

# **SCHEDULE OF RATES**

## **FOR TERM CONTRACTS FOR BUILDING WORKS**

2016 EDITION

Volume 2

(Building Services Works)



ARCHITECTURAL SERVICES DEPARTMENT  
HONG KONG

**ARCHITECTURAL SERVICES DEPARTMENT**

**HONG KONG**

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**Section 00**

**GENERAL REGULATIONS**



**SECTION 00****GENERAL REGULATIONS****Associated documents****GR.01**

This Schedule of Rates (hereinafter referred to as "this Schedule" or "the Schedule") shall be read and used in conjunction with :-

- (a) The General Conditions of Contract and Special Conditions of Contract adopted for the Term Contract.
- (b) The Conditions of Tender, Form of Tender and Articles of Agreement of the Term Contract.
- (c) Drawings, Specification and Employer's Requirements of the Term Contract.
- (d) The term "Specification" shall mean the General Specification, Codes of Practice and other documents referred herein below, Particular Specifications and all other specification requirements issued therein and referred to in the Term Contract.
- (e) The General Specifications and other documents for building works including but not limited to the document as listed below including all current amendments issued thereto, and any further document all as referred to in the Term Contract :-
  - (i) General Specification for Building issued by Architectural Services Department.
  - (ii) Appropriate Sections of General Specification for Civil Engineering Works issued by Civil Engineering and Development Department.
  - (iii) Design Manual : Barrier Free Access issued by Buildings Department.
  - (iv) Code of Practice for Fire Safety in Buildings issued by Buildings Department.
  - (v) The Fresh Water Plumbing Maintenance Guide, Handbook on Plumbing Installation for Buildings, Hong Kong Waterworks Standard Requirements for Plumbing Installations in Buildings, Maintenance of Internal Plumbing and Circular Letters issued to Licensed Plumbers and Authorized Persons by Water Supplies Department.
  - (vi) Geotechnical Manual for Slopes, Geoguide 5 - Guide To Slope Maintenance and other relevant Geoguides issued by Geotechnical Engineering Office, Civil Engineering Department.
- (f) The General Specifications, Codes of Practice and other documents for building services installations including but not limited to the document as listed below, which are issued by Architectural Services Department or Electrical and Mechanical Services Department including all current amendments issued thereto, and any further document all as referred to in the Term Contract :-
  - (i) General Specification for Electrical Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
  - (ii) General Specification for Air Conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

<b>Associated documents (Cont'd)</b>	<b>GR.01 (Cont'd)</b>	(f)	(iii)	General Specification for Mechanical Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(iv)	General Specification for Fire Service Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(v)	General Specification for Lift, Escalator and Passenger Conveyor Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(vi)	General Specification for Liquefied Petroleum Gas Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(vii)	General Specification for Catering Equipment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(viii)	General Specification for Swimming Pool Water Treatment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(ix)	General Requirements for Electronic Contract (ESG01) issued by Electrical and Mechanical Services Department.
			(x)	General Specification for Broadcast Reception Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(xi)	General Specification for Public Address Systems (ESG11) issued by Electrical and Mechanical Services Department.
			(xii)	General Technical Specification for Monochrome and Colour Closed Circuit Television Systems (ESG14) issued by Electrical and Mechanical Services Department.
			(xiii)	General Technical Specification for Uninterruptible Power Supply (UPS) (ESG15) issued by Electrical and Mechanical Services Department.
			(xiv)	General Specification for Plumbing and Drainage Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(xv)	Code of Practice for the Electricity (Wiring) Regulations issued by Electrical and Mechanical Services Department.
			(xvi)	Code of Practice for Energy Efficiency of Building Services Installation issued by Electrical and Mechanical Services Department.
			(xvii)	Code of Practice on Working near Electricity Supply Lines issued by Electrical and Mechanical Services Department.

**Associated documents (Cont'd)****GR.01 (Cont'd)**

- (f) (xviii) Code of Practice on Avoiding Danger from Gas Pipes issued by Electrical and Mechanical Services Department.
- (xix) Code of Practice for Hong Kong LPG Industry issued by Electrical and Mechanical Services Department.
- (xx) Code of Practice GU01, GU03 - 06, GU09, GU12, GU13, GU15 and GU21 issued by Electrical and Mechanical Services Department.
- (xxi) Code of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment issued by Fire Services Department.
- (xxii) Code of Practice for Lift Works and Escalator Works issued by Electrical and Mechanical Services Department.
- (xxiii) Testing and Commissioning Procedure for Electrical Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxiv) Testing and Commissioning Procedure for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxv) Testing and Commissioning Procedure for Fire Services Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxvi) Testing and Commissioning Procedure for Lift, Escalator and Passenger Conveyor Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxvii) Testing and Commissioning Procedure for Liquefied Petroleum Gas Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxviii) Testing and Commissioning Procedure for Catering Equipment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxix) Testing and Commissioning Procedure for Swimming Pool Water Treatment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxx) Testing and Commissioning Procedure for Broadcast Reception Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxxi) Testing and Commissioning Procedure for Burglar Alarm and Security Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

**Associated documents (Cont'd)****GR.01 (Cont'd)**

- (f) (xxxii) Testing and Commissioning Procedure for Emergency Generator Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxxiii) Testing and Commissioning Procedure for Steam Boiler and Calorifier Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (xxxiv) Testing and Commissioning Procedure for Plumbing and Drainage Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
- (g) Particular Specification(s) and all other specification requirements issued and referred to in the Term Contract.
- (h) Any Amendments and Corrigenda to the Schedule of Rates issued and referred to in the Term Contract.

All items of works contained in this Schedule and in the Amendments and Corrigenda to the Schedule of Rates issued and referred to in the Term Contract, shall be executed in accordance with the conditions and stipulations as provided in the above mentioned documents, and in compliance with all requirements on workmanship, materials, plant, measurements and any other requirements as stipulated in the above documents.

Due allowance is deemed to have been made in the Contract Percentages for complying with the requirements in the Specification and/or Employer's Requirements as adopted in the Term Contract.

**Definitions generally****GR.02**

Where any of the definitions given in these General Regulations are at variance with those given in the Special Conditions preceding the Sections throughout this Schedule, the definitions given in the Sections in this Schedule shall take priority.

- “approved” shall mean approved in writing by the Maintenance Surveyor but this approval shall not relieve the Contractor from responsibilities imposed by the Term Contract.
- “described” shall mean described in the Specification and all current amendments (if any) issued thereto.
- “ditto” shall mean the whole of the work described in detail in the preceding item, except as qualified in the description in which it occurs.
- “origin” shall mean the place or country where the material (which shall be natural material only) is originally produced.
- “proprietary” shall mean a proprietary material or product, protected by a patent or registered trade mark ® or a trade mark symbol <sup>TM</sup> or similar recognizable trade mark or copyright, that is manufactured and marketed by the owner who has exclusive rights of use, or other material or product that the Contractor could provide authentication documents on its make and origin as required by the Maintenance Surveyor and to his satisfaction.

**Definitions  
generally  
(Cont'd)**

**GR.02  
(Cont'd)**

“Schedule”	shall mean this Schedule of Rates.
“specified”	shall mean specified in the Specification and all current amendments (if any) issued thereto.
“submission”	shall mean the submission of all documents like design, calculation, working drawings, shop drawings, records, etc. as required in the Special Conditions to each Section of the Schedule including obtaining the approval of the Maintenance Surveyor on the submission.
"Term Contract"	shall mean the Contract referring this Schedule as forming part of the Contract.

**Abbreviations**

“exc.”	shall mean exceeding.
“n.e.”	shall mean not exceeding.
“c/w”	shall mean complete with.
“xx - yy”	shall mean a range of dimensions exceeding the first dimension as stated but not exceeding the second, for example: "1.50 - 3.00" shall mean exceeding 1.50 and not exceeding 3.00.
“bore”	shall mean nominal internal diameter.
“dia”	shall mean nominal diameter.
“mm”	shall mean millimetre.
“m”	shall mean linear metre.
“m <sup>2</sup> ”	shall mean square metre.
“m <sup>3</sup> ”	shall mean cubic metre.
“kg”	shall mean kilogram.
“AL”	shall mean Accredited Laboratory which is an independent body accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS).
"B.S."	shall mean British Standard.
"DIN"	shall mean German Institute for Standardization.
"DBH"	shall mean diameter of trunk of tree or plant measured at a height of 1.3 m above ground level.
"EN"	shall mean European Standard.
"FRR"	shall mean fire resistance rating.
“G.S.”	shall mean the General Specification and other documents referred to in General Regulations Clause GR.01(e) and (f) where appropriate.

<b>Abbreviations (Cont'd)</b>	<b>GR.02 (Cont'd)</b>	<p>"MDF" shall mean medium density fibreboard.</p> <p>"PWL" shall mean Public Works Laboratories.</p> <p>"RSE" shall mean Registered Structural Engineer.</p> <p>"TCP" shall mean Technically Competent Person.</p>
<b>Methods of measurement</b>	<b>GR.03</b>	<p>All works including "Supply only of materials" measured and paid for under this Schedule shall be measured in accordance with the conditions and rules detailed herein irrespective of any local or trade customs.</p> <p>All works shall be measured net as completed or fixed in its place. Due consideration has been made in the Schedule rates for works executed in small quantities, narrow widths, short lengths, isolated patches, repairs, any height or locations above or below ground, difficult positions or confined spaces or any other exceptional circumstances; and no additional payment for such circumstances shall be made except where specifically provided for in this Schedule.</p> <p>All works of "Supply only of materials" shall be the net quantities specified in a Works Order. No allowance or payment shall be made to the Contractor for small quantities, short lengths, breakage or damage, delivery to store or any designated location as directed by the Maintenance Surveyor or any other circumstance except where specifically provided for in this Schedule.</p> <p>Any disadvantage which may be entailed by items being performed under exceptional circumstances must be regarded as being offset by other items which may be proven exceptionally advantageous.</p>
<b>Overtime</b>	<b>GR.04</b>	<p>All works shall be deemed to be executed during any working hour in a 24 hour-day (from 00:00 hour to 24:00 hour) including Sundays and General Holidays. No additional payment shall be made for any overtime including :-</p> <p>(a) Overtime which is ordered by the Maintenance Surveyor in accordance with the Conditions of Contract to expedite slow progress of the work caused by default, negligence or omission by the Contractor.</p> <p>(b) Watchmen or security guard at any time.</p>
<b>Deductions for voids</b>	<b>GR.05</b>	<p>Where a minimum area is defined for the deduction of voids, such minimum shall refer only to openings or wants detached from the boundaries of the space measured. Openings and wants caused by projections from the boundary of the space measured shall always be the subject of deduction, irrespective of size.</p>
<b>Curved or circular works</b>	<b>GR.06</b>	<p>Except where specified items are included in this Schedule for curved or circular work, all work shall be measured and priced as if straight and flat. Where specific items for curved work or circular work are included, the maximum radius stated in such description shall be the limit for which curved or circular work shall be paid for and any work curved to a radius greater than this limit shall be measured and priced as if straight and flat.</p>

**Works executed  
by Specialist  
Sub-contractors,  
sub-contractors,  
etc.**

**GR.07**

Where appropriate throughout this Schedule and where specified in the Term Contract, the following categories of works shall be executed by :-

- (a) Specialist Sub-contractors included in the list of Approved Suppliers of Materials and Specialist Contractors for Public Works maintained by Development Bureau namely :-
- (i) Air-conditioning Installation
  - (ii) Audio Electronics Installation
  - (iii) Broadcast Reception Installation
  - (iv) Burglar Alarm and Security Installation
  - (v) Catering Equipment Installation
  - (vi) Design, Manufacture and Installation of Glass (or Fibre) Reinforced Plastic Units
  - (vii) Diesel Generator Installation
  - (viii) Electrical Installation
  - (ix) Electrical and Mechanical Installation for Sewage Treatment and Screening Plant
  - (x) Electronic Timing and Display Installation
  - (xi) Fabrication of Steel Pipe Specials
  - (xii) Fabrication of Unfired Pressure Vessels
  - (xiii) Fire Service Installation
  - (xiv) Fountain Installation
  - (xv) Landscaping
  - (xvi) Landslip Preventive/Remedial Works to Slopes/Retaining Walls
  - (xvii) Lift, Escalator and Passenger Conveyor Installation
  - (xviii) Liquefied Petroleum Gas Installation
  - (xix) Low Voltage Cubicle Switchboard Installation
  - (xx) Mechanical Handling and Lifting Installation
  - (xxi) Mechanical Plant and Equipment Installation
  - (xxii) Plumbing Installation
  - (xxiii) Radio Electronics Installation

**Works executed  
by Specialist  
Sub-contractors,  
sub-contractors,  
etc.  
(Cont'd)**

**GR.07  
(Cont'd)**

- (a)
  - (xxiv) Repair and Restoration of Historic Buildings
  - (xxv) Repair of Motors, Transformers and Switchgear
  - (xxvi) Road Marking
  - (xxvii) Soil and Rock Testing
  - (xxviii) Space Frame Systems
  - (xxix) Steam and Compressed Air Installation
  - (xxx) Structural Steelwork
  - (xxxi) Supply and Installation of Pumpsets and Associated Pipework
  - (xxxii) Supply and Installation of Water Treatment Plant
  - (xxxiii) Supply of Bituminous Pavement Materials and Construction of Special Bituminous Surfacing
  - (xxxiv) Swimming Pool Water Treatment Installation
  - (xxxv) Turn-key Interior Design and Fitting-out Works
  - (xxxvi) Uninterruptible Power Supply Installation
  - (xxxvii) Video Electronics Installation
- (b) Maintenance Surveyor's approved sub-contractors or applicators namely : -
  - (i) Medical Gas
  - (ii) Town Gas
  - (iii) Curtain Walling
  - (iv) Fuel Supply
  - (v) Chimney

The above categories of specialist works are not exhaustive. Other categories of works, if specified in the Term Contract, shall also be executed by Specialist Sub-contractors or other approved sub-contractors or applicators.

Due allowance is deemed to have been made in the Contract Percentages for complying with these requirements.



**Latest standards and specification****GR.08**

Where materials, workmanship and works are specified in this Schedule to be in conformity with certain British Standards or other International Standards, or to be in accordance with certain G.S. Items, Code of Practice and the like, they shall deem to be referred to the latest relevant and equivalent standards and amendments as specified in the Specification; or where no specific dates are stated, they shall deem to be referred to the latest relevant and equivalent standards and specification current and published on or after the date 10 days prior to the tender closing date for the Term Contract unless otherwise specified. If conflict occurs between various standards, then the more onerous is to apply.

Due allowance is deemed to have been made in the Contract Percentages for complying with these requirements.

**Imperial equivalents where required or necessary****GR.09**

Whenever practicable, the Contractor shall supply materials in metric sizes and execute the works strictly in accordance with the metric dimensions specified. Imperial equivalents may be accepted only when circumstances prohibit compliance with this sub-clause (for example, statutory obligations) or where the Maintenance Surveyor considers it impracticable, undesirable or impossible to use metric sizes or dimensions or when suitable materials are not available in metric sizes.

The provision of this sub-clause shall not apply to materials which are specified in this Schedule by their actual manufactured sizes or their metric equivalents (for example, roof tiles, plywood, building boards, p.v.c. pipes, mosaic tiles) or classified in accordance with the relevant British Standards (for example, copper pipes) or other International Standards.

**Schedule rates****GR.10**

The rates throughout this Schedule shall include for : -

- (a) All materials supplied, and all works and services executed complying strictly with the Specification as detailed in General Regulations Clause GR.01 and the provision or execution of all samples of materials or finished works in patterns where required.
- (b) Provision of all materials and cutting and wastage on the same, except where otherwise stated, including collection, loading, conveyance, delivery, unloading, stacking, storage of the same, multi-handling between positions as directed on Site and provision of storage accommodation, handling, hoisting, lowering, distributing, etc. to specified location.
- (c) Provision of all labour including contributions to Mandatory Provident Fund, paid leave, travelling expenses, lodging allowance or living accommodation and any other allowances as required.
- (d) Provision of all tools, plant, temporary water, power and lighting, watching and work sheds.
- (e) All expenses for delivery, distribution or transportation of articles, materials, labour, personnel, tools, plant, work sheds etc. by all means including land, sea or air except otherwise specifically provided for in the Special Conditions of each Section in this Schedule or when specifically required and ordered by the Maintenance Surveyor.
- (f) Executing work in any position, location and height unless otherwise stated.

**Schedule rates  
(Cont'd)**

**GR.10  
(Cont'd)**

- (g) Providing record of photograph, location plan and schedule of existing trees, if any, within and in close vicinity (within 2.00 m) of the site boundary and works areas including protective and preservative works/measures such as tree surgery works, temporary fencing, etc. and the like, allowance for method of operation and vehicular access for tree preservation throughout the period of the Works and removing all temporary protective and preservative works/measures on completion and making good all works disturbed.
- (h) Setting up monitor points for controlling noise, vibration, settlement and lateral movement imposed on adjoining properties including provision of equipment, technical and supervisory personnel carrying out daily monitoring and submission of records as directed by the Maintenance Surveyor.
- (i) Providing and maintaining temporary access and road as G.S. Item 1.25 and making good to match existing.
- (j) Providing and maintaining temporary drainage system as G.S. Item 1.26 and making good to match existing.
- (k) Provision of drawings including shop drawings and/or as built drawings, and operation and maintenance manuals, and carrying out tests on samples or finished works including the submission of test reports and test certificates to the satisfaction of the Maintenance Surveyor; unless specifically provided otherwise in the Schedule.
- (l) Allowance for the works to be executed by Specialist Sub-contractors, Maintenance Surveyor's approved sub-contractors and applicators where required in the Specification, or as stated in the Special Conditions of each Section of the Schedule.
- (m) Carrying out tests by the Public Works Laboratories (PWL) or by an independent body accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) (hereinafter referred to as the "Accredited Laboratory") (AL) including provision and submission of sampling and analysis methodology to the Maintenance Surveyor for approval prior to conducting any tests. The testing laboratories to be engaged by the Contractor shall be approved by the Maintenance Surveyor. The testing laboratories shall submit test results directly from the laboratory to the Maintenance Surveyor in sealed envelopes.
- (n) Conducting compliance tests on structural works by the PWL/AL. The testing laboratories to be engaged by the Contractor shall be approved by the Maintenance Surveyor. The testing laboratories shall submit test results directly from the laboratory to the Maintenance Surveyor in sealed envelopes.
- (o) Certification including the employment of independent certification bodies wherever required or necessary.
- (p) Provision, erection, maintenance, alteration, dismantling and clearing away of the following temporary works and protective measures that are required for the execution and completion of the Works unless specifically provided otherwise in the Schedule : -
  - (i) All bamboo, metal or proprietary scaffolding, staging, ladders, trestles, cradles, gondolas, platforms and similar items complete with all netting, coverings, screens, dust sheets, barricades, catch-fans, protective canopies, etc.;

**Schedule rates  
(Cont'd)**

**GR.10  
(Cont'd)**

- (p) (ii) All types of hoardings and walkways complete with gateways, adequate lighting, associated power supply and electrical work as required by the Maintenance Surveyor including the types of hoardings and walkways (including internal metal/aluminium hoardings) referred to in Section 10 - Steel and Metal Work of this Schedule and other proprietary hoardings and walkways systems, and the submission of detailed drawings together with supporting calculations certified by TCP or RSE for approval and provision of operation manuals of other proprietary hoardings and walkways systems not referred to in Section 10 - Steel and Metal Work; and
- (iii) Similar temporary measures including but not limited to protective shield coverings, fences, barriers and the like and/or other protective measures specifically covered by the Special Conditions of each Section in this Schedule, and the erection, alteration and dismantling of such temporary measures on a daily basis where required by the Maintenance Surveyor for all necessary protection to new works and the public from harm, dust or nuisance.

The drawings referred to in Section 10 - Steel and Metal Work of this Schedule and in sub-clause (ii) above are not exhaustive and would be subject to change. The Contractor is deemed to allow for complying with the latest requirements.

- (q) Clearing away debris, surplus materials or other materials arising from the works and leaving the works and areas affected by the works clean and tidy on completion to the satisfaction of the Maintenance Surveyor.
- (r) Provision of mechanical dump truck covers in accordance with Particular Specification for Mechanical Dump Truck Covers.
- (s) All superintendence, establishment charges, overhead, expenses and profit.
- (t) Any cost and/or expenses incurred for carrying out the works at all times including working outside normal working hours as provided in General Regulations Clause GR.04.
- (u) Any costs and/or expenses in supplying materials or products to match existing works, finishes or systems when instructed by the Maintenance Surveyor, except when such materials or products are not specifically mentioned in this Schedule.
- (v) Any other expenses incurred in conforming with the Term Contract.
- (w) Reinstatement and making good surfaces disturbed.
- (x) Imperial equivalents wherever required or necessary.

Where the Contractor considers any of the rate contained in the Schedule is insufficient or inadequate, the Contractor is deemed to have made all necessary allowances in the Contract Percentages adjustment and/or in any other priced items in the Term Contract for executing the works as contained in the Schedule and in compliance with all requirements as stipulated in the Term Contract.

**Schedule rates and application of Contract Percentages**

**GR.11**

The Schedule rates in this Schedule are derived from the basic rates of provisions of labour, materials, plant and all other provisions as stated in this Schedule including adjustments made to the basic rates giving due consideration of factors including market trends, trade practices and the management efficiency and bidding strategies of contractors as reflected in the past term contracts procurement.

The Schedule rates also take into account conditions under which term contracts works are executed, which may include but not be limited to works executed in small quantities or large quantities, narrow widths, short lengths, isolated patches, repairs, any height or locations above or below ground, difficult positions or confined spaces or any other exceptional circumstances of the works.

The Schedule rates shall apply to the valuation of works instructed by the Maintenance Surveyor, and in all cases, the Schedule rates to be paid for the works shall be determined and applied before applying any relevant Contract Percentages.

The Contract Percentages including any percentage addition as priced and included in the Contract shall include the Contractor's profits and overheads, attendance, all costs and expenses incurred in connection with the Works and are necessary in fulfilling the requirements of the Term Contract where they are not separately itemized or stated in this Schedule, including the works or services assessed under proportional rate items, star rate items and re-applicable rate items.

**Rates for items not specifically mentioned in this Schedule**

**GR.12**

Rates for items not specifically mentioned in this Schedule shall be valued as follows : -

- (a) Proportional rate      When an article, a material, workmanship or service is of similar form, character or quality to that detailed in the Schedule or executed under similar conditions and circumstances as described therein, then at a rate equal to a Schedule rate but with a fair adjustment for the difference in form, character and quality or in conditions and circumstances, and such rate to be agreed upon between the Maintenance Surveyor and the Contractor.
- Such proportional rate shall be subject to relevant Contract Percentages adjustment.
- (b) Star rate                When an article, a material, workmanship or service is not of similar form, character or quality to that detailed in the Schedule or not executed under similar conditions and circumstances as described therein, or when work or material of any kind which is not detailed in the Schedule, then at a reasonable rate to be agreed upon between the Maintenance Surveyor and the Contractor.
- Such star rate shall not be subject to relevant Contract Percentages adjustment unless otherwise specifically stated.
- (c) Re-applicable rate      A rate fixed in accordance with the Term Contract requirements and to be re-applicable in any other Works Orders as approved by the Maintenance Surveyor for the whole duration of the Term Contract and not subject to adjustment of fluctuation and Contract Percentages adjustment.

**Materials supplied by Government or other designated suppliers**      **GR.13**      When materials are supplied to the Contractor by Government or other designated suppliers, no allowance shall be made to the Contractor other than the payment for “Fix only” (“Lay only” or “Set only”, etc.) as detailed under the appropriate items of this Schedule.

**“Supply only”**      **GR.14**      The term “Supply only” used throughout this Schedule shall mean the provision complete by the Contractor of an article, a fitting or a material. The rates for such items shall include for, where applicable, obtaining and taking delivery of the articles, fittings or materials, transporting by land, sea, or air to sites or Government stores or other designated locations as directed by the Maintenance Surveyor, and all necessary off-loading and moving into sites, Government stores or other designated locations.

The rates listed in the “SUPPLY ONLY OF MATERIALS” in each Section of this Schedule shall include all the foregoing charges and allowance for replacement of materials damaged during delivery to sites, off-loading and moving into sites, Government stores or other designated locations as directed by the Maintenance Surveyor.

**“Take down (“Take up” or “Take out”, etc.) and clear away”**      **GR.15**      The term “Take down (“Take up” or “Take out”, etc.) and clear away” used throughout this Schedule shall mean execution complete by the Contractor of the work of taking down, taking up or taking out of an existing article, fitting or material either in whole or in part and removing from Site and disposing of the same. The rates for such items shall include for all or any of the following :-

- (a) Works executed by skilled labourers of the required trades, unless specifically provided otherwise in the Schedule.
- (b) Payment of all fees and charges.
- (c) Taking down, taking up or taking out of the articles, fittings or materials either in whole or in part together with any associated plugs, holdfasts, lugs, brackets and other fixings and all necessary cutting out and disposal.
- (d) Making good any works disturbed and any damage to surrounding surfaces and filling up all mortices, holes, etc. or alternatively leaving the same open and clean to receive readily new articles, fittings or materials.
- (e) Reinstatement and making good surfaces disturbed.
- (f) Preparing edges, ends or surfaces of remaining materials to receive junctions with new.
- (g) Taking up or removing covers, access doors, etc. and the like for the execution of the works and re-fixing the same on completion.

The articles, fittings, or materials taken down shall become property of the Contractor. Unless otherwise specified, due allowance for credits has been considered in the Schedule rates where applicable.

**“Take down (“Take up” or “Take out”, etc.) and set aside for re-use”**

**GR.16**

The term “Take down (“Take up” or “Take out”, etc.) and set aside for re-use” used throughout this Schedule shall mean execution complete by the Contractor of the work of taking down, taking up or taking out of an existing article, fitting or material either in whole or in part and setting the same aside on site or transporting to Government stores or other Government sites for subsequent re-use. The rates for such items shall include for all or any of the following : -

- (a) Works executed by skilled labourers of the required trades, unless specifically provided otherwise in the Schedule.
- (b) Payment of all fees and charges.
- (c) Carefully taking down, taking up or taking out of the articles, fittings or materials together with associated plugs, holdfasts, lugs, brackets and other fixings and all necessary cutting out and disposal.
- (d) Thoroughly cleaning, oiling and adjusting the articles, fittings or materials ready for re-use, dismantling, re-assembling again as necessary, moving and stacking or putting into stores on sites or alternatively loading, transporting, unloading and moving to Government stores or other Government sites.
- (e) Making good any works disturbed and any damage to surrounding surfaces and filling up all mortices, holes, etc. or alternatively leaving the same open and clean to receive readily re-used or new articles, fittings or materials.
- (f) Reinstatement and making good surfaces disturbed.
- (g) Preparing edges, ends or surfaces of remaining materials to receive junctions with re-used or new.
- (h) Repairing or replacing at Contractor's own cost any damage caused to the articles, fittings or materials during taking down, taking up, taking out, etc. and transit.
- (i) Taking up or removing covers, access doors, etc. and the like for the execution of the works and re-fixing the same on completion.

**“Fix only” (“Lay only” or “Set only”, etc.)**

**GR.17**

The term “Fix only” (“Lay only” or “Set only”, etc.) used throughout this Schedule shall mean execution complete by the Contractor of the work of fixing, laying, setting, jointing, re-fixing, re-laying, re-setting and re-jointing an article, a fitting or a material made available free of charge to the Contractor by Government or it has been previously taken down. The prior taking down of the existing articles, fittings or materials shall be measured separately and paid for at the appropriate rates under applicable Sections of this Schedule. The rates for such items shall include for any or all of the following : -

- (a) Works executed by skilled labourers of the required trades, unless specifically provided otherwise in the Schedule.
- (b) Payment of all fees and charges.
- (c) Taking delivery of the articles, fittings or materials at Government stores or other designated suppliers, loading, transporting to sites, unloading, checking and examining the same and storing on sites and returning any crates and other packings to Government stores, if required.

<b>“Fix only”  (“Lay only”  or “Set only”,  etc.)  (Cont'd)</b>	<b>GR.17  (Cont'd)</b>	<p>(d) Taking the articles, fittings or materials from stores on sites, sorting, cutting and fitting, fabricating, assembling, moving, hoisting, distributing at locations, fixing, laying, setting, jointing, re-fixing, re-laying, re-setting and re-jointing in new or existing work, opening or position.</p> <p>(e) Providing all fixing and jointing materials such as nails, bolts, nuts, washers, screws, gaskets, mastic, adhesive, mortar and the like or other fixing and jointing materials made available from taking down.</p> <p>(f) Executing all plugging and screwing, jointing, cutting all mortices and grouting the same, and executing all cutting, fitting, easing or adapting necessary to the articles, fittings or materials to the positions in which the same are to be fixed, and oiling and leaving in good working order.</p> <p>(g) Making good any damage caused to the articles, fittings or materials and surrounding surfaces and making good new or existing finishes up to the same.</p> <p>(h) Reinstatement and making good surfaces disturbed.</p> <p>When the articles, fittings or materials despite having been taken down from another positions and set aside for re-use or having been delivered by Government or other designated suppliers or their agents are made available on site, no deduction shall be made from the rates of “Fix only” (“Lay only” or “Set only”, etc.) for transporting the said articles, fittings or materials to Site.</p>
<b>Built up fittings or  composite units</b>	<b>GR.18</b>	<p>The rates for “Take down and clear away”, “Take down and set aside for re-use” and “Fix only” are not intended to cover built up fittings or composite units, i.e. fittings or units that are fabricated and can be moved in their entirety or broken down into fabricated components. These items are to be measured as the appropriate items in the respective Sections unless otherwise provided in this Schedule.</p>
<b>Nominated  Sub-contractors'  accounts</b>	<b>GR.19</b>	<p>When works are carried out by Nominated Sub-contractors and facilities for the execution of such works are afforded to the Nominated Sub-contractors by the Contractor and accounts for such works are paid by the Contractor in accordance with the Conditions of Contract, the percentage addition allowed to the Contractor on the net cost of such works shall be as that contained in the Form of Tender for “Profit and Attendance on Nominated Sub-contractors' Works”.</p>
<b>“Making good”</b>	<b>GR.20</b>	<p>The term “Making good” shall be understood as including all labour and materials necessary to bring the disturbed area to the same appearance, colour, texture, etc., in the same materials as the surrounding work and shall include for painting, colouring and/or varnishing any new work to match the surrounding existing work to the entire satisfaction of the Maintenance Surveyor.</p>
<b>Daywork</b>	<b>GR.21</b>	<p>When daywork is ordered by the Maintenance Surveyor, measurement of daywork shall be made according to the Special Conditions set out in Section 17 - Labour and Section 18 - Temporary Plant and Facilities of this Schedule.</p>

**“Utility Connection  
And Pavement  
Works”****GR.22**

The term “Utility Connection And Pavement Works” shall mean the works of drainage connection, water supply connection, construction of run-in and reinstatement of footways which shall be executed complete by contractors selected and employed by the Contractor from the “List of Approved Contractor for Public Works in Group A, B or C for Road & Drainage Works” for the drainage connection and construction of run-in and reinstatement of footways and from the “List of Approved Contractors for Public Works in Group A, B or C for Waterworks” for the water supply connection work.

When Utility Connection and Pavement Works are required to be executed under the Term Contract and are ordered specifically by the Maintenance Surveyor for such purpose, the Contractor shall be reimbursed a lump sum fee payment as included in Item 03063 in Section 03 – Excavation of this Schedule for compliance with the requirements stated herein and as provided in the Term Contract for the Utility Connection and Pavement Works. This lump sum fee payment is an allowance made for all costs and expenses other than the valued works executed in connection with the Utility Connection and Pavement Works under the relevant Sections in this Schedule, and shall include for the following : -

- (a) Complying with the requirements and procedures in connection with the Utility Connection And Pavement Works specified in the Particular Specification referred to in the Term Contract and submitting assessments and reports as required.
- (b) Liaising with the relevant authorities and utility companies, preparing and submitting relevant drawings, programmes and documents and completing all the forms in connection with the Utility Connection And Pavement Works.
- (c) Submitting all the detailed particulars in connection with the granting of an Excavation Permit [Note : Excavation Permit means any excavation permit issued by the Government in respect of the Utility Connection And Pavement Works under Section 8 of the Land (Miscellaneous Provision) Ordinance] as required by the Maintenance Surveyor.
- (d) Obtaining approvals and permits from relevant utility companies or Government departments.
- (e) Complying with the conditions of any Excavation Permit applicable to the Utility Connection And Pavement Works.
- (f) Providing and maintaining temporary road or access where required for pedestrian and vehicular traffic diversions and subsequent clearing away after completion of the Works.
- (g) Providing and maintaining traffic control as G.S. Item 1.18.
- (h) Locating and protecting existing services as G.S. Item 1.22.
- (i) Carrying out all necessary site inspections (including handing over inspections) jointly with the relevant authorities and utility companies.
- (j) Provision of identification tapes along the water connection mains.
- (k) Cleaning and sterilization of fresh water mains for making connections.
- (l) Provision of as built drawings and test reports as specified.
- (m) Protection of curbs, masking and unmasking of drainage channels, manhole covers, gully gratings, expansion joints, road studs and road marking.



**“Utility Connection  
And Pavement  
Works”  
(Cont'd)**

**GR.22  
(Cont'd)**

- (n) Provision, maintenance and removal of all measures to maintain traffic flow including labour and temporary traffic diversion lighting and signs and paying all charges incurred.
- (o) Provision, maintenance and removal of temporary road, walkway, covers to trenches and the like.
- (p) Making good all surfaces, features, etc. and the like disturbed by all temporary road, access, traffic control, pedestrian footway, etc. and the like to match existing and including all requirements as stipulated in the Term Contract for carrying out the Utility Connection and Pavement Works.

This lump sum fee payment shall only be paid once for each location specified in the Works Order. Works executed in connection with the Utility Connection and Pavement Works shall be measured separately in accordance with the General Regulations and the Special Conditions of the relevant Sections in this Schedule.

**Submission of  
measurement  
and accounts**

**GR.23**

All quantities shall be measured and rounded to the nearest two decimals of a unit.

**Materials/  
Products**

**GR.24**

All materials / products shall generally be based on the corresponding properties and/or performance standards as stipulated in the Specification (as defined in General Regulations Clause GR.01(d) herein) and/or as set out in this Schedule.

Where materials, products or works in this Schedule are stipulated as "proprietary", "approved", of "specific quality" or by their origins of which properties and/or performance standards are specified without their brand names, authentication documents on such materials, products or works including certificates of origins, technical literature and catalogues, test certificates and/or compliance test reports, manufacturers' guarantees or warranties, samples and mock-ups of these materials, products or works together with other documents required by the Maintenance Surveyor should be submitted or provided for the Maintenance Surveyor's written approval before purchase, delivery and execution. If any of these materials, products or works delivered or executed without the Maintenance Surveyor's prior written approval, or are not carried out to the Maintenance Surveyor's satisfaction, they should be removed or reinstated by the Contractor at his own expenses. The Maintenance Surveyor may also adjust this payment to the Contractor in accordance with General Regulations Clause GR.26.

For all materials, products and works within the definition of "proprietary" in General Regulations Clause GR.02, the Contractor, if required by the Maintenance Surveyor, shall provide a certificate of patent or registered trade mark or copy right; or provide authentication documents like the make or origin of the materials or products, test reports, test certificates, operation and maintenance manuals, warranties and manufacturer's guarantees and any other document that could provide the authentication to the same effect; and provide local project reference to demonstrate that the materials, products and works have proven track record of similar application, all to the satisfaction of the Maintenance Surveyor. The Contractor shall further be required to have specific proprietary materials / products / works executed by approved sub-contractors / applicators and submit technical literature, method statements, etc. where required by the Maintenance Surveyor or as stated in the Term Contract.

Due allowance is deemed to have been made in the Contract Percentages for complying with all of the above requirements.

**Materials/Products specified as "specific quality"**

**GR.25**

Certain materials / products in this Schedule are stipulated as of "specific quality". These shall generally be materials / products of significance, such as those that are safety critical, prestigious in nature, or such are required to create a specific visual impact to the completed works, or are critical to the completed works from their functionality, operation and maintenance perspectives that the quality of such materials / products exceeds the requirement generally stated in the General Specification and in the Term Contract.

The Contractor shall provide authentication of documentary evidence and proof including those specified in this Clause and General Regulations Clause GR.24 herein to identify and justify the properties and/or performance standards of "specific quality" of the subject materials / products are generally of higher quality than that specified in the General Specification and the requirements as stated in the Specification of the Term Contract, for the Maintenance Surveyor's approval. Such proof may include carrying out appropriate quality tests to verify the quality of the subject materials / products is of quality higher than that specified in the General Specification, or obtaining certification from an independent testing authority / expert (to be approved by the Maintenance Surveyor) confirming of such specific quality.

Due allowance is deemed to have been made in the Contract Percentages for complying with all of the above requirements.

**Payment for materials/products**

**GR.26**

Throughout this Schedule and including items valued under General Regulations Clause GR.12, the payment of materials / products shall generally be assessed according to the corresponding properties or performance standards as set out in this Schedule (with reference to the Specification) regardless of whether the materials / products are specified with brand names or referred as "proprietary", "approved", of "specific quality" or by their origins, or not.

The onus of proof is vested with the Contractor to identify the origins, properties and/or performance standards of materials / products used in the works corresponding to those set out in this Schedule (with reference to the Specification) and / or approved or accepted by the Maintenance Surveyor, and to provide the necessary documentary evidence and authentications including but not limited to certificates of origins, certificates of patent, registered trade marks or copy rights, local job references to demonstrate that the materials, products and works have proven track records of similar applications, technical literature and catalogues, test certificates and / or compliance test reports, manufacturers' guarantees or warranties, sub-contractors' / applicators' warranties and the like of the materials / products specified or approved all to the satisfaction of the Maintenance Surveyor, and for use by the Maintenance Surveyor for payment of the corresponding materials / products as set out in this Schedule.

In the absence of any documentary evidence and authentications that are required to demonstrate the conformity or compliance of the materials / products / works with the respective "proprietary", "approved", of "specific quality", origins or brand names, the assessment of such materials / products / works may be based on the basic costs of the materials / products / works that are available in the Schedule as ascertained by the Maintenance Surveyor, or otherwise the Maintenance Surveyor shall withhold or deduct the value of such materials / products / works that are not being carried out to his satisfaction from the final value of the works.

**Adjustment  
to unit rates  
exceeding  
\$99,999.99**

**GR.27**

Whenever the unit rate for an item exceeds \$99,999.99, it has been divided by a factor (“adjustment factor”) to reduce the figure to fall within \$99,999.99 (“adjusted rate”) for inclusion in this Schedule. Such unit rate before adjustment is described in the item description as the actual rate. When the adjusted rate is to be used for all purposes under the Term Contract, such adjusted rate shall be multiplied by the adjustment factor to revert it back to the actual rate before making any adjustment of the relevant Contract Percentages.

**Application of  
Schedule rates**

**GR.28**

This Schedule comprises Volume 1 for Builder's Works and Volume 2 for Building Services Works (B.S. Works). The compilation of unit rates in these two volumes of Schedule of Rates are made with due consideration on the specific natures, purposes and requirements which would vary for the execution of the builder's works and the building services works.

Where similar Schedule rates are found in different Sections, whether within the same volume or different volume of the Schedule, such valuation shall in so far as reasonable be based on Schedule rates of the same Section under which the works are executed.

**Section 01**

**CONTRACT FACILITIES AND SPECIAL ATTENDANCES**

## SECTION 01

### CONTRACT FACILITIES AND SPECIAL ATTENDANCES

#### SPECIAL CONDITIONS

#### Contract Requirements

- SC01.01** This Section shall be read and used in conjunction with the Specification and the Employer's Requirements adopted in the Contract.
- Contract Facilities stated in this Section shall refer to land transport facilities, contract equipment and contract staff services provided by the Contractor for the exclusive use by the Maintenance Surveyor, his representatives, the Employer or his staff all in accordance with the requirements of the Contract for the Contract Period or such other period as instructed by the Maintenance Surveyor.
- Special Attendances stated in this Section shall mean the Contractor's provision of means of access for the works in Works Orders of incidental minor maintenance and repair nature at a height of over 10 metre where no other proper means of access is available. Payments of Special Attendances shall satisfy the conditions as stated in Special Conditions Clause SC01.11 below.
- The Contractor shall arrange for the provisions of Contract Facilities and Special Attendances to be readily available for use at the time or any time, for the duration and in the manner as specified in the Contract, or otherwise as may be instructed by the Maintenance Surveyor.

#### Particular Preamble

- SC01.02** The rates appearing in this Section are allowances for providing the Contract Facilities as required in the Contract and Special Attendances. The Contractor is deemed to have allowed in his Contract Percentage(s) for this and other Sections in the Schedule of Rates of any insufficiency of rates and all other expenses incurred under the Contract for : -
- (a) Meeting all contractual and statutory obligations in connection with the provision of Contract Facilities and Special Attendances, and any other related obligations, liabilities, risks and profit borne by the Contractor;
  - (b) Any of the Contract Facilities requirement which is impracticable or not available (e.g. when the model satisfying the contract requirement is no longer available or out of stock), the Contractor shall provide similar facilities and services satisfying the requirement of the Contract and accepted by the Maintenance Surveyor;
  - (c) Any item or part thereof of any Contract Facilities that is required and specified in the Contract but the methods of measurement provided hereunder do not measure or have excluded such item or part thereof in this Section;
  - (d) The payment for Special Attendances shall in no way vitiate the provisions as stipulated in General Regulations for all works and services carried out under the Contract;
  - (e) Any further period of Contract Facilities provided beyond the period of measurement as provided in the Special Conditions contained in this Section and without any confirmation from the Maintenance Surveyor; and
  - (f) All other allowance as stipulated in the Contract in connection with the provision of the Contract Facilities and Special Attendances.

**SPECIAL CONDITIONS****Rates generally****SC01.03**

The rates in this Section shall generally include for : -

- (a) Maintenance, repairs, service charges, tax, licence and any other government fees and charges in connection with the use of the Contract Facilities and provisions of Special Attendances.
- (b) Provisions of all insurances on the Contract Facilities against accident, damage, loss by theft or fire, etc.
- (c) Replacement of contract staff.
- (d) Replacement of damaged or lost facilities.
- (e) Removal of the Contract Facilities within the time as stipulated in the Contract, or at any time as may be informed by the Maintenance Surveyor.

**Measurement of Contract Facilities generally****SC01.04**

The items for Contract Facilities shall generally be measured and paid for in accordance with the Special Conditions provided below and the Employer's Requirements where such facilities are specifically stated in the Contract.

**LAND TRANSPORT****Measurement of land transport facilities****SC01.05**

The land transport facilities shall include the provision of petrol private car, electric vehicle or multi-purpose vehicle (MPV) and the driver services as specified in the Contract.

The rates for land transport facilities shall be measured each and on a monthly basis for the period from the date when such land transport facilities are provided for use under the Contract until the expiry of the Contract Period as specified in the Contract, and any further period of provision of the land transport facilities that the Maintenance Surveyor expressly confirms in writing.

In case where the period of the provision of land transport facilities provided for use is not in a whole month, or where no land transport or alternative replacement facilities are provided on any day(s) within a particular month, the rate to be paid to the Contractor shall be adjusted as follows : -

Amount to be deducted from the Schedule rate for the provision of land transport facilities in a particular month for each number vehicle  $= \frac{D_1}{D} \times R$

$D_1$  = The number of days on which the land transport or alternative replacement facility is not provided in the particular month.

$D$  = Total number of days in the particular month where provision of the land transport facility is required.

$R$  = Schedule rate for the provision of land transport facilities in a particular month for each number vehicle subject to Contract Percentage adjustment.

The periods ( $D_1$ ) and ( $D$ ) are measured in half calendar day unit occurring during the said month.

No measurement and payment shall be made for any period of time during which no land transport nor other alternative replacement facilities are provided for use under the Contract.

**SPECIAL CONDITIONS****LAND TRANSPORT****Rates for  
land transport  
facilities****SC01.06**

The rates for land transport facilities shall further include for : -

- (a) Provision of Environment-friendly Petrol Private Cars, Electric Vehicles or Hybrid Vehicles of not more than one year old, and in good working order. A valid Environment-friendly Vehicle Certificate shall be provided for Environment-friendly Petrol Private Cars.
- (b) Provision of a competent and licensed driver for each vehicle who must have not less than 3 years' driving experience, no dangerous driving records and who shall be approved by the Maintenance Surveyor. The driver shall be equipped with a mobile telephone for contact purpose when on duty.
- (c) Provision of the vehicles at all times and for the uses as specified in the Contract.
- (d) Arranging the vehicles to be standby during the period when the vehicles are not in use including having the vehicles parked at a location designated by the Maintenance Surveyor.
- (e) All tunnels, bridges and cross harbour tunnel toll fees, and parking fees including the parking fees incurred when the vehicles are standby.
- (f) Maintaining a record of the use of the vehicles including details, times and purposes of journeys together with appropriate pedometer readings and distances travelled.
- (g) Maintaining effective comprehensive insurances covering passenger liabilities of the vehicles to be driven by any driver. In the case of a private car under the ownership of the Contractor, inclusion of an endorsement in the insurance policy expanding the definition to cover the Maintenance Surveyor and his Representatives and all personnel of the Employer.
- (h) Fuels, oils, lubricant and the like for the proper running and functioning of the vehicles.
- (i) Provision for similar alternative transport when the vehicles provided are unavailable.
- (j) Providing or painting the contract number, contract title, the Contractor's name or other suitable identification as approved by the Maintenance Surveyor to the vehicles.

### SPECIAL CONDITIONS

#### CONTRACT EQUIPMENT

**Measurement of contract equipment**

**SC01.07**

The rates for provision of contract equipment shall be measured each and on a monthly basis from the date when such equipment is provided for use until the expiry of the Contract Period as specified in the Contract, and any further period of provision of the contract equipment that the Maintenance Surveyor expressly confirms in writing.

In case where the period of the provision of contract equipment provided for use is not in a whole month, or where no contract equipment or alternative replacement is provided for a period exceeding seven calendar days within a particular month, the rate to be paid to the Contractor shall be adjusted as follows : -

Amount to be deducted from the Schedule rate for the provision of contract equipment in a particular month for each number contract equipment =  $\frac{D_1}{D} \times R$

$D_1$  = The number of days on which the contract equipment or alternative replacement is not provided in the particular month  
(No deduction shall be made for the initial seven calendar days of non-provision, but deduction shall be made for a period of continuous non-provision more than seven calendar days and of which shall include the initial seven calendar days of non-provision).

$D$  = Total number of days in the particular month where provision of the contract equipment is required.

$R$  = Schedule rate for the provision of contract equipment in a particular month for each number contract equipment subject to Contract Percentage adjustment.

The periods ( $D_1$ ) and ( $D$ ) are measured in half calendar day unit occurring during the said month.

No measurement and payment shall be made for any period of time during which no contract equipment nor other alternative replacement is provided for use under the Contract.

**Rates for contract equipment**

**SC01.08**

The rates for contract equipment shall further include for : -

- (a) Provision of all equipment with functions, configurations and specifications as stated in the Contract and in good working order.
- (b) Provision of all necessary consumables like paper, toner, etc.
- (c) Licence fees, connection charges, rental charges, broadband internet connection, service charges, insurance and the like.
- (d) Maintaining monthly report on usage.
- (e) Regular maintenance, repair and temporary replacement of the devices of similar functions and configurations during period of repair.



### SPECIAL CONDITIONS

#### CONTRACT STAFF SERVICES

**Measurement of  
contract staff  
services**

**SC01.09**

The contract staff services shall include the provision of the following staff services when specified in the Contract : -

- (a) Clerical support staff
- (b) Maintenance support officer
- (c) Technical officer
- (d) Works supervisor (builder's work) and works supervisor (building services)
- (e) Quality control assistant (builder's work) and quality control assistant (building services)
- (f) Customer services officer
- (g) Senior customer services officer

The rates for provisions of contract staff services shall be measured each and on a monthly basis from the date when the contract staff reports duty at the Employer's office until the expiry of the Contract Period as specified in the Contract, and any further period of provision of the contract staff services that the Maintenance Surveyor expressly confirms in writing.

Payment shall only be made when the Contractor has demonstrated to the Maintenance Surveyor's satisfaction that salary payments have been received by the contract staff.

In case where the period of the provision of contract staff services is not in a whole month, or where replacement is not provided for the respective contract staff service on any day(s) within a particular month, the rate to be paid to the Contractor shall be adjusted as follows : -

Amount to be deducted from the Schedule rate for  
the provision of contract staff services in a  
particular month for each number contract staff

$$= \frac{D_1}{D} \times R$$

$D_1$  = The number of days on which the contract staff or alternative replacement is not provided in the particular month.

$D$  = Total number of days in the particular month where provision of the contract staff services is required.

$R$  = Schedule rate for the provision of contract staff services in a particular month for each number contract staff subject to Contract Percentage adjustment.

The periods ( $D_1$ ) and ( $D$ ) are measured in half calendar day unit occurring during the said month.

No measurement and payment shall be made for the period of time during which no contract staff services nor other alternative replacement are provided for use under the Contract.

**SPECIAL CONDITIONS****CONTRACT STAFF SERVICES****Rates for  
contract staff  
services****SC01.10**

The rates for "contract staff services" shall further include for : -

- (a) Provision of full time contract staff with qualification and experience that meet the requirements as specified in the Contract.
- (b) Performance of all duties.
- (c) Maintenance of an attendance diary.
- (d) All expenses and reimbursement in connection with employment of the contract staff including but not limited to basic salary, contribution to the Mandatory Provident Fund, gratuity and all necessary levies, e.g. levy for Construction Industry Council, insurances, etc.
- (e) Transportation arrangement required for executing their respective duties.
- (f) Provision of facilities for executing their respective duties like computer equipment and mobile phone (including internet connection and its services charges, hardware and software), digital cameras, stationery and consumables, etc.
- (g) Working outside normal working hours.
- (h) Working on General Holidays, emergency and urgent works and working at specific locations.
- (i) Replacement by temporary staff when the contract staff is on leave, absent or resigned.
- (j) Any other related costs and expenses that the Contractor may incur from the recruitment, management and deployment of the contract staff services.

**PAYMENT FOR SPECIAL ATTENDANCES****Measurement of  
Payment  
for Special  
Attendances****SC01.11**

The item for "Payment for Special Attendances" shall only be measured and paid for when the Maintenance Surveyor is satisfied that the following conditions have been fulfilled : -

- (a) Where the work instructed under the Works Order is incidental minor maintenance and repair work in nature and the claimed value of the works under the Works Order alone does not exceed \$1,000;
- (b) Works is carried out to walls or ceiling soffits, where the work is at a clear height over 10 m high (measured from the level on which the staging or the means of access is erected, or where the level is sloping, measured from the level immediately at the provision of the staging or the means of access) with no other means of access available;
- (c) Submission of reports and photographic records to justify such payment; and
- (d) The provision of the staging or means of access is made by the Contractor himself.

**SPECIAL CONDITIONS****PAYMENT FOR SPECIAL ATTENDANCES****Measurement of  
Payment  
for Special  
Attendances  
(Cont'd)****SC01.11  
(Cont'd)**

Where works under more than one Works Orders of incidental minor maintenance and repair nature are carried out at the same location at or around the same period of time by the Contractor or his Specialist Sub-contractors, the Contractor shall arrange for the full utilization of the means of access to be provided for these Works Orders. Subject to fulfilment of the conditions stated in sub-clauses (a) to (d) herein, payment for Special Attendances will only be made once irrespective of the number of Works Orders issued under such circumstance.

No measurement and payment shall be made for "Payment for Special Attendances" under either one of the following conditions : -

- (i) The claimed value of the works carried out under the above circumstances exceeds \$1,000 per Works Order.
- (ii) Where means of access is available or provided at the location by the owners, the Employer or other parties.
- (iii) The Contractor fails to submit the report and photographic records to justify the payment of the Special Attendances claimed, or the Maintenance Surveyor considers that the report submitted fails to provide adequate information to demonstrate satisfaction of the conditions as stated in sub-clauses (a) to (d) herein.
- (iv) Where works are carried out under separate Works Order with staging or means of access provided at the same location at or around the same period of time, and the estimated value of the works exceeds \$1,000 for that Works Order.

**Rates for  
Payment  
for Special  
Attendances****SC01.12**

The rates for "Payment for Special Attendances" shall further include for : -

- (a) Providing any means of access including but not be limited to scaffolding, screens, working platforms, staging, gondolas and the like; and erection, subsequent dismantling and removal of the same upon completion of the works;
- (b) Compliance with all safety requirements and certification from independent checking engineer, where required, and payment of all fees; and
- (c) Submission of all necessary records and reports in the format as approved by the Maintenance Surveyor.

Item		A \$	Item
<b>CONTRACT FACILITIES</b>			
Note : - The following Items 01001 to 01018 inclusive will only be paid for if the requirements as set out in the Contract and the conditions as set out in the Special Conditions are complied with.			
<b>LAND TRANSPORT</b>			
<i>Per number-month</i>			
01001	Private car - fully air conditioned saloon car with seating capacity of not less than five seats (including driver) .....	23,800.00	01001
01002	MPV - fully air conditioned saloon car with seating capacity of not less than seven seats (including driver) .....	25,500.00	01002
<b>CONTRACT EQUIPMENT</b>			
<i>Per number-month</i>			
01003	Provision of facsimile machine (for A4 size).....	110.00	01003
01004	Provision of mobile phone.....	240.00	01004
01005	Provision of computer facilities .....	250.00	01005
01006	Provision of monochrome laser-jet printer (for A4 size).....	160.00	01006
01007	Provision of colour inkjet printer (for A3 size).....	220.00	01007
01008	Provision of colour laser printer (for A3 size).....	340.00	01008
01009	Provision of digital camera.....	50.00	01009
<b>CONTRACT STAFF SERVICES</b>			
<i>Per number-month</i>			
01010	Clerical support staff .....	10,800.00	01010
01011	Maintenance support officer.....	14,500.00	01011
01012	Technical officer .....	15,600.00	01012
01013	Works supervisor (builder's work) .....	20,300.00	01013
01014	Works supervisor (building services).....	20,300.00	01014
01015	Quality control assistant (builder's work) .....	15,600.00	01015
01016	Quality control assistant (building services).....	15,600.00	01016
01017	Customer services officer.....	12,000.00	01017
01018	Senior customer services officer.....	13,000.00	01018

Item		Item
	<b>PAYMENT FOR SPECIAL ATTENDANCES</b>	
	Note : - Item 01019 will only be paid for if the requirements as set out in the Contract and the conditions as set out in the Special Conditions are complied with.	
	<i>Per item</i>	
01019	Payment for Special Attendances.....	01019
		A \$ 3,000.00

**Section 27**

**ELECTRICAL INSTALLATION -  
LIGHTING SYSTEM AND FIXTURES**

## SECTION 27

### ELECTRICAL INSTALLATION

#### SPECIAL CONDITIONS

(Note: The following special conditions shall apply equally where appropriate to rates under Sections 27 to 30)

<b>Measurement of conduits and flexible conduits</b>	<b>SC27.01</b>	Conduits and flexible conduits shall be measured the net length as fixed in linear metres over all conduit fittings, boxes and short running lengths.
<b>Measurement of trunkings, trays and ladders</b>	<b>SC27.02</b>	Trunkings, trays and ladders shall be measured the net length as fixed in linear metres over all fittings, short running lengths and branches.
<b>Measurement of cables</b>	<b>SC27.03</b>	Cables shall be measured the net length as fixed in linear metres between equipment, control gear, fittings, accessories and the like.
<b>Measurement of excavations, cable ducts, chases, holes and other subsidiary work</b>	<b>SC27.04</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All cable ducts shall be measured separately and paid for at the appropriate rates under Section 12 - Roadwork and Cable Duct of this Schedule. All chases in, and holes through existing walls, ceilings and similar for cables, conduits etc. shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule. Special concrete marker blocks specifically ordered in writing by the Maintenance Surveyor shall be measured separately and paid for at the appropriate rates under the applicable Works Sections of this Schedule.
<b>Measurement of power supply for bedhead trunking system and staff/emergency/ nurse call system</b>	<b>SC27.05</b>	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the bedhead trunking system and staff/emergency/ nurse call systems shall be measured separately and paid for at the appropriate rates under these Sections 27 to 30 or other applicable Work Sections of this Schedule.
<b>Measurement of control panel for bedhead trunking system and staff/emergency/ nurse call system</b>	<b>SC27.06</b>	The interconnecting cables and the cable containment for the control panel connecting to external equipment or existing panel shall be measured separately.

**SPECIAL CONDITIONS****Measurement of simplified items****SC27.07**

- (1) Simplified items included in Section 27 shall apply to :-
- (a) Lighting points commencing from the loadside of the over-current protection device (e.g. MCB) or existing lighting switch/ lighting fitting.
  - (b) Lighting switch points commencing from the loadside of the over-current protection device (e.g. MCB) or existing lighting fitting and lighting switch.
  - (c) Occupancy sensor points/ motion detector points commencing from the loadside of the over-current protection device (e.g. MCB) or existing lighting switch/ fitting.
- (2) Simplified items included in Section 28 shall apply to :-
- (a) Power points commencing from the loadside of over-current protection device (e.g. RCBO) or adjacent power outlet.
  - (b) Telephone points commencing from the telephone distribution room on the same floor.
  - (c) LAN nodes commencing from the server, hub, cabinet, switches, equipment rack or router on the same floor.
  - (d) Service outlet points (e.g. broadcast and satellite reception, audio-visual, public address) commencing from the cabinet, equipment rack or distribution splitter on the same floor.
  - (e) Door bell points commencing from the loadside of over-current protection device (e.g. RCBO) or existing door bell/ push button.
- (3) Any point containing a socket outlet (single or twin), a power connection unit, a power switch controlling socket outlet/ power connection unit and the like shall be measured as a power point. Any power point for power switch controlling socket outlet/ power connection unit shall be measured in accordance with the rating of its controlled socket outlet and rating of protection fuse of power connection unit no matter its rating is larger than the socket outlet/ power connection unit except the connection unit with cables of conductor size 2.5 mm<sup>2</sup> with ring final circuit arrangement shall be measured as a 13A power point.
- (4) Cabling and wiring facilities for fan regulators shall not be measured as a power point.
- (5) Any power points, telephone points, LAN points and service outlet points being fixed to floor outlet box/ trunking service box shall be measured as simplified items. Floor outlet box or trunking service box shall be measured separately.
- (6) Simplified items shall be adopted unless otherwise specifically ordered in writing by the Maintenance Surveyor.
- (7) Additional payment for Items 27841 to 27848 and Items 28536 to 28563 inclusive for provision of circuit protective conductors to grid switch shall be measured according to the number of final circuits.



### SPECIAL CONDITIONS

<b>Measurement of periodic inspection, testing and certification of electrical installation</b>	<b>SC27.08</b>	<p>Testing and inspection of electrical installation for the whole premises to comply with the statutory requirements shall be paid for at the appropriate single rate in accordance with the installed rating of outgoing switch of the switchboard or cut-out switch comprising rising mains and feeder circuits in single-phase or three-phase, except for small premises without switchboard or cut-out switch in which case the appropriate single rate for the installed rating shall apply. The testing of the sub-main circuit, final circuit, external mounted IDMT relay and testing of the main L.V. switchboard shall be measured separately and paid for at the appropriate rates under Section 30.</p>
<b>Measurement of temporary supply</b>	<b>SC27.09</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>
<b>Rates generally</b>	<b>SC27.10</b>	<p>The rates for all items shall generally include for : -</p> <ul style="list-style-type: none"> <li>(a) Colour band and colour identification work.</li> <li>(b) Lettering and engraving for identification, signs, labels in both English and Chinese.</li> <li>(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.</li> <li>(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.</li> <li>(e) All protective coating or finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.</li> <li>(f) Any kind of fixing method including drilling of the background and provision of fixings, hangers, brackets, supports, saddles, nails, screws, nuts, bolts, shims, washers, plugs, shotfired pins, spring compensated and seismic restraints and isolated components and the like.</li> </ul>

### SPECIAL CONDITIONS

**Rates generally  
(Cont'd)**

**SC27.10  
(Cont'd)**

- (g) Provision of fire stopping as required.
- (h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (m) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (n) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (o) Provision of manufacturer's guarantee.
- (p) Submission of sample board for all compact sized materials and accessories, and supply of samples of materials for testing (including testing to destruction).

Where an equipment or item requires identification by lettering, engraving, sign, label, etc., 25 per cent of the value of the appropriate item will be deducted for non-provision of the required lettering, engraving, sign, label, etc.

**Rates for  
"Take down  
and clear  
away" or  
"Take down  
and set aside  
for re-use"**

**SC27.11**

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with electrical installation shall further include for :-

- (a) All in-line fittings including brackets, supports, hangers and the like.
- (b) Cutting into existing conduits, trunkings, trays, ladders, cables and the like in position.
- (c) Plugging off remaining ends with plugs or caps as required.
- (d) Preparing remaining ends of building services works to receive connections with new work if required.
- (e) In the case of equipment, lighting fittings, appliances and the like, taking down all associated connecting cables and the like.
- (f) In the case of bedhead trunking and staff/ emergency/ nurse call system, taking down all associated building services works.

**SPECIAL CONDITIONS**

**Rates for  
"Take down  
and clear  
away" or  
"Take down  
and set aside  
for re-use"  
(Cont'd)**

**SC27.11  
(Cont'd)**

In the case of fluorescent lighting fittings, the rates for "Fix only" or "Take down and clear away" or "Take down and set aside for re-use" for fittings/ components of the fittings complete with T5 electronic ballasts shall also apply to the similar items complete with T8/ T12 electronic/ magnetic ballasts and starter units.

**PART I - ELECTRICAL INSTALLATION**

**Rates for  
electrical  
installation  
generally**

**SC27.12**

The rates for electrical installation shall further include for : -

- (a) Making all necessary arrangements with public electricity supply companies and other public utility companies as may be required.
- (b) Connecting supply to and energizing all new or "re-used" fittings including provision of associated materials.
- (c) Disconnecting existing supply when existing fittings are taken down and properly sealing off the supply.
- (d) Submission of Completion Certificate (Form WR1).
- (e) Warning notice for installation having both new and old cable colours.

**Rates for  
conduits  
and flexible  
conduits**

**SC27.13**

The rates for conduits and flexible conduits shall further include for : -

- (a) Draw wires, draw cable and the like.
- (b) Bends, bushes, couplers, adaptors, expansion joints and the like.
- (c) All bending, setting, cutting, screwing, threading, jointing and providing all conduit fixings.
- (d) All conduit boxes, adaptable junction boxes, covers, and fittings
- (e) Provision of all sleeves for casting in or building in where conduits pass through slabs, walls or beams and caulking between conduit and sleeve where required.
- (f) Components and the forming of holes for making connections into trunking.
- (g) Bonding as specified between adjacent component parts.
- (h) Cleaning out and testing of the conduit system for continuity.
- (i) Provision of expansion joints in services runs wherever they coincide with structural expansion joints.

**SPECIAL CONDITIONS****Rates for trunkings****SC27.14**

The rates for trunkings shall further include for : -

- (a) All joints in the running lengths and components for bonding.
- (b) All cutting and jointing to fittings.
- (c) All cutting, drilling, bushing and jointing to equipment or control gear including all necessary connection accessories.
- (d) Pin-racks for supporting cables.
- (e) Internal fire barriers as required.
- (f) Bonding as specified between adjacent component parts.
- (g) Covers, cross units, tee units and elbow units

**Rates for trays and ladders****SC27.15**

The rates for trays and ladders shall further include for : -

- (a) Cutting openings as required.
- (b) All joints in the running lengths.
- (c) All cutting and jointing to fittings.
- (d) Pin-racks for supporting cables.
- (e) Bonding as specified between adjacent component parts.
- (f) Cable ties for securing cables.

**SPECIAL CONDITIONS**

<b>Rates for cables</b>	<b>SC27.16</b>	The rates for cables shall further include for : - <ul style="list-style-type: none"><li>(a) Laying or fixing in different locations, such as laying in trenches or open ducts, laying on arms or hangers, fixing to cable trays, ladders or other surfaces, drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment, unless specifically provided in this Schedule.</li><li>(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.</li><li>(c) Making cable-joints.</li><li>(d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like.</li><li>(e) Components for supporting cables including combination system cable supports, two piece cleats, trefoil cleats, multiway cleats, hangers, channels and the like.</li><li>(f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.</li><li>(g) Bonding as specified between adjacent component parts.</li><li>(h) Provision of lettered or numbered ferrules for 1 core PVC cable at terminations where required for identification.</li></ul>
<b>Rates for cable termination glands</b>	<b>SC27.17</b>	The rates for cable termination glands shall further include for : - <ul style="list-style-type: none"><li>(a) Assembling and mounting.</li><li>(b) Insulating material, jointing material, locknuts, bushes, couplers and the like.</li></ul>

### SPECIAL CONDITIONS

**Rates for fittings and accessories**

**SC27.18**

The rates for fittings and accessories shall further include for : -

- (a) All boxes, cover plates, connector blocks, cable terminations, bonding and connecting of cable tails.
- (b) All necessary bushes, nipples, locknuts, couplers and the like.
- (c) Assembling and fixing in position.
- (d) Bonding as specified between adjacent component parts.

**Rates for equipment and control gear**

**SC27.19**

The rates for equipment (e.g. motors, fans, starter panels, circuit breakers, batteries, rectifiers and the like) and control gear (e.g. fuse-and-link disconnecting boxes, isolating switches, changeover switches, switch fuses, fused switches, distribution boards, connectors, starters, busbar chambers and the like) shall further include for : -

- (a) Connecting cable ends or cable tails to which they are connected.
- (b) Coupling to and forming holes for conduit entry.
- (c) Links, fuses, gland plates, terminal boxes and the like which form part of the item.
- (d) Bonding as specified between adjacent component parts.

**Rates for lighting fittings**

**SC27.20**

The rates for lighting fittings shall further include for : -

- (a) Reflectors, shades, lamps, control gear, ballasts, transformers, light troughs, diffusers and the like.
- (b) All connection/ terminal boxes, connector blocks, plugs and connecting of cable tails including all necessary grommets, bushes, nipples, locknuts and the like.
- (c) Assembling and fixing in position including all forms of suspensions, supports, safety chains with attachments and the like.
- (d) Adjustment, alignment and the like.
- (e) Bonding as specified between adjacent component parts.

The rates for "Fix only" or "Take down and clear away" or "Take down and set aside for re-use" for a normal lighting fitting shall also apply to the similar items equipped with the emergency power pack but the emergency power pack shall not be measured separately.

### SPECIAL CONDITIONS

**Rates for ventilation fans, air curtains and appliances**

**SC27.21**

The rates for ventilation fans, air curtains and appliances shall further include for : -

- (a) All connection/ terminal boxes, connector blocks, plugs and connecting of cable tails including all necessary grommets, bushes, nipples, locknuts and the like.
- (b) Assembling and fixing in position including all supporting devices, hangers and the like.
- (c) Bonding as specified between adjacent component parts.
- (d) Taking down existing power connection units for cable connection and subsequent refixing as required.

**Rates for earthing, lightning protection and bonding items**

**SC27.22**

The rates for earthing, lightning protection and bonding items shall further include for : -

- (a) Bends, twists and through joints.
- (b) Cables and tape connections and junctions including tinning, sweating and provision of any jointing materials, heat, holes, rivets, bolts, nuts, washers and clamps.
- (c) Saddles, cleats, clips, holdfasts and the like which form part of the tape and rod conductor items.
- (d) Driving electrodes into the ground and connecting electrodes to connectors.

Unless otherwise stated as being included in the items, bonding shall be measured and paid for at the appropriate rates under Sections 27 to 30.

**Rates for simplified items**

**SC27.23**

- (1) The rates for lighting points/ occupancy sensor points/ motion detector points and lighting switch points shall include the cabling and wiring facilities starting from the over-current protection device or adjacent points as the case may be, complete with cable termination, conduits/ trunking, draw wires, flexible conduits, adaptors, boxes and all necessary accessories. However, MCBs/ RCDs/ RCBOs in the MCB board, lighting fittings, motion sensors, lighting switches and the like shall be measured separately and paid for at the appropriate rates under Sections 27 and 28.
- (2) The number of lighting points/ occupancy sensor points/ motion detector points shall be measured as the number of new lighting fittings/ sensors installed. Lighting circuits with ELV provision for lighting dimming control, motion sensor control, etc. shall be measured separately.
- (3) The number of lighting switch points shall be measured as the number of new lighting switch gang installed. Therefore, the number of lighting switch points for lighting switches and grid switch panel shall be measured as number of gangs installed on the lighting switches and grid switch panel.

### SPECIAL CONDITIONS

**Rates for  
simplified  
items  
(Cont'd)**

**SC27.23  
(Cont'd)**

- (4) The rates for power points shall include the cabling and wiring facilities starting from the over-current protection device or adjacent points as the case may be, complete with cable termination, conduits/ trunking, draw wires, flexible conduits, adaptors, boxes and all necessary accessories. The rates for power points shall further include the cabling and wiring facilities from the MCB unit to the contactor/ time switch but exclude the by-pass switch. RCD, contactor and time switch shall not be measured separately as a power point/ lighting point. However, MCBs/ RCDs/ RCBOs in the MCB board, socket outlets, power connection units and the like shall be measured separately and paid for at the appropriate rates under Sections 27 and 28.
- (5) The rates for telephone points, LAN points and service outlet points shall include for cabling and wiring facilities starting from the telephone distribution room/ server room/ control point on the same floor complete with conduit/ trunking, draw wires, boxes, blanking plates and all necessary accessories. Each point shall have a starting point and an end point. In case if there is a ring of multiple end points, one point shall be taken as a common start point. In case different rings are interconnected with each other, the interconnection shall be taken as a new point.

**Rates for  
periodic  
inspection,  
testing and  
certification  
of electrical  
installation**

**SC27.24**

The rates provided for the relevant work under periodic inspection, testing and certification of electrical installation shall generally include for : -

- (a) Testing, inspection and measuring of electrical installation comprising rising mains, feeder circuits, sub-main circuits, final circuits, protective conductors, earthing facilities, power supplies to all communal services of the premises and all necessary testing and inspection to satisfy the requirements as stipulated in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department.
- (b) Provision of electrical schematic, test report, test readings and test certificate which should be certified by a Registered Electrical Worker of the appropriate grade of the EMSD.
- (c) Submission of duly completed and signed Form WR2.
- (d) The testing and inspection, if necessary, to be scheduled in phases and/ or arranged in non-office hours/ night time/ on Sundays and holidays, to suit the allowable working schedule for such work of the premises as advised by the premises management office or the occupants of the premises or per the instruction given by the project officer.



**SPECIAL CONDITIONS****Rates for periodic inspection, testing and certification of electrical installation (Cont'd)****SC27.24 (Cont'd)**

For the purpose of assessment of the payment for periodic inspection, testing and certification of electrical installation under Section 30, the Contractor shall submit to the Maintenance Surveyor a detailed report which shall include, but not limited to, the value of works claimed in the Works Order, photographic records, electrical schematic diagrams, test report and test certificate which should be certified by the Registered Electrical Worker of the appropriate grade of the EMSD and the submission of Form WR2.

For government premises, Form WR2 shall be submitted to the Maintenance Surveyor for record. The Submission of Form WR2 to the EMSD including the endorsement fee shall only be paid for non-government premises with the L.V. switchboard not maintained by the EMSTF, for which WR2 shall be submitted to the EMSD for endorsement.

The Contractor shall submit the format of the report to the Maintenance Surveyor for approval upon commencement of the Contract; once endorsed, the details of the report shall be submitted by the Contractor together with any application for such payment.

In order to justify any payment, the Contractor shall demonstrate that the conditions as laid down in the Special Conditions under Section 27 of this Schedule have been satisfied.

No payment shall be made in respect of any work if the Contractor failed to submit the report, or if the Maintenance Surveyor considers that the work as stated in the report fails to satisfy the Special Conditions under Section 27 of this Schedule.

**Rates for Buildings Energy Efficiency Ordinance Submission****SC27.25**

- (a) In order to fulfill the energy efficiency requirements by the Buildings Energy Efficiency Ordinance, the Contractor is required to appoint a Registered Energy Assessor (REA) at his own cost for the completion and submission of the Form of Compliance - Form EE4 to the EMSD for approval including but not limited to compilation and certification of the required forms and worksheets for the electrical installations, lighting installations and air-conditioning installations, where applicable, including any necessary endorsement fees.
- (b) The rates as separately scheduled for the Buildings Energy Efficiency Ordinance submission shall generally include for the preparation of the installation summaries, worksheets, relevant drawings, drawing lists and other supportive documents by the Contractor. The Contractor shall further coordinate with the REA and provide the required information at no extra cost for his submission of the Form of Compliance to the EMSD as required to fulfill the latest requirements of the Buildings Energy Efficiency Ordinance.

### SPECIAL CONDITIONS

#### PART II - BEDHEAD TRUNKING SYSTEM AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM

**Rates for bedhead trunking system and staff/ emergency/ nurse call system generally**

**SC27.26**

The rates for bedhead trunking system and staff/ emergency/ nurse call system shall further include for : -

- (a) All components and parts building up the system.
- (b) Interconnecting wirings and signal cables including conduits and/ or flexible conduits, trunkings, trays, junction boxes and the like necessary to complete the system.
- (c) All electricity supply and control circuits from the supply points including cables, wirings, conduits and/ or flexible conduits, trunkings, cable trays, fuses, control boxes and necessary accessories required to energize the system.
- (d) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

**Rates for call units**

**SC27.27**

The rates for call units shall further include for push button package, flashlights, flexible cables, flexible conduits and all associated components.

**Rates for power supply units**

**SC27.28**

The rates for power supply units for call system shall further include for : -

- (a) Uninterruptible power supply system and associated accessories.
- (b) Well-ventilated and earthed metal enclosures.
- (c) Transformers, fused spur units, termination blocks and the like.
- (d) Rectifying, filtering and control circuits and associated accessories.
- (e) Circuit protection devices.
- (f) All cable and wiring facilities including necessary conduits, trunking and the like.

**Rates for control panels**

**SC27.29**

The rates for control panels shall further include for visual indications, audible alarm, indication lamps, switches and the internal wiring of the control panel. The cable and cable containment to external equipment or existing panel shall be measured separately and paid for at the appropriate rates under Sections 27 to 30.

**SPECIAL CONDITIONS**PARTICULAR SPECIFICATION

**Particular  
Specification  
for electrical  
installation**

**SC27.30**

The Particular Specification for electrical installation can be found in the Contract.

**Particular  
Specification  
for bedhead  
trunking  
system and  
staff/ emergency/  
nurse call  
system**

**SC27.31**

The Particular Specification for bedhead trunking system and staff/ emergency/ nurse call system can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>LAMP HOLDERS</b>						
The rates include for the provision of fixing screws and rawplugs of approved sizes and types.						
<i>Each</i>						
27001	Lampholder, bakelite, batten type, with shade carrier skirt or home office type, shield for all lamp with Edison Screw/ Bayonet cap.....	33.32	5.79	7.14	18.49	27001
27002	Lampholder, bakelite, cordgrip type, with shade carrier etc. for all lamps with Edison Screw/ Bayonet cap.....	23.57	4.10	5.11	13.35	27002
27003	Lampholder, porcelain, backplate type, for all lamps with Edison Screw/ Bayonet cap.....	29.83	5.79	7.14	18.49	27003
27004	Lampholder, porcelain, backplate type, skirted for all lamps with Edison Screw/ Bayonet cap.....	29.21	5.79	7.14	18.49	27004
27005	Lampholder, bakelite, angle batten type, with home office type, shield for all lamps with Edison Screw/ Bayonet cap.....	29.96	5.79	7.14	18.49	27005
27006	Lampholder, brass, threaded for all lamps with Edison Screw/ Bayonet cap.....	41.53	5.79	7.14	18.49	27006
27007	Lock ring for lampholder.....	8.34	1.78	2.12	5.44	27007
27008	Wedge lampholder for B.C. lamps.....	8.40	2.00	2.45	6.16	27008
27009	Lampholder for high pressure sodium type lamps (all types).....	149.85	14.09	17.46	48.05	27009
27010	Ditto but for low pressure sodium type lamps (all types).....	70.45	9.92	12.24	34.23	27010
27011	Ditto but for tungsten halogen type lamps (all types).....	-	9.92	12.24	34.23	27011
27012	Ditto but for metal halide MBIL type lamps (all types).....	157.78	14.09	17.46	48.05	27012
27013	Lampholder for tubular fluorescent lamp (all types).....	32.77	4.10	5.11	13.35	27013
27014	Lampholder for compact fluorescent lamp (all types).....	37.32	4.10	5.11	13.35	27014
27015	Lampholder for circular fluorescent lamp (all types).....	31.74	4.10	5.11	13.35	27015

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>LAMPS</b>					
	T5 tubular fluorescent tube, 2700K to 6500K :-					
	<i>Each</i>					
27016	549 mm long, 14W.....	44.84	2.93	3.52	8.88	27016
27017	549 mm long, 24W.....	53.03	2.93	3.52	8.88	27017
27018	849 mm long, 21W.....	47.20	2.93	3.52	8.88	27018
27019	849 mm long, 39W.....	53.84	2.93	3.52	8.88	27019
27020	1149 mm long, 28W.....	47.48	2.93	3.52	8.88	27020
27021	1449 mm long, 35W.....	50.04	3.49	4.07	9.71	27021
27022	1449 mm long, 49W.....	67.11	3.49	4.07	9.71	27022
27023	1149 mm long, 54W.....	54.99	3.49	4.07	9.71	27023
27024	1449 mm long, 80W.....	67.11	3.49	4.07	9.71	27024
	LED lighting tube, suitable for T5/ T8 lighting panel with length :-					
	<i>Each</i>					
27025	Up to 600 mm long, min. lumen output 800 lm each tube .....	458.41	12.64	16.98	39.80	27025
27026	600 - 900 mm long, min. lumen output 1200 lm each tube .....	529.96	12.64	16.98	39.80	27026
27027	900 - 1200 mm long, min. lumen output 1600 lm each tube.....	583.18	12.64	16.98	39.80	27027
27028	1200 - 1500 mm long, min. lumen output 2000 lm each tube.....	637.18	12.64	16.98	39.80	27028

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>LAMPS (CONT'D)</b>						
Circular fluorescent lamp : -						
	<i>Each</i>					
27029	22W.....	30.49	4.08	5.11	13.23	27029
27030	32W.....	33.36	4.08	5.11	13.23	27030
27031	40W.....	47.43	4.08	5.11	13.23	27031
27032	60W.....	52.22	4.08	5.11	13.23	27032
Compact fluorescent lamp : -						
	<i>Each</i>					
27033	2 pin single turn, 5/ 7W.....	20.99	2.00	2.45	6.11	27033
27034	Ditto but 9/ 11W.....	23.43	2.00	2.45	6.11	27034
27035	2 pin double turn, 10/ 13W.....	35.46	2.00	2.45	6.11	27035
27036	Ditto but 18/ 26W.....	44.18	2.00	2.45	6.11	27036
27037	4 pin biaxial long turn, 18/ 24/ 34W .....	63.54	2.00	2.45	6.11	27037
27038	Ditto but 36/ 40/ 55W.....	63.54	2.00	2.45	6.11	27038
27039	4 pin double turn, 10/ 13W.....	45.96	2.00	2.45	6.11	27039
27040	Ditto but 18/ 26W.....	52.28	2.00	2.45	6.11	27040
27041	2 or 4 pin triple turn, 13/ 18/ 26W .....	90.98	2.00	2.45	6.11	27041
27042	4 pin triple turn, 32/ 42W .....	104.53	2.00	2.45	6.11	27042
27043	2 pin 2D compact fluorescent lamp.....	49.90	2.00	2.45	6.11	27043
27044	Ditto but 4 pin 28/ 38/ 55 W.....	80.01	2.00	2.45	6.11	27044

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>LAMPS (CONT'D)</b>					
	Incandescent lamp : -					
	<i>Each</i>					
27045	15/ 25/ 40/ 60W, B15/ B22/ E14/ E27 cap, 35 mm diameter candle type or 45 mm diameter golf ball type lamps.....	-	1.17	2.35	4.47	27045
27046	25/ 40/ 60/ 100W, G.L.S. lamp B15/ B22/ E14/ E27 cap, with clear, pearl or colour finish.....	-	1.17	2.35	4.47	27046
27047	150W/ 200W, G.L.S. lamp G.E.S. cap, clear or pearl finishes.....	-	2.00	2.49	6.19	27047
	Halogen lamp : -					
	<i>Each</i>					
27048	Dichroic lamp; in any power rating.....	-	2.00	2.49	6.19	27048
27049	Aluminium reflector lamp; in any power rating.....	-	2.00	2.49	6.19	27049
27050	Reflector lamp (spot/ flood/ wide flood); in any power rating.....	-	2.00	2.49	6.19	27050
27051	Single-end/ double-end; in any power rating.....	-	2.00	2.49	6.19	27051
	Induction lamp : -					
	<i>Each</i>					
27052	Up to 60W.....	632.80	2.00	2.49	6.19	27052
27053	60 - 80W.....	779.70	2.00	2.49	6.19	27053
27054	80 - 120W.....	926.60	2.00	2.49	6.19	27054
27055	120 - 200W.....	1,220.60	2.00	2.49	6.19	27055
	Low pressure sodium lamp : -					
	<i>Each</i>					
27056	26/ 35W.....	230.62	7.85	9.52	23.63	27056
27057	35/ 55W.....	242.14	7.85	9.52	23.63	27057
27058	66/ 90W.....	330.69	7.85	9.52	23.63	27058
27059	90/ 135W.....	343.10	7.85	9.52	23.63	27059

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>LAMPS (CONT'D)</b>					
	Metal halide lamp : -					
	<i>Each</i>					
27060	35W reflector - ceramic.....	452.81	7.85	9.52	23.63	27060
27061	70/ 150W double-end compact.....	144.08	7.85	9.52	23.63	27061
27062	250W double-end compact.....	712.70	7.85	9.52	23.63	27062
27063	400W double-end compact.....	742.01	7.85	9.52	23.63	27063
27064	70/ 150W double-end compact - ceramic.....	343.03	7.85	9.52	23.63	27064
27065	70/ 150W single-end compact.....	184.30	7.85	9.52	23.63	27065
27066	200W single-end compact.....	360.72	7.85	9.52	23.63	27066
27067	35/ 70W single-end compact - ceramic.....	384.80	7.85	9.52	23.63	27067
27068	150W single-end compact - ceramic.....	397.14	7.85	9.52	23.63	27068
27069	70W MBIF, elliptical coated.....	299.44	7.85	9.52	23.63	27069
27070	100/ 250W MBIF, elliptical coated.....	308.07	7.85	9.52	23.63	27070
27071	400W MBIF, elliptical coated.....	340.61	7.85	9.52	23.63	27071
27072	250W tubular clear.....	286.20	7.85	9.52	23.63	27072
27073	400W tubular clear.....	302.05	7.85	9.52	23.63	27073
27074	1000W tubular clear.....	868.12	9.56	11.87	32.56	27074
27075	750W MBIL double-end.....	463.33	9.56	11.87	32.56	27075
27076	1500W MBIL double-end.....	987.47	9.56	11.87	32.56	27076
27077	2000W MBIL double-end.....	1,962.07	9.56	11.87	32.56	27077
27078	70/ 150W compact metal halide.....	399.97	7.85	9.52	23.63	27078
27079	1000W compact metal halide.....	1,636.92	9.56	11.87	32.56	27079
	High pressure sodium lamp (Standard) : -					
	<i>Each</i>					
27080	50/ 70W SON-E.....	143.78	7.85	9.52	23.63	27080
27081	70W SON-I/ SON-T.....	155.94	7.85	9.52	23.63	27081
27082	100W SON-E/ SON-T.....	180.53	7.85	9.52	23.63	27082
27083	110/ 150W SON-E/ SON-T.....	190.86	7.85	9.52	23.63	27083
27084	250W SON/ SON-T.....	199.63	7.85	9.52	23.63	27084
27085	400W SON/ SON-T.....	202.70	7.85	9.52	23.63	27085
27086	1000W SON-T.....	776.27	7.85	9.52	23.63	27086



Item					Item	
	<b>LAMPS (CONT'D)</b>					
	High pressure sodium lamp (Special) :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
27087	50/ 70W high lumen output.....	172.50	7.85	9.52	23.63	27087
27088	100/ 150W high lumen output.....	203.32	7.85	9.52	23.63	27088
27089	250/ 400W high lumen output.....	216.60	7.85	9.52	23.63	27089
27090	150W colour temperature not less than 2150K.....	249.05	7.83	9.51	23.61	27090
27091	250W colour temperature not less than 2150K.....	301.81	7.83	9.51	23.61	27091
27092	400W colour temperature not less than 2150K.....	375.60	7.83	9.51	23.61	27092
27093	35/ 50W WHITE SON.....	348.40	7.83	9.51	23.61	27093
27094	100W WHITE SON.....	373.07	7.83	9.51	23.61	27094
27095	150W WHITE SON.....	402.18	7.83	9.51	23.61	27095
27096	250W WHITE SON.....	440.92	7.83	9.51	23.61	27096
27097	70/ 150W double-end.....	358.69	7.83	9.51	23.61	27097
27098	250W double-end.....	447.86	7.83	9.51	23.61	27098
27099	400W double-end.....	497.06	7.83	9.51	23.61	27099
27100	70W reflector.....	306.66	7.83	9.51	23.61	27100
	High pressure mercury discharge lamp :-					
	<i>Each</i>					
27101	50/ 80/ 125/ 250/ 400/ 450/ 700 W MBF.....	-	7.83	9.51	23.61	27101
	Other lamps :-					
	<i>Each</i>					
27102	Energy saving lamp 9/ 11/ 13/ 15/ 18W, E14/ E27 lamp base.....	41.95	1.17	1.56	4.43	27102
27103	Energy saving lamp 20/ 25W, E14/ E27 lamp base.....	67.40	1.17	1.56	4.43	27103
27104	Energy saving lamp, globe type 9/ 11/ 13/ 15/ 18W.....	49.54	1.17	1.56	4.43	27104
27105	Energy saving lamp, globe type 20/ 25W.....	57.29	1.17	1.56	4.43	27105
27106	24V, 75/ 55W, sealed beam lamp bulb for underwater floodlight.....	74.18	7.83	10.03	23.61	27106
27107	Dimmable energy saving lamp 9/ 11/ 13/ 15/ 18W .....	194.81	1.17	1.56	4.43	27107
27108	LED lamp, 12V 3 - 5W, GU 5.3 .....	519.48	10.50	14.04	36.35	27108
27109	LED lamp, 12V 5 - 7W, GU 5.3 .....	730.42	10.50	14.04	36.35	27109

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS</b>					
	Surface mounted modular vandal resistant fluorescent lighting fitting c/w T5 electronic ballast, fluorescent tube, (one electronic ballast for each set of fluorescent tube), aluminium louvres/ reflectors, anti-vibration devices and polycarbonate diffusers : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
27110	200 x 600 mm, 1 x 14W, single tube.....	856.71	30.60	36.24	97.20	27110
27111	200 x 600 mm, 1 x 14W, single tube, IP54, impact resistance IK10.....	1,182.32	30.60	36.24	97.20	27111
27112	300 x 600 mm, 1 x 14W, single tube, matt-satin polycarbonate green cross blades, dimmable electronic ballast.....	874.04	34.28	40.59	103.60	27112
27113	300 x 600 mm, 2 x 14W, twin tube.....	933.83	34.28	40.59	103.60	27113
27114	300 x 600 mm, 2 x 14W, twin tube, IP54 c/w emergency power pack.....	1,917.32	34.28	40.59	103.60	27114
27115	300 x 600 mm, 2 x 14W, twin tube, IP54 c/w 1 x 10W PLC night light.....	1,680.07	34.28	40.59	103.60	27115
27116	600 x 600 mm, 3 x 14W, triple tube, IP54, impact resistance IK10.....	2,067.73	34.28	40.59	103.60	27116
27117	600 x 600 mm, 3 x 14W, triple tube, IP54, impact resistance IK10 c/w NiMH emergency power pack.....	2,318.74	34.28	40.59	103.60	27117
27118	200 x 1200 mm, 1 x 28W, single tube.....	891.88	30.60	36.24	97.20	27118
27119	200 x 1200 mm, 1 x 28W, single tube, IP54, impact resistance IK10.....	1,380.97	30.60	36.24	97.20	27119
27120	300 x 1200 mm, 2 x 28W, twin tube.....	1,094.63	34.28	40.59	103.60	27120
27121	300 x 1200 mm, 2 x 28W, twin tube, IP54, impact resistance IK10 c/w 2-hour NiMH emergency power pack.....	1,924.62	34.28	40.59	103.60	27121
27122	300 x 1200 mm, 2 x 28W, twin tube, impact resistance IK10 c/w parabolic side reflector.....	1,289.50	34.28	40.59	103.60	27122
27123	300 x 1200 mm, 2 x 28W, twin tube, IP54, impact resistance IK10 c/w night light.....	1,732.16	34.28	40.59	103.60	27123
27124	250 x 1200 mm, 2 x 28W, twin tube, impact resistance IK10.....	1,497.53	34.28	40.59	103.60	27124
27125	200 x 1500 mm, 1 x 35W, single tube.....	1,244.86	32.49	39.32	103.12	27125
27126	200 x 1500 mm, 1 x 35W, single tube, IP54, impact resistance IK10.....	1,749.61	32.49	39.32	103.12	27126
27127	300 x 1500 mm, 2 x 35W, twin tube.....	1,328.73	38.12	44.66	110.25	27127
27128	300 x 1500 mm, 2 x 35W, twin tube, IP54, impact resistance IK10 c/w self-contained emergency NiMH power pack.....	2,676.50	38.12	44.66	110.25	27128
27129	300 x 1500 mm, 2 x 35W, twin tube c/w parabolic side reflector.....	1,793.26	38.12	44.66	110.25	27129
27130	600 x 1200 mm, 3 x 28W, triple tube c/w parabolic side reflector.....	2,510.12	38.12	44.66	110.25	27130
27131	600 x 1200 mm, 3 x 28W, triple tube, IP54 c/w emergency power pack, impact resistance IK10.....	3,744.99	38.12	44.66	110.25	27131
27132	600 x 1200 mm, 3 x 28W, triple tube, IP54 c/w night light, impact resistance IK10.....	3,368.47	38.12	44.66	110.25	27132

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Surface mounted fluorescent light fitting c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube) :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27133	600 mm, 1 x 14W, batten type similar to SFA 50 .....	219.67	21.27	26.55	71.28	27133
27134	600 mm, 2 x 14W, batten type similar to SFA 69.....	319.46	23.27	29.52	82.25	27134
27135	600 mm, 1 x 14W, batten type with plastic diffuser similar to SFA 51.....	304.92	22.38	27.55	75.22	27135
27136	600 mm, 2 x 14W, batten type with plastic diffuser similar to SFA 74.....	451.17	24.97	30.70	86.33	27136
27137	1200 mm, 1 x 28W, batten type similar to SFA 50.....	246.38	23.62	28.77	79.79	27137
27138	1200 mm, 2 x 28W, batten type similar to SFA 69.....	378.46	25.41	31.09	92.38	27138
27139	1200 mm, 1 x 28W, batten type with metal trough reflector similar to SFA 58.....	321.55	24.74	30.64	84.61	27139
27140	1200 mm, 2 x 28W, batten type with metal trough reflector similar to SFA 72.....	488.79	27.12	33.49	97.55	27140
27141	1200 mm, 1 x 28W, batten type with metal angle reflector similar to SFA 56.....	327.19	24.97	30.70	84.61	27141
27142	1200 mm, 1 x 28W, batten type with plastic diffuser similar to SFA 51.....	362.55	24.97	30.70	84.61	27142
27143	1200 mm, 2 x 28W, batten type with plastic diffuser similar to SFA 74.....	559.10	27.12	33.49	97.55	27143
27144	1500 mm, 1 x 35W, batten type similar to SFA 50.....	288.87	24.58	30.36	84.22	27144
27145	1500 mm, 2 x 35W, batten type similar to SFA 69.....	449.94	28.62	34.96	99.18	27145
27146	1500 mm, 1 x 35W, batten type with metal trough reflector similar to SFA 58.....	348.77	27.85	33.86	89.46	27146
27147	1500 mm, 1 x 49W, batten type similar to SFA 50.....	293.87	24.58	30.36	84.22	27147
27148	1500 mm, 2 x 49W, batten type similar to SFA 69.....	458.90	28.62	34.96	99.18	27148
27149	1500 mm, 1 x 80W, batten type similar to SFA 50.....	418.10	24.58	30.36	84.22	27149
27150	1500 mm, 2 x 80W, batten type similar to SFA 69.....	655.40	28.62	34.96	99.18	27150
27151	1500 mm, 1 x 80W, batten type with metal trough reflector similar to SFA 58.....	502.85	27.85	33.86	89.46	27151

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Surface mounted fluorescent light fitting c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube) :- (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27152	1500 mm, 1 x 35W, batten type with metal angle reflector similar to SFA 56.....	333.27	27.75	33.65	88.93	27152
27153	1500 mm, 1 x 35W, batten type with plastic diffuser similar to SFA 51.....	332.05	27.75	33.65	88.93	27153
27154	1500 mm, 2 x 35W, batten type with metal trough reflector similar to SFA 72.....	533.20	29.62	37.10	104.87	27154
27155	1500 mm, 2 x 35W, batten type with plastic diffuser similar to SFA 74.....	538.76	29.52	36.88	104.23	27155
27156	1500 mm, 1 x 49W, batten type with metal angle reflector similar to SFA 56.....	336.58	27.75	33.65	88.93	27156
27157	1500 mm, 1 x 49W, batten type with metal trough reflector similar to SFA 58.....	361.98	27.85	33.86	89.46	27157
27158	1500 mm, 1 x 49W, batten type with plastic diffuser similar to SFA 51.....	342.01	27.75	33.65	88.93	27158
27159	1500 mm, 2 x 49W, batten type with metal trough reflector similar to SFA 72.....	544.01	29.62	37.10	104.87	27159
27160	1500 mm, 2 x 49W, batten type with plastic diffuser similar to SFA 74.....	557.01	29.52	36.88	104.23	27160
	Surface mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types) :-					
	<i>Each</i>					
27161	150 x 1500 mm, 1 x 35W similar to SFA 110.....	456.33	25.31	30.97	92.01	27161
27162	300 x 600 mm, 1 x 14W similar to SFA 110.....	479.25	25.31	30.97	92.01	27162
27163	300 x 600 mm, 2 x 14W similar to SFA 110.....	661.17	30.55	36.17	97.01	27163
27164	300 x 1200 mm, 1 x 28W similar to SFA 110.....	627.38	30.55	36.17	97.01	27164
27165	300 x 1500 mm, 1 x 35W similar to SFA 110.....	681.23	32.44	39.16	102.70	27165
27166	300 x 1500 mm, 1 x 49W similar to SFA 110.....	688.67	32.44	39.16	102.70	27166
27167	300 x 1200 mm, 2 x 28W similar to SFA 110.....	689.21	34.22	40.42	103.20	27167
27168	300 x 1200 mm, 2 x 28W c/w nano reflectors.....	995.48	34.22	40.42	103.20	27168
27169	300 x 1500 mm, 2 x 35W similar to SFA 110.....	809.39	38.12	44.56	110.04	27169
27170	300 x 1500 mm, 2 x 35W c/w emergency power pack.....	959.41	38.12	44.56	110.04	27170
27171	300 x 1500 mm, 2 x 49W similar to SFA 110.....	821.72	38.12	44.56	110.04	27171
27172	400 x 1500 mm, 3 x 35W.....	937.55	38.12	44.56	110.04	27172
27173	600 x 600 mm, 2 x 14W similar to SFA 111.....	722.88	32.49	39.24	102.91	27173
27174	600 x 1200 mm, 2 x 28W similar to SFA 110.....	795.14	41.31	48.68	120.66	27174

Item						
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Surface mounted modular fluorescent lighting fitting c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one T5 electronic ballast for each set of T5 fluorescent tube) : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27175	600 x 600 mm, 3 x 14W similar to SFA 111.....	788.72	38.12	44.56	110.04	27175
27176	600 x 1200 mm, 3 x 28W similar to SFA 110.....	935.10	44.76	52.87	125.46	27176
27177	1200 mm, 1 x 28W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,043.64	31.16	36.36	83.42	27177
27178	1200 mm, 2 x 28W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,249.87	31.16	36.36	83.42	27178
27179	1500 mm, 1 x 35W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,248.56	32.26	36.91	85.42	27179
27180	1500 mm, 2 x 35W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,393.52	32.26	36.91	85.42	27180
	Surface mounted modular fluorescent lighting fitting c/w ball-proof hinged wire guard, with/ without transparent polycarbonate/ plastic cover, T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one T5 electronic ballast for each set of T5 fluorescent tube) : -					
	<i>Each</i>					
27181	300 x 1200 mm, 2 x 28W similar to SFA 112.....	472.57	31.16	36.36	83.42	27181
27182	300 x 1500 mm, 1 x 35W similar to SFA 112.....	811.71	27.21	32.63	70.20	27182
27183	300 x 1500 mm, 2 x 35W similar to SFA 112.....	938.28	32.26	36.91	85.42	27183
27184	300 x 1500 mm, 2 x 35W c/w 2-hour emergency power pack.....	1,474.02	32.26	36.91	85.42	27184
27185	450 x 1200 mm, 3 x 28W similar to SFA 112.....	761.91	44.76	52.87	125.46	27185
27186	450 x 1500 mm, 3 x 35W similar to SFA 112.....	1,512.78	46.69	54.10	132.75	27186

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Surface mounted modular fluorescent lighting fitting c/w ball-proof hinged wire guard, with/ without transparent polycarbonate/ plastic cover, T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one T5 electronic ballast for each set of T5 fluorescent tube) :- (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27187	450 x 1500 mm, 3 x 35W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover c/w emergency power pack.....	2,048.52	46.69	54.10	132.75	27187
27188	600 x 1500 mm, 3 x 35W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover similar to SFA 112.....	1,229.81	46.69	54.10	132.75	27188
27189	600 x 1200 mm, 3 x 54W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover similar to SFA 112.....	1,122.85	44.76	52.87	125.46	27189
27190	600 x 1500 mm, 4 x 49W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover similar to SFA 112.....	1,617.01	50.34	58.35	138.23	27190
	Surface/ pendant mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types), die cast aluminium body :-					
	<i>Each</i>					
27191	1 x 28W similar to SFA 113.....	790.23	26.67	31.87	69.48	27191
27192	2 x 28W similar to SFA 113.....	1,024.56	31.16	36.36	83.42	27192
27193	3 x 28W similar to SFA 113.....	1,421.65	36.22	42.34	96.50	27193
27194	1 x 35W similar to SFA 113.....	853.52	27.21	32.63	70.20	27194
27195	2 x 35W similar to SFA 113.....	1,267.01	32.26	36.91	85.42	27195
27196	3 x 35W similar to SFA 113.....	1,493.48	39.24	46.31	100.61	27196

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Recess mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types), with/ without air slot :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27197	200 x 600 mm, 1 x 14W, vandal resistant.....	1,390.35	25.16	30.84	91.63	27197
27198	300 x 600 mm, 1 x 14W similar to SFA 114.....	603.97	25.16	30.84	91.63	27198
27199	300 x 600 mm, 1 x 14W c/w nano reflectors.....	623.20	25.16	30.84	91.63	27199
27200	300 x 600 mm, 1 x 14W c/w air slots.....	753.33	25.16	30.84	91.63	27200
27201	300 x 600 mm, 1 x 14W c/w air slots with perforated white panel.....	1,123.58	25.16	30.84	91.63	27201
27202	300 x 600 mm, 1 x 14W c/w air slots with perforated white panel and 2-hour emergency power pack.....	1,443.41	25.16	30.84	91.63	27202
27203	300 x 600 mm, 2 x 14W similar to SFA 114.....	746.91	30.35	36.02	96.61	27203
27204	300 x 600 mm, 2 x 14W, vandal resistant.....	1,612.10	30.35	36.02	96.61	27204
27205	300 x 1200 mm, 1 x 28W similar to SFA 114.....	651.20	30.35	36.02	96.61	27205
27206	300 x 1200 mm, 1 x 28W c/w air slots with perforated white panel.....	1,140.06	30.35	36.02	96.61	27206
27207	300 x 1200 mm, 1 x 28W c/w air slots with perforated white panel and 2-hour emergency power pack.....	1,605.29	30.35	36.02	96.61	27207
27208	300 x 1200 mm, 2 x 28W similar to SFA 114.....	775.83	34.01	40.34	102.98	27208
27209	300 x 1200 mm, 2 x 28W c/w dimmable electronic ballast, 3-level dimmer switch and 2-hour emergency power pack.....	973.22	34.01	40.34	102.98	27209
27210	300 x 1500 mm, 1 x 35W similar to SFA 114.....	698.31	37.81	44.38	109.60	27210
27211	300 x 1500 mm, 1 x 35W c/w white powder coated sheet steel with perforated white panel .....	1,150.20	37.81	44.38	109.60	27211
27212	300 x 1500 mm, 1 x 35W c/w white powder coated sheet steel with perforated white panel and 2-hour emergency power pack.....	1,767.16	37.81	44.38	109.60	27212

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>						
Recess mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types), with/ without air slot :- (Cont'd)						
<i>Each</i>		A \$	B \$	C \$	D \$	
27213	300 x 1500 mm, 1 x 49W similar to SFA 114.....	703.37	37.81	44.38	109.60	27213
27214	300 x 1500 mm, 2 x 35W similar to SFA 114.....	840.00	37.81	44.38	109.60	27214
27215	300 x 1500 mm, 2 x 49W similar to SFA 114.....	850.26	37.81	44.38	109.60	27215
27216	600 x 600 mm, 2 x 14W similar to SFA 115.....	754.15	37.81	44.38	109.60	27216
27217	600 x 600 mm, 2 x 14W c/w nano reflectors.....	794.27	37.81	44.38	109.60	27217
27218	600 x 600 mm, 2 x 14W c/w air slots with perforated white panel and 2-hour emergency power pack.....	1,701.14	37.81	44.38	109.60	27218
27219	600 x 600 mm, 3 x 14W similar to SFA 115.....	815.91	37.81	44.38	109.60	27219
27220	600 x 600 mm, 4 x 14W similar to SFA 115.....	1,023.34	37.81	44.38	109.60	27220
27221	600 x 1200 mm, 2 x 28W c/w air slots with perforated white panel and 2-hour emergency power pack.....	1,851.35	37.81	44.38	109.60	27221
27222	600 x 1500 mm, 2 x 35W c/w white powder coated sheet steel with perforated white panel .....	1,384.60	37.81	44.38	109.60	27222
27223	600 x 1500 mm, 2 x 35W c/w white powder coated sheet steel with perforated white panel and 2-hour emergency power pack.....	2,001.56	37.81	44.38	109.60	27223
27224	300 x 600 mm, 1 x 14W c/w dimmable electronic ballast.....	850.23	40.98	48.49	120.16	27224
27225	300 x 600 mm, 2 x 14W c/w dimmable electronic ballast.....	993.17	40.98	48.49	120.16	27225
27226	300 x 1200 mm, 1 x 28W c/w dimmable electronic ballast.....	906.71	40.98	48.49	120.16	27226
27227	300 x 1200 mm, 2 x 28W c/w dimmable electronic ballast.....	1,031.34	40.98	48.49	120.16	27227
27228	600 x 1200 mm, 2 x 28W c/w dimmable electronic ballast.....	1,086.72	40.98	48.49	120.16	27228
27229	600 x 1200 mm, 2 x 28W similar to SFA 114.....	831.21	40.98	48.49	120.16	27229
27230	600 x 1200 mm, 2 x 28W c/w nano reflectors.....	1,143.76	40.98	48.49	120.16	27230
27231	600 x 1200 mm, 2 x 28W c/w mirror aluminium back reflector, dimmable electronic ballast, 3-level dimmer switch and 2-hour emergency power pack.....	1,136.15	40.98	48.49	120.16	27231
27232	600 x 1200 mm, 3 x 28W similar to SFA 114.....	1,035.51	44.39	52.68	124.95	27232
27233	600 x 1200 mm, 4 x 28W similar to SFA 114.....	1,179.29	44.39	52.68	124.95	27233



Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Compact fluorescent down light fitting, recess mounted to false ceiling, integral electronic control gear/ ballast, white stove enameled steel/ die cast aluminium body and anodized aluminium reflector with/ without metal trim:-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27234	Down light with 7/ 9/ 11W PL lamp similar to SFA 224.....	236.84	17.57	21.50	61.01	27234
27235	Down light with 7/ 9/ 11W PL lamp c/w glass diffuser similar to SFA 224.....	316.32	17.57	21.50	61.01	27235
27236	Down light with 13/ 18/ 26W PL lamp similar to SFA 224.....	255.80	17.57	21.50	61.01	27236
27237	Down light with 13/ 18/ 26W PL lamp c/w glass diffuser similar to SFA 224.....	332.14	17.57	21.50	61.01	27237
27238	Down light with 2 x 13W/ 2 x 18W/ 2 x 26W PL lamp similar to SFA 224.....	338.32	17.57	21.50	61.01	27238
27239	Down light with 2 x 13W/ 2 x 18W/ 2 x 26W PL lamp c/w glass diffuser similar to SFA 224.....	422.93	17.57	21.50	61.01	27239
27240	Down light with 13/ 18/ 26W PL lamp, IP 65 c/w safety glass diffuser similar to SFA 224.....	2,146.02	17.57	21.50	61.01	27240
27241	Down light with dimmable electronic ballast, 13/ 18/ 26W PL lamp similar to SFA 224.....	1,364.56	17.57	21.50	61.01	27241
27242	Down light with dimmable electronic ballast, 2 x 13W/ 2 x 18W/ 2 x 26W PL lamp similar to SFA 224.....	1,526.75	17.57	21.50	61.01	27242
	Recessed downlight :-					
	<i>Each</i>					
27243	Ceiling recessed downlight similar to SFA 224, die cast aluminium body and front ring, anodised aluminium reflector, 150 mm diameter, IP65 c/w safety glass, control gear and 1 x 18W/ 26W compact fluorescent lamp c/w emergency power pack with NiMH rechargeable battery for 2 hours discharge.....	1,305.29	20.17	24.22	73.19	27243

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>						
	Surface mounted fluorescent light fitting c/w T5 circular fluorescent tube, electronic control gear/ electronic ballast and diffuser : -					
	<i>Each</i>					
27244	1 x 22W.....	909.93	24.01	30.50	91.66	27244
27245	1 x 40W.....	1,161.05	24.01	30.50	91.66	27245
	Surface mounted compact fluorescent light fitting, integral electronic control gear/ ballast : -					
	<i>Each</i>					
27246	Twin compact fluorescent 9W c/w prismatic controller.....	509.16	22.25	27.45	75.07	27246
27247	Twin compact fluorescent 11W c/w prismatic controller.....	548.93	22.25	27.45	75.07	27247
27248	Circular/ diamond shape compact fluorescent lighting fitting opal/ clear prismatic polycarbonate diffuser, die cast aluminium/ polycarbonate body c/w 16/ 21W 2D lamp .....	456.17	22.38	27.55	75.22	27248
27249	Circular/ diamond shape compact fluorescent lighting fitting opal/ clear prismatic polycarbonate diffuser, die cast aluminium/ polycarbonate body c/w 28/ 38W 2D lamp .....	551.17	22.38	27.55	75.22	27249
27250	Circular/ diamond shape compact fluorescent lighting fitting vandal resistant prismatic diffuser, die-cast aluminium base with IP65 protection body c/w 16/ 21W 2D electronic ballast and lamp tube .....	912.96	22.38	27.55	75.22	27250
27251	Circular/ diamond shape compact fluorescent lighting fitting vandal resistant prismatic diffuser, die-cast aluminium base with IP65 protection body c/w 28/ 38W 2D electronic ballast and lamp tube .....	996.97	22.38	27.55	75.22	27251
27252	Circular/ diamond shape compact fluorescent lighting fitting vandal resistant prismatic diffuser, die-cast aluminium base with IP65 protection body c/w 28/ 38W 2D electronic ballast, lamp tube and 2-hour emergency power pack (NiMH) and charger.....	1,709.40	22.38	27.55	75.22	27252

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>						
	Self-contained and maintained type for 2-hour duration emergency fluorescent lighting fitting c/w battery charger, inverter and :-					
	<i>Each</i>					
27253	600/ 900 mm, 1 x 14W/ 21W single fluorescent tube (electronic ballast).....	433.08	22.03	27.12	75.61	27253
27254	600/ 900 mm, 2 x 14W/ 21W twin fluorescent tubes (electronic ballasts).....	549.79	24.23	29.52	82.25	27254
27255	1200/ 1500 mm, 1 x 28W/ 35W single fluorescent tube (electronic ballast).....	637.05	25.11	30.13	87.83	27255
27256	1200/ 1500 mm, 2 x 28W/ 35W twin fluorescent tubes (electronic ballasts).....	740.83	26.41	31.28	94.91	27256
27257	Bulk head fitting, 1 x 13/ 18/ 26W compact fluorescent tube.....	566.75	23.62	28.77	79.79	27257
27258	Ditto but 2 x 13/ 18/ 26W compact fluorescent tubes.....	650.82	23.62	28.77	79.79	27258
27259	Bulk head fitting, 1 x 7/ 9/ 11W compact fluorescent tube.....	506.22	23.62	28.77	79.79	27259
27260	Ditto but 2 x 7/ 9/ 11W compact fluorescent tubes.....	568.36	23.62	28.77	79.79	27260
	Weather proof, IP65 self-contained and maintained type for 2-hour duration emergency fluorescent lighting fitting with polycarbonate/ slab cover, battery charger, inverter and :-					
	<i>Each</i>					
27261	600/ 900 mm, 1 x 14W/ 21W single fluorescent tube (electronic ballast).....	578.14	21.92	26.90	75.01	27261
27262	600/ 900 mm, 2 x 14W/ 21W twin fluorescent lamp tubes (electronic ballasts).....	762.21	23.13	29.27	81.61	27262
27263	1200/ 1500 mm, 1 x 28W/ 35W single fluorescent tube (electronic ballast).....	737.95	25.67	30.94	93.84	27263
27264	1200/ 1500 mm, 2 x 28W/ 35W twin fluorescent lamp tubes (electronic ballasts).....	932.71	26.27	31.05	94.15	27264
27265	Bulk head fitting, 1 x 13/ 18/ 26W compact fluorescent tube.....	745.10	23.48	28.54	79.16	27265
27266	Ditto but 2 x 13/ 18/ 26W compact fluorescent tubes.....	876.50	23.48	28.54	79.16	27266
27267	Bulk head fitting, 1 x 7/ 9/ 11W compact fluorescent tube.....	704.60	23.48	28.54	79.16	27267
27268	Ditto but 2 x 7/ 9/ 11W compact fluorescent tubes.....	768.65	23.48	28.54	79.16	27268

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Corrosion resistant fluorescent light fitting c/w polycarbonate diffuser, IP65, T5 fluorescent tube and electronic ballast (one electronic ballast for each set of fluorescent tube) :-					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
27269	600 mm, 1 x 14W similar to SFA 116.....	574.64	29.47	35.54	107.12	27269
27270	600 mm, 2 x 14W similar to SFA 117.....	723.19	30.98	37.22	121.99	27270
27271	1200 mm, 1 x 28W similar to SFA 116.....	661.71	34.33	40.16	115.78	27271
27272	1200 mm, 2 x 28W similar to SFA 117.....	853.44	35.99	42.36	135.53	27272
27273	1500 mm, 1 x 35W similar to SFA 116.....	1,010.03	36.77	43.92	121.08	27273
27274	1500 mm, 2 x 35W similar to SFA 117.....	1,185.30	39.44	46.99	141.59	27274
27275	1500 mm, 1 x 49W similar to SFA 116.....	1,067.59	37.90	44.83	121.08	27275
27276	1500 mm, 2 x 49W similar to SFA 117.....	1,229.01	40.57	47.89	141.59	27276
	Corrosion resistant IP65 fluorescent lighting fitting c/w T8 electronic ballast and self-contained battery (NiCd)/ (NiMH) for 2 hours discharge (emergency of the normal length) :-					
	<i>Each</i>					
27277	600 mm, 1 x 18/ 20W, single tube.....	-	21.94	27.08	73.79	27277
27278	600 mm, 2 x 18/ 20W, twin tube.....	-	24.69	30.57	86.15	27278
27279	1200 mm, 1 x 36/ 40W, single tube.....	-	23.57	28.72	79.64	27279
27280	1200 mm, 2 x 36/ 40W, twin tube.....	-	25.56	31.31	92.19	27280
27281	1500 mm, 1 x 58/ 60W, single tube.....	-	24.69	30.57	86.15	27281
27282	1500 mm, 2 x 58/ 60W, twin tube.....	-	28.57	34.89	98.99	27282

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic ballast and self-contained battery (NiCd) for 2 hours discharge (emergency of the normal length) :-					
	<i>Each</i>	<b>Supply and fix</b>	<b>Take down and clear away</b>	<b>Take down and set aside for re-use</b>	<b>Fix only</b>	
		<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
		<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	
27283	600 mm, 1 x 14W, single tube.....	-	21.94	27.08	73.79	27283
27284	600 mm, 2 x 14W, twin tube.....	-	24.69	30.57	86.15	27284
27285	1200 mm, 1 x 28W, single tube.....	-	23.57	28.72	79.64	27285
27286	1200 mm, 2 x 28W, twin tube.....	-	25.56	31.31	92.19	27286
27287	1500 mm, 1 x 35W, single tube.....	-	24.53	30.31	84.08	27287
27288	1500 mm, 2 x 35W, twin tube.....	-	28.56	34.89	98.99	27288
27289	1500 mm, 1 x 49W, single tube.....	-	24.69	30.57	86.15	27289
27290	1500 mm, 2 x 49W, twin tube.....	-	28.74	35.19	101.43	27290
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic ballast and self-contained battery (NiMH) for 2 hours discharge (emergency of the normal length) :-					
	<i>Each</i>					
27291	600 mm, 1 x 14W, single tube.....	836.98	21.94	27.08	73.79	27291
27292	600 mm, 2 x 14W, twin tube.....	1,007.18	24.69	30.57	86.15	27292
27293	1200 mm, 1 x 28W, single tube.....	898.67	23.57	28.72	79.64	27293
27294	1200 mm, 2 x 28W, twin tube.....	1,087.96	25.56	31.31	92.19	27294
27295	1500 mm, 1 x 35W, single tube.....	1,467.31	24.53	30.31	84.08	27295
27296	1500 mm, 2 x 35W, twin tube.....	1,739.56	28.56	34.89	98.99	27296
27297	1500 mm, 1 x 49W, single tube.....	1,472.42	24.69	30.57	86.15	27297
27298	1500 mm, 2 x 49W, twin tube.....	1,753.02	28.74	35.19	101.43	27298

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic dimmable ballast and self-contained battery (NiMH) for 2 hours discharge (emergency of the normal length) : -					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
27299	1200 mm, 1 x 28W, single tube.....	1,030.98	23.57	28.72	79.64	27299
27300	1200 mm, 2 x 28W, twin tube.....	1,351.01	25.56	31.31	92.19	27300
27301	1500 mm, 1 x 35W, single tube.....	1,600.93	24.53	30.31	84.08	27301
27302	1500 mm, 2 x 35W, twin tube.....	2,005.02	28.56	34.89	98.99	27302
27303	1200 mm, 1 x 28W, single tube c/w light sensor.....	1,050.03	23.57	28.72	79.64	27303
27304	1500 mm, 1 x 35W, single tube c/w light sensor.....	1,619.98	24.53	30.31	84.08	27304
	Corrosion resistant IP65 fluorescent lighting fitting c/w T8 electronic ballast : -					
	<i>Each</i>					
27305	600 mm, 1 x 18/ 20W, single tube.....	-	21.94	27.08	73.79	27305
27306	600 mm, 2 x 18/ 20W, twin tube.....	-	24.69	30.57	86.15	27306
27307	1200 mm, 1 x 36/ 40W, single tube.....	-	23.57	28.72	79.64	27307
27308	1200 mm, 2 x 36/ 40W, twin tube.....	-	25.56	31.31	92.19	27308
27309	1500 mm, 1 x 58/ 60W, single tube.....	-	24.69	30.57	86.15	27309
27310	1500 mm, 2 x 58/ 60W, twin tube.....	-	28.56	34.89	98.99	27310
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic dimmable ballast : -					
	<i>Each</i>					
27311	1200 mm, 1 x 28W, single tube.....	775.47	23.53	28.68	79.49	27311
27312	1200 mm, 2 x 28W, twin tube.....	1,095.50	25.49	31.24	92.01	27312
27313	1500 mm, 1 x 35W, single tube.....	1,340.73	24.50	30.24	83.89	27313
27314	1500 mm, 2 x 35W, twin tube.....	1,744.83	28.50	34.83	98.79	27314
27315	1200 mm, 1 x 28W, single tube c/w light sensor.....	794.52	23.53	28.68	79.49	27315
27316	1500 mm, 1 x 35W, single tube c/w light sensor.....	1,359.78	24.50	30.24	83.89	27316

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Surface mounted modular fluorescent light fitting c/w T5 fluorescent tube, dimmable electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types) : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
27317	300 x 600 mm, 1 x 14W similar to SFA 110.....	601.30	25.31	30.97	92.01	27317
27318	300 x 600 mm, 2 x 14W similar to SFA 110.....	905.27	30.55	36.17	97.01	27318
27319	300 x 1200 mm, 1 x 28W similar to SFA 110.....	688.62	30.55	36.17	97.01	27319
27320	300 x 1200 mm, 2 x 28W similar to SFA 110.....	978.00	34.22	40.50	103.40	27320
27321	300 x 1500 mm, 1 x 35W similar to SFA 110.....	804.31	32.44	39.24	102.91	27321
27322	300 x 1500 mm, 2 x 35W similar to SFA 110.....	1,123.94	38.04	44.56	110.04	27322
27323	300 x 1500 mm, 1 x 49W similar to SFA 110.....	820.26	32.44	39.24	102.91	27323
27324	300 x 1500 mm, 2 x 49W similar to SFA 110.....	1,155.75	38.04	44.56	110.04	27324
	Flameproof IP66 fluorescent fitting c/w T5 electronic ballast for use in Zone 1 hazardous area and for gas groups IIA & IIB conform to FSD requirements : -					
	<b>Each</b>					
27325	600 mm, 1 x 14W, single tube batten.....	5,331.35	56.93	71.38	213.38	27325
27326	600 mm, 2 x 14W, twin tube batten.....	5,708.19	62.27	76.98	226.50	27326
27327	1200 mm, 1 x 28W, single tube batten.....	5,658.72	56.93	71.38	213.38	27327
27328	1200 mm, 2 x 28W, twin tube batten.....	5,994.54	62.27	76.98	226.50	27328
27329	1500 mm, 1 x 35W, single tube batten.....	6,593.71	56.93	71.38	213.38	27329
27330	1500 mm, 2 x 35W, twin tube batten.....	6,986.11	62.27	76.98	226.50	27330
27331	1500 mm, 1 x 49W, single tube batten.....	7,536.76	56.93	71.38	213.38	27331
27332	1500 mm, 2 x 49W, twin tube batten.....	7,937.62	62.27	76.98	226.50	27332
	X-ray view boxes : -					
	<b>Each</b>					
27333	X-ray view box, twin type, 1 mm thick aluminium x-ray viewing boxes; fluorescent tubes with color temperature 6500K to suit viewing box; 3 mm thick transparent perspex; including all necessary electrical connection to adjacent power source .....	3,183.77	23.43	28.59	79.31	27333
27334	Ditto but stainless steel x-ray viewing box.....	3,653.07	23.43	28.59	79.31	27334

Item					Item	
	<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>					
	Emergency power pack (with inverter, battery charger, indication lights, test button and nickel-metal hydride rechargeable battery for 2 hours discharge) for fluorescent light/ compact fluorescent light/ LED light fitting :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27335	Not exceeding 18W.....	351.97	7.90	9.56	24.52	27335
27336	18W - 28W power pack.....	465.23	7.90	9.56	24.52	27336
27337	28W - 35W power pack.....	535.74	7.90	9.56	24.52	27337
27338	35W - 58W power pack.....	767.41	7.90	9.56	24.52	27338
	Reflector for surface mounted fluorescent light fittings (batten type) :-					
	<i>Each</i>					
27339	Metal angle reflector, 1200 mm for SFA 56 .....	82.68	9.06	10.24	26.35	27339
27340	Metal angle reflector, 1500 mm for SFA 56.....	91.13	9.06	10.24	26.35	27340
27341	Metal trough reflector, 600 mm for single tube batten similar to SFA 58.....	87.84	9.12	10.31	26.51	27341
27342	Metal trough reflector, 1200 mm for single tube batten similar to SFA 58.....	93.66	9.12	10.31	26.51	27342
27343	Metal trough reflector, 1200 mm for twin tube batten similar to SFA 72.....	114.23	9.12	10.31	26.51	27343
27344	Metal trough reflector, 1500 mm for single tube batten similar to SFA 58.....	102.86	9.12	10.31	26.51	27344
27345	Metal trough reflector, 1500 mm for twin tube batten similar to SFA 72.....	127.87	9.12	10.31	26.51	27345



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>						
Plastic diffuser for surface mounted fluorescent light fittings (batten type) :-						
<i>Each</i>						
27346	600 mm for single tube batten similar to SFA 51.....	69.72	5.90	6.38	15.85	27346
27347	1200 mm for single tube batten similar to SFA 51.....	78.94	5.90	6.38	15.85	27347
27348	1200 mm for twin tube batten similar to SFA 74.....	128.08	5.90	6.38	15.85	27348
27349	1500 mm for single tube batten similar to SFA 51.....	88.73	5.90	6.38	15.85	27349
27350	1500 mm for twin tube batten similar to SFA 74.....	144.51	5.90	6.38	15.85	27350
Plastic panel diffuser						
<i>Per square metre</i>						
27351	for surface/ recess mounted modular fluorescent light fitting size.....	229.98	20.64	22.31	55.51	27351
Starter for fluorescent lighting fittings :-						
<i>Each</i>						
27352	18/ 30/ 36/ 58/ 85 W.....	-	2.12	2.35	6.28	27352
Condenser for fluorescent lighting fittings :-						
<i>Each</i>						
27353	18/ 30/ 36/ 58/ 85W.....	-	9.65	11.90	35.09	27353

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>						
	Quick start unit for fluorescent lighting fittings : -					
	<i>Each</i>					
27354	30/ 36/ 58/ 85W.....	-	9.59	11.83	34.89	27354
	Ballast for fluorescent lighting fittings : -					
	<i>Each</i>					
27355	18/ 30/ 36/ 58/ 85W single.....	-	7.90	9.56	23.12	27355
	Socket for starter unit of fluorescent lighting fittings : -					
	<i>Each</i>					
27356	Starter unit 2/ 4 pin .....	-	5.87	6.33	15.77	27356
	Electronic ballast for T5 fluorescent light fitting and compact fluorescent light fitting : -					
	<i>Each</i>					
27357	Not exceeding 14W.....	170.68	7.90	9.56	23.12	27357
27358	14W - 21W.....	172.63	7.90	9.56	23.12	27358
27359	21W - 28W.....	174.73	7.90	9.56	23.12	27359
27360	35W.....	176.85	7.90	9.56	23.12	27360
27361	49W.....	183.00	7.90	9.56	23.12	27361
27362	54W.....	184.94	7.90	9.56	23.12	27362
27363	80W.....	187.05	7.90	9.56	23.12	27363

Item					Item	
<b>FLUORESCENT LIGHTING FITTINGS (CONT'D)</b>						
Dimmable electronic ballast for T5 fluorescent light/ compact fluorescent light fitting : -						
<i>Each</i>						
A						
B						
C						
D						
Supply and fix						
Take down and clear away						
Take down and set aside for re-use						
Fix only						
\$						
\$						
\$						
\$						
27364	Not exceeding 14W.....	246.26	7.90	9.56	23.12	27364
27365	14W - 21W.....	250.94	7.90	9.56	23.12	27365
27366	21W - 28W.....	255.51	7.90	9.56	23.12	27366
27367	35W.....	260.20	7.90	9.56	23.12	27367
27368	49W.....	274.14	7.90	9.56	23.12	27368
27369	54W.....	278.85	7.90	9.56	23.12	27369
27370	80W.....	283.54	7.90	9.56	23.12	27370
Sundry fittings : -						
<i>Each</i>						
27371	Brackets, tubular, comprise flange plate and nipple and 20 mm diameter tube bent to required shape, all galvanized, n.e. 450 mm projection.....	41.51	7.06	8.83	22.53	27371
27372	Ditto but 450 mm - 600 mm projection.....	43.89	7.06	8.83	22.53	27372
27373	Brackets, corner fitting, comprise 20 mm diameter tube bent to required shape n.e. 450 mm projection .....	43.80	7.94	9.74	24.46	27373
27374	Pendant, tubular, comprise male pendant plates, conduit, socket, adaptors and male bush as required and 20 mm diameter tube n.e. 300 mm length, all galvanized .....	39.56	7.06	8.83	22.53	27374
27375	Extra over modular fluorescent fitting for provision of ball-proof wire mesh, 300 x 600 mm.....	126.48	7.46	9.37	20.64	27375
27376	Ditto but 600 x 600 mm.....	146.35	7.46	9.37	20.64	27376
27377	Ditto but 300 x 1200 mm.....	147.58	7.66	9.77	21.27	27377
27378	Ditto but 600 x 1200 mm.....	189.12	7.66	9.77	21.27	27378
27379	Ditto but 300 x 1500 mm.....	165.09	7.92	9.94	22.63	27379
27380	Ditto but 600 x 1500 mm.....	212.01	7.92	9.94	22.63	27380
27381	T8 to T5 Bi-pin lampholder adaptor.....	29.45	1.78	2.12	5.44	27381
<i>Per linear metre</i>						
27382	Extra over items 27367 - 27370 for each additional length of 20 mm diameter tube all galvanized for tubular pendant mounting .....	28.87	3.55	4.14	10.77	27382
27383	Brass chain for lighting fitting, chromium plated, 20 mm oval link with brazed ends .....	21.11	2.13	2.51	6.24	27383
27384	Chain, hot dip galvanized steel, bright, for lighting fitting c/w screw eyes, screw hocks and 20 mm oval link with welded ends.....	22.48	2.13	2.51	6.24	27384

Item					Item	
	<b>LIGHTING FITTINGS</b>					
	LED down light fitting, recess mounted to false ceiling, integral electronic control gear/ driver, white stove enameled steel/ die cast aluminium body and anodized aluminium reflector (all types) with/ without metal trim : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27385	Down light with up to 3W LED lamp, IP54.....	670.64	17.73	21.74	61.70	27385
27386	Down light with 3 - 7W LED lamp similar to SFA 224.....	985.61	19.42	23.28	66.06	27386
27387	Down light with 7 - 12W LED lamp similar to SFA 224.....	1,223.91	19.42	23.28	66.06	27387
27388	Down light with 12 - 16W LED lamp similar to SFA 224.....	1,496.41	19.42	23.28	66.06	27388
27389	Down light with 3 - 7W LED lamp c/w glass diffuser similar to SFA 224.....	1,394.85	19.42	23.28	66.06	27389
27390	Down light with 7 - 12W LED lamp c/w glass diffuser similar to SFA 224.....	1,635.17	19.42	23.28	66.06	27390
27391	Down light with 12 - 16W LED lamp c/w glass diffuser similar to SFA 224.....	1,939.02	19.42	23.28	66.06	27391
27392	Down light with 3 - 7W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224.....	2,593.75	19.42	23.28	66.06	27392
27393	Down light with 7 - 12W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224.....	2,822.95	19.42	23.28	66.06	27393
27394	Down light with 12 - 16W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224.....	3,103.61	19.42	23.28	66.06	27394
27395	Down light with infra-red lamp, 175 mm diameter.....	410.24	17.73	21.74	61.70	27395
27396	Down light with 8 - 10W LED lamp c/w glass cover.....	1,138.59	17.73	21.74	61.70	27396
27397	Down light with 10 - 12W LED lamp, IP44 c/w glass cover.....	1,233.91	17.73	21.74	61.70	27397
27398	Down light with 8 - 10W LED lamp c/w dimmable driver.....	1,400.93	17.73	21.74	61.70	27398
27399	Down light with 10W - 13W LED lamp c/w dimmable driver.....	1,496.25	17.73	21.74	61.70	27399
27400	Down light with 22 - 24W LED lamp c/w dimmable driver.....	2,068.17	17.73	21.74	61.70	27400
27401	Down light with 22 - 24W LED lamp c/w dimmable driver and 2-hour emergency power pack.....	2,533.40	17.73	21.74	61.70	27401
27402	Down light with 10 - 12W LED lamp, IP65 c/w clear tempered glass lens.....	1,895.73	17.73	21.74	61.70	27402
27403	Down light with 10 - 12W LED lamp c/w clear tempered glass lens, IP65 and 2-hour NiMH emergency power pack.....	2,327.33	17.73	21.74	61.70	27403
27404	Down light with 10 - 12W LED lamp c/w matt diffuser .....	1,635.17	17.73	21.74	61.70	27404
27405	Down light with 18 - 20W LED lamp c/w satin glass diffuser.....	2,019.65	17.73	21.74	61.70	27405
	Self-contained and maintained type for 2-hour duration down light fittings c/w battery charger, inverter, transformer and : -					
	<i>Each</i>					
27406	3 - 7W LED lamp similar to SFA 224.....	1,337.58	23.79	29.05	80.55	27406
27407	7 - 12W LED lamp similar to SFA 224.....	1,575.88	23.79	29.05	80.55	27407
27408	12 - 16W LED lamp similar to SFA 224.....	1,848.38	23.79	29.05	80.55	27408

Item					Item	
	<b>LIGHTING FITTINGS (CONT'D)</b>					
	Surface mounted modular LED lighting fitting c/w LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube), aluminium louvres/ reflectors and polycarbonate diffusers :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
27409	200/ 300 mm x 600 mm long, single tube, IP65, min. lumen output 800 lm each tube.....	841.06	27.97	34.43	106.03	27409
27410	200/ 300 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube.....	1,166.50	31.08	38.40	119.52	27410
27411	600 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube.....	1,306.48	31.08	38.40	119.52	27411
27412	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube.....	665.93	26.56	32.70	100.19	27412
27413	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	921.30	29.52	36.47	112.99	27413
27414	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,031.85	29.52	36.47	112.99	27414
27415	200/ 300 mm x 900 mm long, single tube, IP65, min. lumen output 1200 lm each tube.....	923.03	30.11	37.05	113.46	27415
27416	200/ 300 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube.....	1,258.27	33.29	40.53	128.16	27416
27417	600 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube.....	1,409.27	33.29	40.53	128.16	27417
27418	200/ 300 mm x 900 mm long, single tube, min. lumen output 1200 lm each tube.....	739.13	28.62	35.22	107.33	27418
27419	200/ 300 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube.....	1,001.85	31.65	38.57	121.28	27419
27420	600 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube.....	1,122.07	31.65	38.57	121.28	27420
27421	200/ 300 mm x 1200 mm long, single tube, IP65, min. lumen output 1600 lm each tube.....	961.57	31.02	38.14	116.72	27421
27422	200/ 300 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube.....	1,321.33	34.11	40.96	132.05	27422
27423	600 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube.....	1,479.88	34.11	40.96	132.05	27423
27424	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube.....	798.68	29.44	36.21	110.29	27424
27425	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,078.93	32.40	38.96	124.81	27425
27426	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,208.40	32.40	38.96	124.81	27426
27427	200/ 300 mm x 1500 mm long, single tube, IP65, min. lumen output 2000 lm each tube.....	1,270.88	33.48	41.09	141.93	27427
27428	200/ 300 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube.....	1,731.54	43.34	52.91	154.13	27428
27429	600 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube.....	1,939.32	43.34	52.91	154.13	27429
27430	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube.....	1,077.17	31.70	38.92	137.39	27430
27431	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,406.45	42.08	51.36	148.99	27431
27432	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,575.22	42.08	51.36	148.99	27432

Item					Item	
	<b>LIGHTING FITTINGS (CONT'D)</b>					
	Surface mounted modular LED lighting fitting c/w dimmable LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube), aluminium louvres/ reflectors and polycarbonate diffusers :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
27433	200/ 300 mm x 600 mm long, single tube, IP65, min. lumen output 800 lm each tube.....	904.37	27.97	34.43	106.03	27433
27434	200/ 300 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube.....	1,254.30	31.08	38.40	119.52	27434
27435	600 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube.....	1,404.82	31.08	38.40	119.52	27435
27436	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube.....	716.05	26.56	32.70	100.19	27436
27437	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	990.64	29.52	36.47	112.99	27437
27438	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,109.52	29.52	36.47	112.99	27438
27439	200/ 300 mm x 900 mm long, single tube, IP65, min. lumen output 1200 lm each tube.....	992.51	30.11	37.05	113.46	27439
27440	200/ 300 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube.....	1,352.98	33.29	40.53	128.16	27440
27441	600 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube.....	1,515.34	33.29	40.53	128.16	27441
27442	200/ 300 mm x 900 mm long, single tube, min. lumen output 1200 lm each tube.....	794.76	28.62	35.22	107.33	27442
27443	200/ 300 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube.....	1,077.26	31.65	38.57	121.28	27443
27444	600 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube.....	1,206.53	31.65	38.57	121.28	27444
27445	200/ 300 mm x 1200 mm long, single tube, IP65, min. lumen output 1600 lm each tube.....	1,033.95	31.02	38.14	116.72	27445
27446	200/ 300 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube.....	1,420.78	34.11	40.96	132.05	27446
27447	600 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube.....	1,591.27	34.11	40.96	132.05	27447
27448	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube.....	858.80	29.44	36.21	110.29	27448
27449	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,160.14	32.40	38.96	124.81	27449
27450	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,299.36	32.40	38.96	124.81	27450
27451	200/ 300 mm x 1500 mm long, single tube, IP65, min. lumen output 2000 lm each tube.....	1,366.54	33.48	41.09	141.93	27451
27452	200/ 300 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube.....	1,861.87	43.34	52.91	154.13	27452
27453	600 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube.....	2,085.29	43.34	52.91	154.13	27453
27454	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube.....	1,158.25	31.70	38.92	137.39	27454
27455	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,512.31	42.08	51.36	148.99	27455
27456	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,693.79	42.08	51.36	148.99	27456

Item					Item	
	<b>LIGHTING FITTINGS (CONT'D)</b>					
	Recess mounted modular LED lighting fitting c/w LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube), aluminium louvres/ reflectors and polycarbonate diffusers : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
27457	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube.....	847.84	28.49	34.93	103.78	27457
27458	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	933.72	34.37	40.80	109.43	27458
27459	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,045.77	34.37	40.80	109.43	27459
27460	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube.....	1,017.00	34.37	40.80	109.43	27460
27461	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,101.75	38.52	45.69	116.64	27461
27462	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,233.96	38.52	45.69	116.64	27462
27463	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube.....	1,073.95	36.51	44.26	116.11	27463
27464	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,141.30	42.82	50.26	124.14	27464
27465	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,278.26	42.82	50.26	124.14	27465
	Recess mounted modular LED lighting fitting c/w dimmable LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube), aluminium louvres/ reflector sand polycarbonate diffusers : -					
	<b>Each</b>					
27466	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube.....	910.33	28.49	34.93	103.78	27466
27467	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,052.37	34.37	40.80	109.43	27467
27468	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,178.65	34.37	40.80	109.43	27468
27469	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube.....	1,079.94	34.37	40.80	109.43	27469
27470	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,170.23	38.51	45.69	116.64	27470
27471	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,310.66	38.51	45.69	116.64	27471
27472	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube.....	1,152.94	36.51	44.26	116.11	27472
27473	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,209.10	42.82	50.26	124.14	27473
27474	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,354.19	42.82	50.26	124.14	27474

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>LIGHTING FITTINGS (CONT'D)</b>		A	B	C	D	
		\$	\$	\$	\$	
	Track lighting system : -					
	<i>Each</i>					
27475	Single-circuit extruded monorail aluminium lighting track, surface/ suspended mounted, 1000 mm in length, 16A max. rating, mains voltage.....	260.31	21.42	26.80	71.94	27475
27476	Single-circuit extruded monorail aluminium lighting track, surface/ suspended mounted, 2000 mm in length, 16A max. rating, mains-voltage .....	381.16	20.26	30.65	85.01	27476
27477	End cap for monorail lighting track .....	24.34	2.26	2.51	6.57	27477
27478	Three phase four circuit six conductor slimline lighting track made from extruded aluminum with powder coated finish c/w components including push-up live end, plug-in coupler, push-up coupler, plug-in coupler, rigid L/ T/ X coupler, flexible coupler, mounting clip, end cap, suspension, mains supply kit, cable entry moulding, etc., two 16 A fused feeds, 1000 mm in length.....	1,087.29	27.33	33.81	98.49	27478
27479	Spot light with 7 - 9W LED lamp, 90° tiltable bracket, 360° spot/ flood rotatable transadapter, for light track mounting similar to SFA 244.....	741.86	19.42	23.28	66.06	27479



Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
Bulkhead light fitting c/w electronic control gear/ electronic ballast, lamps, side/ back entry cutting and rubber grommet or stop :-						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
27480	2 x 8W vandal resistant fluorescent bulkhead with injection moulded polycarbonate diffuser, IP65.....	620.99	23.56	29.43	87.62	27480
27481	Ditto but 3 x 8W fluorescent light, IP65 .....	842.72	23.56	29.43	87.62	27481
27482	Ditto but for 1 x 11W PL fluorescent light, IP65.....	554.59	23.56	29.43	87.62	27482
27483	Ditto but for 2 x 11W PL fluorescent light, IP65.....	631.40	23.56	29.43	87.62	27483
27484	Bulkhead lighting fitting IP65 with die-cast aluminium body, moulded glass lens c/w built-in control gear and 1 x 70W CDMT lamp.....	1,396.54	23.56	29.43	87.62	27484
27485	Bulkhead fitting of IP65 protection c/w 70W CDMT lamp, polycarbonate cover .....	1,674.68	23.56	29.43	87.62	27485
27486	Bulkhead luminaire c/w 2 x 8W fluorescent lamps, 2-hour battery & control gear.....	528.79	23.56	29.43	87.62	27486
27487	Traditional bulkhead fitting similar to SFA 203, die cast aluminium casing with polyester powder coated finish, hinged anti vandal polycarbonate diffuser, to IEC 60598, IP 64 c/w 1 x 13W PLC lamp.....	317.36	23.56	29.43	87.62	27487
27488	Bulkhead fitting, prismatic type, glass diffuser, 35W CDMT lamp similar to SFA 35.....	1,500.70	23.56	29.43	87.62	27488
27489	Ditto but for 70W SON.....	2,020.63	23.56	29.43	87.62	27489
27490	Ditto but for 70W CDMT.....	1,880.45	23.56	29.43	87.62	27490
27491	Gasket for retaining flange for bulkhead fitting.....	28.49	4.30	5.80	15.77	27491
27492	Glassware only for bulkhead fitting similar to SFA 35.....	373.51	11.77	14.08	43.42	27492
27493	Key for bulkhead (supply only) lighting fitting.....	18.17	-	-	-	27493
27494	Bulkhead lighting fitting, IP65 c/w polycarbonate diffuser and 1 x 26W PLC lamp.....	575.12	23.56	29.43	87.62	27494

Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
Floodlighting fittings including control gear, side/ back entry, cutting, and rubber grommet or stop : -						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
27495	MBIL floodlighting fitting IP54 c/w 750/ 1000/ 1500W control gear.....	10,528.83	57.64	71.79	220.77	27495
27496	Ditto but 2000W.....	17,332.80	57.64	71.79	220.77	27496
27497	H.P. sodium (SON) floodlighting fitting IP65, die cast aluminium housing c/w 70W lamp, control gear and anodized aluminium reflector (all types) similar to SFA 205.....	1,339.85	54.12	68.32	205.09	27497
27498	Ditto but for 150W lamp.....	1,843.99	54.12	68.32	205.09	27498
27499	Ditto but for 250W lamp.....	2,474.15	54.12	68.32	205.09	27499
27500	Ditto but for 400W lamp.....	3,419.40	54.12	68.32	205.09	27500
27501	Ditto but for 70W MBIF lamp.....	1,917.94	54.12	68.32	205.09	27501
27502	Ditto but for 150W MBIF lamp.....	2,334.38	54.12	68.32	205.09	27502
27503	Ditto but for 250W MBIF lamp.....	2,854.95	54.12	68.32	205.09	27503
27504	Ditto but for 400W MBIF lamp.....	3,635.80	54.12	68.32	205.09	27504
27505	Tungsten halogen floodlight fitting, IP54 c/w lamp, 500W.....	-	23.71	29.62	88.17	27505
27506	Ditto but with 1000W lamp.....	-	23.71	29.62	88.17	27506
27507	Ditto but with 1500W lamp.....	-	23.71	29.62	88.17	27507
27508	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2, IP54 body; extruded aluminium body with high temperature polypropylene side casing and high temperature nylon body; vertical lamp, prismatic glass reflector c/w 250W MBIF control gear, lamp piece and safety chain .....	4,201.48	54.12	68.32	205.09	27508
27509	Ditto but with 400W MBIF control gear.....	4,758.00	54.12	68.32	205.09	27509
27510	Ditto but with 250W SON control gear.....	3,390.71	54.12	68.32	205.09	27510
27511	Ditto but with 400W SON control gear.....	3,687.87	54.12	68.32	205.09	27511
27512	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2, IP54 body; extruded aluminium body with high temperature polypropylene side casing and high temperature nylon body; vertical lamp, self-cleaning high purity spun aluminium reflector c/w 250W MBIF control gear, lamp piece and safety chain .....	3,591.24	54.12	68.32	205.09	27512
27513	Ditto but with 400W MBIF control gear.....	3,985.73	54.12	68.32	205.09	27513
27514	Ditto but with 250W SON control gear.....	2,903.32	54.12	68.32	205.09	27514
27515	Ditto but with 400W SON control gear.....	3,123.85	54.12	68.32	205.09	27515

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>LIGHTING FITTINGS (CONT'D)</b>						
Floodlighting fittings including control gear, side/ back entry, cutting, and rubber grommet or stop : - (Cont'd)						
<i>Each</i>						
		A \$	B \$	C \$	D \$	
27516	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2 IP65 body; technopolymer reinforced with fiber glass body; turned aluminium sheet upper housing with grey powder paint; toughened glass cover with gasket clips; elliptical lamp, polished and anodized aluminium reflector c/w 250W MBIF control gear, lamp piece and safety chain .....	2,663.76	54.24	68.46	205.50	27516
27517	Ditto but with 400W MBIF control gear.....	2,894.52	54.24	68.46	205.50	27517
27518	Ditto but with 250W SON control gear.....	1,910.72	54.24	68.46	205.50	27518
27519	Ditto but with 400W SON control gear.....	2,041.50	54.24	68.46	205.50	27519
27520	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2 IP54 body; prismatic borosilicate glass retained by a spun aluminium cover sealed reflector; tempered glass cover with stainless steel clips c/w 250W MBIF control gear, lamp piece and safety chain.....	4,087.57	54.24	68.46	205.50	27520
27521	Ditto but with 400W MBIF control gear.....	4,386.83	54.24	68.46	205.50	27521
27522	Ditto but with 250W SON control gear.....	3,180.62	54.24	68.46	205.50	27522
27523	Ditto but with 400W SON control gear.....	3,533.68	54.24	68.46	205.50	27523
27524	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2 IP54 body; prismatic borosilicate glass retained by a spun aluminium cover sealed reflector c/w 250W MBIF control gear, lamp piece and safety chain .....	3,432.50	54.24	68.46	205.50	27524
27525	Ditto but with 400W MBIF control gear.....	3,712.46	54.24	68.46	205.50	27525
27526	Ditto but with 250W SON control gear.....	2,717.27	54.24	68.46	205.50	27526
27527	Ditto but with 400W SON control gear.....	2,863.94	54.24	68.46	205.50	27527
27528	High bay floodlight c/w 60W LED lamp.....	3,718.31	54.24	68.46	205.50	27528
27529	High bay floodlight c/w 80W LED lamp.....	4,150.68	54.24	68.46	205.50	27529
27530	High bay floodlight c/w 100W LED lamp.....	4,323.62	54.24	68.46	205.50	27530
27531	High bay floodlight c/w 150W LED lamp.....	4,755.98	54.24	68.46	205.50	27531

Item					Item
<b>LIGHTING FITTINGS (CONT'D)</b>					
Floodlighting fittings including control gear, side/ back entry, cutting, and rubber grommet or stop :- (Cont'd)					
<i>Each</i>					
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	A \$	B \$	C \$	D \$	
27532	Twin lamp tennis-court floodlight with heavy gauge aluminium housing, reflector with forward throw cut-off pattern, clear tempered lens c/w 1 x 250W HP sodium lamp and 1 x 400W metal halide lamp and integral control gears, IP65.....				27532
	6,891.45	82.06	102.39	307.11	
27533	Tennis court lighting similar to SFA 267, aluminium housing, 4mm toughened glass lens, hinged aluminium lens frame with reinforced corners, sharp cut-off forward throw anodised aluminium reflector c/w control gear and 1 x 1000W/ 1500W metal halide lamp.....				27533
	10,401.32	23.64	28.78	86.21	
27534	400W MBI/ T floodlight fitting IP65 c/w GRP body, anodized aluminium reflector, toughened glass front cover, steel galvanized cradle, integral control gear and lamp.....				27534
	3,756.55	70.65	85.70	264.00	
27535	1000W SON/ T floodlight fitting IP65 c/w aluminium reflector, galvanized steel body, integral control gear and lamp.....				27535
	8,006.10	70.65	85.70	264.00	
27536	Floodlight fitting with mounting box similar to SFA 204, die cast aluminium housing, anodised aluminium reflector, 160° tiltable and 360° rotatable c/w safety glass and 1 x 35W metal halide lamp, IP65.....				27536
	1,998.30	53.90	68.05	204.27	
27537	Asymmetrical floodlight fitting similar to SFA 205, marine grade 316 stainless steel construction, anodised aluminium reflector, IP67 c/w safety chain and quick release clips at front cover, adjustable stirrup bracket, internal control gear and 1 x 250W high pressure sodium or metal halide lamp.....				27537
	5,297.48	53.90	68.05	204.27	
27538	Floodlight fitting similar to SFA 206, die cast aluminium housing with integral cooling ribs, hinged door frame for reflector changing, cast aluminium swivel with locking teeth at 5° intervals, mounting onto 50 mm square tenon c/w control gear, 1 x 400W high pressure sodium or metal halide lamp, and reflector for narrow vertical flood beam, IP67.....				27538
	7,828.38	53.90	68.05	204.27	
27539	Ditto but reflector for wide flood beam.....				27539
	6,692.28	53.90	68.05	204.27	
27540	Floodlight fitting similar to SFA 206, die cast aluminium housing with integral cooling ribs, hinged door frame for reflector changing, cast aluminium swivel with locking teeth at 5° intervals, wall mounted c/w control gear, 1 x 70W high pressure sodium or metal halide lamp, and reflector for wide flood beam, IP67.....				27540
	5,564.15	53.90	68.05	204.27	
27541	Ditto but stanchion mounted and reflector for wide flood beam.....				27541
	5,412.97	53.90	68.05	204.27	
27542	Adjustable compact outdoor floodlight similar to SFA 207, injection moulded polyester body, glass-filled nylon base or spike for mounting, IP54 c/w 1 x 150W high pressure sodium or metal halide lamp.....				27542
	410.84	17.17	21.21	65.57	
27543	Floodlight fitting, IP65 c/w 60W or below induction lamp.....				27543
	2,188.60	53.90	68.05	204.27	
27544	Floodlight fitting, IP65 c/w 80W induction lamp.....				27544
	2,335.50	53.90	68.05	204.27	
27545	Floodlight fitting, IP65 c/w 120W induction lamp.....				27545
	2,482.40	53.90	68.05	204.27	
27546	Floodlight fitting, IP65 c/w 200W induction lamp.....				27546
	2,776.40	53.90	68.05	204.27	
27547	Floodlight fitting, aluminium housing, IP65 c/w 60W LED lamp.....				27547
	3,750.59	53.90	68.05	204.27	
27548	Floodlight fitting, IP65, surface mounted c/w 60W high intensity LED lamp and glass diffuser.....				27548
	3,625.51	53.90	68.05	204.27	
27549	Floodlight fitting, IP65 c/w 70W LED lamp.....				27549
	3,598.19	53.90	68.05	204.27	

Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
Floodlight fitting accessories : -						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
27550	Heat shield for floodlight.....	1,147.55	11.88	14.22	43.87	27550
27551	Wire guard for floodlight .....	489.54	11.88	14.22	43.87	27551
27552	Front glass assembly c/w silicone rubber gasket for floodlight.....	681.27	11.88	14.22	43.87	27552
27553	Floodlight louvre for 750W fitting.....	1,406.52	17.31	21.33	63.19	27553
27554	Ditto but for 1000W fitting.....	1,430.48	17.31	21.33	63.19	27554
27555	Ditto but for 1500W fitting.....	1,465.10	17.31	21.33	63.19	27555
27556	Multi-use or cross arm mounting bracket c/w 2"U" clamps (hot dip galvanized steel) .....	311.10	17.31	21.36	66.09	27556
27557	Wall bracket (hot dip galvanized steel).....	260.30	15.32	19.52	56.78	27557
27558	Stainless steel (304) mounting bracket for floodlight.....	684.82	15.32	19.52	56.78	27558
27559	Ditto but of stainless steel (316).....	776.77	15.32	19.52	56.78	27559
27560	Hot dip galvanized steel universal pole clamp for floodlight fitting .....	99.70	6.33	8.48	23.51	27560
27561	Stainless steel (304) universal pole clamp for floodlight fitting.....	247.35	6.33	8.48	23.51	27561
27562	Ditto but of stainless steel (316).....	276.15	6.33	8.48	23.51	27562
27563	Stirrup assembly (hot dip galvanized steel).....	395.03	17.31	21.36	66.09	27563
27564	Stirrup assembly c/w blanking plate and gland (hot dip galvanized).....	438.20	17.31	21.36	66.09	27564
27565	Stirrup assembly c/w blanking plate and gland (304 stainless steel).....	1,253.62	17.31	21.36	66.09	27565
27566	Stirrup assembly c/w blanking plate and gland (316 stainless steel).....	1,311.33	17.31	21.36	66.09	27566
27567	Special wall bracket, hot dip galvanized.....	410.18	17.31	21.36	66.09	27567
27568	Step up transformer c/w weatherproof metal box rated IP65.....	1,659.93	22.11	27.89	83.02	27568
27569	Step down transformer c/w enclosure, 220/ 12V, 50 VA.....	859.63	9.29	11.63	33.51	27569

Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
Floodlight fitting accessories : - (Cont'd)						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
27570	Ballast for 70/ 150/ 250W H.P. Sodium lamp.....	240.01	11.87	14.20	43.78	27570
27571	Ballast for 400W H.P. Sodium lamp.....	281.66	11.87	14.20	43.78	27571
27572	Ballast for 150/ 250/ 400W white SON lamp.....	442.51	11.87	14.20	43.78	27572
27573	Ballast for 250/ 400W MBIF lamp.....	289.24	11.87	14.20	43.78	27573
27574	Ballast for 750W MBIL lamp.....	1,206.38	11.87	14.20	43.78	27574
27575	Ballast for 1000W MBIL lamp.....	1,206.38	11.87	14.20	43.78	27575
27576	Ballast for 1500W MBIL lamp .....	1,217.13	11.87	14.20	43.78	27576
27577	Ballast for 2000W MBIL lamp .....	1,227.13	11.87	14.20	43.78	27577
27578	Transformer for 1500W MBIL lamp.....	1,925.95	11.87	14.20	43.78	27578
27579	Ballast for 50/ 80/ 125W MBF lamp.....	-	11.87	14.20	43.78	27579
27580	Ballast for 250/ 400W MBF lamp.....	-	11.87	14.20	43.78	27580
27581	Electronic Ballast for 150W Metal Halide Lamp.....	894.31	11.87	14.20	43.78	27581
27582	Capacitor for 250W H.P. Sodium white SON lamp 30 mF + 10%.....	125.01	10.06	13.00	37.46	27582
27583	Capacitor for 400W H.P. Sodium white SON lamp 40 mF + 10%.....	170.68	10.06	13.00	37.46	27583
27584	Capacitor for 250W/ 400W MBIF lamp .....	133.70	10.06	13.00	37.46	27584
27585	Capacitor for 750W MBIL lamp.....	317.63	10.06	13.00	37.46	27585
27586	Capacitor for 1000W MBIL lamp.....	321.44	10.06	13.00	37.46	27586
27587	Capacitor for 1500W MBIL lamp.....	329.76	10.06	13.00	37.46	27587
27588	Capacitor for 2000W MBIL lamp.....	386.09	10.06	13.00	37.46	27588
27589	Ignitor for 70W H.P. Sodium lamp.....	160.32	10.06	13.00	37.46	27589
27590	Ignitor for 150/ 250/ 400W H.P. Sodium lamp.....	178.27	10.06	13.00	37.46	27590
27591	Ignitor for 150/ 250/ 400W white SON lamp.....	181.85	10.06	13.00	37.46	27591
27592	Ignitor for 250W/ 400W MBIF lamp.....	338.13	10.06	13.00	37.46	27592
27593	Ignitor for 1000W MBIL lamp.....	434.52	10.06	13.00	37.46	27593
27594	Ignitor for 1500W MBIL lamp.....	593.97	10.06	13.00	37.46	27594
27595	Ignitor for 2000W MBIL lamp.....	655.40	10.06	13.00	37.46	27595
<i>Per linear meter</i>						
27596	Safety chain, hot dipped galvanized steel (or wrought iron) chain 25 mm oval link c/w shackles .....	52.28	2.13	2.51	6.24	27596

Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Pole top light fitting : -					
	<i>Each</i>					
27597	Pole top lantern c/w 35W/ 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp and control gear similar to SFA 46 with large canopy.....	1,408.01	32.60	39.97	121.82	27597
27598	Pole top lantern c/w 35W/ 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp and control gear similar to SFA 46 with small canopy.....	1,352.92	32.60	39.97	121.82	27598
27599	Lighting fitting, IP23 c/w 70W SON lamp .....	1,445.02	32.60	39.97	121.82	27599
27600	Ditto but for 70W metal halide lamp.....	1,274.54	32.60	39.97	121.82	27600
27601	Pole top adaptor for above.....	447.00	13.33	17.54	52.27	27601
27602	Pole top fitting similar to SFA 208, 500 mm diameter opal/ clear globe made of impact resistant plastic on a black console, IP44 c/w 1 x 70W/ 100W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	2,250.78	68.85	86.36	255.80	27602
27603	Ditto but 1 x 26W PLC lamp.....	1,678.76	68.85	86.36	255.80	27603
27604	500 mm unbreakable globe only for pole top fitting similar to SFA 208.....	910.42	23.62	29.49	87.81	27604
27605	Pole top luminaire similar to SFA 209, cast aluminium alloy housing with hinged top, clear acrylic lens, IP54 c/w cast aluminium mounting arm, control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	14,572.85	46.57	57.27	172.89	27605
27606	Symmetrical pole top luminaire similar to SFA 210, aluminium alloy body, white/ clear plastic diffuser with optical texture, anodised aluminium reflector, IP44 c/w control gear and 1 x 70W/ 100W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	4,542.20	32.60	39.97	121.82	27606
27607	Pole top luminaire with additional upper light output similar to SFA 211, aluminium alloy body, crystal glass diffuser with optical texture, white louvred reflector, mounting height 3.5m to 5m, IP44 c/w control gear and 1 x 70W/ 100W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	5,399.02	32.60	39.97	121.82	27607
27608	Cylindrical pole top luminaire similar to SFA 212, seamless aluminium housing, die cast aluminium door frame, tempered glass or polycarbonate lens, anodised aluminium reflector, schedule 40 steel yoke c/w control gear and 1 x 70W/ 100W/ 150W high pressure sodium/ metal halide lamp 1 x 35W/ 70W CDMT lamp.....	8,039.82	32.69	40.06	122.07	27608
27609	Single pole top fitting similar to SFA 213, hinged cylindrical aluminium top housing of over 500 mm diameter, injection moulded clear acrylic diffuser, hydroformed specular reflector, c/w control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	11,220.08	32.69	40.06	122.07	27609
27610	Ditto but 1 x 150W high pressure sodium or metal halide lamp .....	11,632.75	32.69	40.06	122.07	27610
27611	Pole top fitting similar to SFA 214, cylindrical aluminium top housing of 565 mm diameter with polyester powder finish, thermoformed clear acrylic lens, hydroformed anodised aluminium reflector c/w control gear and 1 x 150W high pressure sodium or metal halide lamp.....	5,657.37	32.69	40.06	122.07	27611
27612	Pole top fitting similar to SFA 214, cylindrical aluminium top housing of 565 mm diameter with polyester powder finish, thermoformed clear acrylic lens, hydroformed anodised aluminium reflector c/w control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	5,465.48	32.69	40.06	122.07	27612

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>LIGHTING FITTINGS (CONT'D)</b>						
Pole top light fitting :- (Cont'd)						
<i>Each</i>						
		A \$	B \$	C \$	D \$	
27613	Pole top mounted area light similar to SFA 215, one piece spun aluminium housing with cast aluminium door, clear contoured tempered glass or polycarbonate lens, perimeter forward throw reflector c/w extruded mounting arm, control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	3,127.91	37.97	47.72	142.39	27613
27614	Pole top mounted area light similar to SFA 215, one piece spun aluminium housing with cast aluminium door, clear contoured tempered glass or polycarbonate lens, perimeter forward throw reflector c/w extruded mounting arm, 3.5m/ 4.5m lamp pole, control gear and 1 x 70W/ 150W high pressure sodium/ metal halide lamp or 1 x 35W/ 70W CDMT lamp.....	6,143.32	251.73	313.98	951.30	27614
27615	Ditto but twin lantern.....	9,355.73	253.20	317.14	952.42	27615
27616	Pole top fitting similar to SFA 216, injection moulded frosted clear polycarbonate globe with decorative finial on top of globe and spun aluminium hood c/w 3.4m lamp pole from the fitting manufacturer, control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	35,728.33	251.73	313.98	951.30	27616
27617	Lighting fixture similar to SFA 217, moulded aluminium housing and hood, cage of 4 moulded aluminium rods, welded aluminium louvre, symmetrical light distribution, overall height over 1m c/w control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	16,797.37	53.06	61.48	172.30	27617
27618	Pole top luminaire similar to SFA 218, die cast aluminium alloy body, vandal resistant polycarbonate globe of 500 mm diameter, anodised aluminium reflector, IP54 c/w control gear and 1 x 70W/ 150W high pressure sodium/ metal halide lamp or 1 x 35W/ 70W CDMT lamp.....	4,605.03	32.54	39.89	121.58	27618
27619	Pole top globe fitting similar to SFA 219, top half of 400 mm diameter globe being spun aluminium with outside mat and inside anodised, acrylic or polycarbonate diffuser, IP44, c/w control gear and 1 x 50W/ 70W HPS lamp or 1 x 35W/ 70W CDMT lamp.....	5,934.42	32.60	39.97	121.82	27619
27620	Pole top luminaire similar to SFA 220, die cast aluminium alloy body, vandal resistant polycarbonate diffuser, anodised aluminium reflector, IP54 c/w control gear and 1 x 50W/ 70W HPS lamp or 1 x 35W/ 70W CDMT lamp.....	4,228.51	32.60	39.97	121.82	27620
27621	Ditto but double heads and c/w mounting bracket.....	9,295.78	34.31	43.93	130.68	27621
27622	Side road lantern similar to SFA 221, single piece compression moulded canopy in glass reinforced polyester resin, hinged anti-vandal polycarbonate bowl, anodised aluminium reflector c/w control gear in separate compartment of body and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	2,324.87	32.60	39.97	121.82	27622
27623	Rectangular road lighting similar to SFA 222, body of extruded aluminium sides and sheet aluminium top, toughened soda lime glass lens, anodised aluminium reflector, IP54 c/w control gear in hinged extruded aluminium gear tray and 1 x 100W/ 150W CDMT lamp.....	4,300.53	32.60	39.97	121.82	27623



Item	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item	
A \$	B \$	C \$	D \$			
<b>LIGHTING FITTINGS (CONT'D)</b>						
Wall/ Ceiling mounting luminaire : -						
<i>Each</i>						
27624	100 mm diameter white opal glass cylindrical glassware and gallery similar to SFA 6.....	157.70	17.17	21.21	65.57	27624
27625	115 mm diameter white opal glass cylindrical glassware and gallery similar to SFA 7.....	239.64	17.17	21.21	65.57	27625
27626	Surface mounted ceiling downlight similar to SFA 223, die cast aluminium body of 150 mm diameter, anodised aluminium reflector, IP65 c/w safety glass, control gear and 1 x 35W metal halide discharge lamp.....	2,465.26	23.62	29.49	87.81	27626
27627	Surface mounted ceiling downlight similar to SFA 223, die cast aluminium body of 150 mm diameter, anodised aluminium reflector, IP65 c/w safety glass, control gear and 1 x 18W compact fluorescent lamp.....	1,488.47	23.62	29.49	87.81	27627
27628	Circular surface mounted fluorescent light fitting c/w opal diffuser, 1 x 13W/ 18W compact fluorescent lamp and electronic ballast.....	498.21	24.15	30.71	92.34	27628
27629	Surface mounted downlight, white colour cylindrical metal in specular finish, aluminium reflector, 240 mm diameter c/w integral electronic ballast and 2 x 18W PLC lamps (4000K).....	310.58	23.71	29.62	88.17	27629
27630	Surface mounted light fitting c/w 1 x 18W compact fluorescent lamp and electronic ballast.....	995.87	20.48	25.82	74.10	27630
27631	Ditto with 2-hour battery pack.....	1,624.14	20.48	25.82	74.10	27631
27632	Surface mounted light fitting, die cast aluminium body, polycarbonate diffuser, IP65, c/w driver and 1 x 20W 2D LED lamp.....	2,439.67	23.71	29.62	88.17	27632
27633	Vandal resistant wall mounted luminaire similar to SFA 225, injection moulded polycarbonate body, hinged injection moulded clear prismatic polycarbonate diffuser, IP65 c/w control gear in galvanised steel tray and 1 x 13/ 18/ 26W compact fluorescent lamp.....	1,004.23	17.23	21.28	65.83	27633
27634	Ditto but with 1 x 70W high pressure sodium lamp.....	1,429.10	17.23	21.28	65.83	27634
27635	Ditto but with 1 x 70W metal halide lamp.....	1,240.30	17.23	21.28	65.83	27635
27636	Wall mounted downlight similar to SFA 226, die cast aluminium body, anodised aluminium reflector, 190 mm diameter, IP65 c/w mounting bracket with adjustable joint up to 12°, safety glass, control gear and 1 x 35W/ 70W CDMT lamp .....	2,766.65	17.23	21.28	65.83	27636
27637	Surface mounted circular luminaire similar to SFA 227, die cast aluminium alloy body, polycarbonate lens, IP55 c/w control gear and 1 x 18W/ 26W compact fluorescent lamp.....	812.69	23.71	29.62	88.17	27637
27638	Wall mounted downlight similar to SFA 226, die cast aluminium body, anodised aluminium reflector, 190 mm diameter, IP65 c/w mounting bracket with adjustable joint up to 12°, safety glass, control gear and 1 x 18W/ 26W compact fluorescent lamp.....	2,669.91	17.23	21.28	65.83	27638
27639	Enclosed polycarbonate wall mounting luminaires c/w 35W/ 70W CDMT lamp with IP65 protection and vandal-resistant fixings.....	1,207.20	17.23	21.28	65.83	27639
27640	Surface ceiling and wall luminaire similar to SFA 228, die cast aluminium body, crystal glass with optical texture or impact resistant polycarbonate diffuser, IP65 c/w control gear and 1 x 18W/ 26W compact fluorescent lamp or 1 x 35W metal halide lamp .....	1,432.39	23.71	29.62	88.17	27640
27641	Recessed wall luminaire similar to SFA 229, marine grade aluminium alloy body and frame, tempered prismatic glass lens, shielded light source, IP55 c/w control gear and 1 x 70W high pressure sodium or 1 x 70W metal halide lamp.....	4,264.59	23.71	29.62	88.17	27641

Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
Wall/ Ceiling mounting luminaire :- (Cont'd)						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
27642	Wall luminaire similar to SFA 230, die cast aluminium body, fully shielded light source, IP43, c/w control gear and 1x 18W/ 26W compact fluorescent lamp or 1 x 35W CDMT lamp .....	1,700.12	23.71	29.62	88.17	27642
27643	Wall luminaire with directed light similar to SFA 231, die cast aluminium body, anodised aluminium reflector, safety glass with optical texture, IP55 c/w control gear and 1 x 18W/ 26W compact fluorescent lamp or 1 x 35W metal halide lamp .....	2,602.11	23.71	29.62	88.17	27643
27644	Wall luminaire with double-sided light output similar to SFA 232, die cast aluminium body, glass optical lens, anodised aluminium reflector, IP44 c/w safety glass, control gear and 1 x 14/ 18W/ 26W compact fluorescent lamp or 1 x 35W metal halide lamp .....	1,507.91	23.71	29.62	88.17	27644
27645	Recessed circular luminaire with shielded light similar to SFA 233, die cast aluminium body, 250 mm outside diameter, c/w matt safety glass, control gear and 1 x 18W/ 26W compact fluorescent lamp.....	1,195.30	23.71	29.62	88.17	27645
27646	Surface mounted downlight, die cast aluminium housing, IP65 and 5 - 7W LED lamp.....	1,566.66	23.71	29.62	88.17	27646
27647	Single mode LED, surface mounted luminaire, IP65 c/w 18 - 20W LED lamp.....	1,331.15	23.71	29.62	88.17	27647
27648	Ditto c/w 2-hour emergency power pack.....	1,556.13	23.71	29.62	88.17	27648
27649	Surface mounted dual light, die cast aluminium body, polycarbonate diffuser, IP65, c/w microwave sensor, electronic ballast, 1 x up to 3W LED lamp & 1 x 28W 2D lamp.....	815.19	23.71	29.62	88.17	27649
27650	Surface mounted dual light, die cast aluminium body, polycarbonate diffuser, IP65, c/w microwave sensor, electronic ballast, 1 x up to 3W LED lamp & 1 x 28W 2D lamp and 2-hour emergency power pack.....	953.59	23.71	29.62	88.17	27650
27651	Surface mounted dual light , die cast aluminium body, polycarbonate diffuser, IP65, c/w 120 x 360 PIR detector, electronic ballast, 1 x 7W energy saving lamp & 1 x 28W 2D lamp and 2-hour emergency power pack.....	1,378.17	23.71	29.62	88.17	27651
27652	Surface mounted dual light, die cast aluminium body, polycarbonate diffuser, IP65, c/w microwave sensor, electronic ballast, 1 x 28W 2D lamp and 2-hour emergency power pack.....	889.18	23.71	29.62	88.17	27652
27653	Surface mounted dual light, IP65 c/w, microwave sensor, 18 - 20W LED lamp and 2-hour emergency power pack.....	1,698.39	23.71	29.62	88.17	27653
27654	Weatherproof ceiling/ wall mounted down light, IP65 c/w 5 - 7W LED lamp.....	1,427.95	23.71	29.62	88.17	27654
27655	13W 600 mm horizontal fluorescent lighting unit c/w dual voltage safety shaver and lamp tube.....	1,022.79	23.51	29.37	87.45	27655
27656	Wall mounted fluorescent luminaire c/w 13W fluorescent lamp and control gear with shaver supply unit to BS EN 60742.....	1,217.30	34.75	39.56	94.79	27656
27657	Wall mounted vandal resistant light fitting similar to SFA 234, oval polycarbonate housing and guard, opal polycarbonate diffuser, polished aluminium reflector, IP65 c/w control gear and 2 x 9W PL lamp.....	505.77	23.51	29.37	87.45	27657
27658	Wall mounted vandal resistant light fitting similar to SFA 235, circular polycarbonate housing and guard, opal polycarbonate diffuser, polished aluminium reflector, IP65 c/w control gear and 2 x 9W PL lamp.....	531.17	23.51	29.37	87.45	27658

Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
Wall/ Ceiling mounting luminaire :- (Cont'd)						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
27659	Rectangular recessed fitting similar to SFA 236, aluminium housing, opal toughened glass diffuser, IP54 c/w control gear and 1 x 18W PLC lamp.....	719.55	29.43	36.68	109.74	27659
27660	Ditto but similar to SFA 237 with 45° grille for directed light.....	719.07	29.43	36.68	109.74	27660
27661	Wall mounted luminaire similar to SFA 238, corrosion resistant aluminium alloy body, vandal resistant polycarbonate diffuser, IP55 c/w wall mounting base and arm, control gear and 1 x 18W PLC lamp.....	1,579.97	23.51	29.37	87.45	27661
27662	Wall mounted circular luminaire similar to SFA 239, die cast aluminium alloy body, over 250 mm diameter, half shielded and polycarbonate lens the other half, IP55 c/w control gear and 1 x 18W PLC lamp.....	921.93	23.51	29.37	87.45	27662
27663	Hemispherical surface bulkhead similar to SFA 240, die cast aluminium body, over 250 mm diameter, opal polycarbonate bowl with 4-ring quarter sphere grille, IP65 c/w control gear and 1 x 50W HPS lamp or 1 x 35W/ 70W CDMT lamp.....	2,224.16	23.51	29.37	87.45	27663
27664	Lantern similar to SFA 241, hinged transparent acrylic or polycarbonate refractor bowl, IP54 c/w control gear in separate compartment and 1 x 70W HPS or CDMT lamp.....	1,486.87	32.46	39.81	121.30	27664
27665	Vertical fixing adaptor for lantern similar to SFA 241.....	382.40	13.23	16.93	50.91	27665
27666	Side entry lantern similar to SFA 242, glass reinforced polyester body, hinged injection moulded bowl, 2 aluminium alloy reflectors c/w control gear and 1 x 70W/ 100W CDMT lamp.....	2,398.95	32.60	39.97	121.82	27666
27667	Side entry lantern similar to SFA 242, glass reinforced polyester body, hinged injection moulded bowl, 2 aluminium alloy reflectors c/w control gear and 1 x 150W CDMT lamp.....	2,417.71	32.60	39.97	121.82	27667
27668	Side entry lantern similar to SFA 242, glass reinforced polyester body, hinged injection moulded bowl, 2 aluminium alloy reflectors c/w control gear and 1 x 250W CDMT lamp.....	2,877.28	32.60	39.97	121.82	27668
27669	Side entry lantern similar to SFA 243, die cast aluminium body, injection moulded acrylic or polycarbonate refractor bowl c/w control gear and 1 x 70W/ 100W CDMT lamp.....	2,399.97	32.60	39.97	121.82	27669
27670	Special made wall mount bracket arm for side entry lantern comprising 1 no. 300 x 300 x 9 mm thick mild steel base plate and 1 no. 25 mm diameter x 900 mm long galvanized steel pipe bent to shape and welded to base plate fixed to wall with 4 nos. anchor bolt (9 mm diameter x 75 mm long).....	328.39	21.94	27.67	82.35	27670

Item					Item	
	<b>LIGHTING FITTINGS (CONT'D)</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Spot lights :-					
	<i>Each</i>					
27671	Weatherproof spot light of die cast aluminium body c/w wire guard, stand base and 1 x 500W lamp with built-in reflector.....	209.52	13.33	17.54	52.27	27671
27672	Spot light, in black/ white/ bronze finish with extruded aluminium profile, 90° tiltable bracket, 360° spot/ flood rotatable transadapter, reflector for 1 x 3 - 5W LED lamp suitable for light track mounting similar to SFA 244.....	643.17	13.33	17.54	52.27	27672
27673	Recessed LED spot light, 1 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tube and accessories.....	310.36	13.33	17.54	52.27	27673
27674	Recessed LED spot light, 2 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	457.01	13.33	17.54	52.27	27674
27675	Recessed LED spot light, 3 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	569.83	13.33	17.54	52.27	27675
27676	Recessed LED spot light, 4 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	648.81	13.33	17.54	52.27	27676
27677	Surface LED spot light, star wire suspended, 3 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	671.37	13.33	17.54	52.27	27677
27678	Surface LED spot light, row/ matrix wire suspended, 4 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	772.91	13.33	17.54	52.27	27678
27679	Surface LED spot light, circle wire suspended, 6 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	1,167.77	13.33	17.54	52.27	27679
27680	Surface LED spot light, matrix wire suspended, 6 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	1,167.77	13.33	17.54	52.27	27680
27681	Surface LED spot light, matrix wire suspended, 8 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories.....	1,585.18	13.33	17.54	52.27	27681
27682	Beacon light fitting, 400 mm in height and diameter 150 mm .....	1,149.96	23.62	29.49	87.81	27682
27683	PAR 38, 120W or 100W GLS eyeball spotlight for light track mounting .....	-	17.17	21.21	65.57	27683
27684	Surface mounted spot light accent, aluminium housing and reflector, IP65, integral control gear c/w 1 x 35W HITT lamp (metal halide).....	1,107.29	17.17	21.21	65.57	27684

Item					Item	
<b>LIGHTING FITTINGS (CONT'D)</b>						
Recessed steplight : -						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
27685	Recessed rectangular steplight similar to SFA 246, die cast aluminium body, anodised aluminium reflector, glare suppression and 60° light output, IP65 c/w control gear and 1 x 18W PLC lamp.....	1,261.72	23.71	29.62	88.17	27685
27686	Recessed circular steplight similar to SFA 247, die cast aluminium body, IP65 c/w safety glass, control gear and 1 x 26W PLC lamp.....	1,270.27	23.71	29.62	88.17	27686
27687	Recessed rectangular steplight similar to SFA 248, die cast aluminium housing with 45° grille, opal toughened glass diffuser anodised aluminium reflector, IP65 c/w control gear and 1 x 18W PLC lamp.....	1,238.44	23.71	29.62	88.17	27687
27688	Recessed rectangular steplight similar to SFA 249, die cast aluminium body, anodised aluminium reflector, IP64 c/w safety glass, control gear and 1 x 7W/ 9W PL lamp.....	829.04	23.71	29.62	88.17	27688
27689	Recessed rectangular steplight similar to SFA 250, die cast aluminium body, anodised aluminium reflector, glare suppression and 45° light output, IP64 c/w matt safety glass, control gear and 1 x 11W fluorescent lamp.....	942.48	23.71	29.62	88.17	27689
Buried uplight : -						
<i>Each</i>						
27690	Buried uplight similar to SFA 251, die cast aluminium housing and protective front grille, toughened transparent glass diffuser, glass surface temperature 100°C, IP67 c/w matt safety glass, control gear and 1 x 19W/ 23W CFL PAR 38 lamp.....	2,047.33	32.74	40.14	122.32	27690
27691	Buried uplight similar to SFA 252, die cast aluminium housing and protective front grille, aluminium rotosymmetric reflector, toughened transparent glass diffuser, glass surface temperature 72°C, IP67 c/w control gear and 1 x 70W MBI lamp.....	3,739.01	32.74	40.14	122.32	27691
27692	Buried drive-over luminaire similar to SFA 253, die cast aluminium housing, 15 mm thick toughened glass with maximum surface temperature 75°C, aluminium reflector, internal anti-glare grid in die cast aluminium, IP67 c/w control gear and 1 x 70W metal halide lamp.....	5,490.10	32.74	40.14	122.32	27692
27693	Buried drive-over floodlight similar to SFA 254, glass fiber reinforced polymer housing, tempered heat resistant glass lens, adjustable hydroformed reflector c/w control gear and 1 x 70W metal halide lamp .....	2,060.89	32.74	40.14	122.32	27693
27694	Semi-buried fixture similar to SFA 255 for low level illumination, glass fiber reinforced polymer housing, tempered heat resistant glass multiple zone prismatic refractor at side c/w control gear and 1 x 50W/ 70W metal halide lamp.....	5,117.20	32.74	40.14	122.32	27694
27695	Buried uplight similar to SFA 256, injection moulded ABS housing with cast aluminium/ bronze doors, spun aluminium reflector, tempered glass lens, IP67 c/w control gear and 1 x 70W metal halide lamp.....	5,891.43	23.71	29.62	88.17	27695

Item					Item	
	<b>LIGHTING FITTINGS (CONT'D)</b>					
	Buried uplight : - (Cont'd)					
	<b>Each</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A	B	C	D	
		\$	\$	\$	\$	
27696	Well light similar to SFA 257 for installation in 230 mm diameter 375 mm deep direct burial pipe, spun copper housing with bronze clamping ring, convex tempered clear glass lens, cast aluminium louvre at grade, IP67 c/w control gear in separate ballast box and 6 - 13W LED lamp.....	7,417.37	23.71	29.62	88.17	27696
27697	Buried drive-over uplight similar to SFA 258, corrosion resistant aluminium housing of 150 mm diameter, 12 mm thick toughened glass lens, internal die cast aluminium anti-glare grid, drive over load 3500 kg at 30 km/ h, IP67 c/w control gear and LED lamp up to 6W.....	2,788.74	32.74	40.14	122.32	27697
27698	Buried uplight similar to SFA 259, grade 304 stainless steel body of 250 mm diameter, thermal shock resistant borosilicate glass lens, internal louvred glare shield, IP67 c/w control gear and 1 x 26W compact fluorescent lamp.....	2,507.02	32.74	40.14	122.32	27698
	Indicating lamp : -					
	<b>Each</b>					
27699	Indicating lamp with polycarbonate diffuser c/w LED lamp up to 3W .....	301.87	17.69	21.71	61.57	27699
	Bollard fittings : -					
	<b>Each</b>					
27700	1m - 1.1m high bollard similar to SFA 260, extruded aluminium housing of 180 mm diameter, vandal resistant clear polycarbonate diffuser, anodised aluminium louvre c/w control gear and 1 x 35W/ 50W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp.....	1,993.08	32.69	40.06	122.07	27700
27701	1m - 1.1m high bollard similar to SFA 260, extruded aluminium housing of 180 mm diameter, vandal resistant clear polycarbonate diffuser, anodised aluminium louvre c/w control gear and 3 - 6W LED lamp .....	2,815.86	32.69	40.06	122.07	27701
27702	Concrete bollard similar to SFA 261, one piece precast concrete body of minimum 75 mm thickness reinforced with internal steel cage, 13 mm thick hot dip galvanised base plate for anchoring, clear/ opal acrylic inner lens, horizontal cast aluminium grille of minimum thickness 6 mm, vandal resistant clear polycarbonate diffuser c/w control gear and 1 x 70W/ 100W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp.....	13,787.96	32.69	40.06	122.07	27702
27703	1m - 1.1m high bollard similar to SFA 262, extruded aluminium pole, aluminium alloy top and flange, clear polycarbonate prismatic lens c/w control gear and 1 x 18W/ 26W fluorescent lamp.....	5,918.48	20.52	25.87	74.23	27703
27704	Border lighting for low level illumination similar to SFA 263, cast aluminium housing, frosted tempered borosilicate fresnel lens at side c/w control gear and 1 x 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp.....	2,871.38	32.69	40.06	122.07	27704
27705	1m - 1.1m high bollard similar to SFA 264, cylindrical aluminium body of 150 mm diameter, clear glass bowl with decorative ring, IP44 c/w control gear and 1 x 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp.....	3,541.56	32.69	40.06	122.07	27705
27706	1m - 1.1m high bollard similar to SFA 265, extruded aluminium pole of diameter 160 mm, die cast aluminium body and louvre, vandal resistant clear polycarbonate lens, IP54 c/w control gear and 1 x 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp.....	3,038.88	32.69	40.06	122.07	27706
27707	Stand-alone solar power LED bollard c/w vandal resistant cast aluminium body, IP65, impact resistance IK10, polycarbonate diffuser, self contained with solar panel, batteries and 1 x up to 3W LED lamp.....	3,895.54	32.69	40.06	122.07	27707

Item					Item	
	<b>LIGHTING FITTINGS (CONT'D)</b>					
	Fiber optic lighting system : -					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A	B	C	D	
		\$	\$	\$	\$	
27708	Light generator with closed halogen dichroic lamp (12V/ 50W 24 deg., Ra=100 and colour temperature 3000K). The generator shall concentrate the luminous flux of lamps into a fiber optic harness. Housing to be cast aluminium c/w built in transformer (230V/ 12V 50 VA) and protective dichroic filter.....	1,518.88	9.33	11.78	37.41	27708
27709	Harness, 2 meters each, made of 16 nos. of fiber optic cables (bundle of 19 optical fibers in a cable diameter of 5 mm) meeting in parallel at the connecting end. Optical fiber to be made of glass (70 µm diameter) or P.M.M.A. of 1 mm diameter (polymethylmethacrylate) suitable to connect to the light generator and the optical termination.....	7,389.66	15.43	19.83	61.13	27709
27710	Termination and accessories to put at the end of fiber optic cable equipped with an adjustable glass lens-holder to focus from 19° to 30°.....	393.83	15.43	19.39	59.34	27710
27711	Ditto with 12V/ 75W 24° lamp.....	2,277.68	15.43	19.39	59.34	27711
27712	Ditto with 150W metal halide lamp.....	8,715.41	15.43	19.39	59.34	27712
27713	Ditto with 200W metal halide lamp.....	9,503.00	15.43	19.39	59.34	27713
	<i>Per linear metre</i>					
27714	Diffusing optical cable suitable to connect to the light generator of 17 mm P.M.M.A. cable with a reflective centre core, an ultra-violet stabilized clear PVC outer protective sheath and a clear mylar wrapping around fiber optics.....	87.45	13.22	16.72	48.97	27714
	Bed head light fitting : -					
	<i>Each</i>					
27715	Bed head lighting fitting with B.S. lamp holder.....	758.14	14.42	16.03	54.64	27715
27716	Ditto but with shaver supply unit.....	762.41	14.42	16.03	54.64	27716
27717	Angle poise bedhead fitting c/w lamp.....	1,096.42	17.27	21.33	65.96	27717
	External lighting for construction site : - (Items 27714 to 27718 will only be paid for, if ordered by the Maintenance Surveyor in writing.)					
	Isolating step down transformer 220/ 110V, single phase, having centre tap with secondary winding earthed so that the normal voltage of circuit to earth does not exceed 55V : -					
	<i>Per set</i>					
27718	500 VA.....	698.29	9.42	11.61	35.36	27718
27719	1000 VA.....	1,222.85	9.42	11.61	35.36	27719
27720	Weatherproof surface mounted fluorescent light fitting, IP65 c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast, 1 x 28W.....	1,132.34	25.67	30.94	81.78	27720
27721	Weatherproof bulkhead fittings rated IP65 c/w glassware, 100W, 110V lamp, side/ back cable entry, cutting, and rubber grommet or stop where applicable.....	498.05	23.56	29.43	87.62	27721

Item						Item
	<b>LIGHTING FITTINGS (CONT'D)</b>					
	External lighting for construction site :- (Items 27714 to 27718 will only be paid for, if ordered by the Maintenance Surveyor in writing.) (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Isolating step down transformer 220/ 110V, single phase, having centre tap with secondary winding earthed so that the normal voltage of circuit to earth does not exceed 55V :- (Cont'd)					
	<b>Per set</b>	A \$	B \$	C \$	D \$	
27722	Weatherproof bulkhead fittings rated IP65 c/w polycarbonate diffuser, 100W lamp, 110V, side/ back cable entry, cutting, and rubber grommet or stop where applicable .....	544.47	23.56	29.43	87.62	27722
	Miscellaneous lighting fittings :-					
	<b>Each</b>					
27723	Surface luminaire similar to SFA 256, circular die cast aluminium casing of minimum overall diameter 380 mm, IP65 c/w control gear and 1 x 70W SON lamp.....	2,203.77	23.35	29.10	88.64	27723
27724	Garage pit luminaire c/w lamp and control gear suitable for use in Zone 2 hazardous area to IEC 60079-10.....	4,225.74	23.64	28.78	86.21	27724
	Shades :-					
	<b>Each</b>					
27725	Shades n.e. 150 mm.....	26.53	2.80	3.16	8.31	27725
27726	Shades (locally made) n.e. 150 mm diameter.....	15.24	2.80	3.16	8.31	27726
27727	Coolicon shades 230 mm diameter.....	31.44	2.80	3.16	8.31	27727
27728	Coolicon shades (locally made) 230 mm diameter.....	20.18	2.80	3.16	8.31	27728
27729	Coolicon shades 280 mm diameter.....	31.52	2.80	3.16	8.31	27729
27730	Coolicon shades (locally made) 280 mm diameter.....	22.35	2.80	3.16	8.31	27730



Item					Item	
	<b>LIGHTING FITTINGS (CONT'D)</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Dome cover, wall mounting :-					
	<i>Each</i>					
27731	65 mm diameter.....	25.02	3.89	4.71	13.55	27731
27732	87 mm diameter.....	28.05	3.89	4.71	13.55	27732
27733	125 mm diameter.....	33.35	3.89	4.71	13.55	27733
27734	Dome back plate, side entry .....	32.90	3.89	4.71	13.55	27734
	Dome cover :-					
	<i>Each</i>					
27735	Dome cover 65 mm diameter.....	24.19	3.89	4.71	13.55	27735
27736	Dome cover 87 mm diameter.....	25.77	3.89	4.71	13.55	27736
27737	Dome cover 125 mm diameter.....	31.16	3.89	4.71	13.55	27737
27738	Dome back plate, side entry.....	31.48	3.89	4.71	13.55	27738
	Sundries :-					
	<i>Each</i>					
27739	Weatherproof metal box for 250/ 400W SON control gear.....	641.95	26.85	32.93	97.78	27739
27740	Weatherproof metal box for 250/ 400W MBIL control gear.....	672.77	34.43	41.71	127.29	27740
27741	Weatherproof metal box for 750W/ 1000W MBIL control gear.....	796.62	34.43	41.71	127.29	27741
27742	Weatherproof metal box for 1500/ 1600W MBIL control gear.....	816.61	34.43	41.71	127.29	27742
27743	External control gear box c/w gear for 250W SON.....	1,305.97	28.11	34.75	101.54	27743
27744	External control gear box c/w gear for 400W SON.....	1,517.25	28.11	34.75	101.54	27744
27745	Pendant, plain, comprising ceiling rose, flex and B.C. lampholder (labour rates including fixing of shade) .....	54.19	7.97	9.64	29.01	27745

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>LAMP POLES AND ACCESSORIES</b>					
	Lamp poles, mild steel c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. :-					
	<i>Each</i>					
27746	n.e. 3.5 m.....	2,527.73	202.92	265.55	777.87	27746
27747	3.5 m - 4.5 m.....	2,945.35	248.72	312.12	949.86	27747
27748	4.5 m - 7.0 m.....	8,031.77	378.72	475.39	1,448.02	27748
27749	7.0 m - 7.5 m.....	9,182.46	457.95	571.39	1,745.97	27749
27750	7.5 m - 8.0 m.....	10,907.32	568.64	709.40	2,172.34	27750
27751	8.0 m - 10.0 m.....	14,697.99	780.25	978.01	2,975.95	27751
27752	10.0 m - 12.0 m.....	17,332.07	946.13	1,183.19	3,610.57	27752
	Twin heads lamp pole for SFA 215, 127 mm square straight steel pole flange mounting, gauge 11 galvanised steel with bronze enamel finish :-					
	<i>Each</i>					
27753	4.2 m nominal height.....	5,445.59	253.20	317.14	952.42	27753
	Lamp poles, tubular steel, hot dipped galvanized to BS EN ISO 1461 c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. :-					
	<i>Each</i>					
27754	n.e. 4.0 m.....	3,493.55	239.89	303.01	906.65	27754
27755	4.0 m - 4.5 m.....	3,758.09	269.36	337.98	1,028.57	27755
27756	4.5 m - 7.0 m.....	8,910.76	378.80	475.52	1,448.39	27756
27757	7.0 m - 7.5 m.....	10,133.55	445.72	556.07	1,699.09	27757
27758	7.5 m - 8.0 m.....	12,150.44	577.99	721.04	2,207.98	27758
27759	8.0 m - 12.0 m.....	19,323.75	938.45	1,173.60	3,581.23	27759
	Lamp poles, tubular steel, hot dipped galvanized to BS EN ISO 1461, wall mounted c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. :-					
	<i>Each</i>					
27760	n.e. 3.5 m.....	3,210.17	210.02	274.86	805.10	27760
27761	3.5 m - 4.0 m.....	3,645.53	239.20	302.14	904.02	27761
27762	4.0 m - 4.5 m.....	3,975.47	261.20	327.72	997.38	27762
27763	4.5 m - 7.0 m.....	8,120.92	385.38	483.73	1,473.49	27763

Item						
	<b>LAMP POLES AND ACCESSORIES (CONT'D)</b>					
	Lamp poles, tubular steel, hot dipped galvanized to BS EN ISO 1461, wall mounted c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. :- (Cont'd)					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
27764	7.0 m - 7.5 m.....	10,303.74	461.80	576.20	1,760.66	27764
27765	Hot-dip galvanized flange mounted type tapered polygonal high mast of 30 m nominal mounting height c/w raising and lowering system and head frame for mounting maximum 24 nos. of luminaires with the supply of foundation bolts/ nuts/ washers..... (The actual rate should be : \$401,376.30 for Item 27765A)	40,137.63	6,641.11	11,068.71	28,484.92	27765
27766	4.8 m - 5.0 m aluminium lamp pole .....	24,833.11	258.13	322.63	988.70	27766
	Accessories :-					
	<i>Each</i>					
27767	Compression gland .....	184.57	11.83	15.33	45.17	27767
27768	Working platform (hot dip galvanized steel).....	1,495.28	203.10	244.66	616.38	27768
27769	Metal hot dip galvanized cover for weatherproof service box on lamp pole c/w gaskets, screws and washers .....	446.22	8.96	10.70	26.99	27769
27770	Double head lamp pole bracket at 4.5 m lamp pole, including modification of the 4.5 m lamp pole and removal of the original bracket.....	354.50	20.54	25.11	73.98	27770
27771	Pole cap.....	238.94	16.87	21.32	64.42	27771
27772	Connector box.....	271.88	14.42	18.24	56.31	27772
27773	Service box.....	272.34	18.71	23.63	71.43	27773
27774	Control box.....	281.67	18.71	23.63	71.43	27774
27775	Grade 316 stainless steel angle adjustable mounting frame for 400W floodlight.....	308.06	7.31	10.13	28.15	27775

Item					Item	
	<b>EMERGENCY LIGHTING</b>					
	Exit sign box to BS 5499-1: 2002, BS 5499-4: 2000, BS EN 60598-1: 2008, BS EN 60598-2-22: 1998+A2: 2008, BS 5266-1: 2011, BS EN 50172: 2004 and BS EN 1838: 1999 c/w lamp, NiMH battery for 2 hours, charger, automatic changeover device, inverter/ ballast indications and switch, cables, conduits (surface or concealed in partitions and ceiling), all necessary accessories and connection to power supply switch/ terminal :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
27776	Exit sign box, 400 - 650 mm long.....	952.99	64.68	75.46	275.92	27776
27777	Exit sign box without battery, charger and changeover, 400 - 650 mm long.....	675.64	64.68	75.46	275.92	27777
27778	Exit sign box using LED as light source, 400 - 650 mm long.....	974.57	64.68	75.46	275.92	27778
27779	Exit sign box using LED as light source without battery, charger and changeover, 400 - 650 mm long.....	741.31	64.68	75.46	275.92	27779
27780	Exit sign box using LED as light source, 600 - 1200 mm long, automatic discharge and recharge monthly.....	1,066.60	64.68	75.46	275.92	27780
	Exit sign plate or directional sign plate to BS 5499-1: 2002, BS 5499-4: 2000, BS EN 60598-1: 2008, BS EN 60598-2-22: 1998+A2: 2008, BS 5266-1: 2011, BS EN 50172: 2004 and BS EN 1838: 1999 c/w lamp, NiMH battery for 2 hours, charger, automatic changeover device, clear perspex front plate, coloured perspex back plates plugging and screwing to wall and all necessary accessories and connection to power supply switch/ terminal, suitable for ceiling suspension/ wall mounting :-					
	<i>Each</i>					
27781	Exit sign plate or directional sign plate, using fluorescent tube as light source, 400 - 650 mm long.....	921.30	64.68	75.46	275.92	27781
27782	Exit sign plate or directional sign plate using LED as light source, 400 - 650 mm long.....	308.06	64.68	75.46	275.92	27782
27783	Exit sign plate or directional sign plate using LED as light source, 1200 mm long.....	1,052.90	64.68	75.46	275.92	27783
27784	Exit sign plate or directional sign plate using LED as light source, 400 - 600 mm long, automatic discharge and recharge monthly.....	947.61	64.68	75.46	275.92	27784
27785	Exit sign plate or directional sign plate using LED as light source, 400 mm long c/w NiMH battery for 3 hours.....	1,129.70	64.68	75.46	275.92	27785
27786	Exit sign plate or directional sign plate using LED as light source, 400 mm long, recess mounted.....	980.38	64.68	75.46	275.92	27786

Item					Item	
	<b>EMERGENCY LIGHTING (CONT'D)</b>					
	Central battery power supply system for emergency lighting	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Central power supply, monitoring and control panel c/w rectifier/ charger, inverter, storage and all necessary accessories of the battery, switchgear, zone indication and control software and instrumentation, controlling following capacity :-					
	<b>Each</b>	A \$	B \$	C \$	D \$	
27787	below 100 Ah.....	22,083.39	35.56	38.80	156.29	27787
27788	100 - 200 Ah.....	41,541.15	36.64	39.89	174.61	27788
27789	200 - 300 Ah.....	60,065.21	37.72	40.98	189.70	27789
27790	300 - 400 Ah.....	77,337.30	38.80	42.04	206.95	27790
27791	400 - 500 Ah.....	83,368.82	46.35	49.59	259.77	27791
	UPS or static inverter system c/w static transfer switch with synchronizing and phase maintenance bypass switch, storage battery, charger, rectifier, inverter and lock equipment, controlling following capacity :-					
	<b>Each</b>					
27792	below 100 Ah.....	25,257.56	24.79	42.04	180.00	27792
27793	100 - 200 Ah.....	46,743.61	43.12	46.35	200.48	27793
27794	200 - 300 Ah.....	68,735.08	44.19	47.42	220.97	27794
27795	300 - 400 Ah.....	88,716.22	46.35	48.50	241.44	27795
27796	400 - 500 Ah.....	95,158.56	54.97	57.12	299.65	27796

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>EMERGENCY LIGHTING (CONT'D)</b>						
	Emergency lighting fittings :-					
	<i>Each</i>					
27797	Centrally supplied emergency lighting unit 5W - 40W, to BS EN 60598-2-22 (without battery) c/w heat resistant cable, conduits, all necessary accessories and connection to central control panel .....	622.59	49.59	57.12	210.18	27797
27798	Emergency luminaire, 10W, 12V, to BS EN60598-2-22 c/w heat resistant cable, conduits, all necessary accessories and connection to central control panel .....	662.33	49.59	57.12	210.18	27798
	Self-contained emergency lighting unit, weather and vandal resistant c/w NiMH battery, charger, automatic changeover device and all necessary accessories :-					
	<i>Each</i>					
27799	Luminaire 28W, 2D, with 2 hours battery operating capacity.....	817.42	51.75	60.36	219.88	27799
27800	T8 fluorescent lamp with 2 hours battery operating capacity, electronic ballast, 18/ 36/ 54 W.....	-	51.75	60.36	219.88	27800
27801	T5 fluorescent lamp with 2 hours battery operating capacity, electronic ballast, 14W.....	817.17	51.75	60.36	219.88	27801
27802	Ditto, 28W.....	916.53	51.75	60.36	219.88	27802
27803	Ditto, 35W.....	1,018.72	51.75	60.36	219.88	27803
27804	Ditto, 49W.....	1,157.48	51.75	60.36	219.88	27804
27805	Ditto, 54W.....	1,377.64	51.75	60.36	219.88	27805

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>EMERGENCY LIGHTING (CONT'D)</b>					
	Self-contained emergency lighting unit c/w NiMH battery, charger, automatic changeover device and all necessary accessories :-					
	<i>Each</i>					
27806	Non-maintained type 6V, 10W tungsten halogen recessed emergency luminaries with a red LED to indicate lamp filament failure c/w nickel-metal hydride emergency power pack and silver aluminum reflector of 112 mm diameter.....	-	24.06	29.58	81.50	27806
27807	Non-maintained type 12V, 2 x 2W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	1,702.65	31.05	41.57	162.19	27807
27808	Non-maintained type 12V, 2 x 2W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	1,596.20	28.94	37.78	148.85	27808
27809	Non-maintained type 12V, 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 2-hour NiMH emergency power pack.....	972.59	31.05	41.57	162.19	27809
27810	Non-maintained type 12V, 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 3 hours NiMH emergency power pack.....	1,091.14	31.05	41.57	162.19	27810
27811	Non-maintained type 12V, 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	911.78	28.94	37.78	148.85	27811
27812	Non-maintained type 12V, 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 3 hours NiMH emergency power pack.....	917.57	28.94	37.78	148.85	27812
27813	Non-maintained type 12V, 2 x 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 2-hour NiMH emergency power pack.....	2,284.23	31.05	41.57	162.19	27813
27814	Non-maintained type 12V, 2 x 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 3 hours NiMH emergency power pack.....	2,562.64	31.05	41.57	162.19	27814
27815	Non-maintained type 12V, 2 x 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	2,141.42	28.94	37.78	148.85	27815
27816	Non-maintained type 12V, 2 x 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 3 hours NiMH emergency power pack.....	2,417.67	28.94	37.78	148.85	27816
27817	Modification of the luminaire for connection to the central control panel and centrally supplied emergency lighting point including power supply and control cable installed inside flexible conduit.....	307.27	-	-	-	27817

Item					Item	
	<b>EMERGENCY LIGHTING (CONT'D)</b>					
	NiMH battery and charger kit for self-contained emergency luminaire : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
27818	Charger kit installed inside surface mounted luminaire including necessary modification for the addition of the kit.....	284.13	11.43	12.02	70.06	27818
27819	Charger kit installed inside recessed mounted luminaire including necessary modification for the addition of the kit.....	282.77	11.43	12.02	70.06	27819
27820	Charger kit installed inside a metal box mounted next to and connected to the recessed mounted luminaire including necessary modification for the addition of the kit.....	487.71	11.43	12.02	70.06	27820



Item					Item	
	<b>LED LIGHT STRIPS</b>					
	Surface mounted flexible LED light strips; LED mounted on printed circuit board, complete with power input cables, power lead connectors, strip to strip connectors, corner connectors, self adhesive backing, etc. :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
27821	Single colour flexible LED light strips; 12V DC; 4 to 8W/ m.....	131.59	7.34	8.81	11.73	27821
27822	Single colour flexible LED light strips; 12V DC; 8 to 12W/ m.....	150.90	7.34	8.81	11.73	27822
27823	Single colour flexible LED light strips; 12V DC; 12 to 16W/ m.....	171.55	7.34	8.81	11.73	27823
27824	Single colour flexible LED light strips; 12V DC; 4 to 8W/ m; IP68.....	173.35	7.34	8.81	11.73	27824
27825	Single colour flexible LED light strips; 12V DC; 8 to 12W/ m; IP68.....	192.65	7.34	8.81	11.73	27825
27826	Single colour flexible LED light strips; 12V DC; 12 to 16W/ m; IP68.....	213.32	7.34	8.81	11.73	27826
	LED driver power supply c/w metal/ PVC casing :-					
	<i>Each</i>					
27827	12W; 12V.....	193.77	14.67	17.60	23.47	27827
27828	18W; 12V.....	202.09	14.67	17.60	23.47	27828
27829	36W; 12V.....	240.49	14.67	17.60	23.47	27829
27830	60W; 12V.....	255.75	14.67	17.60	23.47	27830
27831	100W; 12V.....	443.69	14.67	17.60	23.47	27831
27832	150W; 12V.....	465.92	14.67	17.60	23.47	27832
27833	240W; 12V.....	720.79	14.67	17.60	23.47	27833
27834	320W; 12V.....	756.70	14.67	17.60	23.47	27834
27835	18W; 12V; IP67.....	194.44	14.67	17.60	23.47	27835
27836	36W; 12V; IP67.....	245.65	14.67	17.60	23.47	27836
27837	60W; 12V; IP67.....	257.78	14.67	17.60	23.47	27837
27838	100W; 12V; IP67.....	463.90	14.67	17.60	23.47	27838
27839	150W; 12V; IP67.....	502.98	14.67	17.60	23.47	27839
27840	240W; 12V; IP67.....	752.11	14.67	17.60	23.47	27840

Item					Item	
	<b>SIMPLIFIED ITEMS</b>					
	Section 1 : Installation by galvanized steel surface conduit system/ concealed conduit system	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Lighting point/ occupancy sensor point/ motion detector point :-					
	<b>Each</b>	A \$	B \$	C \$	D \$	
27841	Lighting point/ occupancy sensor point/ motion detector point c/w trunking, conduits, boxes, PVC cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	395.46	102.70	-	-	27841
27842	Lighting point/ occupancy sensor point/ motion detector point c/w trunking, conduits, boxes, OHLS cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	407.88	102.70	-	-	27842
	Add 8% to either of Items 27837 to 27838 inclusive for provision of circuit protective conductor to MCB board in full length of conduit, another 8% for provision of additional cable to feed maintained light point and again another 8% for provision of additional cable to feed reasonable & separate control of a twin/ triplet light fitting.					
	Lighting switch point :-					
	<b>Each</b>					
27843	Lighting switch point c/w trunking, conduits, boxes, PVC cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	202.42	50.60	-	-	27843
27844	Lighting switch point c/w trunking, conduits, boxes, OHLS cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	232.37	55.77	-	-	27844

Item					Item	
	<b>SIMPLIFIED ITEMS (CONT'D)</b>					
	Section 2 : Installation by PVC surface conduit system					
	Lighting point/ occupancy sensor point/ motion detector point :-					
	<i>Each</i>					
27845	Lighting point/ occupancy sensor point/ motion detector point c/w trunking, conduits, boxes, PVC cables, circuit protective conductor and all necessary accessories.....	297.02	74.00	-	-	27845
	Add 8% to Item 27841 for provision of additional cable to feed reasonable & separate control of a twin/ triplet light fitting					
	Lighting switch point :-					
	<i>Each</i>					
27846	Lighting switch point c/w trunking, conduits, boxes, PVC cables and all necessary accessories .....	136.94	32.86	-	-	27846
	Section 3 : Installation by surface wiring system					
	Lighting point :-					
	<i>Each</i>					
27847	Lighting point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories.....	207.29	32.74	-	-	27847
	Add 8% to item 27843 for provision of additional cable to feed reasonable & separate control of a twin/ triplet light fitting					
	Lighting switch point :-					
	<i>Each</i>					
27848	Lighting switch point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories.....	78.71	11.80	-	-	27848

**Section 28**

**ELECTRICAL INSTALLATION -**

**SMALL POWER DISTRIBUTION**

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>KWH METERS AND BOXES</b>					
	KWH Meter : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
28001	63A single-phase meter.....	694.85	15.36	20.01	59.58	28001
28002	80A ditto.....	703.57	15.36	20.01	59.58	28002
28003	100A ditto.....	854.50	15.36	20.01	59.58	28003
28004	63A/ 100A three-phase (4-wire) whole current meter.....	1,415.57	19.27	23.92	74.82	28004
28005	200A to 2000A current transformers operated meter (current transformers to be measured separately).....	1,415.57	19.27	23.92	74.82	28005
	Metal boxes for above KWH meters, approved type : -					
	<i>Each</i>					
28006	Up to 100A single-phase.....	184.57	12.09	15.36	48.15	28006
28007	Up to 2000A three-phase.....	184.57	12.09	15.36	48.15	28007
28008	Metal box for 4 nos. current transformers.....	196.67	15.36	20.01	60.00	28008
	Measuring Current Transformer : -					
	<i>Each</i>					
28009	100/ 5A ratio.....	184.87	14.71	18.72	57.84	28009
28010	200/ 5A ratio.....	193.58	14.71	18.72	57.84	28010
28011	400/ 5A ratio.....	283.86	14.71	18.72	57.84	28011
28012	500/ 5A ratio.....	288.91	14.71	18.72	57.84	28012
28013	600/ 5A ratio.....	292.16	14.71	18.72	57.84	28013
28014	1000/ 5A ratio.....	302.74	14.71	18.72	57.84	28014
28015	2000/ 5A ratio.....	429.31	14.71	18.72	57.84	28015

Item					Item	
	<b>KWH METERS AND BOXES (CONT'D)</b>					
	Measuring Current Transformer (Split Type) : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28016	100 or 200/ 5A.....	845.07	14.74	18.76	57.96	28016
28017	400 or 500/ 5A.....	877.97	14.74	18.76	57.96	28017
28018	600/ 5A.....	882.06	14.74	18.76	57.96	28018
28019	1000/ 5A.....	981.88	14.74	18.76	57.96	28019
28020	2000/ 5A.....	1,876.70	14.74	18.76	57.96	28020
	<i>Each</i>					
28021	60A neutral link for meter board loop wire.....	92.38	9.12	11.39	34.95	28021
	<b>MOUNTING BLOCKS</b>					
	<i>Each</i>					
28022	Mounting blocks, solid hardwood, 20 mm thick, 75 mm diameter or 75 x 75 mm or 120 x 70 mm .....	25.64	6.89	8.30	21.19	28022
28023	Ditto but 100 mm diameter or 75 x 150 mm.....	27.58	6.89	8.30	21.19	28023
28024	Ditto but 150 mm diameter or 150 x 150 mm.....	35.20	6.89	8.30	21.19	28024
28025	Ditto but 250 mm diameter.....	52.21	7.98	10.00	25.54	28025
28026	Ditto but 150 x 250 mm.....	45.63	7.98	10.00	25.54	28026
28027	Ditto but 180 x 250 mm.....	48.44	7.98	10.00	25.54	28027
28028	Ditto but 200 x 300 mm.....	52.61	7.98	10.00	25.54	28028
28029	Ditto but 250 x 300 mm.....	53.50	7.98	10.00	25.54	28029
28030	Ditto but 150 x 380 mm.....	53.82	7.98	10.00	25.54	28030
28031	Ditto but 200 x 380 mm.....	55.59	7.98	10.00	25.54	28031
28032	Ditto but 250 x 380 mm.....	71.85	9.49	11.34	28.87	28032
28033	Ditto but 300 x 300 mm.....	72.15	9.49	11.34	28.87	28033
28034	Ditto but 300 x 450 mm.....	87.08	9.49	11.34	28.87	28034
28035	Ditto but 350 x 400 mm.....	87.26	9.49	11.34	28.87	28035
28036	Mounting blocks, solid hardwood, 32 mm thick, 150 mm diameter, centre pack sunk for BESA box and conduit entry. ....	101.71	9.49	11.34	28.87	28036
28037	Mounting blocks, solid hardwood, 250 mm x 400 mm x 20 mm thick (approved type) for bell and indicators, etc. c/w hinged cover over transformer and bell units .....	199.20	13.11	16.58	50.45	28037
28038	Wooden board (approved type) for desk fan fixed to wall.....	184.79	20.84	25.96	79.23	28038

Item					Item	
<b>PLUGS AND SOCKET OUTLETS</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Plugs only, fused or unfused, bakelite :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28039	15A/ 13A, 3 pin.....	22.74	4.46	5.15	16.05	28039
28040	5A, 3 pin.....	19.87	4.46	5.15	16.05	28040
28041	2A, 3 pin.....	-	4.46	-	-	28041
28042	Cartridge fuse link to B.S. 1362 (2A to 15A).....	8.01	1.24	1.53	4.26	28042
Plugs only, moulded rubber :-						
<i>Each</i>						
28043	15A, 3 pin.....	49.96	4.46	5.15	16.05	28043
28044	13A/ 5A, 3 pin, fused.....	46.10	4.46	5.15	16.05	28044
Socket outlets, shuttered type, bakelite :-						
<i>Each</i>						
28045	15A, 3 pin.....	53.60	9.91	12.23	37.40	28045
28046	13A, 3 pin.....	52.31	9.91	12.23	37.40	28046
28047	13A, 3 pin, twin.....	67.51	9.91	12.23	37.40	28047
28048	5A, 3 pin.....	52.16	9.91	12.23	37.40	28048
28049	2A, 3 pin (unshuttered).....	-	9.91	-	-	28049
28050	13A, 3 pin, socket integrated with 30 mA RCD.....	497.75	10.68	12.84	41.39	28050
28051	13A, 3 pin, twin socket integrated with 30 mA RCD.....	622.41	10.68	12.84	41.39	28051

Item					Item	
<b>PLUGS AND SOCKET OUTLETS (CONT'D)</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Socket outlet, shuttered type, metalclad :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28052	15A, 3 pin.....	148.19	9.85	12.19	37.23	28052
28053	13A, 3 pin.....	133.34	9.85	12.19	37.23	28053
28054	13A, 3 pin, twin.....	170.59	9.85	12.19	37.23	28054
28055	5A, 3 pin.....	130.74	9.85	12.19	37.23	28055
28056	13A, 3 pin socket with cover plate.....	161.06	9.85	12.19	37.23	28056
28057	13A, 3 pin twin socket with cover plate.....	210.49	9.85	12.19	37.23	28057
28058	13A, 3 pin, socket integrated with 30 mA RCD.....	625.30	10.65	12.79	41.20	28058
28059	13A, 3 pin, twin socket integrated with 30 mA RCD.....	712.85	10.65	12.79	41.20	28059
Socket outlet, round type, 50 mm fixing centre with over lapping or non-over lapping plate :-						
<i>Each</i>						
28060	2A, 3 pin.....	-	9.85	-	-	28060
28061	5A, 3 pin.....	154.03	9.85	12.19	37.23	28061
Switched-socket outlets with pilot light, shuttered type, bakelite :-						
<i>Each</i>						
28062	15A, 3 pin.....	63.39	9.94	12.29	37.55	28062
28063	13A, 3 pin.....	63.13	9.94	12.29	37.55	28063
28064	13A, 3 pin, twin.....	92.83	9.94	12.29	37.55	28064
28065	5A, 3 pin.....	56.97	9.94	12.29	37.55	28065
28066	13A, 3 pin socket with cover plate.....	88.71	9.94	12.29	37.55	28066
28067	13A, 3 pin twin socket with cover plate.....	132.02	9.94	12.29	37.55	28067
28068	13A, 3 pin, socket integrated with 30 mA RCD.....	509.11	10.73	12.89	41.57	28068
28069	13A, 3 pin, twin socket integrated with 30 mA RCD.....	644.34	10.73	12.89	41.57	28069



Item					Item	
<b>PLUGS AND SOCKET OUTLETS (CONT'D)</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Switched-socket outlets with pilot light, shuttered type, metalclad :-						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28070	5A, 3 pin.....	163.65	9.74	12.03	36.39	28070
28071	15A, 3 pin.....	210.68	9.74	12.03	36.39	28071
28072	13A, 3 pin.....	188.38	9.74	12.03	36.39	28072
28073	13A, 3 pin, twin.....	279.73	9.74	12.03	36.39	28073
28074	13A, with 30 mA RCD.....	677.31	10.59	12.68	40.47	28074
Switched-socket outlets, shuttered type, bakelite :-						
28075	15A, 3 pin.....	60.94	9.74	12.03	36.39	28075
28076	13A, 3 pin.....	57.56	9.74	12.03	36.39	28076
28077	13A, 3 pin, with 30 mA RCD.....	489.65	10.59	12.68	40.47	28077
28078	13A, 3 pin, twin.....	78.55	9.74	12.03	36.39	28078
28079	Ditto but with 30 mA RCD.....	522.15	10.59	12.68	40.47	28079
28080	13A, 3 pin, triple.....	184.49	9.74	12.03	36.39	28080
28081	5A, 3 pin.....	54.96	9.74	12.03	36.39	28081

Item					Item	
<b>PLUGS AND SOCKET OUTLETS (CONT'D)</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Switched-socket outlets, shuttered type, metalclad : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28082	15A, 3 pin.....	180.07	9.77	12.07	36.47	28082
28083	13A, 3 pin.....	151.65	9.77	12.07	36.47	28083
28084	Ditto but with 30 mA RCD.....	607.00	10.61	12.71	40.56	28084
28085	13A, 3 pin, twin.....	245.72	9.77	12.07	36.47	28085
28086	Ditto but with 30 mA RCD.....	707.00	10.61	12.71	40.56	28086
28087	5A, 3 pin.....	141.42	9.77	12.07	36.47	28087
28088	13A, 3 pin with cover plate.....	240.35	9.77	12.07	36.47	28088

Item					Item	
<b>PLUGS AND SOCKET OUTLETS (CONT'D)</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Splashproof, flush mounted socket outlet, IP56 :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28089	13A.....	292.96	20.38	25.45	77.24	28089
28090	13A, twin.....	512.35	20.38	25.45	77.24	28090
28091	13A, DP, switch and with 30 mA RCD.....	1,475.57	21.45	26.79	82.28	28091
Enclosure for flush mounted splashproof socket :-						
<i>Each</i>						
28092	1 gang.....	208.62	9.73	12.02	36.35	28092
28093	2 gang.....	301.81	9.73	12.02	36.35	28093
Splashproof, surface mounted socket outlet, IP44 :-						
<i>Each</i>						
28094	13A, socket with cover plate.....	134.83	20.38	25.45	77.24	28094
Splashproof, socket outlets with plugs, IP44 :-						
<i>Each</i>						
28095	16A, 3 pin.....	174.61	19.38	24.22	73.48	28095
28096	16A, 5 pin.....	191.47	24.35	29.68	92.06	28096
28097	32A, 3 pin.....	258.60	19.38	24.22	73.48	28097
28098	32A, 5 pin.....	264.63	30.04	37.81	113.32	28098
28099	63A, 3 pin.....	686.45	30.04	37.81	113.32	28099
28100	63A, 5 pin.....	782.97	33.72	42.65	129.19	28100

Item					Item	
<b>PLUGS AND SOCKET OUTLETS (CONT'D)</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Socket outlet with plug, weatherproof type rated IP65 :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28101	13A, 3 pin.....	365.34	20.29	25.35	76.92	28101
28102	15A, 3 pin.....	431.30	20.29	25.35	76.92	28102
28103	30A, 3 pin.....	672.52	20.29	25.35	76.92	28103
28104	60A, 3 pin.....	1,112.59	29.91	37.64	112.84	28104
28105	15A, 5 pin.....	734.68	24.89	30.31	94.02	28105
28106	30A, 5 pin.....	796.77	29.91	37.64	112.84	28106
28107	60A, 5 pin.....	1,339.53	34.75	43.95	133.12	28107
Switched socket outlet with plug, weatherproof type rated IP65 :-						
<i>Each</i>						
28108	13A, 3 pin.....	530.84	20.29	25.35	76.92	28108
28109	15A, 3 pin.....	763.25	20.29	25.35	76.92	28109
28110	30A, 3 pin.....	1,108.98	20.29	25.35	76.92	28110
28111	60A, 3 pin.....	1,763.35	29.91	37.64	112.84	28111
28112	15A, 5 pin.....	1,005.55	24.89	30.31	94.02	28112
28113	30A, 5 pin.....	1,223.31	29.91	37.64	112.84	28113
28114	60A, 5 pin.....	1,777.99	34.75	43.95	133.12	28114
Switched socket outlet assemblies, sparkless, c/w plug, chromium plated brass cover, flush or surface pattern :-						
<i>Each</i>						
28115	13A, 3 pin.....	1,187.11	20.29	25.35	76.92	28115
28116	13A, 3 pin, twin.....	2,194.25	20.29	25.35	76.92	28116
28117	15A, 3 pin.....	1,331.62	20.29	25.35	76.92	28117
28118	30A, 3 pin.....	2,053.65	20.29	25.35	76.92	28118

Item					Item	
<b>PLUGS AND SOCKET OUTLETS (CONT'D)</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Switched socket outlet assemblies, flameproof, c/w plug :-						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28119	5A, 3 pin.....	2,466.80	20.32	25.41	77.07	28119
28120	13A, 3 pin.....	2,860.75	20.32	25.41	77.07	28120
28121	15A, 3 pin.....	3,055.58	20.32	25.41	77.07	28121
28122	30A, 3 pin c/w 30 mA RCD.....	4,396.69	21.66	27.03	82.11	28122
Shaver supply unit to IEC 61558-1 with isolating transformer to IEC 61558-2-5: -						
	<i>Each</i>					
28123	Dual socket of voltage 110V and 220V.....	371.43	10.54	12.64	40.31	28123
Connection unit, Bakelite :-						
	<i>Each</i>					
28124	20A, connection unit, DP.....	59.01	9.73	12.02	36.35	28124
28125	32A, connection unit, DP.....	71.30	9.73	12.02	36.35	28125
28126	45A, connection unit, DP.....	71.68	9.73	12.02	36.35	28126
28127	Fused spur (2 - 13A), DP, with cable outlet.....	64.58	9.69	12.00	36.24	28127
28128	Fused spur (2 - 13A), DP, switch.....	75.60	9.69	12.00	36.24	28128
28129	Fused spur (2 - 13A), DP, switch, with pilot light.....	101.44	9.69	12.00	36.24	28129
28130	Fused spur (2 - 13A), DP, switch, with cable outlet.....	72.75	9.69	12.00	36.24	28130
28131	Fused spur (2 - 13A), DP, switch, with cable outlet and pilot light.....	100.12	9.69	12.00	36.24	28131
28132	Fused spur (2 - 13A), DP, switch, with cable outlet and pilot light, IP55.....	200.83	10.38	12.73	49.34	28132
28133	Fused spur (2 - 13A), DP, switch, with cable outlet, IP65.....	220.60	10.38	12.73	49.34	28133
28134	32A, TPN connection unit.....	223.92	29.98	37.72	113.09	28134
28135	30A, 3 terminal junction box.....	189.23	9.69	12.00	36.24	28135

Item					Item	
<b>PLUGS AND SOCKET OUTLETS (CONT'D)</b>						
The rates include for mounting boxes frames and cutting into wall where applicable.						
Connection unit, metalclad :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28136	Fused spur (2 - 13A fuse), DP.....	194.76	9.69	12.00	36.24	28136
28137	Fused spur (2 - 13A fuse), DP, with cable outlet.....	222.32	9.69	12.00	36.24	28137
28138	Fused spur (2 - 13A fuse), DP, with cable outlet and pilot light.....	255.90	9.69	12.00	36.24	28138
28139	Fused spur (2 - 13A fuse), DP, switch.....	228.57	9.69	12.00	36.24	28139
28140	Fused spur (2 - 13A fuse), DP, switch, with pilot light.....	286.57	9.69	12.00	36.24	28140
28141	Fused spur (2 - 13A fuse), DP, switch, with cable outlet.....	273.16	9.69	12.00	36.24	28141
28142	Fused spur (2 - 13A fuse), DP, switch, with cable outlet and pilot light.....	324.27	9.69	12.00	36.24	28142
Metal casing and socket c/w 30 mA RCD :-						
<i>Each</i>						
28143	Galvanized iron casing, single socket .....	710.03	20.38	25.45	77.24	28143
28144	Ditto but twin.....	733.65	20.38	25.45	77.24	28144
28145	Ditto but with four sockets.....	842.93	20.38	25.45	77.24	28145
28146	Stainless steel casing, single socket.....	737.78	20.38	25.45	77.24	28146
28147	Ditto but twin.....	773.85	20.38	25.45	77.24	28147
28148	Ditto but with four sockets.....	905.58	20.38	25.45	77.24	28148
28149	Metal casing, single socket.....	565.81	20.38	25.45	77.24	28149
Telephone outlets :-						
<i>Each</i>						
28150	1-gang 6-pin telephone socket outlet.....	55.33	9.69	12.00	36.24	28150

Item					Item	
	<b>SUB-SWITCHES</b>					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Plates only, bakelite to suit switches to IEC 60669-1 and socket to BS546 :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28151	1 switch, 10A, flush.....	19.39	4.03	4.73	15.34	28151
28152	2 switches, 10A, flush.....	20.64	4.03	4.73	15.34	28152
28153	3 switches, 10A, flush.....	22.04	4.03	4.73	15.34	28153
28154	4 switches, 10A, flush.....	30.65	4.03	4.73	15.34	28154
28155	1 socket, 5/ 13/ 15A, 3 pin, flush.....	39.18	4.03	4.73	15.34	28155
	Moulded switch plates, c/w fixing screws suitable for 1 gang or 2 gang boxes :-					
	<i>Each</i>					
28156	1 gang plate for 1 gang box.....	27.56	4.03	4.73	15.34	28156
28157	2 gang plate for 1 gang box.....	30.25	4.03	4.73	15.34	28157
28158	2 gang plate for 2 gang box.....	51.13	4.03	4.73	15.34	28158
28159	3 gang plate for 2 gang box.....	55.16	4.03	4.73	15.34	28159
28160	4 gang plate for 2 gang box.....	60.46	4.03	4.73	15.34	28160

Item					Item	
	<b>SUB-SWITCHES (CONT'D)</b>					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Stainless steel or brass switch plates, c/w fixing screws suitable for 1 gang or 2 gang boxes : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28161	1 gang plate for 1 gang box.....	110.32	4.03	4.74	15.37	28161
28162	2 gang plate for 1 gang box.....	127.49	4.03	4.74	15.37	28162
28163	2 gang plate for 2 gang box.....	140.22	4.03	4.74	15.37	28163
28164	3 gang plate for 2 gang box.....	153.57	4.03	4.74	15.37	28164
28165	4 gang plate for 2 gang box.....	167.84	4.03	4.74	15.37	28165
	White bakelite light switch to IEC 60669-1 : -					
	<i>Each</i>					
28166	10A, 1 gang SP 1 way.....	43.70	9.69	11.94	36.10	28166
28167	10A, 1 gang SP 2 way.....	49.82	9.69	11.94	36.10	28167
28168	10A, 2 gang SP 1 way or 2 way.....	55.75	9.69	11.94	36.10	28168
28169	10A, 3 gang SP 1 way or 2 way.....	64.05	9.69	11.94	36.10	28169
28170	10A, 2 way with or without "centre off" SP .....	53.72	9.69	11.94	36.10	28170
28171	10A, intermediate, SP.....	85.14	9.69	11.94	36.10	28171
28172	10A, 1 way DP.....	72.48	9.69	11.94	36.10	28172



Item					Item	
	<b>SUB-SWITCHES (CONT'D)</b>					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Chromium plated grid switch assemblies : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28173	10A, 1 gang SP 1 way.....	229.89	9.67	11.95	36.54	28173
28174	10A, 1 gang SP 2 way.....	240.04	9.67	11.95	36.54	28174
28175	10A, 2 gang SP 1 way or 2 way.....	264.83	9.67	11.95	36.54	28175
28176	10A, 3 gang SP 1 way or 2 way.....	392.96	9.67	11.95	36.54	28176
28177	10A, 4 gang SP 1 way or 2 way.....	426.83	9.67	11.95	36.54	28177
28178	10A, DP 1 way.....	287.30	9.67	11.95	36.54	28178
28179	20A, DP 1 way.....	306.09	9.67	11.95	36.54	28179
28180	20A, 1 gang DP with pilot light .....	324.28	9.67	11.95	36.54	28180
28181	Ditto but 45A.....	359.97	9.67	11.95	36.54	28181
	Dimmer switch, white, bakelite : -					
	<i>Each</i>					
28182	250W, 1 gang, 1 way or 2 way.....	160.24	9.67	11.95	36.54	28182
28183	500W, 1 gang, 1 way or 2 way.....	160.71	9.67	11.95	36.54	28183
28184	250W, 2 gang, 1 way or 2 way.....	286.36	9.67	11.95	36.54	28184
28185	3 level dimmer switch (50%, 70%, 100%) .....	121.69	7.52	10.73	33.30	28185
28186	250V/ 6A dimmer switch for any combination of 10 lamps, 0 - 10 V interface.....	489.28	7.52	10.73	34.80	28186
28187	Multi-sensor dimmer with housing for control of light intensity and occupancy switching operation.....	1,280.66	7.52	10.73	34.80	28187
	Dimmer switch, chromium plated : -					
	<i>Each</i>					
28188	400W, 1 gang, 1 way or 2 way.....	353.24	9.67	11.95	36.54	28188
28189	500W, 2 gang, 1 way or 2 way.....	423.30	9.67	11.95	36.54	28189

Item					Item	
	<b>SUB-SWITCHES (CONT'D)</b>					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	White bakelite DP switch :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28190	20A.....	67.00	9.77	12.09	36.93	28190
28191	32A.....	100.19	9.77	12.09	36.93	28191
28192	45A.....	125.35	9.77	12.09	36.93	28192
	White bakelite DP switch with pilot light :-					
	<i>Each</i>					
28193	20A.....	76.40	9.77	12.09	36.93	28193
28194	32A.....	109.97	9.77	12.09	36.93	28194
28195	45A.....	132.11	9.77	12.09	36.93	28195
	Metalclad, surface mounted switch :-					
	<i>Each</i>					
28196	10A, 1 gang 1 way or 2 way.....	114.74	9.77	12.09	36.93	28196
28197	10A, 2 gang 1 way or 2 way.....	130.57	9.77	12.09	36.93	28197
28198	10A, 3 gang 1 way or 2 way.....	178.01	9.77	12.09	36.93	28198
28199	20A, DP with pilot light.....	186.60	9.77	12.09	36.93	28199
28200	45A, DP with pilot light.....	522.14	9.77	12.09	36.93	28200
28201	32A, TPN with pilot light.....	628.48	29.86	37.76	113.73	28201
28202	10A, lighting switch, 1 gang chromium plated brass cover.....	235.37	9.77	12.09	36.93	28202
28203	Ditto but 2 gang.....	259.75	9.77	12.09	36.93	28203
	Splashproof, flush mounted switch, protection class IP 56 :-					
	<i>Each</i>					
28204	10A, 1 gang 1 way SP.....	186.86	20.19	25.31	77.31	28204
28205	10A, 1 gang 2 way SP.....	189.65	20.19	25.31	77.31	28205
28206	10A, 1 gang 1 way DP.....	293.70	20.19	25.31	77.31	28206
28207	Ditto but 20A.....	403.37	20.19	25.31	77.31	28207
28208	10A, 2 gang 1 way SP.....	275.18	20.19	25.31	77.31	28208

Item					Item	
	<b>SUB-SWITCHES (CONT'D)</b>					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Splashproof, surface mounted switch, protection class IP44 :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28209	10A, 1 gang 1 way SP.....	162.10	20.12	25.23	77.01	28209
28210	10A, 1 gang 2 way SP.....	164.25	20.12	25.23	77.01	28210
28211	10A, 2 gang 1 way SP.....	244.04	20.12	25.23	77.01	28211
28212	10A, 1 gang 1 way DP.....	171.30	20.12	25.23	77.01	28212
28213	Ditto but 20A, c/w pilot light .....	249.92	20.12	25.23	77.01	28213
28214	Switch, flameproof 10A.....	1,622.06	20.12	25.23	77.01	28214
28215	Ditto but 16A.....	2,106.00	20.12	25.23	77.01	28215
	Stainless steel (304) plated grid switch c/w metal casing :-					
	<i>Each</i>					
28216	2 gang grid switch.....	214.74	9.69	12.00	36.24	28216
28217	3 gang grid switch.....	269.59	9.69	12.00	36.24	28217
28218	4 gang grid switch.....	301.08	9.69	12.00	36.24	28218
28219	5 gang grid switch.....	392.05	9.69	12.00	36.24	28219
28220	6 gang grid switch.....	505.25	10.51	12.64	40.69	28220
28221	8 gang grid switch.....	578.33	10.51	12.64	40.69	28221
28222	10 gang grid switch.....	653.68	10.51	12.64	40.69	28222
28223	12 gang grid switch.....	741.14	13.63	16.93	51.26	28223
28224	14 gang grid switch.....	1,050.41	13.63	16.93	51.26	28224
28225	16 gang grid switch.....	1,377.52	13.63	16.93	51.26	28225
28226	18 gang grid switch.....	1,750.62	16.03	20.78	61.52	28226
	Keyswitch :-					
	<i>Each</i>					
28227	Keytag.....	54.74	-	-	-	28227
28228	10A, wall unit keyswitch.....	340.53	20.12	25.23	77.01	28228
28229	20A, DP wall unit keyswitch.....	378.03	20.12	25.23	77.01	28229

Item					Item	
	<b>SUB-SWITCHES (CONT'D)</b>					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Float switch : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28230	Mercury float switch .....	414.02	26.29	32.97	99.73	28230
28231	Galvanized steel bracket for mercury float switch.....	136.16	12.73	15.88	48.24	28231
28232	Ditto but of stainless steel 316.....	323.10	12.73	15.88	48.24	28232
	Ceiling switch, cord or chain operated : -					
	<i>Each</i>					
28233	6A, 1 way or 2 way SP.....	66.86	9.69	11.98	36.61	28233
28234	10A, 1 way SP.....	69.44	9.69	11.98	36.61	28234
28235	10A, 2 way SP.....	74.36	9.69	11.98	36.61	28235
28236	15A, 1 way SP.....	77.74	9.69	11.98	36.61	28236
28237	16A, 1 way DP.....	81.29	9.69	11.98	36.61	28237
	Miscellaneous switch : -					
	<i>Each</i>					
28238	Emergency stop switch, metalclad, heavy duty type.....	380.71	12.73	15.88	48.24	28238
28239	Push button switch, 5A, bakelite miniature panel mounting.....	232.20	4.03	4.74	15.37	28239
28240	On-off pull switch, 2A, for fluorescent fitting, fitted with ball chain and metal tassel.....	61.54	4.03	4.74	15.37	28240
28241	Toggle switch, 10/ 15A, 2 way.....	49.61	6.79	8.11	24.00	28241
28242	Photo electric daylight switch 220V 50Hz.....	471.76	25.31	32.71	98.49	28242
28243	Dusk/ Dawn Photo electric switch, light threshold from 20 - 500 lux, adjustable .....	1,301.43	19.04	23.87	72.81	28243
28244	Photo-electric control 1000W/ 1500VA 220 - 240V with standard 3-prong EEI-NEMA twist lock mounting.....	553.47	26.95	33.81	102.27	28244
28245	Socket (or mount) with standard EEI-NEMA twist lock receptacle for photo-electric control.....	102.13	13.00	16.28	49.53	28245

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>BELLS AND BELL ACCESSORIES</b>		A	B	C	D	
<i>Each</i>		\$	\$	\$	\$	
28246	Door bell with bakelite case, battery operated type, of any rating.....	137.16	13.35	15.75	41.03	28246
28247	Door bell, 2 notes, 8V, without transformer.....	155.64	13.35	15.75	41.03	28247
28248	Door bell, 2 notes, 8V, with 220V/ 8V transformer.....	192.04	13.35	15.75	41.03	28248
28249	Bell, underdome type, circular 75 mm diameter, 4.5, 6.0 or 12.0V.....	243.75	13.35	15.75	41.03	28249
28250	Ditto but circular and insulated pattern, 100 mm diameter, 12 or 24V.....	270.15	13.35	15.75	41.03	28250
28251	Alarm bell, waterproof, 150 mm diameter gong, cast iron pattern continuous ringing, 220V A.C. or 24V D.C.....	345.20	13.35	15.75	41.03	28251
28252	Alarm bell, waterproof, 225 mm diameter gong, cast iron pattern continuous ringing, 220V A.C. or 24V D.C.....	681.56	13.35	15.75	41.03	28252
28253	Mini buzzer, 51 mm diameter, 8/ 12V A.C. ....	76.51	13.35	15.75	41.03	28253
28254	Mini buzzer, 71 mm diameter, 8/ 12V A.C. ....	92.09	13.35	15.75	41.03	28254
28255	Buzzer 24V A.C. with case.....	125.70	13.35	15.75	41.03	28255
28256	Buzzer 8V A.C. with case.....	137.68	13.35	15.75	41.03	28256
28257	Bell indicator, unit pendulum type, 6 - 9 ways.....	58.08	13.35	15.75	41.03	28257
28258	Bell push, flush type with bakelite plate on BS 4662 Box/ IEC 60670 Box .....	59.49	10.83	13.42	33.42	28258
28259	Weatherproof bell push, rated IP65.....	272.06	18.79	23.26	70.61	28259
28260	Bell push, foot operated floor type.....	199.59	10.83	13.42	33.42	28260
28261	Bell push, surface mounted.....	48.52	10.83	13.42	33.42	28261
28262	Bell transformer, 220/ 4V.....	187.35	13.35	15.75	41.03	28262
28263	Bell transformer, 220/ 8V.....	188.54	13.35	15.75	41.03	28263
28264	Bell transformer, 220/ 12V.....	263.10	13.35	15.75	41.03	28264
28265	Bell transformer, 220/ 24V.....	275.21	13.35	15.75	41.03	28265
28266	Control relay, with bakelite case plug-in type coil voltage 12/ 24/ 48V.....	156.26	13.35	15.75	41.03	28266
28267	Ditto but coil voltage 110/ 220V.....	181.66	13.35	15.75	41.03	28267

Item					Item	
	<b>CONDUITS AND CONDUIT FITTING</b>					
	Heavy gauge galvanized welded screwed steel conduit to IEC 61386-21, c/w all necessary accessories and fixed in saddles, chases, screed, within dry partition or on shuttering : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Concealed conduit : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
28268	20 mm diameter.....	43.78	-	-	18.04	28268
28269	25 mm diameter .....	49.86	-	-	18.04	28269
28270	32 mm diameter.....	58.20	-	-	23.12	28270
	Surface mounted conduit including all types of spacing saddles : -					
	<i>Per linear metre</i>					
28271	20 mm diameter.....	71.80	9.52	11.62	38.36	28271
28272	25 mm diameter .....	89.09	9.52	11.62	38.36	28272
28273	32 mm diameter.....	106.90	10.83	13.41	42.80	28273
28274	40 mm diameter.....	111.35	10.97	14.07	44.49	28274
28275	50 mm diameter.....	138.78	11.47	14.71	50.60	28275
	Heavy gauge PVC conduit c/w all necessary accessories and fixed in saddles, chases, screed, within dry partition, or on shuttering : -					
	<i>Per linear metre</i>					
28276	20 mm diameter.....	30.27	4.78	5.86	14.63	28276
28277	25 mm diameter.....	37.96	5.62	6.97	17.94	28277
28278	32 mm diameter.....	47.64	5.88	7.33	19.34	28278
	Draw wire in conduit : -					
	<i>Per linear metre</i>					
28279	Draw wire.....	1.92	-	-	1.65	28279

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>						
Watertight flexible metallic conduit c/w all necessary accessories : -						
<i>Per linear metre</i>		A \$	B \$	C \$	D \$	
28280	20 mm diameter.....	34.61	8.60	10.32	13.42	28280
28281	25 mm diameter.....	42.65	8.60	10.32	13.42	28281
28282	32 mm diameter.....	50.18	8.60	10.32	13.42	28282
28283	40 mm diameter.....	75.50	9.40	11.27	14.59	28283
28284	50 mm diameter.....	107.63	9.40	11.27	14.59	28284
Watertight flexible metallic conduit with PVC sheathed c/w all necessary accessories : -						
<i>Per linear metre</i>						
28285	20 mm diameter.....	34.61	8.60	10.32	13.42	28285
28286	25 mm diameter.....	42.65	8.60	10.32	13.42	28286
28287	32 mm diameter.....	50.18	8.60	10.32	13.42	28287
28288	40 mm diameter.....	62.66	9.40	11.27	14.59	28288
28289	50 mm diameter.....	115.26	9.40	11.27	14.59	28289
Adaptors male/ female for flexible metallic conduit, brass, sweated or screwed onto conduit of the following sizes : -						
<i>Each</i>						
28290	20 mm diameter.....	10.07	2.49	2.90	7.38	28290
28291	25 mm diameter.....	12.09	2.49	2.90	7.38	28291
28292	32 mm diameter.....	16.03	2.49	2.90	7.38	28292
28293	40 mm diameter.....	22.25	2.49	2.90	7.38	28293
28294	50 mm diameter.....	29.50	3.01	3.69	9.32	28294

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>						
Brass female bushes for conduit of the following sizes :-						
	<i>Each</i>	A \$	B \$	C \$	D \$	
28295	20 mm diameter.....	2.94	0.69	0.83	2.00	28295
28296	25 mm diameter.....	3.58	0.69	0.83	2.00	28296
28297	32 mm diameter.....	4.26	0.69	0.83	2.00	28297
28298	40 mm diameter.....	5.50	0.83	1.00	2.29	28298
28299	50 mm diameter.....	11.17	1.19	1.35	3.59	28299
Brass male bushes for conduit of the following sizes :-						
	<i>Each</i>					
28300	20 mm diameter.....	3.11	0.69	0.83	2.00	28300
28301	25 mm diameter.....	3.88	0.69	0.83	2.00	28301
28302	32 mm diameter.....	4.47	0.69	0.83	2.00	28302
28303	40 mm diameter.....	6.46	0.83	1.00	2.29	28303
28304	50 mm diameter.....	10.90	1.19	1.35	3.59	28304
Rubber grommets of the following sizes :-						
	<i>Each</i>					
28305	20 mm diameter.....	2.29	0.69	0.83	2.00	28305
28306	25 mm diameter.....	2.59	0.69	0.83	2.00	28306
28307	32 mm diameter.....	2.94	0.69	0.83	2.00	28307
28308	40 mm diameter.....	3.75	0.83	1.00	2.29	28308
28309	50 mm diameter.....	5.67	1.19	1.35	3.59	28309



Item					Item	
<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>						
Conduit boxes, malleable iron (galvanized) for heavy gauge steel conduits, round without lids for conduit of the following sizes :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28310	20 mm diameter standard BESA boxes with 51 mm fixing centres.....	31.37	6.85	8.27	21.13	28310
28311	20 mm diameter deep pattern standard BESA boxes with 51 mm fixing centres.....	35.03	6.85	8.27	21.13	28311
28312	Lids and screws for standard BESA boxes.....	9.36	1.69	2.08	5.16	28312
28313	Break joint ring, galvanized iron.....	8.29	1.69	2.08	5.16	28313
28314	Metal break ring, or overlapping plate, galvanized iron, suitable for steel conduit box with 51 mm fixing centre.....	7.37	1.69	2.08	5.16	28314
Heavy spacing saddles for steel conduit of the following sizes :-						
<i>Each</i>						
28315	20 mm diameter.....	16.30	4.03	4.70	12.22	28315
28316	25 mm diameter.....	16.74	4.03	4.70	12.22	28316
28317	32 mm diameter.....	17.67	4.03	4.70	12.22	28317
28318	40 mm diameter.....	24.25	4.70	5.62	14.20	28318
28319	50 mm diameter.....	25.67	4.70	5.62	14.20	28319
Spacing saddles for PVC conduit of the following sizes :-						
<i>Each</i>						
28320	20 mm diameter.....	14.58	3.65	4.44	11.17	28320
28321	25 mm diameter.....	15.54	3.65	4.44	11.17	28321
28322	32 mm diameter.....	16.34	3.65	4.44	11.17	28322
Ordinary duty spacing saddles (galvanized) for conduit of the following sizes :-						
<i>Each</i>						
28323	20 mm diameter.....	9.45	2.45	2.87	7.16	28323
28324	25 mm diameter.....	9.81	2.45	2.87	7.16	28324
28325	32 mm diameter.....	10.44	2.45	2.87	7.16	28325
28326	40 mm diameter.....	12.02	2.45	2.87	7.16	28326
28327	50 mm diameter.....	13.35	2.45	2.87	7.16	28327
28328	Nipple, screwed, 20 mm.....	7.85	1.34	1.60	4.03	28328
28329	Lock nut, milled edge, round 20 mm.....	5.37	1.34	1.60	4.03	28329

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>						
	Solid couplers, screwed, malleable iron, galvanized, for steel conduit of the following sizes :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
28330	20 mm diameter.....	6.16	1.35	1.63	4.04	28330
28331	25 mm diameter.....	7.05	1.35	1.63	4.04	28331
28332	32 mm diameter.....	8.11	1.35	1.63	4.04	28332
28333	40 mm diameter.....	10.67	1.35	1.63	4.04	28333
28334	50 mm diameter.....	14.82	1.35	1.63	4.04	28334
	Adaptable junction boxes, cast iron/ sheet steel, galvanized, c/w cover (including cutting and drilling holes into wall and ceiling as required)					
	Cast iron, square :-					
	<i>Each</i>					
28335	75 x 75 x 50 mm.....	51.37	9.05	11.34	35.38	28335
28336	100 x 100 x 50 mm.....	58.01	10.00	12.00	37.46	28336
28337	100 x 100 x 75 mm.....	61.44	10.00	12.00	37.46	28337
28338	150 x 150 x 75 mm.....	74.28	10.00	12.00	39.55	28338
28339	225 x 225 x 75 mm.....	140.14	12.00	15.32	48.95	28339
28340	300 x 300 x 75 mm.....	232.38	15.32	19.98	61.33	28340
	Cast iron, oblong :-					
	<i>Each</i>					
28341	150 x 75 x 50 mm.....	61.15	10.00	12.00	37.47	28341
28342	225 x 150 x 75 mm.....	101.49	10.00	12.00	39.55	28342
28343	300 x 200 x 90 mm.....	160.40	12.00	15.32	48.95	28343
28344	450 x 300 x 100 mm.....	290.76	15.32	19.98	61.33	28344

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>						
Sheet steel, square : -						
<i>Each</i>		A \$	B \$	C \$	D \$	
28345	75 x 75 x 50 mm.....	49.34	9.07	11.36	35.45	28345
28346	100 x 100 x 50 mm.....	52.50	9.50	11.79	37.54	28346
28347	150 x 150 x 75 mm.....	59.20	10.17	12.71	39.63	28347
28348	225 x 225 x 75 mm.....	82.54	13.37	16.72	52.03	28348
28349	300 x 300 x 75 mm.....	104.95	15.24	20.02	61.47	28349
PVC adaptable junction box c/w cover (including cutting and drilling holes into wall and ceiling as required) : -						
<i>Each</i>						
28350	75 x 75 x 44 mm .....	30.11	6.89	8.32	20.71	28350
28351	100 x 100 x 50 mm .....	34.79	7.87	9.57	24.02	28351
28352	150 x 150 x 50 mm.....	56.12	9.23	11.21	28.27	28352
28353	150 x 150 x 75 mm.....	64.98	9.23	11.21	28.27	28353
28354	225 x 225 x 75 mm .....	97.11	12.38	15.88	47.93	28354
Sheet metal cover plate c/w screws for adaptable junction box of the following sizes : -						
<i>Each</i>						
28355	75 x 75 mm.....	10.25	2.49	2.89	7.20	28355
28356	100 x 100 mm.....	11.20	2.49	2.89	7.20	28356
28357	150 x 150 mm.....	13.62	2.49	2.89	7.20	28357
28358	225 x 225 mm.....	23.56	2.49	2.89	7.20	28358
28359	300 x 300 mm.....	34.89	3.43	4.11	10.17	28359
28360	150 x 75 mm.....	11.36	2.49	2.89	7.20	28360
28361	225 x 150 mm.....	17.81	2.49	2.89	7.20	28361
28362	300 x 200 mm.....	25.70	2.49	2.89	7.20	28362
28363	450 x 300 mm.....	44.42	3.43	4.11	10.17	28363

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>						
Galvanized cast iron box for surface mounting, to IEC 60670 or BS 4662 boxes : -						
<i>Each</i>						
28364	35 mm deep, 1 gang.....	10.16	2.49	2.93	4.85	28364
28365	47 mm deep, 1 gang.....	11.07	2.49	2.93	4.85	28365
28366	35 mm deep, 2 gang.....	13.28	2.49	2.93	4.85	28366
28367	47 mm deep, 2 gang.....	16.09	2.49	2.93	4.85	28367
Galvanized steel box for flush mounting, to IEC 60670 or BS 4662 boxes : -						
<i>Each</i>						
28368	25 mm deep, 1 gang.....	22.72	6.71	8.25	13.64	28368
28369	25 mm deep, 2 gang.....	25.77	7.75	9.23	15.54	28369
28370	25 mm deep, 3 gang.....	29.12	8.59	10.36	17.36	28370
28371	35 mm deep, 1 gang.....	23.56	6.71	8.25	13.64	28371
28372	35 mm deep, 2 gang.....	26.20	7.75	9.23	15.54	28372
28373	47 mm deep, 1 gang.....	25.24	6.71	8.25	13.64	28373
28374	47 mm deep, 2 gang.....	28.14	7.75	9.23	15.54	28374
28375	44 mm deep for shaver unit.....	36.53	6.67	8.19	13.56	28375
Galvanized steel box for surface mounting, to IEC 60670 or BS 4662 boxes : -						
<i>Each</i>						
28376	41 mm deep, 1 gang with knockout.....	20.99	5.92	7.22	12.00	28376
28377	41 mm deep, 2 gang with knockout.....	25.11	6.47	8.09	13.18	28377
28378	17 mm deep, 1 gang.....	19.79	5.73	6.84	11.60	28378
28379	25 mm deep, 1 gang.....	20.20	5.73	6.84	11.60	28379
28380	30 mm or 32 mm deep, 1 gang.....	20.40	5.73	6.84	11.60	28380
28381	30 mm or 32 mm deep, 2 gang.....	21.71	6.11	7.43	11.79	28381
28382	30 mm or 32 mm deep, 3 gang.....	23.13	6.11	7.43	11.79	28382
28383	38 mm or 40 mm deep, 1 gang.....	22.07	5.92	7.22	12.00	28383
28384	38 mm or 40 mm deep, 2 gang.....	25.32	6.47	8.09	13.18	28384
28385	38 mm or 40 mm deep for 2 x 1 gang with partition.....	26.23	6.47	8.09	13.18	28385
28386	44 mm deep, 1 gang.....	23.02	5.92	7.22	12.00	28386
28387	44 mm deep for shaver unit.....	32.52	5.92	7.22	12.00	28387

Item					Item	
	<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>					
	PVC switch box : -					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28388	35 mm deep, 1 gang.....	9.98	2.46	2.90	7.22	28388
28389	47 mm deep, 1 gang.....	10.36	2.46	2.90	7.22	28389
28390	47 mm deep, 2 gang.....	16.68	2.46	2.90	7.22	28390
28391	surface switch box 35 mm deep, 1 gang.....	10.37	2.46	2.90	7.22	28391
28392	surface switch box 47 mm deep, 1 gang.....	10.44	2.46	2.90	7.22	28392
28393	surface switch box 47 mm deep, 2 gang.....	16.66	2.46	2.90	7.22	28393
	Steel base box for grid switch : -					
	<i>Each</i>					
28394	73 x 73 x 40 mm.....	67.64	8.60	10.38	26.09	28394
28395	73 x 133 x 40 mm.....	81.48	9.50	11.43	28.78	28395
28396	133 x 133 x 40 mm.....	206.18	10.28	12.30	39.28	28396
28397	194 x 133 x 40 mm.....	225.61	11.19	14.90	42.85	28397
	Moulded base box for grid switch : -					
	<i>Each</i>					
28398	1 gang or 2 gang.....	30.84	6.72	8.05	20.52	28398
28399	3 gang or 4 gang.....	43.79	6.72	8.05	20.52	28399
	Blank plate : -					
	<i>Each</i>					
28400	White bakelite, 1 gang.....	12.54	1.45	1.74	4.17	28400
28401	White bakelite, 2 gang.....	19.88	1.45	1.74	4.17	28401
28402	Stainless steel, 1 gang.....	42.09	4.21	4.91	15.58	28402
28403	Stainless steel, 2 gang.....	45.91	4.21	4.91	15.58	28403

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>CONDUITS AND CONDUIT FITTING (CONT'D)</b>					
	Accessories for weatherproof switch/ socket :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
28404	Entry blank.....	22.41	3.04	3.58	9.25	28404
28405	PVC cable entry.....	22.96	3.04	3.58	9.25	28405
28406	20 mm conduit entry.....	24.27	3.04	3.58	9.25	28406
28407	Box coupler.....	12.68	0.67	0.82	2.04	28407
28408	Gel seal for socket.....	26.77	2.33	2.86	7.08	28408
28409	Surface mounting 1 gang box.....	78.48	6.72	8.26	20.52	28409
28410	Surface mounting 2 gang box.....	104.02	6.72	8.26	20.52	28410
28411	1 gang flush mounting frame.....	173.90	9.56	11.69	35.31	28411
28412	2 gang flush mounting frame.....	257.73	9.96	12.07	36.27	28412
	<b>UNDERFLOOR BUSBAR TRUNKING UNIT</b>					
	Underfloor busbar trunking unit (with colour) for final circuit distribution c/w trunking coupler, all necessary interconnection wirings and accessories :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
28413	Four compartments 300 mm wide, 1200 mm long.....	961.08	61.78	76.99	107.10	28413
28414	Four compartments 300 mm wide, 2400 mm long.....	1,908.37	118.73	134.50	152.32	28414
	Underfloor busbar trunking accessories :-					
	<i>Each</i>					
28415	Flexible connector assembly c/w 2 m long flexible conduit and all necessary wirings.....	134.61	30.12	45.19	45.86	28415
28416	Cross over bridge assembly for four compartments trunking.....	992.90	58.92	73.20	115.18	28416

Item					Item	
	<b>FLOOR OUTLET BOX</b>					
	Floor outlet box or trunking service box c/w base box, cover including carpet frame & lid assembly, blank plate for spare outlet hole, mounting plate with outlet hole suitable for installing power socket, LAN socket and Telephone socket (socket outlet, cabling & wiring facilities to be measured separately) :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
28417	Two compartment type with 3/ 4 outlet holes.....	1,033.79	61.78	76.99	166.07	28417
28418	Three compartment type with 6/ 9 outlet holes.....	1,038.88	61.78	76.99	174.23	28418
28419	Four compartment type with 8 outlet holes.....	1,043.24	61.78	76.99	181.96	28419
	<b>CABLE TRUNKING AND CABLE TRAY</b>					
	Cable trunking galvanized sheet steel suspended from ceiling soffit or fixed to wall with cover, an addition of fifty (50) percent will be made to the rate involving hanger or bracket for trunking installed all the way exceeding 450 mm from ceiling soffit or wall :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Trunking :-					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
28420	50 x 50 mm 1 compartment.....	108.35	14.20	18.08	63.19	28420
28421	50 x 75 mm ditto.....	115.63	14.71	18.72	66.24	28421
28422	75 x 75 mm ditto.....	119.97	15.36	20.01	69.11	28422
28423	50 x 100 mm ditto.....	119.97	15.36	20.01	69.11	28423
28424	75 x 100 mm ditto.....	124.27	17.29	21.28	77.42	28424
28425	100 x 100 mm ditto.....	136.23	17.29	21.28	77.42	28425
28426	100 x 150 mm ditto.....	146.51	18.57	23.76	84.21	28426
28427	150 x 150 mm ditto.....	169.81	21.25	25.67	92.89	28427
28428	150 x 200 mm ditto.....	181.73	22.57	28.40	100.73	28428
28429	150 x 250 mm ditto.....	193.63	25.00	31.65	107.98	28429
28430	150 x 500 mm ditto.....	257.85	32.86	38.26	129.54	28430
28431	200 x 200 mm ditto.....	151.98	32.86	38.26	129.54	28431
28432	300 x 300 mm ditto.....	244.85	32.86	38.26	129.54	28432
28433	50 x 100 mm 2 compartments.....	130.27	15.36	20.01	69.11	28433

Item					Item	
	<b>CABLE TRUNKING AND CABLE TRAY (CONT'D)</b>					
	Cable trunking galvanized sheet steel suspended from ceiling soffit or fixed to wall with cover, an addition of fifty (50) percent will be made to the rate involving hanger or bracket for trunking installed all the way exceeding 450 mm from ceiling soffit or wall :- (Cont'd)					
	Trunking :- (Cont'd)					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28434	50 x 150 mm 2 compartments.....	175.96	17.93	21.92	79.31	28434
28435	75 x 100 mm ditto.....	167.75	17.93	21.92	79.90	28435
28436	75 x 150 mm ditto.....	183.93	17.93	21.92	79.90	28436
28437	100 x 150 mm ditto.....	209.14	18.57	23.76	84.21	28437
28438	75 x 100 mm 3 compartments.....	185.33	17.93	21.92	79.90	28438
28439	75 x 150 mm ditto.....	201.48	17.93	21.92	79.90	28439
28440	100 x 150 mm ditto.....	217.90	18.57	23.76	84.21	28440
28441	150 x 150 mm ditto.....	266.57	21.25	25.67	92.89	28441
28442	150 x 200 mm ditto.....	290.09	22.57	28.40	100.73	28442
	Trunking cover :-					
	<i>Per linear metre</i>					
28443	50 mm wide.....	95.60	2.09	2.53	6.03	28443
28444	75 mm wide.....	98.85	2.09	2.53	6.03	28444
28445	100 mm wide.....	101.01	2.09	2.53	6.03	28445
28446	150 mm wide.....	108.85	3.10	3.78	9.12	28446
28447	200 mm wide.....	117.02	3.78	4.62	11.10	28447
28448	300 mm wide.....	128.39	4.62	5.57	13.50	28448
28449	500 mm wide.....	153.00	5.86	6.97	16.78	28449
	Extra over trunking of the following sizes for cross unit 4-way, with 4 connectors :-					
	<i>Each</i>					
28450	50 x 50 mm.....	105.35	12.10	15.39	46.80	28450
28451	75 x 75 mm.....	112.42	13.31	16.64	49.23	28451
28452	100 x 100 mm.....	121.09	14.08	17.44	52.53	28452
28453	100 x 150 mm.....	128.68	14.74	18.11	54.69	28453
28454	150 x 150 mm.....	143.85	15.39	20.05	59.63	28454



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CABLE TRUNKING AND CABLE TRAY (CONT'D)</b>						
Extra over trunking for reducer unit with 2 connectors :-						
<i>Each</i>		A \$	B \$	C \$	D \$	
28455	75 x 75 mm to 100 x 100 mm.....	104.55	11.43	14.74	43.92	28455
28456	100 x 100 mm to 100 x 150 mm.....	108.35	12.10	15.39	47.06	28456
28457	100 x 100 mm to 150 x 150 mm.....	115.93	13.31	16.64	50.07	28457
Extra over trunking of the following size for flat tee, edge tee unit with connectors :-						
<i>Each</i>						
28458	50 x 50 mm.....	98.59	11.43	14.09	41.93	28458
28459	50 x 100/ 75 x 75 mm.....	103.18	11.43	14.74	43.92	28459
28460	75 x 100 mm.....	104.82	12.10	15.39	47.06	28460
28461	100 x 100 mm.....	108.59	12.10	15.39	47.06	28461
28462	100 x 150 mm.....	113.23	13.31	16.64	50.07	28462
28463	150 x 150 mm.....	122.69	14.74	18.11	54.69	28463
28464	200 x 200 mm.....	131.89	15.39	20.05	59.63	28464
Extra over trunking of the following size for flat elbow, internal or external elbow unit with connectors :-						
<i>Each</i>						
28465	50 x 50 mm.....	96.67	10.99	14.15	42.09	28465
28466	50 x 100/ 75 x 75 mm.....	100.23	11.50	14.80	44.09	28466
28467	50 x 150/ 100 x 100 mm.....	104.55	12.17	15.46	47.24	28467
28468	75 x 100 mm.....	101.54	12.17	15.46	47.24	28468
28469	75 x 150 mm.....	106.97	13.37	16.72	50.27	28469
28470	100 x 150 mm.....	108.35	13.37	16.72	50.27	28470
28471	150 x 150 mm.....	115.93	14.80	18.18	54.91	28471
28472	150 x 500 mm.....	190.41	16.84	22.31	67.59	28472

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>CABLE TRUNKING AND CABLE TRAY (CONT'D)</b>					
	Extra over trunking of the following size for flat elbow, internal or external elbow unit with connectors : - (Cont'd)					
	<i>Each</i>	A \$	B \$	C \$	D \$	
28473	200 x 200 mm.....	123.22	15.46	20.12	59.86	28473
28474	300 x 300 mm.....	161.15	16.84	22.31	67.59	28474
28475	50 x 100 mm 2 compartments.....	102.92	11.50	14.80	44.09	28475
28476	50 x 150 mm 2 compartments.....	107.80	12.17	15.46	47.24	28476
28477	100 x 150 mm 2 compartments.....	111.59	13.37	16.72	50.27	28477
28478	75 x 100 mm 3 compartments.....	106.97	12.17	15.46	47.24	28478
28479	75 x 150 mm 3 compartments.....	113.43	12.78	16.10	48.81	28479
28480	100 x 150 mm 3 compartments.....	114.84	13.37	16.72	50.27	28480
28481	150 x 150 mm 3 compartments.....	124.05	14.15	17.54	52.17	28481
	Blank end for cable trunking of the following sizes : -					
	<i>Each</i>					
28482	50 x 50 mm.....	46.96	4.73	6.11	14.18	28482
28483	50 x 100/ 75 x 75 mm.....	48.27	4.73	6.11	14.18	28483
28484	50 x 150/ 100 x 100 mm.....	49.61	4.73	6.11	14.18	28484
28485	75 x 100 mm.....	49.00	4.73	6.11	14.18	28485
28486	100 x 150 mm.....	52.65	4.73	6.11	14.18	28486
28487	150 x 150 mm.....	53.97	4.74	6.12	14.20	28487
28488	150 x 500 mm.....	75.73	7.00	9.04	21.47	28488
28489	300 x 300 mm.....	73.79	7.00	9.04	21.47	28489
28490	Wiring clip for cable trunking.....	44.31	0.44	0.56	1.17	28490

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>CABLE TRUNKING AND CABLE TRAY (CONT'D)</b>					
	PVC mini-trunking to IEC 61084-1, c/w all cross over, elbow, tee, blank end and all necessary fixing accessories :-					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
28491	16 x 16 mm.....	29.23	3.27	4.17	12.68	28491
28492	16 x 25/ 16 x 40/ 25 x 25 mm.....	37.92	5.00	6.11	15.39	28492
28493	25 x 40/ 25 x 50 mm.....	45.47	5.00	6.11	15.39	28493
28494	32 x 50/ 50 x 50 mm.....	70.07	5.00	6.11	15.39	28494
	Surface galvanized sheet steel weatherproof trunking, including all cross over, tee, bend, blank end and fixing accessories :-					
	<i>Per linear metre</i>					
28495	100 x 100 mm.....	353.63	41.01	51.19	161.68	28495
28496	150 x 150 mm.....	495.78	49.37	61.08	190.54	28496
	Exposed floor trunking, including all trunking fittings, crossover, tee, riser bend, outlet box and other accessories, manufactured from 1.6 mm galvanized steel, lids of 3 mm galvanized steel, flush or recessed covers, pyramid sides :-					
	<i>Per linear metre</i>					
28497	153 mm x 38 mm (2 compartments) trunking.....	187.83	16.86	20.81	61.75	28497
28498	228 mm x 38 mm (3 compartments) trunking.....	224.45	20.25	24.93	76.09	28498
	<i>Each</i>					
28499	153 mm x 38 mm (2 compartments) junction box.....	369.22	11.00	13.90	42.83	28499
28500	228 mm x 38 mm (3 compartments) junction box.....	419.29	13.90	17.21	53.56	28500

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>CABLE TRUNKING AND CABLE TRAY (CONT'D)</b>						
Flush floor trunking, including all trunking fittings, tee, cross over, riser bend, outlet box and other accessories, manufactured from 1.6 mm galvanized steel, lids of 3 mm galvanized steel, flush or recessed covers :-						
<i>Per linear metre</i>						
28501	153 mm x 38 mm (2 compartments) trunking.....	218.76	16.77	20.68	61.38	28501
28502	228 mm x 38 mm (3 compartments) trunking.....	270.04	20.12	24.78	75.65	28502
<i>Each</i>						
28503	153 mm x 38 mm (2 compartments) junction box.....	396.31	11.18	14.09	41.62	28503
28504	228 mm x 38 mm (3 compartments) junction box.....	443.38	14.09	17.46	52.09	28504
Underfloor trunking, including all trunking fittings, tee, cross over, riser bend, outlet box and other accessories, manufactured from 1.6 mm galvanized steel, lids of 3 mm galvanized steel, flush or recessed covers :-						
<i>Per linear metre</i>						
28505	153 mm x 38 mm (2 compartments) trunking.....	86.76	16.77	20.68	61.38	28505
28506	228 mm x 38 mm (3 compartments) trunking.....	100.79	20.12	24.78	75.65	28506
<i>Each</i>						
28507	153 mm x 38 mm (2 compartments) junction box.....	157.17	11.18	14.09	41.62	28507
28508	228 mm x 38 mm (3 compartments) junction box.....	165.49	14.09	17.46	101.13	28508
Skirting trunking, including all trunking fittings, riser bend, outlet lid and other accessories, manufactured from 1.6 mm sheet steel, stove epoxy polyester powder finish :-						
<i>Per linear metre</i>						
28509	153 mm x 38 mm (2 compartments).....	172.87	16.77	20.68	61.38	28509
28510	225 mm x 50 mm (2 compartments).....	228.81	20.12	24.78	76.70	28510
28511	228 mm x 38 mm (3 compartments) .....	227.67	20.12	24.78	75.65	28511
28512	228 mm x 50 mm (3 compartments).....	229.89	20.62	25.17	77.49	28512
28513	300 mm x 50 mm (3 compartments).....	309.61	24.78	30.56	92.84	28513
Sill trunking, including all trunking fittings, riser bend, outlet lid and other accessories, manufactured from 1.2 mm sheet steel, stove epoxy polyester powder finish :-						
<i>Per linear metre</i>						
28514	102 mm x 38 mm (2 compartments).....	153.14	16.77	20.68	61.38	28514
28515	153 mm x 38 mm (2 compartments).....	172.87	16.77	20.68	61.38	28515

Item					Item	
	<b>CABLE TRUNKING AND CABLE TRAY (CONT'D)</b>					
	Galvanized metal sheet tray suspended from ceiling soffit, including all fittings, cross, tee, bend and other accessories :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
28516	75 mm wide .....	97.78	13.28	16.62	53.06	28516
28517	100 mm wide.....	117.53	14.08	17.44	58.62	28517
28518	150 mm wide.....	139.23	15.21	18.50	62.79	28518
28519	225 mm wide.....	167.92	16.72	20.64	69.52	28519
28520	300 mm wide.....	203.69	17.29	21.28	72.50	28520
28521	450 mm wide.....	250.24	20.09	24.72	81.41	28521
28522	600 mm wide.....	304.63	21.25	27.10	87.38	28522
	<i>Each</i>					
28523	650 mm high power post, anodised aluminium body with uPVC cover, twin compartments in cross-section of 100 x 100 mm, composed of one full length post body, two full length cover section, 5 nos. outlet box assembly, one end load plate, one top cover, one end load plate, one earth link strap, and all necessary accessories.....	1,248.90	23.68	28.86	90.06	28523
28524	3.6 m high power post, anodised aluminium body with uPVC cover, twin compartments in cross-section of 100 x 100 mm, composed of one full length post body, two full length cover section, two 3 m long dividing strip, 6 nos. outlet box assembly, one end load plate, one top end collar with jacking assembly, two end load plate, 3 nos. earth link strap, and all necessary accessories.....	3,660.85	220.75	270.24	810.61	28524
	3 compartments PVC trunking to IEC 1084-1 or BS4678 part 4, size 145 mm x 40 mm :-					
	<i>Per linear metre</i>					
28525	Straight section of trunking, including blank end, cover and fixing accessories.....	772.65	19.55	24.13	74.04	28525
	<i>Each</i>					
28526	Angle unit - flat, external or internal, including cover.....	162.07	14.05	17.36	54.21	28526
28527	Flat tee unit, including cover.....	177.60	14.05	17.36	54.21	28527
	Plastic cable tray					
	<i>Per linear metre</i>					
28528	Plastic cable tray, 150 mm wide.....	363.18	12.90	16.20	52.09	28528

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CABLE TRUNKING AND CABLE TRAY (CONT'D)</b>						
	Stainless steel weatherproof cable trunking, size 100 x 100 mm : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
28529	Straight section of trunking, including blank end, cover and fixing accessories.....	258.60	17.29	21.28	77.64	28529
	<i>Each</i>					
28530	Extra over trunking for flat tee unit, including cover and connector.....	204.93	12.09	15.36	47.48	28530
28531	Extra over trunking for elbow - flat, internal or external, including cover and connector.....	187.52	12.09	15.36	47.48	28531
	Glass Reinforced Polyester (GRP) cable tray c/w hangers at 1.5m support span : -					
	<i>Per linear metre</i>					
28532	200 mm width.....	531.77	13.71	17.17	56.12	28532
28533	300 mm width.....	612.69	13.71	17.17	56.12	28533
	Stainless steel 304 sheet tray suspended from ceiling soffit, including all fittings, cross, tee, bend and other accessories : -					
	<i>Per linear metre</i>					
28534	200 mm wide .....	115.25	16.21	19.93	67.29	28534
28535	300 mm wide.....	166.68	17.29	21.28	72.51	28535

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>SIMPLIFIED ITEMS</b>		A	B	C	D	
		\$	\$	\$	\$	
	Section 1 : Installation by galvanized steel surface conduit system/ concealed conduit system					
	Power point : -					
	Power point c/w conduits, trunking, boxes, PVC cables and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately), same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables					
	<b>Each</b>					
28536	Single phase, 13A or below.....	444.97	102.70	-	-	28536
28537	Single phase, 13 - 20A.....	586.61	122.81	-	-	28537
28538	Single phase, 20 - 45A.....	647.92	122.81	-	-	28538
28539	Three phases, 45A or below.....	829.19	122.81	-	-	28539
28540	Three phases, 45 - 65A.....	1,039.69	122.81	-	-	28540
28541	Extra over power point for twin type outlet.....	3.81	-	-	-	28541
	Add 13% to either of Items 28536 to 28541 inclusive for provision of circuit protective conductor to MCB board in full length of conduit					
	Power point c/w conduits, trunking, boxes, OHLS cables and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately), same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables					
	<b>Each</b>					
28542	Single phase, 13A or below.....	522.68	102.70	-	-	28542
28543	Single phase, 13 - 20A.....	642.96	123.50	-	-	28543
28544	Single phase, 20 - 45A.....	679.22	123.50	-	-	28544
28545	Three phases, 45A or below.....	907.38	123.50	-	-	28545
28546	Three phases, 45 - 65A.....	1,124.09	123.50	-	-	28546
28547	Extra over power point for twin type outlet.....	3.89	-	-	-	28547
	Add 16% to either of Items 28542 to 28547 inclusive for provision of circuit protective conductor to MCB board in full length of conduit					

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>SIMPLIFIED ITEMS (CONT'D)</b>					
	Section 1 : Installation by galvanized steel surface conduit system/ concealed conduit system (Cont'd)					
	Door bell point : -					
	<i>Each</i>	A	B	C	D	
		\$	\$	\$	\$	
28548	Door bell point c/w conduits, boxes, PVC cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	395.46	102.70	-	-	28548
	Telephone, LAN and services outlet point : -					
	<i>Each</i>					
28549	Telephone point/ LAN point/ services point c/w trunking, conduit, boxes, draw wire, blank plate and all necessary accessories.....	392.79	71.63	-	-	28549
	Section 2 : Installation by PVC surface conduit system					
	Power point : -					
	Power point c/w conduits, trunking, boxes, PVC cables, circuit protective conductor and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately)					
	<i>Each</i>					
28550	Single phase, 13A or below.....	396.25	74.05	-	-	28550
28551	Single phase, 13 - 20A.....	471.83	90.49	-	-	28551
28552	Single phase, 20 - 45A.....	524.32	90.49	-	-	28552
28553	Three phases, 45A or below.....	776.79	90.49	-	-	28553
28554	Three phases, 45 - 65A.....	960.18	90.49	-	-	28554
28555	Extra over power point for twin type outlet.....	2.27	-	-	-	28555



Item					Item	
<b>SIMPLIFIED ITEMS (CONT'D)</b>						
Section 2 : Installation by PVC surface conduit system (Cont'd)						
Door bell point : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
28556	Door bell point c/w conduits, boxes, PVC cables and all necessary accessories .....	297.02	74.00	-	-	28556
Telephone, LAN and services outlet point : -						
<i>Each</i>						
28557	Telephone point/ LAN point/ service point c/w trunking, conduit, boxes, draw wire, blank plate and all necessary accessories.....	194.47	46.06	-	-	28557
Section 3 : Installation by surface wiring system						
Power point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately)						
<i>Each</i>						
28558	Single phase, 13A or below.....	300.77	32.74	-	-	28558
28559	Single phase, 13 - 20A.....	372.77	35.02	-	-	28559
28560	Single phase, 20 - 45A.....	429.87	35.02	-	-	28560
28561	Three phases, 45A or below.....	554.08	35.02	-	-	28561
28562	Three phases, 45 - 65A.....	689.21	35.02	-	-	28562
Door bell point : -						
<i>Each</i>						
28563	Door bell point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories.....	207.29	32.74	-	-	28563

**Section 29**

**ELECTRICAL INSTALLATION -**

**MAIN DISTRIBUTION SYSTEMS**

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>CABLES (COPPER)</b>					
	300/ 500V TRS or PVC sheathed flexible cords, twisted core to IEC 60245 or BS 6500 or acceptable recognized international standard, such as BS 7919 : -					
	<i>Per linear metre</i>					
29001	0.5 mm <sup>2</sup> 2-core.....	19.81	1.70	2.09	5.36	29001
29002	0.75 mm <sup>2</sup> 2-core.....	20.15	1.70	2.09	5.36	29002
29003	1.5 mm <sup>2</sup> 2-core.....	22.45	1.70	2.09	5.36	29003
29004	0.75 mm <sup>2</sup> 3-core.....	21.04	1.70	2.09	5.36	29004
29005	1.5 mm <sup>2</sup> 3-core.....	26.05	1.70	2.09	5.36	29005
29006	2.5 mm <sup>2</sup> 3-core.....	28.34	1.70	2.09	5.36	29006
29007	0.5 mm <sup>2</sup> 2-core, PVC flexible cords, unsheathed.....	19.59	1.70	2.09	5.36	29007
29008	0.75 mm <sup>2</sup> 2-core, PVC flexible cords, unsheathed.....	20.03	1.70	2.09	5.36	29008
29009	0.75 mm <sup>2</sup> 3-core, PVC flexible cords, unsheathed.....	20.88	1.70	2.09	5.36	29009
	450/ 750V PVC insulated cable, all colours, to IEC 60227-3, drawn into conduits/ trunkings (conduits and trunkings measured separately) : -					
	<i>Per linear metre</i>					
29010	1.5 mm <sup>2</sup> 1 core.....	4.69	0.66	0.82	2.04	29010
29011	2.5 mm <sup>2</sup> ditto.....	5.81	0.66	0.82	2.04	29011
29012	4 mm <sup>2</sup> ditto.....	8.05	0.66	0.82	2.04	29012
29013	6 mm <sup>2</sup> ditto.....	11.79	0.98	1.10	2.72	29013
29014	10 mm <sup>2</sup> ditto.....	20.45	0.98	1.10	2.72	29014
29015	16 mm <sup>2</sup> ditto.....	25.62	0.98	1.10	2.72	29015
29016	25 mm <sup>2</sup> ditto.....	37.00	1.13	1.32	3.53	29016
29017	35 mm <sup>2</sup> ditto.....	52.05	1.13	1.32	3.53	29017
29018	50 mm <sup>2</sup> ditto.....	69.07	1.32	1.70	4.13	29018
29019	70 mm <sup>2</sup> ditto.....	92.48	2.27	2.51	6.55	29019
29020	95 mm <sup>2</sup> ditto.....	126.02	2.46	3.02	7.81	29020
29021	120 mm <sup>2</sup> ditto.....	172.34	3.08	3.81	10.45	29021
29022	150 mm <sup>2</sup> ditto.....	280.71	3.68	4.47	12.81	29022
29023	185 mm <sup>2</sup> ditto.....	335.13	4.59	5.76	15.80	29023
29024	240 mm <sup>2</sup> ditto.....	490.06	5.33	6.71	18.43	29024

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	450/ 750V PVC insulated cable, all colours, to IEC 60227-3, drawn into conduits/ trunkings (conduits and trunkings measured separately) :- (Cont'd)					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29025	300 mm <sup>2</sup> 1 core.....	592.73	5.33	6.71	18.43	29025
29026	400 mm <sup>2</sup> ditto.....	724.48	5.33	6.71	18.43	29026
29027	500 mm <sup>2</sup> ditto.....	958.21	5.76	7.17	21.88	29027
29028	630 mm <sup>2</sup> ditto.....	1,181.62	6.05	7.59	23.26	29028
	PVC insulated and PVC sheathed all colours, to IEC 60502-1 (for cables of 600/ 1000V with CSA 50 mm <sup>2</sup> & above), c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) :-					
	<i>Per linear metre</i>					
29029	1.5 mm <sup>2</sup> 1 core.....	13.33	2.51	3.08	6.55	29029
29030	2.5 mm <sup>2</sup> ditto.....	16.84	2.51	3.08	6.55	29030
29031	4 mm <sup>2</sup> ditto.....	25.12	3.02	3.60	7.82	29031
29032	6 mm <sup>2</sup> ditto.....	33.52	3.02	3.60	7.82	29032
29033	10 mm <sup>2</sup> ditto.....	41.71	3.02	3.60	7.82	29033
29034	16 mm <sup>2</sup> ditto.....	47.33	3.02	3.60	7.82	29034
29035	25 mm <sup>2</sup> ditto.....	80.16	4.27	4.95	11.66	29035
29036	35 mm <sup>2</sup> ditto.....	90.53	4.27	4.95	11.66	29036
29037	50 mm <sup>2</sup> ditto.....	138.49	4.27	4.95	11.66	29037
29038	70 mm <sup>2</sup> ditto.....	165.54	5.59	6.58	15.46	29038
29039	95 mm <sup>2</sup> ditto.....	182.96	7.05	8.42	19.57	29039
29040	120 mm <sup>2</sup> ditto.....	203.78	8.32	9.70	23.04	29040
29041	150 mm <sup>2</sup> ditto.....	299.67	10.00	11.79	27.55	29041
29042	185 mm <sup>2</sup> ditto.....	305.10	10.98	13.03	30.46	29042
29043	240 mm <sup>2</sup> ditto.....	387.03	13.64	16.26	38.06	29043
29044	300 mm <sup>2</sup> ditto.....	473.55	17.17	20.34	47.68	29044
29045	400 mm <sup>2</sup> ditto.....	571.75	19.85	23.40	55.08	29045
29046	500 mm <sup>2</sup> ditto.....	746.98	23.10	27.21	64.11	29046

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	PVC insulated and PVC sheathed all colours, to IEC 60502-1 (for cables of 600/1000V with CSA 50 mm <sup>2</sup> & above), c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) :- (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29047	630 mm <sup>2</sup> 1 core.....	899.43	25.59	30.21	70.75	29047
29048	800 mm <sup>2</sup> ditto.....	1,384.94	33.10	39.17	92.22	29048
29049	1000 mm <sup>2</sup> ditto.....	1,629.52	43.00	50.87	119.46	29049
29050	1.5 mm <sup>2</sup> 2-core.....	16.05	3.02	3.61	7.92	29050
29051	2.5 mm <sup>2</sup> ditto.....	21.43	4.02	4.72	10.61	29051
29052	4 mm <sup>2</sup> ditto.....	30.12	4.28	4.98	11.72	29052
29053	6 mm <sup>2</sup> ditto.....	39.44	4.28	4.98	11.72	29053
29054	10 mm <sup>2</sup> ditto.....	70.77	4.34	5.16	12.83	29054
29055	16 mm <sup>2</sup> ditto.....	94.61	5.64	6.62	15.52	29055
29056	25 mm <sup>2</sup> ditto.....	153.00	6.17	7.31	17.10	29056
	450/ 750V low emission and corrosive gases, thermosetting insulated, non-sheathed, single core cable to BS 7211 drawn into conduits/ trunkings (conduits and trunkings measured separately) :-					
	<i>Per linear metre</i>					
29057	1.5 mm <sup>2</sup> 1 core.....	6.09	0.66	0.82	2.04	29057
29058	2.5 mm <sup>2</sup> ditto.....	7.00	0.66	0.82	2.04	29058
29059	4 mm <sup>2</sup> ditto.....	9.71	0.66	0.82	2.04	29059
29060	6 mm <sup>2</sup> ditto.....	14.29	0.98	1.19	2.93	29060
29061	10 mm <sup>2</sup> ditto.....	24.74	0.98	1.19	2.93	29061
29062	16 mm <sup>2</sup> ditto.....	32.24	0.98	1.19	2.93	29062
29063	25 mm <sup>2</sup> ditto.....	45.81	1.19	1.35	3.61	29063
29064	35 mm <sup>2</sup> ditto.....	64.25	1.19	1.35	3.61	29064
29065	50 mm <sup>2</sup> ditto.....	79.06	1.35	1.77	4.13	29065
29066	70 mm <sup>2</sup> ditto.....	107.45	2.16	2.43	6.33	29066
29067	95 mm <sup>2</sup> ditto.....	153.25	2.49	3.04	7.83	29067
29068	120 mm <sup>2</sup> ditto.....	202.38	3.11	3.82	10.65	29068

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	450/ 750V low emission and corrosive gases, thermosetting insulated, non-sheathed, single core cable to BS 7211 drawn into conduits/ trunkings (conduits and trunkings measured separately) :- (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29069	150 mm <sup>2</sup> 1 core.....	279.46	3.85	4.72	12.97	29069
29070	185 mm <sup>2</sup> ditto.....	390.73	4.62	5.76	15.76	29070
29071	240 mm <sup>2</sup> ditto.....	491.40	5.59	6.85	17.81	29071
29072	300 mm <sup>2</sup> ditto.....	630.73	5.59	6.85	17.81	29072
29073	400 mm <sup>2</sup> ditto.....	762.07	5.59	6.85	17.81	29073
29074	500 mm <sup>2</sup> ditto.....	1,157.52	6.13	7.50	21.39	29074
29075	630 mm <sup>2</sup> ditto.....	1,464.83	6.39	7.94	23.13	29075
	450/ 750V low emission of smoke and corrosive gases, thermosetting insulated and sheathed cable to BS 7211, c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) :-					
	<i>Per linear metre</i>					
29076	1.5 mm <sup>2</sup> 2-core.....	58.92	2.88	3.47	7.92	29076
29077	2.5 mm <sup>2</sup> ditto.....	64.47	3.81	4.56	10.70	29077
29078	4 mm <sup>2</sup> ditto.....	75.17	4.28	4.98	11.73	29078
29079	6 mm <sup>2</sup> ditto.....	82.82	4.28	4.98	11.73	29079
29080	10 mm <sup>2</sup> ditto.....	109.26	4.59	5.47	13.03	29080
29081	16 mm <sup>2</sup> ditto.....	138.78	5.42	6.47	15.83	29081
29082	25 mm <sup>2</sup> ditto.....	190.31	6.19	7.33	17.15	29082
29083	35 mm <sup>2</sup> ditto.....	263.27	6.64	7.78	17.88	29083
29084	1.5 mm <sup>2</sup> 4-core.....	76.98	4.28	4.98	11.73	29084
29085	2.5 mm <sup>2</sup> ditto.....	83.87	4.59	5.42	13.03	29085
29086	4 mm <sup>2</sup> ditto.....	119.47	5.42	6.47	15.83	29086
29087	6 mm <sup>2</sup> ditto.....	137.44	6.19	7.33	17.15	29087
29088	10 mm <sup>2</sup> ditto.....	170.94	6.64	7.78	17.88	29088
29089	16 mm <sup>2</sup> ditto.....	211.84	7.06	8.12	19.57	29089
29090	25 mm <sup>2</sup> ditto.....	316.29	7.72	8.90	21.47	29090
29091	35 mm <sup>2</sup> ditto.....	368.35	8.17	9.35	23.21	29091

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V low emission of smoke and corrosive gases, cross-linked polyethylene insulated and sheathed, steel wire armoured cable to IEC 60502-01, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29092	1.5 mm <sup>2</sup> 2-core.....	76.76	6.49	7.92	22.94	29092
29093	2.5 mm <sup>2</sup> ditto.....	80.58	6.49	7.92	22.94	29093
29094	4 mm <sup>2</sup> ditto.....	97.76	11.46	15.15	44.09	29094
29095	6 mm <sup>2</sup> ditto.....	105.98	11.46	15.15	44.09	29095
29096	10 mm <sup>2</sup> ditto.....	138.53	14.42	17.76	54.47	29096
29097	16 mm <sup>2</sup> ditto.....	160.85	14.42	17.76	54.47	29097
29098	25 mm <sup>2</sup> ditto.....	215.27	16.61	20.81	63.55	29098
29099	35 mm <sup>2</sup> ditto.....	272.93	18.13	22.57	68.18	29099
29100	50 mm <sup>2</sup> ditto.....	371.38	18.26	22.73	69.10	29100
29101	70 mm <sup>2</sup> ditto.....	556.86	21.05	26.53	76.81	29101
29102	95 mm <sup>2</sup> ditto.....	679.30	22.25	27.28	84.67	29102
29103	120 mm <sup>2</sup> ditto.....	820.87	23.33	29.45	91.20	29103
29104	150 mm <sup>2</sup> ditto.....	1,108.88	26.12	33.04	101.20	29104
29105	1.5 mm <sup>2</sup> 4-core.....	115.93	13.37	16.66	50.77	29105
29106	2.5 mm <sup>2</sup> ditto.....	132.21	14.42	17.76	54.47	29106
29107	4 mm <sup>2</sup> ditto.....	163.88	15.04	18.94	56.11	29107
29108	6 mm <sup>2</sup> ditto.....	173.85	15.83	20.19	62.21	29108
29109	10 mm <sup>2</sup> ditto.....	191.71	16.64	21.44	64.59	29109
29110	16 mm <sup>2</sup> ditto.....	230.60	17.93	22.08	65.54	29110
29111	25 mm <sup>2</sup> ditto.....	311.67	18.02	22.17	68.12	29111
29112	35 mm <sup>2</sup> ditto.....	357.83	18.63	22.94	69.92	29112
29113	50 mm <sup>2</sup> ditto.....	421.88	18.72	23.13	70.91	29113
29114	70 mm <sup>2</sup> ditto.....	508.40	20.04	25.53	75.89	29114
29115	95 mm <sup>2</sup> ditto.....	701.98	23.06	27.39	85.01	29115

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V low emission of smoke and corrosive gases, cross-linked polyethylene insulated and sheathed, steel wire armoured cable to IEC 60502-01, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29116	120 mm <sup>2</sup> 4-core.....	824.70	23.24	29.32	90.83	29116
29117	150 mm <sup>2</sup> ditto.....	1,054.31	26.03	32.90	100.78	29117
29118	185 mm <sup>2</sup> ditto.....	1,134.06	28.79	35.68	108.04	29118
29119	240 mm <sup>2</sup> ditto.....	1,454.59	30.27	37.84	118.00	29119
29120	300 mm <sup>2</sup> ditto.....	1,729.96	32.82	41.06	124.62	29120
29121	400 mm <sup>2</sup> ditto.....	2,198.46	34.00	42.75	130.71	29121
	300/ 500V PVC insulated and PVC sheathed, all colours cores, to IEC 60227-4, c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : -					
	<i>Per linear metre</i>					
29122	1.5 mm <sup>2</sup> 2-core with E.C.C.....	16.02	2.86	3.41	7.81	29122
29123	2.5 mm <sup>2</sup> ditto.....	20.15	2.86	3.41	7.81	29123
29124	4 mm <sup>2</sup> ditto.....	31.72	4.24	4.93	11.62	29124
29125	6 mm <sup>2</sup> ditto.....	40.50	4.24	4.93	11.62	29125
29126	10 mm <sup>2</sup> ditto.....	74.62	5.37	6.40	15.67	29126
29127	16 mm <sup>2</sup> ditto.....	95.21	5.37	6.40	15.67	29127
	450/ 750V PVC insulated or ethylene-vinylacetate rubber insulated or other equivalent synthetic insulated, heat resistant, single core, copper cable to IEC 60245-7, all colours, drawn into conduits/ trunking (conduits and trunkings measured separately) : -					
	<i>Per linear metre</i>					
29128	1.5 mm <sup>2</sup> 1 core.....	4.95	0.66	0.82	2.04	29128
29129	2.5 mm <sup>2</sup> ditto.....	6.25	0.66	0.82	2.04	29129
29130	4 mm <sup>2</sup> ditto.....	8.54	0.66	0.82	2.04	29130
29131	6 mm <sup>2</sup> ditto.....	13.35	0.98	1.19	2.93	29131
29132	10 mm <sup>2</sup> ditto.....	23.41	0.98	1.19	2.93	29132



Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	450/ 750V PVC insulated or ethylene-vinylacetate rubber insulated or other equivalent synthetic insulated, heat resistant, single core, copper cable to IEC 60245-7, all colours, drawn into conduits/ trunking (conduits and trunkings measured separately) : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29133	16 mm <sup>2</sup> 1 core.....	32.85	0.98	1.19	2.93	29133
29134	25 mm <sup>2</sup> ditto.....	46.20	1.19	1.35	3.61	29134
29135	35 mm <sup>2</sup> ditto.....	69.21	1.19	1.35	3.61	29135
29136	50 mm <sup>2</sup> ditto.....	96.68	1.35	1.77	4.13	29136
29137	70 mm <sup>2</sup> ditto.....	132.52	2.16	2.43	6.33	29137
29138	95 mm <sup>2</sup> ditto.....	180.97	2.49	3.04	7.83	29138
29139	120 mm <sup>2</sup> ditto.....	245.20	2.96	3.65	10.08	29139
29140	150 mm <sup>2</sup> ditto.....	385.63	3.85	4.72	12.97	29140
29141	185 mm <sup>2</sup> ditto.....	482.21	4.41	5.42	15.66	29141
29142	240 mm <sup>2</sup> ditto.....	615.39	5.14	6.33	17.67	29142
	600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1 c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : -					
	<i>Per linear metre</i>					
29143	1.5 mm <sup>2</sup> 2-core.....	49.01	6.52	7.94	23.03	29143
29144	2.5 mm <sup>2</sup> ditto.....	53.44	6.52	7.94	23.03	29144
29145	4 mm <sup>2</sup> ditto.....	82.95	11.50	15.21	44.25	29145
29146	6 mm <sup>2</sup> ditto.....	93.26	11.50	15.21	44.25	29146
29147	10 mm <sup>2</sup> ditto.....	133.34	14.49	17.82	54.65	29147
29148	16 mm <sup>2</sup> ditto.....	137.74	14.49	17.82	54.65	29148
29149	25 mm <sup>2</sup> ditto.....	235.77	15.16	18.63	57.74	29149
29150	35 mm <sup>2</sup> ditto.....	294.44	15.97	19.59	59.01	29150
29151	50 mm <sup>2</sup> ditto.....	391.79	16.10	19.72	59.82	29151
29152	70 mm <sup>2</sup> ditto.....	565.64	27.55	33.64	100.46	29152
29153	95 mm <sup>2</sup> ditto.....	742.27	29.10	35.41	103.85	29153
29154	120 mm <sup>2</sup> ditto.....	911.33	30.65	37.18	107.24	29154
29155	1.5 mm <sup>2</sup> 4-core.....	89.37	13.59	16.78	51.73	29155
29156	2.5 mm <sup>2</sup> ditto.....	98.10	14.49	17.82	54.65	29156
29157	4 mm <sup>2</sup> ditto.....	117.22	15.10	19.02	56.31	29157

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1 c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29158	6 mm <sup>2</sup> 4-core.....	122.54	15.91	20.27	62.47	29158
29159	10 mm <sup>2</sup> ditto.....	161.13	16.73	21.55	64.87	29159
29160	16 mm <sup>2</sup> ditto.....	181.07	17.00	21.84	65.82	29160
29161	25 mm <sup>2</sup> ditto.....	222.24	18.08	22.30	68.40	29161
29162	35 mm <sup>2</sup> ditto.....	280.71	18.71	23.04	70.23	29162
29163	50 mm <sup>2</sup> ditto.....	370.67	18.79	23.21	71.21	29163
29164	70 mm <sup>2</sup> ditto.....	476.30	20.12	25.67	76.20	29164
29165	95 mm <sup>2</sup> ditto.....	582.12	23.14	27.48	85.34	29165
29166	120 mm <sup>2</sup> ditto.....	709.50	23.42	29.57	91.56	29166
29167	150 mm <sup>2</sup> ditto.....	1,057.03	26.23	33.19	101.64	29167
29168	185 mm <sup>2</sup> ditto.....	1,105.80	29.03	35.95	108.92	29168
29169	240 mm <sup>2</sup> ditto.....	1,382.66	30.27	37.84	118.00	29169
29170	300 mm <sup>2</sup> ditto.....	1,619.80	32.82	41.06	124.62	29170
29171	400 mm <sup>2</sup> ditto.....	2,069.17	34.00	42.75	130.71	29171
29172	1.5 mm <sup>2</sup> 7-core.....	171.81	16.58	21.33	64.33	29172
29173	1.5 mm <sup>2</sup> 12-core.....	212.87	16.58	21.33	64.33	29173
29174	1.5 mm <sup>2</sup> 19-core.....	277.00	19.00	23.87	71.83	29174
29175	1.5 mm <sup>2</sup> 27-core.....	348.88	19.05	24.16	73.12	29175
29176	1.5 mm <sup>2</sup> 37-core.....	398.54	20.71	26.09	77.74	29176
29177	1.5 mm <sup>2</sup> 48-core.....	691.37	21.92	27.16	82.47	29177
29178	2.5 mm <sup>2</sup> 7-core.....	215.96	19.95	25.44	75.57	29178
29179	2.5 mm <sup>2</sup> 12-core.....	267.75	19.95	25.44	75.57	29179
29180	2.5 mm <sup>2</sup> 19-core.....	369.23	21.77	26.66	80.60	29180
29181	2.5 mm <sup>2</sup> 27-core.....	465.30	22.47	28.50	84.14	29181
29182	2.5 mm <sup>2</sup> 37-core.....	780.76	23.09	29.20	85.93	29182
29183	2.5 mm <sup>2</sup> 48-core.....	1,230.45	23.84	30.20	88.64	29183

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	Fire resistant, low emission of smoke and corrosive gases, thermosetting insulated and sheathed, steel wire armoured multi-core cable to BS 7846 (for voltage rating 600/ 1000V) c/w cleats or saddles, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29184	1.5 mm <sup>2</sup> 2-core.....	103.01	6.49	7.92	22.89	29184
29185	2.5 mm <sup>2</sup> ditto.....	125.96	6.49	7.92	22.92	29185
29186	4 mm <sup>2</sup> ditto.....	160.27	11.46	15.10	44.00	29186
29187	6 mm <sup>2</sup> ditto.....	164.70	11.46	15.10	44.00	29187
29188	10 mm <sup>2</sup> ditto.....	186.37	14.38	17.73	54.33	29188
29189	16 mm <sup>2</sup> ditto.....	204.86	14.38	17.73	54.33	29189
29190	25 mm <sup>2</sup> ditto.....	318.54	16.56	20.77	63.43	29190
29191	35 mm <sup>2</sup> ditto.....	354.77	18.10	22.53	68.02	29191
29192	50 mm <sup>2</sup> ditto.....	463.56	18.26	22.67	68.93	29192
29193	70 mm <sup>2</sup> ditto.....	649.22	19.33	25.42	75.46	29193
29194	95 mm <sup>2</sup> ditto.....	807.76	22.23	27.23	84.51	29194
29195	120 mm <sup>2</sup> ditto.....	1,053.16	23.31	29.39	91.04	29195
29196	150 mm <sup>2</sup> ditto.....	1,246.22	26.08	32.97	101.01	29196
29197	185 mm <sup>2</sup> ditto.....	1,369.49	28.85	35.71	108.26	29197
29198	240 mm <sup>2</sup> ditto.....	1,681.62	30.34	37.92	118.25	29198
29199	300 mm <sup>2</sup> ditto.....	2,037.84	32.86	41.13	124.86	29199
29200	400 mm <sup>2</sup> ditto.....	2,413.12	34.10	42.85	130.96	29200

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	Fire resistant, low emission of smoke and corrosive gases, thermosetting insulated and sheathed, steel wire armoured multi-core cable to BS 7846 (for voltage rating 600/ 1000V) or BS 7629-1 (for voltage rating 300/ 500V), c/w cleats or saddles, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29201	1.5 mm <sup>2</sup> 4-core.....	139.73	13.59	16.78	51.73	29201
29202	2.5 mm <sup>2</sup> ditto.....	165.86	14.49	17.86	54.65	29202
29203	4 mm <sup>2</sup> ditto.....	181.98	15.10	19.02	56.31	29203
29204	6 mm <sup>2</sup> ditto.....	216.29	15.91	20.27	62.47	29204
29205	10 mm <sup>2</sup> ditto.....	255.46	16.73	21.55	64.90	29205
29206	16 mm <sup>2</sup> ditto.....	287.00	18.02	22.17	65.82	29206
29207	25 mm <sup>2</sup> ditto.....	396.79	18.08	22.25	68.40	29207
29208	35 mm <sup>2</sup> ditto.....	445.61	18.71	23.04	70.23	29208
29209	50 mm <sup>2</sup> ditto.....	562.48	18.79	23.21	71.21	29209
29210	70 mm <sup>2</sup> ditto.....	713.97	20.12	25.67	76.20	29210
29211	95 mm <sup>2</sup> ditto.....	833.45	23.14	27.48	85.34	29211
29212	120 mm <sup>2</sup> ditto.....	980.35	23.42	29.57	91.56	29212
29213	150 mm <sup>2</sup> ditto.....	1,182.66	26.23	33.20	101.64	29213
29214	185 mm <sup>2</sup> ditto.....	1,281.68	29.03	35.95	108.92	29214
29215	240 mm <sup>2</sup> ditto.....	1,606.70	30.53	38.15	118.98	29215
29216	300 mm <sup>2</sup> ditto.....	1,888.41	33.07	41.40	125.60	29216
29217	400 mm <sup>2</sup> ditto.....	2,333.60	34.30	43.12	131.77	29217

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V fire resistant, low emission of smoke and corrosive gases insulated, non-sheathed, single core cables to IEC 60332-1, IEC 61034-2, IEC 60754-1 and BS 6387 Cat. CWZ in conduits or trunkings (conduits and trunkings measured separately) :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29218	1.5 mm <sup>2</sup> .....	26.74	1.97	2.68	6.45	29218
29219	2.5 mm <sup>2</sup> .....	29.01	1.97	2.68	6.45	29219
29220	4 mm <sup>2</sup> .....	34.72	2.22	2.93	7.49	29220
29221	6 mm <sup>2</sup> .....	40.73	2.22	2.93	7.49	29221
29222	10 mm <sup>2</sup> .....	77.61	2.22	2.93	7.49	29222
29223	16 mm <sup>2</sup> .....	100.86	2.22	2.93	7.49	29223
29224	25 mm <sup>2</sup> .....	133.85	3.04	3.76	11.63	29224
29225	35 mm <sup>2</sup> .....	296.42	3.04	3.76	11.63	29225
29226	50 mm <sup>2</sup> .....	335.53	3.04	3.76	11.63	29226
29227	70 mm <sup>2</sup> .....	415.96	4.28	5.06	15.91	29227
29228	95 mm <sup>2</sup> .....	496.03	5.08	7.00	18.63	29228
29229	120 mm <sup>2</sup> .....	583.58	6.55	7.97	23.09	29229
29230	150 mm <sup>2</sup> .....	734.27	7.19	8.74	27.38	29230
29231	185 mm <sup>2</sup> .....	813.08	8.56	10.79	31.51	29231
29232	240 mm <sup>2</sup> .....	968.76	10.65	12.71	38.95	29232
29233	300 mm <sup>2</sup> .....	1,079.90	12.30	15.68	47.93	29233
29234	400 mm <sup>2</sup> .....	1,256.56	14.49	17.88	54.76	29234
29235	500 mm <sup>2</sup> .....	1,500.56	16.68	20.93	63.94	29235
29236	630 mm <sup>2</sup> .....	1,912.89	20.16	25.70	76.36	29236

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1, laid in trench or cable ducts including suitable cable bed (excavation backfilling and cable ducts measured separately) :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29237	1.5 mm <sup>2</sup> 2-core.....	38.71	3.82	4.29	15.22	29237
29238	2.5 mm <sup>2</sup> ditto.....	44.18	3.82	4.29	15.22	29238
29239	4 mm <sup>2</sup> ditto.....	62.64	7.17	8.31	27.38	29239
29240	6 mm <sup>2</sup> ditto.....	70.36	7.17	8.31	27.38	29240
29241	10 mm <sup>2</sup> ditto.....	104.38	8.31	10.16	30.96	29241
29242	16 mm <sup>2</sup> ditto.....	124.95	8.31	10.16	30.96	29242
29243	25 mm <sup>2</sup> ditto.....	195.45	9.62	11.42	37.00	29243
29244	35 mm <sup>2</sup> ditto.....	260.16	11.12	13.74	38.38	29244
29245	50 mm <sup>2</sup> ditto.....	337.93	11.12	13.74	38.38	29245
29246	1.5 mm <sup>2</sup> 4-core.....	63.54	8.37	10.96	33.33	29246
29247	2.5 mm <sup>2</sup> ditto.....	73.11	10.25	12.50	38.05	29247
29248	4 mm <sup>2</sup> ditto.....	91.99	10.96	13.13	39.97	29248
29249	6 mm <sup>2</sup> ditto.....	105.94	10.96	13.13	39.97	29249
29250	10 mm <sup>2</sup> ditto.....	137.15	11.36	13.82	42.04	29250
29251	16 mm <sup>2</sup> ditto.....	179.38	11.36	13.82	42.04	29251
29252	25 mm <sup>2</sup> ditto.....	221.52	11.73	14.34	43.99	29252
29253	35 mm <sup>2</sup> ditto.....	285.04	12.54	15.46	46.14	29253
29254	50 mm <sup>2</sup> ditto.....	374.23	12.54	15.46	46.14	29254
29255	70 mm <sup>2</sup> ditto.....	477.40	13.90	16.90	49.96	29255
29256	95 mm <sup>2</sup> ditto.....	593.09	14.72	18.09	52.34	29256
29257	120 mm <sup>2</sup> ditto.....	695.00	14.72	18.09	52.34	29257
29258	150 mm <sup>2</sup> ditto.....	998.91	15.56	18.72	56.11	29258

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1, laid in trench or cable ducts including suitable cable bed (excavation backfilling and cable ducts measured separately) :- (Cont'd)					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29259	185 mm <sup>2</sup> 4-core.....	1,020.86	15.67	19.93	60.15	29259
29260	240 mm <sup>2</sup> ditto.....	1,269.19	18.09	22.14	67.38	29260
29261	300 mm <sup>2</sup> ditto.....	1,526.20	20.42	25.16	75.67	29261
29262	400 mm <sup>2</sup> ditto.....	1,959.70	21.05	26.00	79.75	29262
29263	1.5 mm <sup>2</sup> 7-core.....	139.97	11.09	13.31	41.88	29263
29264	1.5 mm <sup>2</sup> 12-core.....	184.46	11.09	13.31	41.88	29264
29265	1.5 mm <sup>2</sup> 19-core.....	248.22	14.68	18.03	52.14	29265
29266	1.5 mm <sup>2</sup> 27-core.....	315.52	14.68	18.03	52.14	29266
29267	1.5 mm <sup>2</sup> 37-core.....	372.66	14.68	18.03	54.55	29267
29268	1.5 mm <sup>2</sup> 48-core.....	639.12	14.68	18.03	54.55	29268
29269	2.5 mm <sup>2</sup> 7-core.....	200.66	14.01	17.49	51.92	29269
29270	2.5 mm <sup>2</sup> 12-core.....	254.95	14.01	17.49	51.92	29270
29271	2.5 mm <sup>2</sup> 19-core.....	340.00	14.65	18.72	56.18	29271
29272	2.5 mm <sup>2</sup> 27-core.....	441.04	15.25	19.39	57.19	29272
29273	2.5 mm <sup>2</sup> 37-core.....	754.05	15.85	20.68	60.97	29273
29274	2.5 mm <sup>2</sup> 48-core.....	1,149.70	15.90	20.75	62.14	29274

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, c/w spacing bar type saddles :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29275	6 mm <sup>2</sup> 1-core.....	89.78	7.92	10.10	29.60	29275
29276	10 mm <sup>2</sup> ditto.....	133.99	7.93	10.15	30.48	29276
29277	16 mm <sup>2</sup> ditto.....	166.32	9.13	12.13	34.60	29277
29278	25 mm <sup>2</sup> ditto.....	212.75	10.45	12.87	36.45	29278
29279	35 mm <sup>2</sup> ditto.....	385.45	11.31	13.57	39.52	29279
29280	50 mm <sup>2</sup> ditto.....	439.03	12.03	14.89	41.40	29280
29281	70 mm <sup>2</sup> ditto.....	516.91	12.87	16.26	44.83	29281
29282	95 mm <sup>2</sup> ditto.....	647.00	16.25	20.31	57.25	29282
29283	120 mm <sup>2</sup> ditto.....	760.71	16.25	20.31	57.25	29283
29284	150 mm <sup>2</sup> ditto.....	924.43	16.25	20.31	57.25	29284
29285	185 mm <sup>2</sup> ditto.....	1,071.65	16.90	21.60	61.19	29285
29286	240 mm <sup>2</sup> ditto.....	1,310.53	18.42	22.60	64.21	29286
29287	1.5 mm <sup>2</sup> 2-core.....	81.99	7.08	8.53	27.16	29287
29288	2.5 mm <sup>2</sup> ditto.....	92.69	7.92	10.10	29.60	29288
29289	4 mm <sup>2</sup> ditto.....	108.53	7.93	10.15	30.48	29289
29290	6 mm <sup>2</sup> ditto.....	133.01	8.88	10.91	32.52	29290
29291	10 mm <sup>2</sup> ditto.....	175.40	9.13	12.13	34.60	29291
29292	16 mm <sup>2</sup> ditto.....	215.04	10.45	12.83	36.46	29292
29293	25 mm <sup>2</sup> ditto.....	338.20	10.89	13.04	39.72	29293
29294	1.5 mm <sup>2</sup> 4-core.....	100.54	7.92	10.10	29.60	29294
29295	2.5 mm <sup>2</sup> ditto.....	110.56	7.93	10.15	30.48	29295
29296	4 mm <sup>2</sup> ditto.....	143.84	8.60	11.22	32.59	29296
29297	6 mm <sup>2</sup> ditto.....	178.82	9.13	12.13	34.60	29297
29298	10 mm <sup>2</sup> ditto.....	238.22	10.45	12.83	36.46	29298
29299	16 mm <sup>2</sup> ditto.....	323.01	10.89	13.04	39.72	29299
29300	25 mm <sup>2</sup> ditto.....	444.14	11.72	14.42	42.43	29300



Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, with an overall protection of PVC sheath, c/w spacing bar type saddles :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29301	1 mm <sup>2</sup> 1-core.....	30.13	2.88	3.61	10.72	29301
29302	1.5 mm <sup>2</sup> ditto.....	34.69	2.88	3.61	10.72	29302
29303	2.5 mm <sup>2</sup> ditto.....	38.73	2.88	3.61	10.72	29303
29304	4 mm <sup>2</sup> ditto.....	66.78	7.92	10.06	29.49	29304
29305	6 mm <sup>2</sup> ditto.....	86.37	7.92	10.06	29.49	29305
29306	10 mm <sup>2</sup> ditto.....	131.52	7.92	10.11	30.34	29306
29307	16 mm <sup>2</sup> ditto.....	165.38	9.07	12.07	34.45	29307
29308	25 mm <sup>2</sup> ditto.....	207.61	10.41	12.79	36.30	29308
29309	35 mm <sup>2</sup> ditto.....	379.93	11.28	13.48	39.36	29309
29310	50 mm <sup>2</sup> ditto.....	426.83	11.98	14.82	41.23	29310
29311	70 mm <sup>2</sup> ditto.....	512.96	12.79	16.19	44.66	29311
29312	95 mm <sup>2</sup> ditto.....	650.62	13.54	16.93	49.75	29312
29313	120 mm <sup>2</sup> ditto.....	750.06	14.85	18.19	52.64	29313
29314	150 mm <sup>2</sup> ditto.....	928.21	16.17	20.20	56.99	29314
29315	185 mm <sup>2</sup> ditto.....	1,062.07	16.81	21.50	60.95	29315
29316	240 mm <sup>2</sup> ditto.....	1,284.26	18.36	22.50	63.95	29316
29317	1 mm <sup>2</sup> 2-core.....	70.87	7.06	8.51	27.04	29317
29318	1.5 mm <sup>2</sup> ditto.....	79.90	7.06	8.51	27.04	29318
29319	2.5 mm <sup>2</sup> ditto.....	91.18	7.92	10.06	29.49	29319
29320	4 mm <sup>2</sup> ditto.....	106.51	7.92	10.11	30.34	29320
29321	6 mm <sup>2</sup> ditto.....	133.84	8.84	10.88	32.34	29321
29322	10 mm <sup>2</sup> ditto.....	176.21	9.07	12.06	34.45	29322
29323	16 mm <sup>2</sup> ditto.....	213.69	10.41	12.79	36.35	29323
29324	25 mm <sup>2</sup> ditto.....	345.89	10.83	12.98	39.55	29324

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, with an overall protection of PVC sheath, c/w spacing bar type saddles : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29325	1.5 mm <sup>2</sup> 4-core.....	99.08	7.92	10.08	29.53	29325
29326	2.5 mm <sup>2</sup> ditto.....	111.14	7.92	10.15	30.42	29326
29327	4 mm <sup>2</sup> ditto.....	138.17	8.85	10.89	32.45	29327
29328	6 mm <sup>2</sup> ditto.....	175.91	9.07	12.09	34.53	29328
29329	10 mm <sup>2</sup> ditto.....	229.91	10.44	12.82	36.41	29329
29330	16 mm <sup>2</sup> ditto.....	324.77	10.84	13.03	39.63	29330
29331	25 mm <sup>2</sup> ditto.....	452.47	11.73	14.37	42.34	29331
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, laid in trenches (including suitable cable bed) or ducting (ducting, excavation and backing-filling measured separately) : -					
	<i>Per linear metre</i>					
29332	1 mm <sup>2</sup> 2-core.....	53.71	3.43	4.24	12.96	29332
29333	1.5 mm <sup>2</sup> ditto.....	64.14	3.88	4.80	15.09	29333
29334	2.5 mm <sup>2</sup> ditto.....	73.51	3.88	4.80	15.09	29334
29335	4 mm <sup>2</sup> ditto.....	101.85	7.08	8.22	27.16	29335
29336	6 mm <sup>2</sup> ditto.....	121.55	7.08	8.22	27.16	29336
29337	10 mm <sup>2</sup> ditto.....	174.17	8.85	10.91	32.45	29337
29338	16 mm <sup>2</sup> ditto.....	213.40	8.85	10.91	32.45	29338
29339	25 mm <sup>2</sup> ditto.....	335.98	11.03	13.28	41.69	29339
29340	1.5 mm <sup>2</sup> 4-core.....	103.43	9.07	12.09	34.53	29340
29341	2.5 mm <sup>2</sup> ditto.....	119.32	10.44	12.82	36.41	29341
29342	4 mm <sup>2</sup> ditto.....	148.83	10.73	13.23	38.30	29342
29343	6 mm <sup>2</sup> ditto.....	188.32	11.17	13.78	39.46	29343
29344	10 mm <sup>2</sup> ditto.....	239.55	11.34	14.37	40.33	29344
29345	16 mm <sup>2</sup> ditto.....	338.11	11.64	14.87	41.69	29345

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) :-					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29346	500 mm <sup>2</sup> 1-core.....	1,225.09	18.20	22.65	64.34	29346
29347	630 mm <sup>2</sup> ditto.....	1,357.84	20.05	25.61	76.03	29347
29348	800 mm <sup>2</sup> ditto.....	1,582.83	23.35	29.50	91.38	29348
29349	1000 mm <sup>2</sup> ditto.....	1,918.97	31.39	39.24	121.92	29349
29350	4 mm <sup>2</sup> 2-core.....	82.15	13.00	15.93	44.82	29350
29351	6 mm <sup>2</sup> ditto.....	94.65	13.45	16.68	46.20	29351
29352	10 mm <sup>2</sup> ditto.....	131.20	13.52	16.73	49.67	29352
29353	16 mm <sup>2</sup> ditto.....	149.43	14.22	17.23	52.34	29353
29354	25 mm <sup>2</sup> ditto.....	224.87	14.82	17.80	53.50	29354
29355	35 mm <sup>2</sup> ditto.....	283.69	15.25	18.93	56.81	29355
29356	50 mm <sup>2</sup> ditto.....	376.25	18.85	23.73	67.31	29356
29357	70 mm <sup>2</sup> ditto.....	485.86	20.34	24.78	70.23	29357
29358	95 mm <sup>2</sup> ditto.....	588.71	21.72	26.29	74.85	29358
29359	4 mm <sup>2</sup> 4-core.....	94.57	13.13	15.97	49.10	29359
29360	6 mm <sup>2</sup> ditto.....	110.94	13.59	17.10	51.60	29360
29361	10 mm <sup>2</sup> ditto.....	135.73	14.55	18.02	52.98	29361
29362	16 mm <sup>2</sup> ditto.....	180.16	15.36	18.74	55.90	29362
29363	25 mm <sup>2</sup> ditto.....	215.40	16.17	19.57	57.96	29363
29364	35 mm <sup>2</sup> ditto.....	274.59	16.40	20.47	60.97	29364
29365	50 mm <sup>2</sup> ditto.....	366.31	20.77	25.86	74.08	29365
29366	70 mm <sup>2</sup> ditto.....	473.50	22.39	26.82	77.28	29366
29367	95 mm <sup>2</sup> ditto.....	575.59	23.68	28.07	82.37	29367
29368	120 mm <sup>2</sup> ditto.....	694.90	24.52	29.95	87.14	29368
29369	150 mm <sup>2</sup> ditto.....	935.72	25.37	30.65	90.41	29369

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) :- (Cont'd)					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29370	185 mm <sup>2</sup> 4-core.....	983.55	26.59	31.27	93.36	29370
29371	240 mm <sup>2</sup> ditto.....	1,240.66	27.59	33.36	101.50	29371
29372	300 mm <sup>2</sup> ditto.....	1,467.73	30.12	35.45	109.17	29372
29373	400 mm <sup>2</sup> ditto.....	1,835.55	31.02	37.53	114.40	29373
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, laid in trenches (including suitable cable bed) or ducting (ducting, excavation and back-filling measured separately) :-					
	<i>Per linear metre</i>					
29374	4 mm <sup>2</sup> 2-core.....	60.78	6.14	7.44	22.89	29374
29375	6 mm <sup>2</sup> ditto.....	68.40	6.40	7.72	24.08	29375
29376	10 mm <sup>2</sup> ditto.....	104.95	6.75	8.09	24.93	29376
29377	16 mm <sup>2</sup> ditto.....	115.62	7.34	9.22	25.86	29377
29378	25 mm <sup>2</sup> ditto.....	191.05	7.48	9.37	26.72	29378
29379	35 mm <sup>2</sup> ditto.....	253.35	8.17	10.00	29.12	29379
29380	50 mm <sup>2</sup> ditto.....	338.15	9.35	11.24	30.65	29380
29381	70 mm <sup>2</sup> ditto.....	433.07	9.95	11.85	32.97	29381
29382	95 mm <sup>2</sup> ditto.....	541.27	10.55	13.00	35.35	29382
29383	4 mm <sup>2</sup> 4-core.....	81.92	6.55	8.17	26.36	29383
29384	6 mm <sup>2</sup> ditto.....	99.95	6.79	8.42	27.22	29384
29385	10 mm <sup>2</sup> ditto.....	123.24	7.08	8.76	28.05	29385
29386	16 mm <sup>2</sup> ditto.....	160.65	7.78	10.08	29.12	29386
29387	25 mm <sup>2</sup> ditto.....	203.74	7.78	10.25	30.05	29387
29388	35 mm <sup>2</sup> ditto.....	272.07	8.44	10.91	33.27	29388
29389	50 mm <sup>2</sup> ditto.....	365.26	9.62	12.13	35.54	29389
29390	70 mm <sup>2</sup> ditto.....	461.25	10.28	12.76	38.63	29390
29391	95 mm <sup>2</sup> ditto.....	573.60	10.87	13.98	41.88	29391
29392	120 mm <sup>2</sup> ditto.....	723.35	11.50	15.10	46.73	29392
29393	150 mm <sup>2</sup> ditto.....	993.10	13.23	16.81	51.04	29393

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, laid in trenches (including suitable cable bed) or ducting (ducting, excavation and back-filling measured separately) :- (Cont'd)					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29394	185 mm <sup>2</sup> 4-core.....	1,017.11	14.08	17.60	55.56	29394
29395	240 mm <sup>2</sup> ditto.....	1,351.99	14.93	18.85	59.24	29395
29396	300 mm <sup>2</sup> ditto.....	1,565.23	15.81	20.12	63.66	29396
29397	400 mm <sup>2</sup> ditto.....	1,934.04	17.23	20.91	66.97	29397
	Multi-core twisted signal cable, AWG 24, unarmoured, c/w aluminum shield as :-					
	<i>Per linear metre</i>					
29398	1-pair.....	31.35	6.41	7.83	23.91	29398
29399	6-pair.....	91.51	16.42	21.05	64.11	29399
29400	10-pair.....	119.65	19.19	22.87	73.78	29400
	Multi-core twisted signal cable, fire resistant, to IEC60331 as :-					
	<i>Per linear metre</i>					
29401	1.5 mm <sup>2</sup> 2-core.....	28.55	6.41	7.83	23.91	29401
	450/ 750V PVC insulated cable to IEC 60227, c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) :-					
	<i>Per linear metre</i>					
29402	1.5 mm <sup>2</sup> 1-core.....	7.67	1.25	1.67	5.14	29402
29403	2.5 mm <sup>2</sup> ditto.....	8.76	1.25	1.67	5.14	29403
29404	4 mm <sup>2</sup> ditto.....	10.90	1.25	1.67	5.14	29404
29405	6 mm <sup>2</sup> ditto.....	13.31	1.25	1.67	5.14	29405
29406	10 mm <sup>2</sup> ditto.....	23.40	1.25	1.67	5.14	29406
29407	16 mm <sup>2</sup> ditto.....	29.79	1.67	2.09	6.39	29407
29408	25 mm <sup>2</sup> ditto.....	42.37	1.67	2.09	6.39	29408
29409	35 mm <sup>2</sup> ditto.....	61.56	2.04	2.49	7.34	29409
29410	50 mm <sup>2</sup> ditto.....	79.57	2.04	2.49	7.34	29410
29411	70 mm <sup>2</sup> ditto.....	109.01	3.53	4.22	11.51	29411
29412	95 mm <sup>2</sup> ditto.....	152.00	4.35	4.99	15.68	29412
29413	120 mm <sup>2</sup> ditto.....	207.51	5.27	7.24	18.86	29413

Item					Item	
	<b>CABLES (COPPER) (CONT'D)</b>					
	Cast iron cable end boxes, double loop in type. Suitable for cables with maximum cross sectional area of conductor up to :-					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29414	2 x 16 mm <sup>2</sup> (conduit outlet).....	800.77	103.27	128.85	389.29	29414
29415	2 x 16 mm <sup>2</sup> (PVC tails outlet).....	872.96	119.21	149.01	451.82	29415
29416	16 mm <sup>2</sup> x 2-core (conduit outlet).....	853.35	108.08	134.88	408.23	29416
29417	16 mm <sup>2</sup> x 2-core (PVC tails outlet).....	910.61	122.74	153.70	465.12	29417
29418	1 x 16 mm <sup>2</sup> x 3-core (conduit outlet).....	908.85	110.33	137.95	418.30	29418
29419	1 x 16 mm <sup>2</sup> x 3-core (PVC tails outlet).....	967.53	126.97	158.51	479.03	29419
	Cast iron cable end boxes, flat type, wall mounting :-					
	<i>Each</i>					
29420	16 mm <sup>2</sup> x 4-core.....	869.07	106.24	133.18	401.35	29420
29421	25 mm <sup>2</sup> x 4-core.....	923.92	112.64	141.20	426.37	29421
29422	35 - 50 mm <sup>2</sup> x 3-core.....	1,058.69	120.40	150.64	454.79	29422
29423	35 - 50 mm <sup>2</sup> x 4-core.....	1,221.54	131.76	164.67	498.96	29423
29424	70 mm <sup>2</sup> x 4-core.....	1,397.27	150.19	187.85	568.14	29424
29425	95 mm <sup>2</sup> x 4-core.....	1,516.06	158.92	198.67	602.03	29425
29426	120 - 150 mm <sup>2</sup> x 4-core.....	1,724.20	162.42	203.33	615.98	29426
29427	185 mm <sup>2</sup> x 4-core.....	2,064.82	169.92	212.60	643.13	29427
29428	240 mm <sup>2</sup> x 4-core.....	2,429.78	189.16	236.66	715.79	29428
29429	300 mm <sup>2</sup> x 4-core.....	2,718.64	208.23	260.56	787.38	29429

Item					Item	
	<b>SERVICE CABLE BOXES</b>					
	Service cable boxes, cast iron, for PVC insulated, sheathed and armoured cables, as comprising armoured bonds, claw connectors and filling with cold compound, fixed complete. Suitable for cables with maximum cross sectional area of conductor up to :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
29430	16 - 25 mm <sup>2</sup> 2-core.....	991.22	128.82	-	488.11	29430
29431	35 - 50 mm <sup>2</sup> 2-core and 16 mm <sup>2</sup> 4-core.....	1,071.65	138.00	-	523.64	29431
29432	70 - 95 mm <sup>2</sup> 2-core and 25 - 50 mm <sup>2</sup> 4-core.....	1,396.72	152.55	-	565.30	29432
29433	120 - 185 mm <sup>2</sup> 2-core and 70 - 120 mm <sup>2</sup> 4-core.....	1,732.63	169.81	-	633.10	29433
29434	240 - 300 mm <sup>2</sup> 2-core and 150 - 185 mm <sup>2</sup> 4-core.....	2,477.24	192.34	-	727.33	29434
29435	400 mm <sup>2</sup> 2-core and 240 - 300 mm <sup>2</sup> 4-core.....	2,873.29	220.31	-	815.51	29435
	Straight through boxes, cast iron for PVC insulated, sheathed and armoured cables as comprising armoured bonds, jointing sleeves and filling with cold compounds, fixed complete. Suitable for cables with maximum cross sectional area of conductors up to :-					
	<i>Each</i>					
29436	16 - 25 mm <sup>2</sup> 2-core.....	920.23	128.80	-	492.03	29436
29437	35 - 50 mm <sup>2</sup> 2-core and 16 mm <sup>2</sup> 4-core.....	1,106.06	140.57	-	536.55	29437
29438	70 - 95 mm <sup>2</sup> 2-core and 25 - 50 mm <sup>2</sup> 4-core.....	1,282.99	155.05	-	592.08	29438
29439	120 - 185 mm <sup>2</sup> 2-core and 70 - 120 mm <sup>2</sup> 4-core.....	1,714.72	170.11	-	649.79	29439
29440	240 - 300 mm <sup>2</sup> 2-core and 150 - 185 mm <sup>2</sup> 4-core.....	2,455.13	189.38	-	723.87	29440
29441	400 mm <sup>2</sup> 2-core and 240 - 300 mm <sup>2</sup> 4-core.....	3,193.48	218.25	-	833.75	29441

Item					Item	
	<b>SERVICE CABLE BOXES (CONT'D)</b>					
	Plastic straight through cable joint comprising armoured bonds, jointing sleeves and filling with cold compounds, fixed complete. Suitable for cables with maximum cross sectional area of conductor up to : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
29442	1.5 - 4 mm <sup>2</sup> 2-core.....	562.04	93.31	-	344.71	29442
29443	6 - 10 mm <sup>2</sup> 2-core.....	607.44	104.55	-	391.13	29443
29444	16 - 25 mm <sup>2</sup> 2-core.....	671.69	115.26	-	433.90	29444
29445	35 - 50 mm <sup>2</sup> 2-core and 16 mm <sup>2</sup> 4-core.....	855.51	126.56	-	476.25	29445
29446	70 - 95 mm <sup>2</sup> 2-core and 25 - 50 mm <sup>2</sup> 4-core.....	1,047.49	141.18	-	531.56	29446
29447	120 - 185 mm <sup>2</sup> 2-core and 70 - 120 mm <sup>2</sup> 4-core.....	2,095.05	153.33	-	576.70	29447
29448	Link box for 240mm <sup>2</sup> 1 core MICS cable.....	1,795.23	20.64	25.76	78.23	29448
	Plastic tee cable joint comprising armoured bonds, jointing sleeves and filling with cold compounds, fixed complete. Suitable for cables with maximum cross sectional area of conductor up to : -					
	<i>Each</i>					
29449	1.5 - 6 mm <sup>2</sup> 2-core.....	908.96	91.42	-	337.75	29449



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>CABLE FIXING</b>					
	Terminating glands for PVC insulated steel wire armoured and PVC sheathed overall c/w PVC shroud suitable for cable of overall diameter with maximum outer sheath of :-					
	<i>Each</i>					
29450	500 mm <sup>2</sup> 1-core.....	160.48	29.99	37.33	115.18	29450
29451	630 mm <sup>2</sup> ditto.....	160.48	29.99	37.33	115.18	29451
29452	800 mm <sup>2</sup> ditto.....	216.81	36.72	45.86	135.05	29452
29453	1000 mm <sup>2</sup> ditto.....	241.80	42.58	54.30	158.51	29453
29454	1.5 - 4 mm <sup>2</sup> 2-core.....	78.08	18.21	22.75	66.65	29454
29455	1.5 - 2.5 mm <sup>2</sup> 4-core, 6 - 10 mm <sup>2</sup> 2-core.....	91.43	21.79	26.90	77.95	29455
29456	4 - 6 mm <sup>2</sup> 4-core, 16 - 35 mm <sup>2</sup> 2-core.....	104.30	23.43	30.01	86.08	29456
29457	10 - 35 mm <sup>2</sup> 4-core, 50 - 95 mm <sup>2</sup> 2-core.....	124.04	27.21	33.96	100.51	29457
29458	50 - 95 mm <sup>2</sup> 4-core.....	146.76	28.57	37.00	108.20	29458
29459	120 - 150 mm <sup>2</sup> ditto.....	157.85	29.73	38.30	112.17	29459
29460	185 mm <sup>2</sup> ditto.....	218.32	35.85	44.49	133.65	29460
29461	240 mm <sup>2</sup> ditto.....	242.21	43.02	53.29	156.71	29461
29462	300 mm <sup>2</sup> ditto.....	316.41	51.26	64.25	194.50	29462
29463	400 mm <sup>2</sup> ditto.....	404.05	59.54	73.34	218.70	29463
	PVC shroud only for PVC / SWA / PVCS cable of size :-					
	<i>Each</i>					
29464	1.5 - 4 mm <sup>2</sup> 2-core.....	8.68	-	-	-	29464
29465	1.5 - 2.5 mm <sup>2</sup> 4-core, 6 - 10 mm <sup>2</sup> 2-core.....	13.05	-	-	-	29465
29466	4 - 6 mm <sup>2</sup> 4-core, 16 - 35 mm <sup>2</sup> 2-core.....	13.28	-	-	-	29466
29467	10 - 35 mm <sup>2</sup> 4-core, 50 - 95 mm <sup>2</sup> 2-core.....	23.72	-	-	-	29467
29468	50 - 95 mm <sup>2</sup> 4-core.....	24.83	-	-	-	29468
29469	120 - 150 mm <sup>2</sup> ditto.....	31.17	-	-	-	29469
29470	185 mm <sup>2</sup> ditto.....	36.07	-	-	-	29470
29471	240 mm <sup>2</sup> ditto.....	42.25	-	-	-	29471
29472	300 mm <sup>2</sup> ditto.....	52.68	-	-	-	29472
29473	400 mm <sup>2</sup> ditto.....	57.83	-	-	-	29473

Item					Item	
<b>CABLE FIXING (CONT'D)</b>						
Saddle clips or bridge, heavy gauge tinned brass, fixed to wood battens with round head brass screws (battens measured separately) :-						
<i>Each</i>						
Complete termination for MICS cables :-						
Including :-						
(a) a complete seal, (brass pot, disc, compound and required number of 150 mm PVC insulating sleeves for the conductor) and						
(b) a complete gland (gland body, gland nut and compression ring).						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29474	20 x 40 mm.....	6.89	1.13	1.32	3.68	29474
29475	20 x 50 mm.....	7.29	1.13	1.32	3.68	29475
29476	20 x 60 mm.....	7.82	1.13	1.32	3.68	29476
29477	20 x 70 mm.....	9.86	1.25	1.63	5.00	29477
29478	20 x 80 mm.....	10.59	1.25	1.63	5.00	29478
29479	20 x 100 mm.....	11.42	1.25	1.63	5.00	29479
29480	20 x 120 mm.....	11.76	1.25	1.63	5.00	29480
29481	6 mm <sup>2</sup> 1-core.....	55.57	11.62	14.82	45.14	29481
29482	10 mm <sup>2</sup> ditto.....	64.92	12.27	15.58	47.25	29482
29483	16 mm <sup>2</sup> ditto.....	78.10	13.62	16.84	50.57	29483
29484	25 mm <sup>2</sup> ditto.....	83.12	14.35	17.66	55.22	29484
29485	35 - 50 mm <sup>2</sup> ditto.....	94.67	15.60	19.85	60.61	29485
29486	70 mm <sup>2</sup> ditto.....	103.23	18.12	22.07	67.88	29486
29487	95 mm <sup>2</sup> ditto.....	108.81	18.85	24.02	72.05	29487
29488	120 mm <sup>2</sup> ditto.....	114.10	20.05	24.78	76.98	29488
29489	150 mm <sup>2</sup> ditto.....	127.87	21.33	25.84	81.81	29489
29490	185 mm <sup>2</sup> ditto.....	144.27	22.00	27.54	87.04	29490
29491	240 mm <sup>2</sup> ditto.....	169.63	22.66	27.81	89.83	29491

Item					Item	
	<b>CABLE FIXING (CONT'D)</b>					
	Complete termination for MICS cables : - (Cont'd)					
	Including : -					
	(a) a complete seal, (brass pot, disc, compound and required number of 150 mm PVC insulating sleeves for the conductor) and					
	(b) a complete gland (gland body, gland nut and compression ring).					
	<b>Each</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29492	1 mm <sup>2</sup> 2-core.....	88.13	14.71	17.93	54.60	29492
29493	1.5 mm <sup>2</sup> ditto.....	91.81	15.36	19.52	58.30	29493
29494	2.5 mm <sup>2</sup> ditto.....	99.20	16.64	20.32	63.83	29494
29495	4 mm <sup>2</sup> ditto.....	104.26	18.08	22.36	68.12	29495
29496	6 mm <sup>2</sup> ditto.....	108.89	18.86	24.05	72.05	29496
29497	10 mm <sup>2</sup> ditto.....	110.04	18.86	24.05	73.37	29497
29498	16 mm <sup>2</sup> ditto.....	118.49	19.50	24.80	78.19	29498
29499	25 mm <sup>2</sup> ditto.....	124.18	21.57	26.40	82.68	29499
29500	1.5 mm <sup>2</sup> 4-core.....	106.31	17.93	21.92	65.98	29500
29501	2.5 mm <sup>2</sup> ditto.....	112.62	18.86	23.64	71.56	29501
29502	4 mm <sup>2</sup> ditto.....	116.48	19.11	24.00	73.76	29502
29503	6 mm <sup>2</sup> ditto.....	119.83	20.27	25.09	76.24	29503
29504	10 mm <sup>2</sup> ditto.....	123.95	20.27	25.09	78.82	29504
29505	16 mm <sup>2</sup> ditto.....	129.72	21.57	26.12	83.34	29505
29506	25 mm <sup>2</sup> ditto.....	158.32	22.22	27.90	88.93	29506
	Cables cleats, 2-bolt cleat for cable with overall diameter of the following : -					
	<b>Each</b>					
29507	50 mm - 75 mm.....	28.84	4.93	6.33	17.66	29507
29508	75 mm - 100 mm.....	43.65	6.21	7.66	23.56	29508
	Cable tiles approved type (sample to be produced) : -					
	<b>Each</b>					
29509	450 x 100 x 25 mm.....	16.32	1.26	1.71	5.09	29509
29510	600 x 175 x 50 mm.....	25.35	1.71	2.53	7.64	29510

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>CABLE FIXING (CONT'D)</b>						
Cable sockets, forged copper, tinned, for the following size single core cables : -						
<i>Each</i>						
29511	2.5 mm <sup>2</sup> .....	7.50	-	-	7.05	29511
29512	4 mm <sup>2</sup> .....	10.77	-	-	10.06	29512
29513	6 mm <sup>2</sup> .....	10.95	-	-	10.17	29513
29514	10 mm <sup>2</sup> .....	12.15	-	-	11.46	29514
29515	16 mm <sup>2</sup> .....	13.49	-	-	12.46	29515
29516	25 mm <sup>2</sup> .....	14.04	-	-	12.53	29516
29517	35 mm <sup>2</sup> .....	18.19	-	-	16.36	29517
29518	50 mm <sup>2</sup> .....	21.33	-	-	18.39	29518
29519	70 mm <sup>2</sup> .....	27.28	-	-	22.17	29519
29520	95 mm <sup>2</sup> .....	34.37	-	-	27.71	29520
29521	120 mm <sup>2</sup> .....	42.09	-	-	32.49	29521
29522	150 mm <sup>2</sup> .....	49.13	-	-	36.41	29522
29523	185 mm <sup>2</sup> .....	58.66	-	-	41.83	29523
29524	240 mm <sup>2</sup> .....	70.88	-	-	46.70	29524
29525	300 mm <sup>2</sup> .....	86.41	-	-	52.59	29525
29526	400 mm <sup>2</sup> .....	110.33	-	-	61.05	29526
29527	500 mm <sup>2</sup> .....	134.70	-	-	67.53	29527
29528	630 mm <sup>2</sup> .....	181.38	-	-	74.91	29528
29529	800 mm <sup>2</sup> .....	280.93	-	-	85.05	29529
29530	1000 mm <sup>2</sup> .....	360.28	-	-	98.85	29530
Cable marker : -						
<i>Each</i>						
29531	Concrete cable marker 230 x 180 x 100 mm.....	56.46	2.78	3.38	9.54	29531
29532	Cable tape off unit with insulating shroud.....	83.92	8.09	10.16	30.98	29532
Jointing compound : -						
<i>Per kg</i>						
29533	Jointing compound, cold pouring (Supply only).....	131.21	-	-	-	29533

Item					Item	
	<b>BUSBAR TRUNKING AND BUS DUCT</b>					
	Busbar trunking, IP54, all-insulated, TPN, c/w ends, elbows and tee units, etc., copper busbar, trunking, supports, hangers, fixing accessories, labels and warning notice of the rated current : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29534	600A.....	5,364.35	98.37	146.99	513.91	29534
29535	800A.....	5,659.52	171.52	219.57	770.74	29535
29536	1000A.....	6,512.72	198.96	254.78	897.88	29536
29537	1200A.....	8,107.01	227.18	291.43	1,027.73	29537
29538	1350A.....	8,906.54	245.75	314.50	1,098.16	29538
29539	1600A.....	10,288.42	272.53	348.12	1,214.12	29539
29540	2000A.....	12,081.49	299.29	382.48	1,337.80	29540
29541	2500A.....	16,525.53	328.90	421.45	1,460.42	29541
	Busbar trunking, IP65, all-insulated, TPN, c/w ends, elbows and tee units, etc., copper busbar, trunking, supports, hangers, fixing accessories, labels and warning notice of the rated current : -					
	<i>Per linear metre</i>					
29542	600A.....	5,536.46	97.99	146.43	511.93	29542
29543	800A.....	5,833.34	170.85	218.71	767.79	29543
29544	1000A.....	6,708.24	198.21	253.81	894.46	29544
29545	1200A.....	8,300.90	226.30	290.34	1,023.80	29545
29546	1350A.....	9,169.41	244.79	313.32	1,093.98	29546
29547	1600A.....	10,642.84	271.47	346.80	1,209.48	29547
29548	2000A.....	12,386.90	298.14	381.05	1,332.70	29548
29549	2500A.....	16,942.98	327.65	419.83	1,454.92	29549

Item					Item	
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	Busbar trunking, IP66, all-insulated, TPN, c/w ends, elbows and tee units, etc., copper busbar, trunking, supports, hangers, fixing accessories, labels and warning notice of the rated current : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
29550	600A.....	5,803.06	97.99	146.43	511.93	29550
29551	800A.....	6,113.18	170.85	218.71	767.79	29551
29552	1000A.....	6,951.76	198.21	253.81	894.46	29552
29553	1200A.....	8,540.89	226.30	290.34	1,023.80	29553
29554	1350A.....	9,377.36	244.84	313.32	1,093.98	29554
29555	1600A.....	10,752.41	271.47	346.80	1,209.48	29555
29556	2000A.....	12,443.97	298.14	381.05	1,332.70	29556
29557	2500A.....	17,682.68	327.65	419.83	1,454.92	29557
	Cable tap box, TPN metal clad with copper busbars for all-insulated totally enclosed plug-in type or feeder type busduct of the rated current : -					
	<i>Each</i>					
29558	600A.....	12,216.36	110.19	165.18	581.37	29558
29559	800A.....	13,468.79	132.09	198.40	696.91	29559
29560	1000A.....	14,620.82	153.47	230.32	815.63	29560
29561	1200A.....	15,138.17	175.26	261.82	933.83	29561
29562	1350A.....	17,720.10	194.72	292.00	1,039.71	29562
29563	1600A.....	18,925.37	214.19	321.09	1,143.34	29563
29564	2000A.....	20,859.40	235.86	354.30	1,267.94	29564
29565	2500A.....	30,476.74	266.61	398.53	1,438.54	29565

Item					Item	
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	90° elbow, edgewise or flatwise, IP54, with copper busbar, trunking, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
29566	600A.....	4,518.09	109.52	164.18	577.88	29566
29567	800A.....	4,668.14	131.31	197.21	692.75	29567
29568	1000A.....	5,025.62	152.55	228.98	810.70	29568
29569	1200A.....	5,538.76	174.23	260.30	928.19	29569
29570	1350A.....	5,884.12	194.72	292.00	1,039.71	29570
29571	1600A.....	6,364.76	214.19	321.09	1,143.34	29571
29572	2000A.....	6,956.29	235.86	354.30	1,267.94	29572
29573	2500A.....	9,604.93	266.61	398.53	1,438.54	29573
	90° elbow, edgewise or flatwise, IP65, with copper busbar, trunking, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -					
	<i>Each</i>					
29574	600A.....	4,635.37	109.52	164.18	577.88	29574
29575	800A.....	4,786.03	131.31	197.21	692.71	29575
29576	1000A.....	5,148.24	152.55	228.98	810.70	29576
29577	1200A.....	5,673.80	174.23	260.30	928.19	29577
29578	1350A.....	6,026.70	194.72	292.00	1,039.71	29578
29579	1600A.....	6,519.05	214.19	321.09	1,143.34	29579
29580	2000A.....	7,123.98	235.86	354.30	1,267.94	29580
29581	2500A.....	9,777.90	266.61	398.53	1,438.54	29581

Item					Item	
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	90° elbow, edgewise or flatwise, IP66, with copper busbar, trunking, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
29582	600A.....	4,863.92	109.74	164.52	579.05	29582
29583	800A.....	5,015.44	131.55	197.59	694.11	29583
29584	1000A.....	5,338.53	152.83	229.43	812.35	29584
29585	1200A.....	5,865.64	174.56	260.81	930.09	29585
29586	1350A.....	6,213.35	195.09	292.60	1,041.85	29586
29587	1600A.....	6,680.15	214.63	321.76	1,145.69	29587
29588	2000A.....	7,249.29	236.32	355.01	1,270.56	29588
29589	2500A.....	10,386.33	267.17	399.34	1,441.54	29589
	Combination elbow, IP54, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	<i>Each</i>					
29590	600A.....	8,759.68	174.56	260.81	930.09	29590
29591	800A.....	9,008.65	208.94	313.06	1,115.95	29591
29592	1000A.....	9,669.84	242.76	364.83	1,302.10	29592
29593	1200A.....	10,640.85	277.57	415.32	1,486.97	29593
29594	1350A.....	11,283.86	306.81	458.52	1,643.96	29594
29595	1600A.....	12,199.67	337.39	506.45	1,808.81	29595
29596	2000A.....	13,331.53	372.46	558.53	1,992.52	29596
29597	2500A.....	18,542.05	420.60	631.10	2,252.58	29597
	Combination elbow, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	<i>Each</i>					
29598	600A.....	8,993.60	174.56	260.81	930.09	29598
29599	800A.....	9,243.85	208.94	313.06	1,115.95	29599
29600	1000A.....	9,914.58	242.76	364.83	1,302.10	29600
29601	1200A.....	10,910.19	277.57	415.32	1,486.97	29601
29602	1350A.....	11,568.22	306.81	458.52	1,643.96	29602



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>		A	B	C	D	
		\$	\$	\$	\$	
	Combination elbow, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :- (Cont'd)					
	<i>Each</i>					
29603	1600A.....	12,507.55	337.39	506.45	1,808.81	29603
29604	2000A.....	13,666.22	372.46	558.53	1,992.52	29604
29605	2500A.....	19,021.09	420.60	631.10	2,252.58	29605
	Combination elbow, IP66, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
29606	600A.....	9,491.91	175.26	261.84	933.83	29606
29607	800A.....	9,745.29	209.75	314.27	1,120.45	29607
29608	1000A.....	10,340.53	243.69	366.27	1,307.34	29608
29609	1200A.....	11,344.16	278.64	416.97	1,492.95	29609
29610	1350A.....	11,994.79	308.01	460.31	1,650.55	29610
29611	1600A.....	12,886.97	338.65	508.40	1,816.03	29611
29612	2000A.....	13,978.80	373.93	560.70	2,000.49	29612
29613	2500A.....	20,191.11	422.22	633.54	2,261.56	29613
	End closer, IP54, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
29614	600A.....	1,086.21	61.23	92.34	317.89	29614
29615	800A.....	1,145.21	67.81	101.64	349.89	29615
29616	1000A.....	1,184.34	73.77	110.36	381.74	29616
29617	1200A.....	1,234.84	80.15	119.06	414.36	29617
29618	1350A.....	1,283.07	85.39	128.08	445.87	29618
29619	1600A.....	1,369.73	94.93	141.81	495.84	29619
29620	2000A.....	1,456.87	104.68	157.26	546.81	29620
29621	2500A.....	1,661.14	118.57	178.21	621.86	29621

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	End closer, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
29622	600A.....	1,086.21	61.23	92.34	317.89	29622
29623	800A.....	1,145.21	67.81	101.64	349.89	29623
29624	1000A.....	1,184.34	73.77	110.36	381.74	29624
29625	1200A.....	1,234.84	80.15	119.06	414.36	29625
29626	1350A.....	1,283.07	85.39	128.08	445.87	29626
29627	1600A.....	1,369.73	94.93	141.81	495.85	29627
29628	2000A.....	1,456.87	104.68	157.26	546.81	29628
29629	2500A.....	1,661.14	118.57	178.21	621.86	29629
	End closer, IP66, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
29630	600A.....	1,086.21	60.87	91.79	316.02	29630
29631	800A.....	1,145.21	67.42	101.01	347.82	29631
29632	1000A.....	1,184.34	73.33	109.68	379.50	29632
29633	1200A.....	1,234.84	79.67	118.37	411.89	29633
29634	1350A.....	1,283.07	84.87	127.33	443.21	29634
29635	1600A.....	1,369.73	94.36	140.98	492.90	29635
29636	2000A.....	1,456.87	104.06	156.34	543.55	29636
29637	2500A.....	1,661.14	117.88	177.17	618.19	29637

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>						
	Expansion joint, IP54, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
29638	600A.....	12,662.99	109.52	164.18	577.88	29638
29639	800A.....	12,992.43	131.31	197.21	692.71	29639
29640	1000A.....	13,041.56	152.55	228.98	810.70	29640
29641	1200A.....	14,343.42	174.23	260.30	928.19	29641
29642	1350A.....	16,192.26	194.72	292.00	1,039.71	29642
29643	1600A.....	16,877.19	214.19	321.09	1,143.34	29643
29644	2000A.....	17,445.79	235.86	354.30	1,267.94	29644
29645	2500A.....	24,077.10	266.61	398.53	1,438.54	29645
	Expansion joint, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
29646	600A.....	12,662.99	109.52	164.18	577.88	29646
29647	800A.....	12,992.43	131.31	197.21	692.71	29647
29648	1000A.....	13,041.56	152.55	228.98	810.70	29648
29649	1200A.....	14,343.42	174.23	260.30	928.19	29649
29650	1350A.....	16,192.26	194.72	292.00	1,039.71	29650
29651	1600A.....	16,877.19	214.19	321.09	1,143.34	29651
29652	2000A.....	17,445.79	235.86	354.30	1,267.94	29652
29653	2500A.....	24,077.10	266.61	398.53	1,438.54	29653

Item					Item	
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	Expansion joint, IP66, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A	B	C	D	
		\$	\$	\$	\$	
29654	600A.....	12,635.50	109.74	164.52	579.05	29654
29655	800A.....	12,964.15	131.55	197.64	694.11	29655
29656	1000A.....	13,013.37	152.83	229.43	812.35	29656
29657	1200A.....	14,312.42	174.56	260.81	930.09	29657
29658	1350A.....	16,157.34	195.09	292.60	1,041.85	29658
29659	1600A.....	16,840.47	214.63	321.71	1,145.69	29659
29660	2000A.....	17,407.90	236.32	355.01	1,270.56	29660
29661	2500A.....	24,024.58	267.17	399.34	1,441.54	29661
	Flanged end, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
29662	600A.....	3,068.63	60.98	91.97	316.64	29662
29663	800A.....	3,382.15	67.53	101.21	348.50	29663
29664	1000A.....	3,451.22	73.51	109.91	380.26	29664
29665	1200A.....	3,811.16	79.81	118.65	412.74	29665
29666	1350A.....	4,018.46	85.03	127.58	444.12	29666
29667	1600A.....	4,442.78	94.57	141.28	493.90	29667
29668	2000A.....	4,965.31	104.30	156.65	544.66	29668
29669	2500A.....	7,163.87	118.10	177.53	619.41	29669

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	Fuseswitch TPN, metal clad, plug-in type c/w HRC fuses for all-insulated totally enclosed TPN copper busduct of the rated current :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
29670	200A.....	7,487.34	152.04	199.66	700.66	29670
29671	400A.....	13,101.10	198.54	260.81	930.09	29671
29672	600A.....	17,590.72	253.81	333.02	1,188.80	29672
	Busduct, TPN copper busbars, all-insulated, totally enclosed, indoor feeder type c/w ends, elbows, tee unit, supports, hangers, fixing accessories, etc. of the rated current :-					
	<i>Per linear metre</i>					
29673	600A.....	4,876.74	99.36	147.92	510.00	29673
29674	800A.....	5,062.72	117.28	174.77	605.00	29674
29675	1000A.....	5,854.26	134.84	202.30	697.44	29675
29676	1200A.....	7,389.07	152.94	228.59	793.87	29676
29677	1350A.....	8,161.15	169.11	253.81	873.42	29677
29678	1600A.....	9,467.72	187.61	280.12	968.40	29678
29679	2000A.....	11,049.00	206.94	310.41	1,073.43	29679
29680	2500A.....	15,145.64	228.85	342.42	1,181.20	29680
	Busduct, TPN copper busbars, all-insulated totally enclosed, indoor plug-in type c/w ends, elbows, tee unit, supports, hangers, fixing accessories, etc. of the rated current :-					
	<i>Per linear metre</i>					
29681	600A.....	5,719.52	99.36	147.92	528.79	29681
29682	800A.....	5,917.83	117.28	174.77	605.00	29682
29683	1000A.....	6,749.44	134.84	202.30	697.44	29683
29684	1200A.....	8,257.19	152.94	228.59	793.87	29684
29685	1350A.....	9,044.77	169.11	253.81	873.42	29685
29686	1600A.....	10,465.42	187.61	280.12	968.40	29686
29687	2000A.....	12,140.13	206.94	310.41	1,073.43	29687
29688	2500A.....	17,140.21	228.85	342.42	1,181.20	29688

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>						
	MCCB, TPN, metal clad, plug-in type, minimum 40 kA at 380V, for all-insulated totally enclosed TPN copper busduct of the rated current :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
29689	200A.....	8,550.18	157.80	202.30	697.44	29689
29690	400A.....	13,491.61	206.03	264.74	914.00	29690
29691	600A.....	17,366.16	262.81	337.34	1,165.96	29691
	Busduct, TPN copper busbars, all-insulated totally enclosed, outdoor feeder c/w ends, elbows, tee unit, supports, hangers, fixing accessories, etc. of the rated current :-					
	<i>Per linear metre</i>					
29692	600A.....	5,730.33	98.57	146.77	506.08	29692
29693	800A.....	5,883.37	116.38	173.41	600.31	29693
29694	1000A.....	6,186.19	133.80	200.74	692.09	29694
29695	1200A.....	7,397.56	151.74	226.85	787.79	29695
29696	1350A.....	8,143.98	167.83	251.85	866.72	29696
29697	1600A.....	9,329.20	186.17	277.97	961.01	29697
29698	2000A.....	10,837.69	205.35	308.04	1,065.20	29698
29699	2500A.....	14,856.37	227.09	339.79	1,172.24	29699
	90° offset, edgewise or flatwise, IP54 for all insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
29700	600A.....	8,650.04	173.89	260.81	930.09	29700
29701	800A.....	8,895.72	208.60	311.88	1,115.97	29701
29702	1000A.....	9,587.37	242.34	364.16	1,300.00	29702
29703	1200A.....	10,507.28	277.80	414.89	1,486.20	29703
29704	1350A.....	11,119.64	307.75	461.54	1,650.55	29704
29705	1600A.....	12,118.27	338.33	508.18	1,816.13	29705
29706	2000A.....	13,165.02	373.29	559.81	2,002.80	29706
29707	2500A.....	18,310.01	421.94	633.27	2,271.64	29707

Item					Item	
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	90° offset, edgewise or flatwise, IP65 for all insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
29708	600A.....	8,881.05	174.23	261.34	931.95	29708
29709	800A.....	9,127.96	209.00	312.47	1,118.24	29709
29710	1000A.....	9,829.96	242.82	364.85	1,302.61	29710
29711	1200A.....	10,773.20	278.34	415.71	1,489.20	29711
29712	1350A.....	11,399.84	308.35	462.44	1,653.89	29712
29713	1600A.....	12,424.08	339.00	509.19	1,819.78	29713
29714	2000A.....	13,495.52	374.04	560.91	2,006.89	29714
29715	2500A.....	18,783.03	422.76	634.48	2,276.21	29715
	90° offset, edgewise or flatwise, IP66 for all insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
29716	600A.....	9,352.56	174.23	261.34	931.95	29716
29717	800A.....	9,601.98	209.00	312.47	1,118.24	29717
29718	1000A.....	9,829.96	242.82	364.85	1,302.61	29718
29719	1200A.....	11,141.05	278.34	415.71	1,489.20	29719
29720	1350A.....	11,399.84	308.35	462.44	1,653.89	29720
29721	1600A.....	12,772.81	339.00	509.19	1,819.78	29721
29722	2000A.....	13,774.00	374.04	560.91	2,006.89	29722
29723	2500A.....	19,894.67	422.76	634.48	2,276.21	29723

Item					Item	
	<b>BUSBAR TRUNKING AND BUS DUCT (CONT'D)</b>					
	Tee unit, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
29724	200A.....	3,761.28	87.79	149.24	594.04	29724
29725	400A.....	4,074.63	87.79	159.89	608.87	29725
29726	600A.....	4,272.37	120.18	180.01	621.76	29726
29727	800A.....	4,583.07	142.95	214.17	746.90	29727
29728	1000A.....	4,935.11	166.76	250.07	869.46	29728
29729	1200A.....	5,495.01	191.48	286.53	990.81	29729
29730	1350A.....	5,855.32	213.11	319.55	1,085.66	29730
29731	1600A.....	6,342.72	234.74	352.39	1,200.91	29731
29732	2000A.....	6,961.16	258.26	386.84	1,325.71	29732
29733	2500A.....	9,604.51	292.15	438.72	1,501.86	29733



**Section 30**

**ELECTRICAL INSTALLATION -**

**MISCELLANEOUS**

Item	Item								
<b>DISTRIBUTION BOARDS</b>									
Fuseboard to BS EN 60439-3 with 500V fuse base and holder, fixed, connected retained with labels, circuit list etc., including solid copper bars for neutral and for earth, suitable for fuses to IEC 60269-1 (HRC fuses measured separately) :-									
	<table border="1"> <thead> <tr> <th style="text-align: center;">Supply and fix</th> <th style="text-align: center;">Take down and clear away</th> <th style="text-align: center;">Take down and set aside for re-use</th> <th style="text-align: center;">Fix only</th> </tr> <tr> <th style="text-align: center;">A \$</th> <th style="text-align: center;">B \$</th> <th style="text-align: center;">C \$</th> <th style="text-align: center;">D \$</th> </tr> </thead> </table>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	A \$	B \$	C \$	D \$
Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only						
A \$	B \$	C \$	D \$						
<b>Each</b>									
30001	20/ 32A SPN 4 way ..... 1,607.02 30.78 36.31 94.62 30001								
30002	20/ 32A SPN 6 way ..... 2,054.82 33.04 39.46 105.78 30002								
30003	20/ 32A SPN 8 way ..... 2,412.54 33.04 39.46 105.78 30003								
30004	20/ 32A SPN 10 way ..... 2,798.28 34.90 43.70 134.21 30004								
30005	20/ 32A SPN 12 way ..... 3,181.02 34.90 43.70 134.21 30005								
30006	20/ 32A TPN 2 way..... 2,143.44 30.78 36.31 94.62 30006								
30007	20/ 32A TPN 4 way..... 2,993.46 34.90 43.70 134.21 30007								
30008	20/ 32A TPN 6 way..... 3,944.88 34.90 43.70 134.21 30008								
30009	20/ 32A TPN 8 way..... 4,992.65 43.70 54.21 167.83 30009								
30010	63A TPN 2 way ..... 4,777.78 30.78 36.31 94.62 30010								
30011	63A TPN 4 way ..... 6,824.89 34.90 43.70 134.21 30011								
30012	63A TPN 6 way ..... 8,906.59 34.90 43.70 134.21 30012								
30013	63A TPN 8 way ..... 10,910.09 43.70 54.21 167.83 30013								
Metal boxes only for distribution boards 250/ 500 V (as per approved pattern) including solid copper earth bar, neutral bar, circuit list etc., (fuses base and holder not included), for fuse-way of the following sizes :-									
<b>Each</b>									
30014	32A SPN 4 - 6 way..... 518.04 17.43 21.94 69.41 30014								
30015	32A SPN 7 - 9 way ..... 893.45 23.43 29.18 93.62 30015								
30016	32A SPN 10 - 12 way..... 962.40 32.71 41.17 130.88 30016								
30017	32A TPN 2 - 4 way..... 1,216.61 32.71 41.17 130.88 30017								
30018	63A TPN 4 way ..... 1,980.03 32.71 41.17 130.88 30018								
30019	63A TPN 6 way..... 2,118.61 41.81 52.17 166.82 30019								
30020	63A TPN 8 way..... 2,256.25 50.20 63.13 200.83 30020								

Item	Item								
<b>DISTRIBUTION BOARDS (CONT'D)</b>									
MCB distribution boards to IEC 60439-3, metal clad, flush mounting with 100 A DP isolating switch for MCB to IEC 60898 (excluding MCBs and cutting into wall measured separately where applicable) :-									
<i>Each</i>									
	<table border="1"> <thead> <tr> <th style="text-align: center;">Supply and fix</th> <th style="text-align: center;">Take down and clear away</th> <th style="text-align: center;">Take down and set aside for re-use</th> <th style="text-align: center;">Fix only</th> </tr> <tr> <th style="text-align: center;">A \$</th> <th style="text-align: center;">B \$</th> <th style="text-align: center;">C \$</th> <th style="text-align: center;">D \$</th> </tr> </thead> </table>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	A \$	B \$	C \$	D \$
Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only						
A \$	B \$	C \$	D \$						
30021	SPN 4 - 6 way..... 393.27 11.50 14.85 47.09 30021								
30022	SPN 7 - 9 way..... 458.46 17.39 21.32 67.59 30022								
30023	SPN 10 - 12 way..... 528.31 22.48 28.19 91.20 30023								
30024	SPN 13 - 15 way..... 617.35 28.28 35.20 120.40 30024								
30025	SPN 16 - 18 way..... 690.56 33.69 42.75 153.70 30025								
MCB distribution boards to IEC 60439-3, metal clad, surface mounting with 100 A DP isolating switch for MCB to IEC 60898 (excluding MCBs) :-									
<i>Each</i>									
30026	SPN 4 - 6 way..... 468.17 17.43 21.94 70.53 30026								
30027	SPN 7 - 9 way..... 573.31 23.43 29.18 94.31 30027								
30028	SPN 10 - 12 way..... 636.85 32.71 41.17 131.97 30028								
30029	SPN 13 - 15 way..... 700.22 51.38 63.47 208.76 30029								
30030	SPN 16 - 18 way..... 775.03 62.35 78.10 254.69 30030								
MCB distribution boards, metal case (locally made) surface mounting, with space for isolating switch if required, fixed, connected with labels, circuit list etc., including solid copper bars for neutral and for earth (MCBs & isolating switch not included) :-									
<i>Each</i>									
30031	SPN 1 - 3 way..... 271.33 17.07 20.97 65.91 30031								
30032	TPN 2 way..... 378.61 17.77 22.53 71.49 30032								
MCB distribution boards, metal clad, to IEC 60439-3, surface mounting with 80A DP RCCB (30 mA) for MCBs to IEC 60898 (excluding MCBs) :-									
<i>Each</i>									
30033	SPN 6 way..... 709.92 17.77 21.94 68.96 30033								
30034	SPN 8 way..... 751.93 23.65 28.90 92.15 30034								

Item					Item	
<b>DISTRIBUTION BOARDS (CONT'D)</b>						
MCB distribution boards, metal clad, to IEC 60439-3, surface mounting split bar board with 80/ 100A DP switch and 60/ 80A, 30 mA RCD for MCBs to IEC 60898 (excluding MCBs) :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30035	Single-phase 4 - 6 way.....	789.51	17.82	21.98	69.10	30035
30036	Single-phase 7 - 9 way.....	841.18	23.71	28.95	92.32	30036
30037	Single-phase 10 - 12 way.....	902.06	32.60	41.14	130.00	30037
MCB distribution boards, metal clad, to IEC 60439-3, surface mounting with busbar rated at not less than 200A for MCBs to IEC 60898 (excluding MCBs) :-						
<i>Each</i>						
30038	TPN 4 way (Direct termination).....	1,102.24	32.60	41.14	130.00	30038
30039	TPN 4 way with 100A TP isolator.....	1,200.55	32.60	41.14	130.00	30039
30040	TPN 6 way (Direct termination).....	1,164.66	41.82	52.13	164.55	30040
30041	TPN 6 way with 100A TP isolator.....	1,359.66	41.82	52.13	164.55	30041
30042	TPN 8 way (Direct termination).....	1,386.73	50.26	63.48	201.27	30042
30043	TPN 8 way with 100A TP isolator.....	1,504.16	50.26	63.48	201.27	30043
30044	TPN 10 way (Direct termination).....	1,414.33	60.41	77.31	246.18	30044
30045	TPN 10 way with 100A TP isolator.....	1,541.91	60.41	77.31	246.18	30045
30046	TPN 12 way (Direct termination).....	1,676.78	63.04	79.23	253.18	30046
30047	TPN 12 way with 100A TP isolator.....	1,969.20	63.04	79.23	253.18	30047
30048	TPN 14/ 16 way (Direct termination).....	2,190.14	70.65	88.75	283.98	30048
30049	TPN 14/ 16 way with 100A isolator.....	2,554.49	70.65	88.75	283.98	30049
30050	TPN 18 way (Direct termination).....	2,719.33	83.16	103.95	324.98	30050
30051	TPN 18 way with 160A TP isolator.....	3,193.55	83.16	103.95	324.98	30051
MCB distribution board accessories :-						
<i>Each</i>						
30052	Cable clamp.....	13.61	1.67	2.08	5.14	30052
30053	Blanking plate.....	8.44	1.67	2.08	5.14	30053
30054	Back plate for mounting 1 - 3 MCB.....	26.52	1.67	2.08	5.14	30054

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>DISTRIBUTION BOARDS (CONT'D)</b>					
	Miniature circuit breakers to IEC 60898 with rated instantaneous tripping current of Type B/ Type C classification and rated short circuit breaking capacity of at least 6000 short circuit rating. The rates shall include opening and closing of MCB board covers or front plates, taking down and re-fixing of blanking plate where required : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
30055	5/ 10/ 16/ 20/ 32/ 40/ 50/ 63A SP.....	49.90	4.91	5.82	15.49	30055
30056	5/ 10/ 16/ 20/ 32/ 40/ 50/ 63A DP.....	125.89	4.91	5.82	15.49	30056
30057	5/ 10/ 16/ 20/ 32/ 40/ 50/ 63A TP.....	223.77	7.49	8.96	23.73	30057
30058	Complete set 40A lateral main MCB tap off unit.....	433.49	10.01	12.54	40.06	30058
	Isolating switches, all insulated for MCB board, include opening and closing of MCB board cover/ front plates : -					
	<i>Each</i>					
30059	30/ 32A DP.....	133.68	9.82	11.85	30.75	30059
30060	60/ 63A DP.....	139.07	9.82	11.85	30.75	30060
30061	100A DP.....	178.95	11.18	13.25	35.17	30061
30062	200A DP.....	721.51	11.87	15.26	48.00	30062
30063	63A TP.....	196.48	11.18	13.25	35.17	30063
30064	100/ 125A TP.....	241.77	11.18	13.25	35.17	30064
30065	160/ 200A TP.....	1,078.16	11.87	15.26	48.00	30065

Item					Item	
<b>DISTRIBUTION BOARDS (CONT'D)</b>						
	MCCB distribution boards to IEC 60439-1 and 60439-3 surface mounting with moulded-case isolating switch, suitable for MCCB to IEC 60947-2 :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30066	100A TPN 4 way.....	3,366.40	41.51	51.73	163.28	30066
30067	200A TPN 4 way.....	3,581.28	41.51	51.73	163.28	30067
30068	250A TPN 4 way.....	3,832.33	41.51	51.73	163.28	30068
30069	300A TPN 4 way.....	4,110.41	41.51	51.73	163.28	30069
30070	400A TPN 4 way.....	4,553.93	41.51	51.73	163.28	30070
30071	600A TPN 4 way.....	5,640.25	41.51	51.73	163.28	30071
30072	800A TPN 4 way.....	6,321.42	41.51	51.73	163.28	30072
30073	200A TPN 6 way.....	4,507.10	49.90	63.00	199.72	30073
30074	250A TPN 6 way.....	4,654.79	49.90	63.00	199.72	30074
30075	300A TPN 6 way.....	4,992.54	49.90	63.00	199.72	30075
30076	400A TPN 6 way.....	5,651.08	49.90	63.00	199.72	30076
30077	600A TPN 6 way.....	6,060.89	49.90	63.00	199.72	30077
30078	800A TPN 6 way.....	6,707.79	49.90	63.00	199.72	30078
30079	100A TPN 8 way.....	5,416.53	63.99	80.58	254.34	30079
30080	200A TPN 8 way.....	5,513.36	63.99	80.58	254.34	30080
30081	250A TPN 8 way.....	5,880.33	63.99	80.58	254.34	30081
30082	300A TPN 8 way.....	6,149.31	63.99	80.58	254.34	30082
30083	400A TPN 8 way.....	6,780.82	63.99	80.58	254.34	30083
30084	600A TPN 8 way.....	7,689.47	63.99	80.58	254.34	30084
30085	800A TPN 8 way.....	8,539.73	63.99	80.58	254.34	30085
30086	300A TPN 10 way.....	7,135.92	77.57	97.54	308.01	30086
30087	400A TPN 10 way.....	7,629.26	77.57	97.54	308.01	30087
30088	600A TPN 10 way.....	8,538.55	77.57	97.54	308.01	30088
30089	300A TPN 12 way.....	8,094.76	90.84	113.56	360.69	30089
30090	400A TPN 12 way.....	8,575.51	90.84	113.56	360.69	30090
30091	600A TPN 12 way.....	9,826.91	90.84	113.56	360.69	30091
30092	600A TPN 14 way.....	10,934.82	104.80	131.33	417.14	30092

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>MOULDED CASE CIRCUIT BREAKERS</b>						
TP moulded case circuit breaker (MCCB), 23 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -						
<i>Each</i>						
30093	15/ 20/ 30/ 32A.....	667.81	22.15	28.00	88.18	30093
30094	40/ 50/ 60/ 63A.....	696.94	28.52	35.76	115.22	30094
30095	75/ 100A.....	714.15	32.48	40.99	129.91	30095
30096	225/ 300A.....	2,201.60	32.48	40.99	129.91	30096
30097	400A.....	2,475.84	32.48	40.99	129.91	30097
TP moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 40 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -						
<i>Each</i>						
30098	30/ 32/ 40/ 50A.....	1,030.56	24.80	31.20	98.12	30098
30099	60/ 63/ 75/ 100A.....	1,060.04	32.48	40.99	129.91	30099
30100	125/ 150/ 175/ 200/ 225A.....	1,509.94	32.48	40.99	129.91	30100
30101	250/ 300/ 315/ 350/ 400A.....	3,335.18	32.48	40.99	129.91	30101
30102	500/ 600/ 630A.....	4,572.98	38.33	48.24	152.04	30102
TP moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 50 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -						
<i>Each</i>						
30103	250 - 400A.....	4,375.20	32.48	40.99	129.91	30103
30104	500 - 600A.....	5,633.01	38.33	48.24	152.04	30104
30105	630 - 800A.....	6,737.21	43.02	54.86	174.20	30105
TPN moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 23 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -						
<i>Each</i>						
30106	15/ 20/ 30/ 32A.....	728.61	22.15	28.00	88.18	30106
30107	40/ 50/ 60/ 63A.....	758.45	28.52	35.76	115.22	30107
30108	75/ 100A.....	774.32	32.48	40.99	129.91	30108
30109	225/ 300A.....	3,326.86	32.48	40.99	129.91	30109
30110	400A.....	3,816.77	32.48	40.99	129.91	30110

Item					Item	
<b>MOULDED CASE CIRCUIT BREAKERS (CONT'D)</b>						
SP moulded case circuit breaker (MCCB), 23 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30111	15/ 20/ 30/ 32A.....	512.60	22.11	27.95	87.98	30111
30112	40/ 50/ 60/ 63A.....	584.72	28.47	35.66	114.99	30112
TPN moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 40 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -						
<i>Each</i>						
30113	Up to 50A.....	1,331.28	24.75	31.14	97.92	30113
30114	50A to 100A.....	1,374.52	32.42	40.91	129.66	30114
30115	100A to 250A.....	1,937.93	32.42	40.91	129.66	30115
30116	250A to 400A.....	3,550.68	32.42	40.91	129.66	30116
30117	400A to 630A.....	5,105.54	38.25	48.14	151.74	30117
TPN moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 50 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -						
<i>Each</i>						
30118	250 to 400A.....	5,646.37	32.42	40.91	129.66	30118
30119	500 to 600A.....	7,505.77	38.25	48.14	151.74	30119
30120	600 to 800A.....	8,913.76	42.94	54.78	173.86	30120
Metal box for TPN MCCB : -						
<i>Each</i>						
30121	Metal box for TPN MCCB up to 100A.....	321.20	13.33	16.59	49.61	30121
30122	Metal box for TPN MCCB of 100A to 225A.....	477.96	13.33	16.59	49.61	30122
30123	Metal box for TPN MCCB of 225A to 400A.....	634.06	19.44	24.46	76.63	30123
30124	Metal box for TPN MCCB of 400A to 800A.....	1,202.72	19.44	24.46	76.63	30124
IDMT earth fault relay : -						
<i>Each</i>						
30125	IDMT earth fault relay c/w necessary current transformers, accessories and interconnections etc. including site test to be witnessed and to the satisfaction of the supply company .....	5,436.32	38.25	48.14	151.74	30125



Item					Item	
<b>MOULDED CASE CIRCUIT BREAKERS (CONT'D)</b>						
Metal box for IDMT relay : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30126	Metal box for TPN MCCB up to 100A & IDMT relay.....	578.13	19.72	24.72	77.86	30126
30127	Metal box for TPN MCCB of 100A to 225A & IDMT relay.....	721.99	19.72	24.72	77.86	30127
30128	Metal box for TPN MCCB of 225A to 400A & IDMT relay.....	924.29	19.72	24.72	77.86	30128
30129	Metal box for TPN MCCB of 400A to 800A & IDMT relay.....	937.77	19.72	24.72	77.86	30129
<b>CONTACTORS</b>						
Contactors to IEC 60947-4-1 : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30130	40A or below TPN with 220/ 380V coil.....	261.83	12.07	15.49	49.25	30130
30131	60A TPN with 220/ 380V coil.....	398.85	19.75	24.76	78.53	30131
30132	80/ 100A TPN with 220/ 380V coil.....	647.94	24.80	31.20	98.12	30132
30133	Metal box for 40A or below TPN contactor.....	173.90	14.82	18.68	56.97	30133
30134	Metal box for 60A TPN contactor.....	257.30	17.38	21.45	65.98	30134
30135	Metal box for 80/ 100A TPN contactor.....	391.26	19.75	24.76	78.00	30135
<b>BUSBAR CHAMBER UNITS AND ACCESSORIES</b>						
Busbar chamber units, 4 full size solid drawn copper busbars, c/w cover and main terminals : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30136	200A, 600 mm long.....	2,268.44	88.09	111.00	331.10	30136
30137	200A 900 mm long.....	2,677.81	123.96	154.65	467.84	30137
30138	200A, 1200 mm long.....	3,146.37	149.66	188.06	563.97	30138
30139	200A, 1500 mm long.....	3,945.60	161.41	203.23	603.13	30139
30140	300A, 600 mm long.....	2,335.80	88.09	111.00	331.10	30140
30141	300A, 900 mm long.....	2,765.38	123.96	154.65	467.84	30141
30142	300A, 1200 mm long.....	3,331.63	149.66	188.06	563.97	30142
30143	300A, 1500 mm long.....	4,195.22	161.41	203.23	603.13	30143

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>BUSBAR CHAMBER UNITS AND ACCESSORIES (CONT'D)</b>						
Busbar chamber units, 4 full size solid drawn copper busbars, c/w cover and main terminals :- (Cont'd)						
<i>Each</i>						
30144	400A, 600 mm long.....	2,532.94	88.09	111.00	331.10	30144
30145	400A, 900 mm long.....	3,031.47	123.96	154.65	467.84	30145
30146	400A, 1200 mm long.....	4,287.01	149.66	188.06	563.97	30146
30147	400A, 1500 mm long.....	5,074.06	161.41	203.23	603.13	30147
30148	500A, 600 mm long.....	2,905.96	88.09	111.00	331.10	30148
30149	500A, 900 mm long.....	3,501.75	123.96	154.65	467.84	30149
30150	500A, 1200 mm long.....	5,026.01	149.66	188.06	563.97	30150
30151	500A, 1500 mm long.....	5,576.74	161.41	203.23	603.13	30151
30152	630A, 600 mm long.....	3,354.39	149.36	187.69	562.87	30152
30153	630A, 900 mm long.....	4,073.71	185.21	233.19	699.55	30153
30154	630A, 1200 mm long.....	5,499.51	216.21	272.53	816.68	30154
30155	630A, 1500 mm long.....	6,382.02	250.36	313.97	945.36	30155
30156	800A, 600 mm long.....	3,736.85	149.36	187.69	562.87	30156
30157	800A, 900 mm long.....	4,810.99	185.21	233.19	699.55	30157
30158	800A, 1200 mm long.....	6,048.21	216.21	272.53	816.68	30158
30159	800A, 1500 mm long.....	7,323.66	250.36	313.97	945.36	30159
Cover for busbar chamber unit of the following length and rating between 200A and 800A :-						
<i>Each</i>						
30160	600 mm.....	337.39	7.64	9.00	23.48	30160
30161	900 mm.....	393.55	7.64	9.00	23.48	30161
30162	1200 mm.....	467.81	7.64	9.00	23.48	30162
30163	1500 mm.....	531.90	7.64	9.00	23.48	30163
Busbar clamp :-						
<i>Each</i>						
30164	160A.....	104.60	2.63	3.30	10.30	30164
30165	160A to 400A.....	192.20	2.79	3.60	11.44	30165
30166	400A to 800A.....	266.39	3.18	4.02	12.43	30166

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>BUSBAR CHAMBER UNITS AND ACCESSORIES (CONT'D)</b>		A	B	C	D	
		\$	\$	\$	\$	
	Cable clamps and brass cable sockets for use with busbar chambers : -					
	<i>Each</i>					
30167	32A/ 63A.....	81.47	2.63	3.15	8.09	30167
30168	100A.....	106.42	2.63	3.15	8.09	30168
30169	160A.....	110.74	4.21	5.10	12.97	30169
30170	200A.....	117.18	4.95	5.88	15.25	30170
30171	315A.....	132.04	5.88	7.24	18.39	30171
30172	400A.....	203.69	6.82	8.37	23.29	30172
30173	500A.....	224.89	7.50	9.05	25.60	30173
30174	630A.....	227.49	8.44	10.11	28.28	30174
30175	800A.....	287.11	10.67	13.10	36.00	30175
	Connection flanges (including cutting and drilling busbar chamber, assembly of switch to flange, and flange to busbar chamber with provision and installation of interconnections as necessary) : -					
	<i>Each</i>					
30176	SPN 32A/ 63A.....	104.52	9.95	11.99	40.20	30176
30177	SPN 100A.....	131.52	13.23	16.39	52.37	30177
30178	TPN 32A.....	127.03	11.87	15.14	48.54	30178
30179	TPN 63A.....	159.38	12.64	15.77	49.64	30179
30180	TPN 100A.....	201.87	15.16	19.65	60.19	30180
30181	TPN 160/ 200A.....	244.70	18.26	23.53	72.70	30181
30182	TPN 300/ 315A.....	307.03	24.89	31.42	99.45	30182
30183	TPN 400/ 500A.....	345.99	31.09	38.94	123.24	30183
30184	TPN 600/ 630/ 800A.....	390.08	37.84	47.54	150.19	30184
	Porcelain support for busbar or for use in link box : -					
	<i>Each</i>					
30185	Not exceeding 300A.....	28.64	4.76	6.60	18.33	30185
30186	300A - 500A.....	36.29	6.11	7.72	23.38	30186
30187	500A - 1000A.....	49.74	7.33	9.33	28.48	30187

Item					Item	
	<b>BUSBAR CHAMBER UNITS AND ACCESSORIES (CONT'D)</b>					
	Cable entry/ conduit box of approved type for switchfuses, all necessary work including cutting and drilling of trunking, assembly and connection of switchfuses, etc. :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30188	TPN 160/ 200A.....	286.79	24.89	31.42	99.45	30188
30189	TPN 315A.....	343.41	31.09	38.94	123.24	30189
30190	TPN 400/ 500A.....	438.46	37.84	47.54	150.19	30190
30191	TPN 630/ 800A.....	543.12	44.40	55.42	175.27	30191
	Insulating sheet as paxolin or ebonite, etc., used in conjunction with distribution boxes and switch gear (to be drilled and cut to shape as required) :-					
	<i>Per square metre</i>					
30192	1.5 mm thick.....	254.79	29.30	36.61	114.69	30192
30193	3 mm thick.....	383.03	39.34	49.26	153.10	30193
30194	7 mm thick.....	648.68	49.26	61.24	190.56	30194
30195	10 mm thick.....	871.01	59.38	73.79	229.33	30195
30196	12 mm thick.....	1,216.02	78.70	98.37	306.63	30196
30197	20 mm thick.....	1,486.53	98.37	122.13	384.05	30197
30198	25 mm thick.....	1,767.23	103.12	128.50	402.09	30198

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>RESIDUAL CURRENT CIRCUIT BREAKERS</b>					
	Residual current operated circuit breaker (RCCB) to IEC 61008-1 with minimum rated short circuit breaking capacity of 3 kA :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
30199	25/ 32/ 40A DP, 30 mA trip.....	265.68	10.00	11.50	32.14	30199
30200	25/ 32/ 40A DP, 100 mA trip.....	387.85	11.00	12.64	34.42	30200
30201	25/ 32/ 40A DP, 300 mA trip.....	566.24	11.00	12.64	34.42	30201
30202	63A DP, 30 mA trip.....	358.20	10.00	11.50	32.14	30202
30203	80A DP, 30 mA trip.....	587.73	10.00	11.50	32.14	30203
30204	100A DP, 30 mA trip.....	824.11	10.00	11.50	32.14	30204
30205	10/ 13/ 16/ 20/ 25/ 32/ 40A TPN, 30 mA trip.....	409.63	14.82	18.77	59.02	30205
30206	25/ 40A TPN, 100 mA trip.....	420.23	14.82	18.77	59.02	30206
30207	63A TPN, 30 mA trip.....	426.42	14.82	18.77	59.02	30207
30208	63A TPN, 100 mA trip.....	447.86	14.82	18.77	59.02	30208
30209	63A TPN, 300/ 500 mA trip.....	571.86	14.82	18.77	59.02	30209
30210	100A TPN, 30 mA trip.....	1,251.33	14.82	18.77	59.02	30210
30211	100A TPN, 100 mA trip.....	1,303.23	14.82	18.77	59.02	30211
	Residual current operated circuit breaker (RCCB) to IEC 61008-1 with minimum rated short circuit breaking capacity of 22 - 40 kA :-					
	<i>Each</i>					
30212	100A TPN, 500 mA trip.....	2,624.93	19.52	24.38	78.02	30212
30213	200A TPN, 500 mA trip.....	3,278.69	22.17	27.96	90.13	30213
30214	400A TPN, 500 mA trip.....	3,967.19	24.91	31.45	100.73	30214

Item					Item
	<b>RESIDUAL CURRENT CIRCUIT BREAKERS (CONT'D)</b>				
	Metal box for RCCB, 10 to 100A SP/ DP :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
	<i>Each</i>	A \$	B \$	C \$	D \$
30215	2 ways.....	112.55	13.16	16.36	49.47
30216	4 ways.....	162.01	13.16	16.36	49.47
30217	6 ways.....	288.06	19.39	24.10	75.44
30218	8 ways.....	401.54	19.39	24.10	75.44
30219	12 ways.....	518.10	19.39	24.10	75.44
	Metal box for RCCB, 10 to 100A TP :-				
	<i>Each</i>				
30220	2 ways.....	160.06	13.16	16.36	49.47
30221	4 ways.....	370.39	13.16	16.36	49.47
30222	6 ways.....	533.39	19.39	24.10	75.44
30223	8 ways.....	638.11	19.39	24.10	75.44
	Residual current operated circuit breaker with integral over current protection (RCBO) to IEC 61009 with rated instantaneous tripping current of Type B/ Type C classification and minimum rated short circuit breaking capacity of 6kA :-				
	<i>Each</i>				
30224	10/ 13/ 16/ 20/ 25/ 32/ 40A DP, 30 mA trip.....	270.47	9.94	11.42	31.96

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>SWITCH AND FUSE GEAR</b>						
	Switch fuses, metal clad, surface mounting, c/w HRC fuses :-					
	<i>Each</i>					
30225	Switch fuse 20A, SPN.....	508.09	15.40	19.27	57.70	30225
30226	Ditto 32A, SPN.....	536.83	17.14	21.04	64.39	30226
30227	Ditto 63A, SPN.....	613.03	21.72	27.30	82.77	30227
30228	Ditto 100A, SPN.....	773.97	33.58	41.88	127.99	30228
30229	Ditto 20A, TPN.....	653.64	19.52	24.52	75.38	30229
30230	Ditto 32A, TPN.....	693.36	19.52	24.52	75.38	30230
30231	Ditto 63A, TPN.....	836.62	33.92	42.64	127.99	30231
30232	Ditto 100A, TPN.....	1,110.59	46.40	58.09	178.23	30232
	Neutral terminal :-					
	<i>Each</i>					
30233	Neutral terminal for switchfuse 15A/ 30A.....	62.66	5.07	6.23	15.63	30233
30234	Neutral terminal for switchfuse 60A.....	68.15	6.60	7.89	19.83	30234
30235	Neutral terminal for switchfuse 100A.....	84.49	9.18	11.36	33.22	30235
	Fuse switches, metal clad, c/w conduit boxes, busbar chamber connection flanges and HRC fuses :-					
	<i>Each</i>					
30236	160A, TPN.....	1,705.85	55.68	69.58	210.14	30236
30237	200A, TPN.....	1,986.31	55.68	69.58	210.14	30237
30238	300A, TPN.....	3,694.07	89.05	111.06	337.30	30238
30239	400A, TPN.....	4,395.18	111.39	139.18	415.85	30239
30240	600A, TPN.....	6,249.86	131.24	162.71	489.38	30240
30241	800A, TPN.....	8,187.65	149.21	187.91	564.85	30241
	Switch fuses all insulated SPN surface mounting, back or side entry c/w IEC 60269-1 fuses :-					
	<i>Each</i>					
30242	20A - 80A.....	550.76	17.07	20.96	64.12	30242

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>SWITCH AND FUSE GEAR (CONT'D)</b>						
Isolating switches, metal clad, surface mounting : -						
	<i>Each</i>					
30243	20A, DP.....	500.66	17.07	20.96	64.12	30243
30244	32A, DP.....	520.72	17.07	20.96	64.12	30244
30245	63A, DP.....	614.20	22.45	28.00	83.70	30245
30246	100A, DP.....	855.54	22.45	28.00	83.70	30246
30247	20A, TPN.....	579.07	22.45	28.00	83.70	30247
30248	32A, TPN.....	619.56	22.45	28.00	83.70	30248
30249	63A, TPN.....	700.26	23.61	29.69	88.84	30249
30250	100A/ 125A, TPN.....	1,014.78	24.82	31.07	93.17	30250
30251	160A/ 200A, TPN.....	1,783.43	55.15	69.48	208.47	30251
30252	250A/ 300A/ 315A, TPN.....	2,922.58	60.21	75.18	234.18	30252
30253	400A, TPN.....	3,464.76	64.66	80.44	253.61	30253
Isolating switches, indoor type : -						
	<i>Each</i>					
30254	20A, DP.....	355.24	13.49	17.46	51.38	30254
30255	32A, DP.....	377.00	13.49	17.46	51.38	30255
30256	63A, DP.....	446.63	17.29	21.47	63.08	30256
30257	80A, DP.....	511.34	17.29	21.47	63.08	30257
30258	100A, DP.....	619.95	17.29	21.47	63.08	30258
30259	32A, TPN.....	546.80	17.31	22.04	63.95	30259
30260	63A, TPN.....	643.61	18.92	23.38	68.69	30260
30261	100A, TPN.....	952.35	20.83	24.69	73.45	30261
30262	160A, TPN.....	1,528.13	50.45	61.85	187.83	30262
30263	200A, TPN.....	1,631.28	50.45	61.85	187.83	30263



Item					Item	
	<b>SWITCH AND FUSE GEAR (CONT'D)</b>					
	Isolating switch, weatherproof rated to IP65 : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30264	20A, DP.....	604.93	27.80	35.54	109.31	30264
30265	32A, DP.....	699.16	30.35	37.72	112.13	30265
30266	63A, DP.....	956.73	38.72	49.46	152.76	30266
30267	80A, DP.....	1,350.28	45.47	55.97	189.25	30267
30268	100A, DP.....	1,447.76	48.65	59.84	202.00	30268
30269	32A, TPN.....	799.25	34.58	43.16	129.42	30269
30270	63A, TPN.....	969.34	44.61	56.63	168.49	30270
30271	100A, TPN.....	1,450.25	55.56	68.77	205.15	30271
30272	160A, TPN.....	2,007.27	65.60	81.40	241.91	30272
30273	200A, TPN.....	2,620.63	75.46	93.22	280.25	30273
	Changeover switches, metal clad : -					
	<i>Each</i>					
30274	30A/ 32A, DP.....	1,974.21	17.14	21.04	65.91	30274
30275	60A/ 63A, DP.....	2,426.27	22.53	28.11	85.77	30275
30276	100A, DP.....	3,551.62	28.09	35.24	106.07	30276
30277	30A/ 32A, TP.....	1,996.48	22.53	28.11	85.77	30277
30278	60A/ 63A, TP.....	2,430.92	28.09	35.24	106.07	30278
30279	100A, TP.....	3,594.16	38.47	47.77	146.84	30279
30280	30A/ 32A, TPN.....	2,023.97	28.09	35.24	106.07	30280
30281	60A/ 63A, TPN.....	2,792.21	34.53	41.51	122.66	30281
30282	100A, TPN.....	3,625.66	43.93	55.55	164.79	30282

Item					Item	
	<b>SWITCH AND FUSE GEAR (CONT'D)</b>					
	Automatic changeover switch c/w changeover contactor sets, copper bar terminals, earthing connection, pilot lights, miniature circuit breakers, voltage measurement relays, plug-in relay and sockets, on-delay relay, control wirings, marking, terminal blocks, power links, mechanical interlock and metal casing :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30283	40A, TPN.....	1,484.57	39.01	48.64	150.19	30283
30284	60A/ 63A, TPN.....	2,663.96	39.01	48.64	150.19	30284
30285	100A, TPN.....	5,009.43	46.45	57.56	175.22	30285
30286	200A, TPN.....	8,048.06	51.08	63.73	192.65	30286
30287	300A/ 320A, TPN.....	12,916.22	51.08	63.73	192.65	30287
30288	400A, TPN.....	19,627.42	51.08	63.73	192.65	30288
30289	60A/ 63A, 4P.....	3,443.02	40.43	50.38	157.81	30289
30290	100A, 4P.....	7,826.31	48.80	60.12	183.95	30290
30291	200A, 4P.....	9,684.57	53.76	64.24	203.92	30291
30292	300A/ 320A, 4P.....	16,836.91	53.76	64.24	203.92	30292
30293	400A, 4P.....	24,442.09	53.76	64.24	203.92	30293
	<b>FUSE</b>					
	The rates shall include opening and closing of switch board/ box covering, where required.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Metal clad cutouts, cast metal or sheet steel :-	A \$	B \$	C \$	D \$	
	<i>Each</i>					
30294	30A/ 32A, SPN.....	130.19	11.51	14.28	40.86	30294
30295	60A/ 63A, SPN.....	145.02	11.51	14.28	40.86	30295
30296	100A, SPN.....	194.50	17.15	21.22	61.98	30296
30297	30A/ 32A, TPN.....	209.92	17.15	21.22	61.98	30297
30298	60A/ 63A, TPN.....	373.42	19.52	24.52	71.95	30298
30299	100A, TPN.....	451.24	22.50	27.41	82.45	30299

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>FUSE (CONT'D)</b>					
	The rates shall include opening and closing of switch board/ box covering, where required.					
	Fuse holder only ceramic porcelain or thermoplastic, rewirable or cartridge type : -					
	<i>Each</i>	A	B	C	D	
		\$	\$	\$	\$	
30300	500V 30A/ 32A.....	19.56	2.97	3.61	8.68	30300
30301	500V 60A/ 63A.....	32.63	2.97	3.61	8.68	30301
30302	500V 100A.....	50.52	2.97	3.61	8.68	30302
30303	500V 200A.....	61.11	4.29	5.14	13.16	30303
	Fuse base only ceramic porcelain or thermoplastic : -					
	<i>Each</i>					
30304	500V 30A/ 32A.....	33.17	4.29	5.14	13.16	30304
30305	500V 60A/ 63A.....	60.63	5.16	6.30	15.90	30305
30306	500V 100A.....	81.58	5.76	6.91	18.36	30306
30307	500V 200A.....	91.60	6.91	8.39	21.94	30307
	Cartridge fuse links to IEC 60269-1: -					
	<i>Each</i>					
30308	Suitable for 13A plug-tops, 2A (yellow), 3A (blue), 5A (red), 10A (black) and 13A (brown).....	9.03	1.23	1.48	3.65	30308

Item	Item								
<b>FUSE (CONT'D)</b>									
The rates shall include opening and closing of switch board/ box covering, where required.									
HRC cartridge fuses to IEC 60269-1, with off-set tags or central tags of rating : -									
<i>Each</i>									
	<table border="1"> <thead> <tr> <th style="text-align: center;">Supply and fix</th> <th style="text-align: center;">Take down and clear away</th> <th style="text-align: center;">Take down and set aside for re-use</th> <th style="text-align: center;">Fix only</th> </tr> <tr> <th style="text-align: center;">A \$</th> <th style="text-align: center;">B \$</th> <th style="text-align: center;">C \$</th> <th style="text-align: center;">D \$</th> </tr> </thead> </table>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	A \$	B \$	C \$	D \$
Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only						
A \$	B \$	C \$	D \$						
30309	6A or 10A..... 17.77 2.00 2.45 6.11 30309								
30310	16A/ 20A..... 18.33 2.00 2.45 6.11 30310								
30311	25A/ 32A..... 19.43 2.00 2.45 6.11 30311								
30312	40A/ 50A/ 63A..... 25.11 2.00 2.45 6.11 30312								
30313	80A..... 41.75 2.57 3.15 8.70 30313								
30314	100A..... 43.42 2.57 3.15 8.70 30314								
30315	125A/ 160A..... 61.44 2.87 3.46 10.44 30315								
30316	200A..... 62.63 2.87 3.46 10.44 30316								
30317	250A..... 101.97 3.46 4.03 12.89 30317								
30318	315A..... 112.49 3.46 4.03 12.89 30318								
30319	350A..... 149.83 3.46 4.03 12.89 30319								
30320	400A..... 155.44 4.48 5.65 17.15 30320								
30321	450A..... 201.34 4.48 5.65 17.15 30321								
30322	500A..... 223.55 4.48 5.65 17.15 30322								
30323	630A..... 264.94 5.65 6.82 19.73 30323								
30324	800A..... 338.59 5.65 6.82 19.73 30324								
Semi-enclosed fuse to BS 3036 of rating : -									
<i>Each</i>									
30325	3/ 5A..... 18.75 2.00 2.45 6.56 30325								
30326	10/ 15/ 20A..... 24.20 2.00 2.45 7.28 30326								
30327	25/ 30A..... 28.27 2.00 2.45 7.82 30327								

Item					Item	
	<b>TIME SWITCHES &amp; BOXES</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30328	20A (1-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure.....	337.94	4.54	6.94	17.72	30328
30329	20A (7-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure.....	558.79	4.54	6.94	17.72	30329
30330	30A (1-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure.....	443.82	4.54	6.94	17.72	30330
30331	30A (7-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure.....	675.99	4.54	6.94	17.72	30331
30332	Up to 20A astronomical programmable (24 hours or 7-day) with digital display, integrated with battery back-up to provide 200 hours continuous operation upon power failure.....	774.62	4.54	6.94	17.72	30332
30333	Metal box for 20A/ 30A time switch.....	172.13	4.54	6.94	17.72	30333
30334	IP53 Plastic box for 20A/ 30A time switch.....	526.33	4.54	6.94	17.72	30334
30335	Programmable quartz class changing bell timer with two control output channels, choice of a minimum of 4 melodies, up to 120 weekly programs and 366 weekly programs of minimum one minute setting, with sockets for microphone and external speaker, power failure backup by lithium primary battery and rechargeable NiCd battery for not less than 800 hours.....	4,684.32	52.42	65.19	202.57	30335

Item					Item	
	<b>E.L.V. TERMINAL UNITS</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30336	Extra low voltage terminal unit with stainless steel sign plate, each unit shall incorporate a 13A fuse.....	256.30	7.92	9.91	30.39	30336
	<b>EARTHING AND LIGHTNING CONDUCTOR FITTINGS</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
30337	Copper tape, without tinned, 25 x 3mm with saddles.....	102.27	8.40	10.19	31.46	30337
30338	Copper tape, tinned entire length 25 x 3mm with saddles.....	106.35	8.40	10.19	31.46	30338
30339	Copper tape, PVC sheathed, 25 x 3mm with saddles.....	145.40	8.40	10.19	31.46	30339
30340	Copper tape, without tinned, 25 x 3mm laid in trench or duct (ducting, excavation and back-filling measured separately).....	91.23	6.72	8.23	23.20	30340
30341	Copper tape, tinned entire length, 25 x 3mm laid in trench or duct (ducting, excavation and back-filling measured separately).....	91.97	6.72	8.23	23.20	30341
30342	Aluminum type 25 x 3 mm with saddles ( for lightning conductors ).....	66.18	9.32	11.63	34.92	30342
30343	Braided copper tape with PVC sheath 25 x 3 mm.....	130.01	8.40	10.19	31.46	30343

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)</b>		A	B	C	D	
<i>Each</i>		\$	\$	\$	\$	
30344	Copper bond earth rod 16 mm diameter 1.2 m long consists of pure electrolytic copper uniformly molecularly bonded onto a high tensile steel core to a minimum thickness of 0.25 mm c/w driving head and coupling .....	134.89	-	-	85.68	30344
30345	Ditto but 2.4 m.....	211.57	-	-	105.27	30345
30346	Copper earth plate, lattice type 600 x 600 mm (excavation measured separately) .....	2,099.59	45.47	56.48	171.67	30346
30347	Ditto but 900 x 900 mm (ditto).....	3,044.14	45.98	57.95	173.88	30347
30348	Earth clips with plugs, tinned copper, for pipes n.e. 25 mm diameter.....	19.59	4.43	5.44	13.71	30348
30349	Ditto for pipes exc. 25 mm diameter but n.e. 38 mm diameter .....	20.76	4.43	5.44	13.71	30349
30350	Ditto for pipes exc. 38 mm diameter but n.e. 75 mm diameter .....	25.78	4.43	5.44	13.71	30350
30351	Tape clip only, for tape 25 x 3 mm wide.....	28.64	4.43	5.44	13.71	30351
30352	Saddle only, for securing tapes by and including single set screw.....	35.34	5.97	7.14	18.11	30352
30353	Light duty air terminal, with 16 mm diameter rod up to 300 mm long (copper rod taper pointed) .....	155.97	17.99	22.17	67.63	30353
30354	Ditto 300 mm - 500 mm long (ditto).....	181.66	17.99	22.17	67.63	30354
30355	Ditto 500 mm - 1000 mm long (ditto).....	247.88	17.99	22.17	67.63	30355
30356	Ditto but with 20 mm diameter rod, 1000 mm long (ditto).....	281.11	17.99	22.17	67.63	30356
30357	Ditto but with 25 mm diameter rod, 1000 mm long (ditto).....	306.16	17.99	22.17	67.63	30357
30358	Multi-pointed air terminal c/w 300 mm - 600 mm long copper rod and base .....	321.97	17.99	22.17	67.63	30358
30359	Tape connection for 25 mm tape.....	35.95	6.63	7.94	20.25	30359
30360	Tape to plate connector.....	58.76	8.25	10.04	27.83	30360
30361	Circular plate type test clamp for 25 mm tape.....	86.20	8.25	10.04	27.83	30361
30362	Connector clamp for 16 mm, 20 mm and 25 mm diameter rod, pressure type.....	55.87	8.25	10.04	27.83	30362
<i>Per linear metre</i>						
30363	Down conductor for early streamer lightning protection system, composing of two identical conductors placed one coaxially about the other with separation by a layer of insulator to form a high capacitance between the conducting layers, designed to withstand 250 kV transient at 1/ 50 wave to IEC 60230 c/w saddles.....	852.53	14.44	19.34	48.66	30363

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)</b>	A	B	C	D	
	<i>Each</i>	\$	\$	\$	\$	
30364	Early streamer emission lightning protection system to French standard NF C17-102, comprising of lightning terminal in a 2 m 316 stainless steel pole, supporting insulation mast/ stainless steel mast, connection clamps, lightning counter and all necessary accessories. The lightning terminal shall generate a leader to capture the lightning and direct it to earth during a lightning event. Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 48 m. Down conductors shall be measured separately.....	41,312.07	458.05	574.19	1,680.16	30364
30365	Ditto but radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 63 m.....	49,725.82	458.05	574.19	1,680.16	30365
30366	Ditto but radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 79 m.....	59,788.60	458.05	574.19	1,680.16	30366
30367	Early streamer lightning terminal to French standard NF C17-102; Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 48 m.....	25,780.63	354.16	532.06	1,145.01	30367
30368	Early streamer lightning terminal to French standard NF C17-102; Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 63 m.....	33,970.31	354.16	532.06	1,145.01	30368
30369	Early streamer lightning terminal to French standard NF C17-102; Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 79 m.....	42,964.31	354.16	532.06	1,145.01	30369
30370	Air termination support c/w connection clamps and all necessary accessories.....	12,243.27	187.64	234.67	568.45	30370
30371	Stainless steel mast assembly.....	3,808.57	337.76	434.30	1,364.40	30371
30372	Lightning event counter.....	3,719.89	38.41	48.00	145.46	30372



Item					Item	
	<b>EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)</b>					
	Power surge protection devices in compliance with IEC 61643-1					
	Shunt type Surge Protection Devices for primary incoming power protection :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30373	20 kA (8/ 20 μs), single-phase .....	802.77	9.32	12.46	36.41	30373
30374	Ditto but three phase.....	2,451.62	9.32	12.46	36.41	30374
30375	40 kA (8/ 20 μs), single-phase .....	812.05	9.32	12.46	36.41	30375
30376	Ditto but three-phase.....	2,455.62	9.32	12.46	36.41	30376
30377	65 kA (8/ 20 μs), single-phase .....	1,730.97	12.30	15.21	46.25	30377
30378	Ditto but three-phase.....	4,837.57	12.30	15.21	46.25	30378
30379	80 kA (8/ 20 μs), single-phase .....	2,303.04	12.30	15.21	46.25	30379
30380	Ditto but three-phase.....	6,859.74	12.30	15.21	46.25	30380
30381	100 kA (8/ 20 μs), single-phase .....	2,353.10	14.25	17.84	54.49	30381
30382	Ditto but three-phase.....	6,997.22	14.25	17.84	54.49	30382
30383	150 kA (8/ 20 μs), single-phase .....	3,318.63	14.25	17.84	54.49	30383
30384	Ditto but three-phase c/w counter.....	11,664.67	14.25	17.84	54.49	30384
	Surge Reduction Filters for electronic equipment with surge rating :-					
	<i>Each</i>					
30385	6A, 4 - 16 kA (8/ 20 μs), single-phase.....	2,615.38	9.29	12.44	36.31	30385
30386	10A/ 20A, 40 - 55 kA (8/ 20 μs), single-phase.....	3,986.48	9.29	12.44	36.31	30386
30387	20A, 40 - 55 kA (8/ 20 μs), three-phase.....	6,129.12	12.41	15.12	45.50	30387
30388	32A, 135 kA (8/ 20 μs), single-phases.....	4,709.09	9.29	12.44	36.31	30388
30389	63A/ 125A, 135 kA (8/ 20 μs), single-phase.....	4,793.46	9.29	12.44	36.31	30389
30390	32A, 135 kA (8/ 20 μs), three-phase.....	6,558.14	12.41	15.12	45.50	30390
30391	64A, 135 kA (8/ 20 μs), three-phase.....	6,643.94	12.41	15.12	45.50	30391
30392	125A, 135 kA (8/ 20 μs), three-phase.....	6,648.70	12.41	15.12	45.50	30392
30393	200A/ 315A, 135 kA (8/ 20 μs), three-phase.....	6,792.14	12.41	15.12	45.50	30393
30394	630A, 135 kA (8/ 20 μs), three-phase.....	6,852.44	12.41	15.12	45.50	30394

Item					Item	
<b>EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)</b>						
Surge protectors for radio, telecommunications & signal protection :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30395	500A (8/ 20 μs).....	1,557.17	9.29	12.44	36.31	30395
30396	2.5 kA (8/ 20 μs).....	1,557.35	9.29	12.44	36.31	30396
30397	10 kA (8/ 20 μs).....	1,569.72	9.29	12.44	36.31	30397
30398	20 kA (8/ 20 μs).....	1,575.11	9.29	12.44	36.31	30398
Miscellaneous item :-						
<i>Each</i>						
30399	Supplementary bonding to metal type ceiling grid, window frame and service pipes c/w box for wiring not exceeding 2 m.....	14.80	2.79	-	-	30399
Chemicals for soil treatment :-						
<i>Per kg</i>						
30400	Ammonium chloride.....	38.05	-	-	18.38	30400
30401	Copper sulphate.....	41.54	-	-	18.38	30401
30402	Bentonite.....	38.63	-	-	18.38	30402
30403	Lime powder for mixing of earthing chemical.....	23.10	-	-	18.38	30403
30404	Industrial salt for mixing of earthing chemical.....	35.03	-	-	18.38	30404
30405	Carbolic powder for mixing of earthing chemical.....	36.65	-	-	18.38	30405

Item					Item	
	<b>ELECTRICAL APPLIANCES</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30406	Electric rice cooker for 10 persons.....	416.41	3.95	5.55	15.85	30406
30407	Electric rice cooker for 15 persons.....	564.98	3.95	5.55	15.85	30407
30408	Electric cooker 2 rings.....	1,668.23	16.54	20.68	61.90	30408
30409	Electric cooker 3 or 4 rings.....	3,850.05	27.71	34.96	102.74	30409
30410	Water heater, instantaneous type, 6 kW, single-phase.....	1,365.20	16.54	20.68	61.90	30410
30411	Water heater, instantaneous type, 18 kW, three-phase.....	2,183.45	16.54	20.68	68.74	30411
30412	Water heater, instantaneous type, 24 kW, three-phase.....	2,362.59	27.71	34.96	102.74	30412
30413	Water heater, storage type, n.e. 10 litres, single-phase.....	2,063.07	16.54	20.68	61.90	30413
30414	Water heater, storage type, 13 litres, single-phase.....	2,063.07	16.54	20.68	61.90	30414
30415	Water heater, storage type, 25 litres, single-phase.....	2,505.80	16.54	20.68	61.90	30415
30416	Water heater, storage type, 38 litres, single-phase.....	3,452.15	16.54	20.68	61.90	30416
30417	Water heater, storage type, 57 litres, single-phase.....	3,840.13	16.54	20.68	61.90	30417
30418	Water heater, storage type, 90 litres, single-phase.....	5,242.75	27.71	34.96	102.74	30418
30419	Water heater, storage type, 135 litres, single-phase.....	7,120.52	27.71	34.96	102.74	30419
30420	Water heater, storage type, 135 litres, three-phase.....	7,926.50	27.71	34.96	102.74	30420
30421	Water heater, storage type, 150 litres, single-phase.....	7,721.67	27.71	34.96	102.74	30421
30422	Water heater, storage type, 150 litres, three-phase.....	8,600.69	27.71	34.96	102.74	30422
30423	Electric water heater, storage type, 180 litres, three-phase.....	11,755.44	27.71	34.96	102.74	30423
30424	Electric water heater, storage type, 225 litres, three-phase.....	13,669.77	27.71	34.96	102.74	30424
30425	Tubular heater, 300 mm.....	138.16	8.99	11.29	32.84	30425
30426	Tubular heater, 600 mm.....	464.12	8.99	11.29	32.84	30426
30427	Tubular heater, 1200 mm.....	525.03	8.99	11.29	32.84	30427
30428	Kettle, 3.5 - 4.5 litre, 2 kW (max.), single-phase.....	370.43	3.95	5.55	15.85	30428
30429	Water boiler, 3 kW (max.), single-phase.....	4,283.33	3.95	5.55	15.85	30429
30430	Tea urn, 18 litres.....	1,199.43	3.95	5.55	15.85	30430
30431	Electric fire, 1 kW (max.), wall mounted.....	227.67	11.27	14.01	42.71	30431

Item					Item	
<b>ELECTRICAL APPLIANCES (CONT'D)</b>						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30432	Radiator, 1.5 kW (max.), oil filled.....	861.06	16.62	20.76	62.15	30432
30433	Radiator, 2 kW (max.), oil filled.....	925.20	16.62	20.76	62.15	30433
30434	Radiator, 3 kW (max.), oil filled.....	932.82	16.62	20.76	62.15	30434
30435	Radiator, 1 kW (max.), infra-red.....	458.12	16.62	20.76	62.15	30435
30436	Radiator, 1.5 kW (max.), infra-red.....	533.48	16.62	20.76	62.15	30436
30437	Radiator, 2 kW (max.), infra-red.....	546.20	16.62	20.76	62.15	30437
30438	Convecter heater, 1.2 kW (max.).....	788.27	16.62	20.76	62.15	30438
30439	Wall mounted fan heater, 2 kW (max.).....	502.60	16.62	20.76	62.15	30439
30440	Convection heater, heavy duty, wall mounted, 3 kW c/w temperature cut-out and thermostat .....	6,375.18	16.93	21.01	62.96	30440
30441	Wall clock, 300 mm diameter, battery operated, quartz.....	347.84	3.96	5.58	15.91	30441
30442	Hand dryer.....	878.56	6.75	8.45	25.82	30442
30443	Hand/ face dryer, with deflector for hand or face drying, heater rating not less than 2.2 kW.....	927.83	6.75	8.45	25.82	30443
30444	Wall mounted hair dryer.....	988.30	6.89	9.08	26.49	30444
30445	Domestic refrigerator, 170 - 250 litres (CFC free).....	3,074.46	16.62	20.76	62.15	30445
30446	Domestic refrigerator, 250 - 320 litres (CFC free).....	4,037.89	16.62	20.76	62.15	30446
30447	Domestic refrigerator, 320 - 370 litres (CFC free).....	4,785.51	16.62	20.76	62.15	30447
30448	Dehumidifier, moisture removal capacity 13 litres/ day.....	2,764.38	16.93	21.01	62.96	30448
30449	High capacity industrial type dehumidifier, air flow 2500 m <sup>3</sup> / hr.....	59,117.43	16.93	21.01	62.96	30449
30450	Ditto but air flow 5000 m <sup>3</sup> / hr.....	80,658.61	16.93	21.01	62.96	30450
30451	Insect killer, single-phase c/w twin 18W UV fluorescent tubes, effective area not less than 30 m <sup>2</sup> for indoor application .....	1,683.84	16.62	20.76	62.15	30451
30452	Ditto but weatherproof type for outdoor application.....	2,362.59	16.62	20.76	62.15	30452
30453	Electric dual jet airflow hand dryer.....	6,017.76	76.28	114.42	152.55	30453

Item			Item
	<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC)</b>		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2.	Rate	
	Testing of installed rising mains and feeder circuit in single-phase or three-phase : - (Testing of plug-in unit/ tee-off switch, sub-main circuit/ final circuit, functional test of RCD shall be measured separately)		
	<i>Per item</i>	A \$	
30454	Rating of outgoing switch of switchboard or cut-out switch not exceeding 630A.....	454.00	30454
30455	Rating of outgoing switch of switchboard or cut-out switch 630A – 1600A.....	606.96	30455
30456	Rating of outgoing switch of switchboard or cut-out switch 1600A – 3200A.....	947.30	30456
	Testing of plug-in unit/ tee-off switch		
	<i>Each</i>		
30457	Tee off switch/ plug in unit from the rising main.....	67.05	30457
	Type of premises : Clinic & Child Care Centre; Control Point; Prison; Correctional Institution and Detention Centre : -		
	Testing of sub-main circuit : -		
	<i>Per circuit</i>		
30458	Testing of single phase circuit.....	41.68	30458
30459	Testing of three phase circuit.....	55.21	30459
	Testing of 13A socket outlet circuit : -		
	<i>Per circuit</i>		
30460	Testing of single phase circuit.....	184.90	30460
	Testing of residual current device (RCD) : -		
	<i>Each</i>		
30461	Functional test of RCD with or without tester, any rating.....	38.95	30461
	Testing of final circuit for lighting fittings : -		
	<i>Per circuit</i>		
30462	Testing of single phase circuit.....	215.45	30462

Item		Rate	Item
	<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
	Type of premises : Clinic & Child Care Centre; Control Point; Prison; Correctional Institution and Detention Centre : - (Cont'd)		
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	<i>Per circuit</i>	A \$	
30463	Testing of single phase circuit.....	41.68	30463
30464	Testing of three phase circuit.....	55.21	30464

Item	Rate	Item
<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>		
Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
Type of premises : Institution Buildings including Primary, Secondary and Vocational Training School; Police Stations; F.S. Stations; Ambulance Depots; Prestige Buildings including Museums, Art Galleries, Legislative Council Buildings and Court; Playground; Stadium; Sportsground; Park; Hawker Bazaars; Pier; Cemeteries; Public Latrines; Bath House; Refuse Collection Point; Toilet Block; and all other single-user building :-		
Testing of sub-main circuit :-		
<i>Per circuit</i>		
30465	A \$ 40.86	30465
30466	54.10	30466
Testing of 13A socket outlet circuit :-		
<i>Per circuit</i>		
30467	181.21	30467
Testing of residual current device (RCD) :-		
<i>Each</i>		
30468	38.95	30468
Testing of final circuit for lighting fittings :-		
<i>Per circuit</i>		
30469	211.13	30469
Testing of final circuit other than 13A socket outlet and lighting fittings :-		
<i>Per circuit</i>		
30470	40.86	30470
30471	54.10	30471

Item	Item
<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>	
Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)	Rate
Type of premises : Office Building including Office, Government House, Carpark and Post Office; Quarters; Municipal Building including Civic Centre, Community Centre, Culture Centre, Theatre, Swimming Pool, Market, Mortuaries, Libraries, Indoor Game Hall; Industrial Building including Workshop, Depot, Laboratory and Plant; and all other multi-user building : -	
Testing of sub-main circuit : -	A \$
<i>Per circuit</i>	
30472 Testing of single phase circuit.....	39.60 30472
30473 Testing of three phase circuit.....	52.44 30473
Testing of 13A socket outlet circuit : -	175.65 30474
<i>Per circuit</i>	
30474 Testing of single phase circuit.....	175.65 30474
Testing of residual current device (RCD) : -	38.95 30475
<i>Each</i>	
30475 Functional test of RCD with or without tester, any rating.....	38.95 30475
Testing of final circuit for lighting fittings : -	204.67 30476
<i>Per circuit</i>	
30476 Testing of single phase circuit.....	204.67 30476
Testing of final circuit other than 13A socket outlet and lighting fittings : -	39.60 30477
<i>Per circuit</i>	
30477 Testing of single phase circuit.....	39.60 30477
30478 Testing of three phase circuit.....	52.44 30478
Submission of Form WR2 to EMSD	1,935.80 30479
<i>Per item</i>	
30479 Submit Form WR2 to EMSD including endorsement fee.....	1,935.80 30479



Item		Rate	Item
<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>			
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
	<i>Per installation</i>	A \$	
30480	Testing of power factor correction installation up to 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	1,997.66	30480
30481	Testing of power factor correction installation exceeding 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	2,659.64	30481
	Testing and inspection of electrical installation of the low voltage cubicle switchboard where all existing switchgear, busbar, IDMT, circuit breaker, earthing devices and etc. are inspected, tested and issue of test certificate.		
	Current Capacity of Low voltage cubicle switchboard :-		
	<i>Per item</i>		
30482	below 800A 3 Phase (1 - 3 cubicle column) .....	11,334.37	30482
30483	below 800A 3 Phase (4 - 6 cubicle column) .....	20,103.83	30483
30484	800A/ 1000A 3 Phase (1 - 3 cubicle column) .....	11,334.37	30484
30485	800A/ 1000A 3 Phase (4 - 6 cubicle column) .....	20,103.83	30485
30486	1200A/ 1600A 3 Phase (1 - 3 cubicle column) .....	12,176.41	30486
30487	1200A/ 1600A 3 Phase (4 - 6 cubicle column) .....	23,471.97	30487
30488	1200A/ 1600A 3 Phase (7 - 9 cubicle column) .....	33,312.06	30488
30489	2000A/ 2250A/ 2500A 3 Phase (1 - 3 cubicle column) .....	12,176.41	30489
30490	2000A/ 2250A/ 2500A 3 Phase (4 - 6 cubicle column) .....	23,471.97	30490
30491	2000A/ 2250A/ 2500A 3 Phase (7 - 9 cubicle column) .....	33,312.06	30491
30492	2000A/ 2250A/ 2500A 3 Phase (10 - 12 cubicle column) .....	44,416.08	30492
30493	2000A/ 2250A/ 2500A 3 Phase (Extra for each addition cubicle column over 12 cubicle column) .....	3,701.34	30493
30494	3000A/ 3200A 3 Phase (1 - 3 cubicle column) .....	15,080.31	30494
30495	3000A/ 3200A 3 Phase (4 - 6 cubicle column) .....	23,892.12	30495
30496	3000A/ 3200A 3 Phase (7 - 9 cubicle column) .....	39,206.32	30496
30497	3000A/ 3200A 3 Phase (10 - 12 cubicle column) .....	47,784.22	30497
30498	3000A/ 3200A 3 Phase (Extra for each addition cubicle column over 12 cubicle column) .....	3,982.02	30498

Item			Item
	<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)	Rate	
	Testing of IDMT earth fault relay :-		
	<i>Per item</i>	A \$	
30499	Carry out site testing work for IDMT earth fault relay including provision of full set of test report and Form WR2A .....	5,461.85	30499
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion.		
	Testing of installed rising mains and feeder circuit in single-phase or three-phase :- (Testing of plug-in unit/ tee-off switch, sub-main circuit/ final circuit, functional test of RCD shall be measured separately)		
	<i>Per item</i>		
30500	Rating of outgoing switch of switchboard or cut-out switch not exceeding 630A.....	538.20	30500
30501	Rating of outgoing switch of switchboard or cut-out switch 630A – 1600A.....	691.17	30501
30502	Rating of outgoing switch of switchboard or cut-out switch 1600A – 3200A.....	1,031.49	30502
	Testing of plug-in unit/ tee-off switch		
	<i>Each</i>		
30503	Tee off switch/ plug in unit from the rising main.....	109.15	30503

Item	Rate	Item
<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>		
Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)		
Type of premises : Clinic & Child Care Centre; Control Point; Prison; Correctional Institution and Detention Centre : -		
Testing of sub-main circuit :-		
<i>Per circuit</i>		
30504	58.53	30504
30505	72.05	30505
Testing of 13A socket outlet circuit :-		
<i>Per circuit</i>		
30506	201.73	30506
Testing of residual current device (RCD) :-		
<i>Each</i>		
30507	40.56	30507
Testing of final circuit for lighting fittings :-		
<i>Per circuit</i>		
30508	232.28	30508
Testing of final circuit other than 13A socket outlet and lighting fittings :-		
<i>Per circuit</i>		
30509	58.53	30509
30510	72.05	30510

Item	Rate	Item
<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>		
Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)		
Type of premises : Institution Buildings including Primary, Secondary and Vocational Training School; Police Stations; F.S. Stations; Ambulance Depots; Prestige Buildings including Museums, Art Galleries, Legislative Council Buildings and Court; Playground; Stadium; Sportsground; Park; Hawker Bazaars; Pier; Cemeteries; Public Latrines; Bath House; Refuse Collection Point; Toilet Block; and all other single-user building :-		
Testing of sub-main circuit :-		
<b>Per circuit</b>		
30511	57.70	30511
30512	70.95	30512
Testing of 13A socket outlet circuit :-		
<b>Per circuit</b>		
30513	198.04	30513
Testing of residual current device (RCD) :-		
<b>Each</b>		
30514	40.56	30514
Testing of final circuit for lighting fittings :-		
<b>Per circuit</b>		
30515	227.97	30515
Testing of final circuit other than 13A socket outlet and lighting fittings :-		
<b>Per circuit</b>		
30516	57.70	30516
30517	70.95	30517

Item	Rate	Item
<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>		
Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)		
Type of premises : Office Building including Office, Government House, Carpark and Post Office; Quarters; Municipal Building including Civic Centre, Community Centre, Culture Centre, Theatre, Swimming Pool, Market, Mortuaries, Libraries, Indoor Game Hall; Industrial Building including Workshop, Depot, Laboratory and Plant; and all other multi-user building : -		
Testing of sub-main circuit : -		
<i>Per circuit</i>		
30518	56.44	30518
30519	69.29	30519
Testing of 13A socket outlet circuit : -		
<i>Per circuit</i>		
30520	192.49	30520
Testing of residual current device (RCD) : -		
<i>Each</i>		
30521	40.56	30521
Testing of final circuit for lighting fittings : -		
<i>Per circuit</i>		
30522	221.52	30522
Testing of final circuit other than 13A socket outlet and lighting fittings : -		
<i>Per circuit</i>		
30523	56.44	30523
30524	69.29	30524
Submission of Form WR2 to EMSD		
<i>Per item</i>		
30525	1,935.80	30525

Item			Item
<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>			
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)	Rate	
	<i>Per installation</i>	A \$	
30526	Testing of power factor correction installation up to 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	2,839.70	30526
30527	Testing of power factor correction installation exceeding 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	3,501.68	30527
	Testing and inspection of electrical installation of the low voltage cubicle switchboard where all existing switchgear, busbar, IDMT, circuit breaker, earthing devices and etc. are inspected, tested and issue of test certificate.		
	Current Capacity of Low voltage cubicle switchboard :-		
	<i>Per item</i>		
30528	below 800A 3 Phase (1 - 3 cubicle column) .....	12,176.41	30528
30529	below 800A 3 Phase (4 - 6 cubicle column) .....	20,945.86	30529
30530	800A/ 1000A 3 Phase (1 - 3 cubicle column) .....	12,176.41	30530
30531	800A/ 1000A 3 Phase (4 - 6 cubicle column) .....	20,945.86	30531
30532	1200A/ 1600A 3 Phase (1 - 3 cubicle column) .....	13,018.44	30532
30533	1200A/ 1600A 3 Phase (4 - 6 cubicle column) .....	24,314.01	30533
30534	1200A/ 1600A 3 Phase (7 - 9 cubicle column) .....	34,154.10	30534
30535	2000A/ 2250A/ 2500A 3 Phase (1 - 3 cubicle column) .....	13,018.44	30535
30536	2000A/ 2250A/ 2500A 3 Phase (4 - 6 cubicle column) .....	24,314.01	30536
30537	2000A/ 2250A/ 2500A 3 Phase (7 - 9 cubicle column) .....	34,154.10	30537
30538	2000A/ 2250A/ 2500A 3 Phase (10 - 12 cubicle column) .....	45,258.12	30538
30539	2000A/ 2250A/ 2500A 3 Phase (Extra for each addition cubicle column over 12 cubicle column) .....	3,771.51	30539
30540	3000A/ 3200A 3 Phase (1 - 3 cubicle column) .....	15,922.34	30540
30541	3000A/ 3200A 3 Phase (4 - 6 cubicle column) .....	24,734.15	30541
30542	3000A/ 3200A 3 Phase (7 - 9 cubicle column) .....	40,048.35	30542
30543	3000A/ 3200A 3 Phase (10 - 12 cubicle column) .....	48,626.26	30543
30544	3000A/ 3200A 3 Phase (Extra for each addition cubicle column over 12 cubicle column) .....	4,052.19	30544

Item			Item
	<b>PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)</b>		
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)	Rate	
	Testing of IDMT earth fault relay :-		
	<i>Per item</i>	A \$	
30545	Carry out site testing work for IDMT earth fault relay including provision of full set of test report and Form WR2A .....	6,303.88	30545
	<b>TESTING</b>		
	Testing and inspection of electrical installation comprising sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the submission of Form WR2 for annual renewal of Dangerous Goods Licence -	Rate	
	Type of premises : Dangerous Goods store :-		
	Testing of sub-main circuit :-		
	<i>Per circuit</i>	A \$	
30546	Testing of single phase circuit.....	82.94	30546
30547	Testing of three phase circuit.....	105.64	30547
	Testing of 13A socket outlet circuit :-		
	<i>Per circuit</i>		
30548	Testing of single phase circuit.....	246.75	30548
	Testing of residual current device (RCD) :-		
	<i>Each</i>		
30549	Functional test of RCD with or without tester, any rating.....	40.56	30549
	Testing of final circuit for lighting fittings :-		
	<i>Per circuit</i>		
30550	Testing of single phase circuit.....	296.91	30550

Item	Rate	Item
<b>TESTING (CONT'D)</b>		
Testing and inspection of electrical installation comprising sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of tendering c/w the submission of Form WR2 for annual renewal of Dangerous Goods Licence - (Cont'd)		
Type of premises : Dangerous Goods store : -		
Testing of sub-main circuit : -		
Testing of final circuit other than 13A socket outlet and lighting fittings : -		
<i>Per circuit</i>		
30551	82.94	30551
30552	105.64	30552
Testing and inspection of electrical installation for domestic quarters where all existing switchgear, wiring, lighting, power points, appliances, etc. are inspected and tested, and test certificate is issued to enable the new tenant to obtain electricity supply from Power Company upon change of tenancy (with usable floor area of quarters) : -		
<i>Per item</i>		
30553	1,319.30	30553
30554	1,887.44	30554
30555	1,999.60	30555
30556	2,392.59	30556
30557	3,800.93	30557
Measurement of circuit : -		
<i>Per way</i>		
30558	85.73	30558
30559	120.13	30559
30560	132.48	30560



Item			Item
	<b>TESTING (CONT'D)</b>		
	(Note : The following items are not applicable for new installation. It will only be paid for testing on existing installation if ordered by the Maintenance Surveyor in writing.)	Rate	
	Testing of each emergency lighting :-		
	<i>Per item</i>	A \$	
30561	Testing and provision of written report of emergency lighting fitting including a discharge test to the central battery, for a minute at the 10-hour discharge rate according to the Fire Services Departments latest requirements for Minimum Fire Service Installation and Equipment and Inspection, Testing and Maintenance of Installation and Equipment published by Fire Services Department and all amendment subsequent thereto issued prior to the date of tendering.....	125.15	30561
30562	Testing and provision of written report of single battery emergency lighting fitting including testing of self contained battery according to Fire Services Departments latest requirements for Minimum Fire Service Installation and self contained battery Inspection, Testing and Maintenance of Installation and Equipment published by Fire Services Department and all amendment subsequent thereto issued prior to the date of tendering.....	106.31	30562
30563	Inspection of emergency lighting by registered fire service contractor.....	78.87	30563
30564	Issue of FS251 on certification of emergency lighting installation.....	1,703.77	30564

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>MISCELLANEOUS</b>		A	B	C	D	
		\$	\$	\$	\$	
	Isolating transformer comply with IEC 60076, including submission of test certificates :-					
	<b>Each</b>					
30565	Not exceeding 5 kVA.....	10,890.22	646.70	808.49	2,418.71	30565
30566	5 - 25 kVA.....	29,481.22	966.40	1,205.79	3,616.47	30566
30567	25 - 50 kVA.....	50,206.77	1,458.40	1,822.50	5,651.26	30567
30568	50 - 100 kVA.....	65,226.33	1,914.01	2,390.00	7,269.03	30568
30569	Add to last item for each additional 50 kVA or part thereof .....	15,914.97	485.49	607.14	1,821.98	30569
	Active harmonic filter					
	Active harmonic filter c/w current transformer, wiring and all necessary accessories; with total rms current rating (Arms) rating up to :-					
	<b>Each</b>					
30570	50A.....	84,607.94	1,480.09	1,965.32	2,940.73	30570
30571	100A..... (The actual rate should be : \$116,119.70 for Item 30571A)	11,611.97	1,959.26	2,452.18	3,777.82	30571
30572	300A..... (The actual rate should be : \$347,046.00 for Item 30572A)	34,704.60	2,204.48	3,193.39	4,265.02	30572
	Surge protection device					
	Surge protection device c/w necessary cable and wiring, which shall be capable of diverting the following current levels :-					
	<b>Each</b>					
30573	80A/ 120A/ 160A per phase.....	9,131.26	62.36	102.70	120.40	30573
30574	200A/ 240A/ 360A/ 480A per phase.....	9,709.21	62.36	102.70	143.04	30574
30575	600A/ 720A per phase.....	12,682.58	124.63	146.64	178.72	30575
30576	960A per phase.....	16,424.05	178.21	222.90	245.00	30576

Item					Item	
	<b>MISCELLANEOUS (CONT'D)</b>					
	Electronic power meter c/w current transformer (all types), wiring for sampling current & voltage supply sources, power point with spur/ connection unit and all necessary accessories, using in circuit current rating up to : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30577	60A/ 100A.....	20,859.14	1,247.31	1,730.38	1,904.70	30577
30578	200A.....	23,304.24	1,247.31	1,730.38	1,904.70	30578
30579	400A/ 600A/ 800A.....	25,983.42	1,493.42	2,231.66	2,372.49	30579
30580	1000A/ 1600A/ 2250A.....	28,467.72	1,850.39	2,466.85	2,975.55	30580
	Ceiling rose and connector : -					
	<i>Each</i>					
30581	Ceiling rose surface 2 or 3 terminal cordgrip pattern.....	48.27	7.66	9.19	23.66	30581
30582	Ditto, small cap type.....	37.86	6.03	7.48	22.88	30582
30583	Connector porcelain, single way.....	8.11	1.02	1.25	3.04	30583
30584	Connector porcelain, double way.....	9.15	1.02	1.25	3.04	30584
	<i>Per way</i>					
30585	Connector moulded with non-rotatable tinned brass inserts 5 - 10A.....	3.33	0.38	0.46	1.16	30585
30586	Ditto, 15 - 30A.....	4.05	0.38	0.46	1.16	30586

Item					Item	
	<b>MISCELLANEOUS (CONT'D)</b>					
	Sundries :-					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A	B	C	D	
		\$	\$	\$	\$	
30587	Provision of framed as-built drawing/ safety instruction/ operation instruction in an aluminium frame suitable for A2 size paper c/w 3 mm thick clear plastic front sheet & wooden back plate.....	835.07	9.79	11.98	30.45	30587
30588	Ditto, for A3 size paper.....	715.75	7.39	8.91	22.92	30588
30589	Numbered ferrule for 1 core PVC cable per way.....	14.23	2.55	-	10.03	30589
30590	Label for distribution board per way.....	8.54	0.86	0.95	1.96	30590
30591	Adhesive circuitry label at least 4mm in height showing circuit numbers.....	1.37	0.35	0.37	0.80	30591
30592	Traffolyte type warning notice for switch room, size 300 x 150 mm.....	137.64	4.88	6.12	17.33	30592
30593	Traffolyte type label with engraved English and Chinese lettering, size up to 0.002 m <sup>2</sup> .....	7.78	0.86	1.11	2.90	30593
30594	Traffolyte type label with engraved English and Chinese lettering, size 0.002 - 0.006 m <sup>2</sup> .....	16.95	0.86	1.11	2.90	30594
30595	Warning label for different cable colour code.....	78.33	4.88	6.12	17.33	30595
30596	Label on next date of Periodic Inspection and Testing.....	38.73	0.86	1.11	2.90	30596
30597	Label on testing of residual current device.....	25.85	0.86	1.11	2.90	30597
	Motor starter D.O.L. T.P. with enclosure :-					
	<i>Each</i>					
30598	15/ 30A.....	626.67	16.05	20.11	61.61	30598
30599	45A.....	1,085.45	19.58	23.91	75.00	30599
30600	60A.....	1,266.53	20.74	26.08	79.56	30600
30601	Packing gland for circular P.V.C. or T.R.S. flexible cord (1 mm <sup>2</sup> or 1.5 mm <sup>2</sup> ) brass, with compression ring as required .....	16.70	0.25	0.38	1.19	30601
	Heat-shrunk corrosion protection sleeve standard length 450 mm suitable for pipe size of :-					
	<i>Per piece</i>					
30602	150/ 104 mm.....	568.97	13.45	16.70	51.14	30602
30603	165/ 127 mm.....	627.12	14.56	18.35	56.09	30603
30604	196/ 140 mm.....	682.98	15.66	19.45	60.36	30604
30605	255/ 150 mm.....	721.24	16.78	21.19	63.77	30605
30606	300/ 210 mm.....	746.54	17.38	21.74	66.24	30606

Item					Item	
	<b>MISCELLANEOUS (CONT'D)</b>					
	Auto transformer :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30607	Auto transformer 15 kVA, single phase, 50 Hz, with 400/ 260/ 240/ 220V tappings.....	12,070.19	63.92	80.06	248.13	30607
30608	Auto transformer 25 kVA, single phase, 50 Hz, with 400/ 260/ 240/ 220V tappings.....	16,750.01	63.92	80.06	248.13	30608
30609	Auto transformer 45 kVA, three phases, 50 Hz, with 600/ 420/ 400/ 380/ 346V tappings.....	23,742.03	69.94	87.39	270.63	30609
	Weatherproof stainless steel grade 316 metal box/ chamber other than those item explicitly specified for housing electrical instrument, switches, relays, socket outlets, MCB units etc. with minimum thickness 1.6 mm for casing and 2 mm for front panel, and with hinged cover, lock and handle, viewing glass. Square or rectangular pattern, including all bends, ends, inlets, junctions, connections, flanged joints and the like of the following sizes in volume: -					
	<i>Each</i>					
30610	Not exceeding 0.005 m <sup>3</sup> .....	788.54	69.52	116.01	138.78	30610
30611	0.005 m <sup>3</sup> - 0.01 m <sup>3</sup> .....	880.10	69.52	116.01	138.78	30611
30612	0.01 m <sup>3</sup> - 0.03 m <sup>3</sup> .....	1,303.83	69.52	116.01	138.78	30612
30613	0.03 m <sup>3</sup> - 0.05 m <sup>3</sup> .....	1,856.44	115.59	147.97	183.93	30613
30614	0.05 m <sup>3</sup> - 0.1 m <sup>3</sup> .....	2,374.27	115.59	147.97	183.93	30614
30615	0.1 m <sup>3</sup> - 0.3 m <sup>3</sup> .....	5,822.16	183.93	231.93	252.19	30615
	Galvanized sheet metal box/ chamber other than those items explicitly specified for housing electrical instrument, switches, relays, socket outlets, MCB units etc. with minimum thickness 1.6 mm for casing and 2 mm for front panel, and with hinged cover, lock and handle, viewing glass, painted overall where necessary. Square or rectangular pattern, including all bends, ends, inlets, junctions, connections, flanged joints and the like of the following sizes in volume: -					
	<i>Each</i>					
30616	Not exceeding 0.005 m <sup>3</sup> .....	291.74	11.12	13.94	41.80	30616
30617	0.005 m <sup>3</sup> - 0.01 m <sup>3</sup> .....	320.24	11.12	13.94	41.80	30617
30618	0.01 m <sup>3</sup> - 0.03 m <sup>3</sup> .....	398.94	13.35	17.33	51.32	30618
30619	0.03 m <sup>3</sup> - 0.05 m <sup>3</sup> .....	613.76	16.84	21.04	63.58	30619
30620	0.05 m <sup>3</sup> - 0.1 m <sup>3</sup> .....	867.61	19.38	24.39	74.13	30620
30621	0.1 m <sup>3</sup> - 0.3 m <sup>3</sup> .....	1,899.87	27.90	35.12	106.35	30621

Item					Item	
	<b>MISCELLANEOUS (CONT'D)</b>					
	Weather proof galvanized sheet metal box/ chamber other than those items explicitly specified for housing electrical instrument, switches, relays, socket outlets, MCB units etc. with minimum thickness 1.6 mm for casing and 2 mm for front panel, and with hinged cover, lock and handle, viewing glass, painted overall where necessary. Square or rectangular pattern, including all bends, ends, inlets, junctions, connections, flanged joints and the like of the following sizes in volume :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30622	Not exceeding 0.005 m <sup>3</sup> .....	402.81	69.52	116.01	138.78	30622
30623	0.005 m <sup>3</sup> - 0.01 m <sup>3</sup> .....	440.22	69.52	116.01	138.78	30623
30624	0.01 m <sup>3</sup> - 0.03 m <sup>3</sup> .....	604.98	69.52	116.01	138.78	30624
30625	0.03 m <sup>3</sup> - 0.05 m <sup>3</sup> .....	852.62	115.59	147.97	183.93	30625
30626	0.05 m <sup>3</sup> - 0.1 m <sup>3</sup> .....	1,063.85	115.59	147.97	183.93	30626
30627	0.1 m <sup>3</sup> - 0.3 m <sup>3</sup> .....	2,508.98	183.93	231.93	252.19	30627
	Emergency call system :-					
	<i>Each</i>					
30628	Emergency call panel, c/w emergency call button, metal case, weatherproof indication panel integrated with indicating lamp, buzzer unit, mute switch, reset switch, timer for auto-mute of buzzer unit, lamp test button, transformer, conduit and wiring.....	4,830.09	101.49	117.46	527.83	30628
30629	Emergency call button c/w relay and accessories connected to emergency call panel.....	519.65	80.57	85.12	176.03	30629
30630	Additional repeater panel connected to emergency call panel to receive repeated signals, c/w metal case, weatherproof indication panel integrated with indicating lamp, buzzer unit, mute switch, reset switch, timer for auto-mute of buzzer unit, lamp test button, transformer, conduit and wiring.....	3,542.15	84.84	90.67	328.98	30630
30631	Additional 1 emergency call panel connected to emergency call repeater panel, including necessary relay, indicating lamp, wiring and accessories.....	3,039.43	81.15	106.62	214.28	30631

Item		Rate	Item
<b>MISCELLANEOUS (CONT'D)</b>			
	Buildings Energy Efficiency Ordinance (BEEO) Submission		
	All lighting installations, unless otherwise specified, in a prescribed building should be assessed in accordance with the energy efficient requirements, for the premises in accordance with the requirements as specified in the latest edition of Code of Practice for Energy Efficiency of Building Services Installation (Building Energy Code or BEC in abbreviation), preparation and completion of the installation summaries and worksheets, including but not limited to Form EE-LG, LG-G, LG-1 and LG-2 as required by the BEEO and to coordinate with the Registered Energy Assessor for submission.		
	Type of premises : Prison; Fire Station; Judiciary Building; Police Station; Correctional Institution; Government Offices Building ; - The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:		
	<i>Per item</i>	A \$	
30632	Not exceeding 1000 m <sup>2</sup> .....	46,048.83	30632
30633	Exceeding 1000 m <sup>2</sup> but not exceeding 2000 m <sup>2</sup> .....	64,468.36	30633
30634	Exceeding 2000 m <sup>2</sup> but not exceeding 3000 m <sup>2</sup> .....	73,678.13	30634
30635	Exceeding 3000 m <sup>2</sup> ..... (The actual rate should be : \$110,517.20 for Item 30635A)	11,051.72	30635
	Type of premises : Hospital/ Health Care Building :- The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:		
	<i>Per item</i>		
30636	Not exceeding 1000 m <sup>2</sup> .....	48,351.28	30636
30637	Exceeding 1000 m <sup>2</sup> but not exceeding 2000 m <sup>2</sup> .....	67,691.78	30637
30638	Exceeding 2000 m <sup>2</sup> but not exceeding 3000 m <sup>2</sup> .....	77,362.04	30638
30639	Exceeding 3000 m <sup>2</sup> ..... (The actual rate should be : \$116,043.10 for Item 30639A)	11,604.31	30639

Item			Item
	<b>MISCELLANEOUS (CONT'D)</b>		
	Buildings Energy Efficiency Ordinance (BEEO) Submission (Cont'd)		
	Type of premises : District Open Space/ Park (with Toilet Block, Service Block and Fountain); District Open Space/ Park (with Toilet Block and Service Block); District Open Space/ Park (with Toilet Block only); Library; Indoor Games Hall; Indoor Swimming Pool; Sport Ground/ Stadium; School with Noise Abatement; School with No Noise Abatement :- The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:	Rate	
	<i>Per item</i>	A \$	
30640	Not exceeding 1000 m <sup>2</sup> .....	47,430.30	30640
30641	Exceeding 1000 m <sup>2</sup> but not exceeding 2000 m <sup>2</sup> .....	66,402.42	30641
30642	Exceeding 2000 m <sup>2</sup> but not exceeding 3000 m <sup>2</sup> .....	75,888.47	30642
30643	Exceeding 3000 m <sup>2</sup> ..... (The actual rate should be : \$113,832.70 for Item 30643A)	11,383.27	30643



Item			Item
	<b>MISCELLANEOUS (CONT'D)</b>		
	Buildings Energy Efficiency Ordinance (BEEO) Submission (Cont'd)		
	All electrical installations, unless otherwise specified, in a prescribed building should be assessed in accordance with the energy efficient requirements, for the premises in accordance with the requirements as specified in the latest edition of Code of Practice for Energy Efficiency of Building Services Installation (Building Energy Code or BEC in abbreviation), preparation and completion of the installation summaries and worksheets, including but not limited to Form EE-EL, EL-1 to EL-5 as required by the BEEO and to coordinate with the Registered Energy Assessor for submission.	Rate	
	Type of premises : Prison; Fire Station; Judiciary Building; Police Station; ;Correctional Institution; Government Offices Building; Hospital/ Health Care Building; District Open Space/ Park (with Toilet Block, Service Block and Fountain); District Open Space/ Park (with Toilet Block and Service Block); District Open Space/ Park (with Toilet Block only); Library; Indoor Games Hall; Indoor Swimming Pool; Sport Ground/ Stadium; School with Noise Abatement; School with No Noise Abatement : - The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:		
	<i>Per item</i>	A \$	
30644	Up to 50 nos. of circuits/ motors.....	4,350.53	30644
30645	51 nos. of circuits to 100 nos. of circuits/ motors.....	8,139.70	30645
30646	101 nos. of circuits to 200 nos. of circuits/ motors.....	16,560.06	30646
30647	201 nos. of circuits to 300 nos. of circuits/ motors.....	24,699.73	30647
30648	301 nos. of circuits to 400 nos. of circuits/ motors.....	33,120.09	30648
30649	401 nos. of circuits to 500 nos. of circuits/ motors.....	41,259.79	30649
30650	Every 100 nos. of additional circuits above 500 nos. of circuits/ motors.....	8,701.03	30650

Item					Item	
<b>FANS &amp; VENTILATION SYSTEM</b>						
Ceiling fan, c/w regulator and down rod of any length including application of glue to all thread parts of the fan :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30651	900 mm diameter.....	588.63	29.54	36.80	111.51	30651
30652	1200 mm diameter.....	634.61	33.39	38.93	118.16	30652
30653	1400 mm diameter.....	692.58	38.93	44.42	126.69	30653
30654	For existing ceiling fan only, application of rust inhibitor to screw thread, of each ceiling fan down rod (taking down and refix ceiling fan, where required, measured separately).....	27.77	-	-	-	30654
Wall mounted fan, 3-speed c/w off pull switch and oscillation control pull switch, cord-operated :-						
<i>Each</i>						
30655	400 mm diameter.....	596.12	16.00	20.11	61.70	30655
30656	500 mm diameter.....	1,279.84	22.00	24.67	70.15	30656
Wall mounted rotary fan, industrial type, c/w selector switch for 2 or 3 speed control and oscillation control switch :-						
<i>Each</i>						
30657	600 mm diameter.....	1,503.98	24.67	27.52	78.55	30657
30658	630 mm diameter.....	1,603.22	25.52	28.15	80.93	30658
Ceiling mounted rotary fan c/w regulator :-						
<i>Each</i>						
30659	400 mm diameter.....	914.84	22.45	25.61	76.11	30659
Regulator for fan :-						
<i>Each</i>						
30660	Regulator for fan, 3 speed or above.....	227.05	8.84	11.07	32.85	30660

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
Domestic type exhaust fan, wall/ window mounted c/w automatic/ cord operated shutter : -						
<i>Each</i>						
30661	150 mm diameter.....	383.69	17.65	22.10	67.88	30661
30662	200 mm diameter.....	386.20	17.65	22.10	67.88	30662
30663	250 mm diameter.....	412.91	17.65	22.10	67.88	30663
30664	300 mm diameter.....	498.43	17.65	22.10	67.88	30664
Domestic type exhaust fan, wall/ window mounted c/w louvre and automatic/ cord operated shutter : -						
<i>Each</i>						
30665	150 mm diameter.....	418.47	21.49	26.94	83.57	30665
30666	200 mm diameter.....	442.32	21.49	26.94	83.57	30666
30667	250 mm diameter.....	477.36	21.49	26.94	83.57	30667
30668	300 mm diameter.....	575.37	21.49	26.94	83.57	30668
Domestic type exhaust fan, wall/ window mounted c/w louvre and electrical operated shutter : -						
<i>Each</i>						
30669	150 mm diameter.....	1,158.70	17.65	22.10	67.88	30669
30670	200 mm diameter.....	1,356.41	17.65	22.10	67.88	30670
30671	230 mm diameter.....	1,605.96	17.65	22.10	67.88	30671
30672	300 mm diameter.....	2,106.59	17.65	22.10	67.88	30672
Exhaust fan, propeller type : -						
<i>Each</i>						
30673	250 mm diameter.....	616.02	22.51	28.62	87.13	30673
30674	315 mm diameter.....	788.02	22.51	28.62	87.13	30674
30675	335 mm diameter.....	879.99	22.51	28.62	87.13	30675
30676	400 mm diameter.....	1,236.12	28.62	35.71	109.85	30676
30677	450 mm diameter.....	1,366.85	32.33	40.42	123.61	30677
30678	500 mm diameter.....	1,550.58	35.71	44.44	137.51	30678
30679	630 mm diameter.....	2,887.90	60.42	75.02	232.45	30679
30680	800 mm diameter.....	4,716.01	87.89	110.04	339.62	30680

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
	Plate axial fan, wall mounted c/w speed controller :-					
	<i>Each</i>					
30681	315 mm diameter; speed up to 1000 rpm, sound level less than 39 dBA.....	3,177.37	38.51	47.87	145.71	30681
30682	375 mm diameter; speed up to 1000 rpm, sound level less than 45 dBA.....	3,861.77	47.87	59.94	181.68	30682
30683	450 mm diameter; speed up to 1000rpm, sound level less than 50 dBA.....	4,751.72	57.04	71.47	218.03	30683
30684	630 mm diameter; speed up to 750 rpm, sound level less than 51 dBA.....	6,421.97	94.74	118.43	363.64	30684
	Fume cupboard exhaust fan :-					
	<i>Each</i>					
30685	152 mm diameter; speed up to 3000 rpm.....	8,307.49	17.65	22.10	67.88	30685
30686	241 mm diameter; speed up to 1500 rpm.....	9,247.38	30.02	35.54	72.16	30686
30687	241 mm diameter; speed up to 3000 rpm.....	11,415.51	30.02	35.54	72.16	30687
30688	305 mm diameter; speed up to 1500 rpm.....	13,776.12	35.54	43.21	79.04	30688
	Exhaust fan, axial, speed up to 750 rpm, 380V/ 3-phase/ 50 Hz. :-					
	<i>Each</i>					
30689	560 mm diameter, 1.5 m <sup>3</sup> / sec. air volume, 30 pa static pressure.....	6,399.95	46.13	57.35	177.28	30689
30690	600 mm diameter, 2.3 m <sup>3</sup> / sec. air volume, 40 pa static pressure.....	7,972.76	60.42	75.02	232.45	30690
30691	800 mm diameter, 5.0 m <sup>3</sup> / sec. air volume, 50 pa static pressure.....	10,015.07	87.89	110.04	340.69	30691
	Wire mesh protective guard for exhaust fan (all types) :-					
	<i>Each</i>					
30692	250 mm diameter.....	99.73	16.21	20.02	60.22	30692
30693	315 mm diameter.....	103.75	16.21	20.02	60.22	30693
30694	335 mm diameter.....	109.29	16.72	20.52	60.97	30694
30695	400 mm diameter.....	115.87	17.25	21.60	64.16	30695
30696	450 mm diameter.....	129.99	19.39	24.13	72.24	30696
30697	500 mm diameter.....	137.02	19.89	24.67	73.90	30697
30698	630 mm diameter.....	162.25	20.39	25.64	76.94	30698
30699	800 mm diameter.....	207.39	20.90	26.16	79.26	30699

Item					Item	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
Galvanized sheet metal wall cowl for exhaust fan (all types) :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30700	250 mm diameter.....	110.49	16.21	20.02	60.22	30700
30701	315 mm diameter.....	116.10	16.21	20.02	60.22	30701
30702	335 mm diameter.....	123.07	16.72	20.52	60.97	30702
30703	400 mm diameter.....	126.62	17.25	21.60	64.16	30703
30704	450 mm diameter.....	142.89	19.39	24.13	72.24	30704
30705	500 mm diameter.....	151.28	19.89	24.67	73.90	30705
30706	630 mm diameter.....	177.68	20.39	25.64	76.94	30706
30707	800 mm diameter.....	232.71	20.90	26.16	79.26	30707
Air curtain c/w galvanized sheet metal casing with powder coating finishing coat. Fan motor shall have 2-step air flow rate changeover and c/w a controller of on/ off and Hi/ Lo speed operation, including all supporting mild steel hanger and wall bracket fixed to structural member, c/w all necessary accessories :-						
<i>Each</i>						
30708	600 mm long.....	1,416.31	28.47	35.56	106.21	30708
30709	900 mm long.....	1,721.77	40.62	47.09	114.84	30709
30710	1200 mm long.....	2,014.81	53.89	69.62	123.24	30710

Item					Item	
	<b>BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM</b>					
	Bedhead trunking : -					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30711	Bedhead trunking, constructed from aluminium extrusions of minimum size 180 mm(H) x 90 mm(D), 3 compartments c/w front plate and panel to accommodate electrical and medical gas bedhead services .....	1,778.74	15.01	16.05	48.24	30711
30712	Ditto, size 250 mm(H) x 90 mm(D).....	2,059.34	15.56	16.70	50.07	30712
	<i>Each</i>					
30713	Right angle vertical bend for bedhead trunking.....	1,696.26	12.72	13.25	40.19	30713
30714	End cap for bedhead trunking.....	209.52	9.73	9.88	16.06	30714
30715	Bedhead 13A single socket .....	475.32	10.58	11.17	39.67	30715
30716	Bedhead 13A single socket (switched).....	490.47	10.58	11.17	39.67	30716
30717	Bedhead 13A twin socket.....	717.09	10.58	11.17	39.67	30717
30718	Bedhead 13A single socket c/w RCD.....	1,545.74	10.58	11.17	39.67	30718
30719	Bedhead 13A single socket (switched) c/w RCD .....	1,565.34	10.58	11.17	39.67	30719
30720	Bedhead 13A twin socket c/w RCD.....	1,781.20	10.58	11.17	39.67	30720
30721	Bedhead 13A twin socket (switched) c/w RCD.....	1,809.91	10.58	11.17	39.67	30721
30722	Bedhead single switch c/w fuse spur.....	638.53	10.58	11.17	39.67	30722
30723	Bedlight switch c/w bedlight mounting bracket.....	863.34	10.58	11.17	39.67	30723
30724	Bedhead staff call socket.....	116.08	10.58	11.17	39.67	30724
30725	Angle poise bedlight unit c/w trunking mounting bracket for 11W compact fluorescent lamp.....	3,546.49	21.40	22.45	81.25	30725
	Bedhead trunking-mounted fluorescent luminaries : -					
	<i>Each</i>					
30726	400 mm length.....	2,334.11	16.56	17.11	97.23	30726
30727	600 mm length.....	2,601.04	16.56	17.11	98.27	30727
30728	1000 mm length.....	3,127.00	16.56	17.11	99.11	30728
	Indicator lamp : -					
	<i>Each</i>					
30729	Overdoor indicator lamp (red).....	441.67	10.58	11.17	39.67	30729

Item	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item	
	A \$	B \$	C \$	D \$		
<b>BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM (CONT'D)</b>						
Hard-wire staff/ emergency/ nurse call system :-						
<i>Each</i>						
30730	Bedhead staff call push/ reset.....	1,146.20	11.14	11.68	48.46	30730
30731	Bedhead nurse call/ present/ reset unit with reassurance indicator and handset jack socket.....	1,732.10	11.14	11.68	48.46	30731
30732	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push unit and handset jack socket .....	2,037.10	11.14	11.68	48.46	30732
30733	Bedhead RDS control station.....	2,232.93	10.65	11.21	40.02	30733
30734	Staff/ emergency/ nurse call panel c/w intercom.....	3,909.07	15.88	16.93	119.78	30734
30735	Nurse call/ reset unit with reset push.....	1,184.61	13.27	13.82	79.71	30735
30736	Nurse call/ reset unit with reassurance indicator.....	1,263.10	13.27	13.82	79.71	30736
30737	Nurse call/ reset unit with reassurance indicator and emergency pull/ push unit.....	1,564.66	13.82	14.37	81.50	30737
Nurse/ staff/ emergency call control & monitoring console/ panel for hard-wire system c/w intercom and wiring :-						
<i>Each</i>						
30738	Up to 10 ways.....	6,983.74	78.45	83.87	482.32	30738
30739	10 - 20 ways.....	7,457.58	83.87	88.99	527.14	30739
30740	20 - 30 ways.....	7,969.36	88.90	94.14	567.97	30740
30741	30 - 40 ways.....	9,231.55	94.14	99.37	612.09	30741
Multiplexed/ microprocessor staff/ emergency/ nurse call system :-						
<i>Each</i>						
30742	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push unit and handset jack socket .....	2,419.24	11.05	11.60	48.46	30742
30743	Bedhead nurse call/ present/ reset unit with reassurance indicator, RDS control and handset jack socket .....	4,303.59	11.60	12.12	53.58	30743
30744	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push, RDS control and handset jack socket .....	4,606.85	11.60	12.12	53.58	30744
30745	Bedhead nurse call/ present/ reset unit with reassurance indicator, RDS control, intercom and handset jack socket .....	5,991.59	11.60	12.12	53.58	30745
30746	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push, RDS control, intercom and handset jack socket .....	6,243.94	11.60	12.12	53.58	30746
30747	Bedhead speaker microphone unit.....	1,730.11	10.58	11.17	39.67	30747

Item					Item	
<b>BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM (CONT'D)</b>						
Multiplexed/ microprocessor staff/ emergency/ nurse call system : - (Cont'd)						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
30748	Light dimmer; PCB type.....	1,451.86	10.58	11.17	39.67	30748
30749	Nurse call/ present/ reset unit.....	1,400.05	13.27	13.82	79.71	30749
30750	Nurse call/ present/ reset unit with reassurance indicator.....	1,492.28	13.27	13.82	79.71	30750
30751	Nurse call/ present/ reset unit with reassurance indicator and intercom.....	3,178.90	13.82	14.37	83.89	30751
30752	Nurse/ staff/ emergency call panel c/w touch screen control, intercom and wiring .....	73,695.71	65.27	81.62	522.60	30752
Nurse/ staff/ emergency call control & monitoring console/ panel for multiplexed/ microprocessor system c/w intercom and wiring : -						
<i>Each</i>						
30753	Up to 10 ways.....	10,405.24	83.87	88.99	529.49	30753
30754	10 - 20 ways.....	13,143.32	88.90	94.14	571.85	30754
30755	20 - 30 ways.....	16,519.92	94.14	99.37	613.27	30755
30756	30 - 40 ways.....	19,966.84	99.42	104.56	656.01	30756
30757	40 - 60 ways.....	33,008.32	110.19	115.29	739.49	30757
30758	Keyboard console, 70 ways c/w LCD display and intercom.....	57,457.55	117.93	128.15	906.67	30758
Control circuit c/w cables/ wiring, trunking, conduits (surface or concealed in partition and ceiling) and all necessary accessories and connected to nurse/ emergency/ staff call control panel : -						
<i>Each</i>						
30759	Nurse call point.....	422.11	64.93	70.32	291.14	30759
30760	Nurse present/ reset point.....	435.07	65.57	70.80	301.02	30760
30761	Nurse call/ present/ reset point.....	447.11	66.09	71.48	309.50	30761
30762	Emergency call point.....	422.11	64.93	70.32	291.14	30762
30763	Emergency reset point.....	422.11	64.93	70.32	291.14	30763
30764	Emergency call/ reset point.....	435.07	65.57	70.80	301.02	30764
30765	Staff call point.....	422.11	64.93	70.32	291.14	30765
30766	Staff reset point.....	422.11	64.93	70.32	291.14	30766
30767	Staff call/ reset point.....	435.07	65.57	70.80	301.02	30767



Item					Item	
	<b>BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM (CONT'D)</b>					
	General items applicable to all bedhead trunking and staff/ emergency/ nurse call system :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
30768	Headset; stethoscope type c/w parking bracket/ hood to bedhead trunking.....	281.42	2.19	3.22	8.34	30768
30769	Dummy handset jack plug.....	52.94	2.19	3.22	8.34	30769
30770	Nurse call handset c/w call button only.....	723.79	5.37	5.95	12.96	30770
30771	Nurse call handset c/w call button and RDS control.....	836.62	5.37	5.95	12.96	30771
30772	Nurse call handset parking bracket.....	62.89	5.37	5.95	16.76	30772
30773	Nurse call handset linen clip.....	33.77	5.37	5.95	16.76	30773
30774	Nurse call handset socket.....	61.84	5.37	5.95	16.76	30774
30775	Nurse call handset c/w call button, RDS control and intercom microphone.....	4,056.75	5.37	5.95	17.00	30775
30776	Nurse call handset/ patient remote call unit with nurse call push, power supply unit, reassurance indicator, intercom, bedlight switch, sound channel selector, volume control and flexible cable.....	4,249.82	5.37	5.95	17.00	30776
30777	Staff call unit, vandal-proof push.....	390.53	13.27	13.82	79.71	30777
30778	Emergency call unit.....	948.77	13.27	13.82	79.71	30778
30779	Present/ reset unit.....	394.17	13.27	13.82	79.71	30779
30780	Present/ reset unit with emergency pull/ push unit .....	1,085.40	13.82	14.37	84.53	30780
30781	Repeater unit with indicator and mute switch .....	1,176.17	13.82	14.37	84.53	30781
30782	Pull-cord type nurse call unit with reassurance indicator.....	311.60	13.27	13.82	79.71	30782
30783	Splash-proof nurse call unit with reassurance indicator.....	536.25	13.27	13.82	79.71	30783
30784	Splash-proof nurse call/ present/ reset unit with reassurance indicator.....	1,195.63	13.82	14.37	84.53	30784
30785	Splash-proof present/ reset unit.....	862.33	13.82	14.37	84.53	30785
30786	RDS jack socket unit.....	165.73	5.37	5.95	16.76	30786
30787	Buzzer unit.....	490.17	10.58	11.17	39.67	30787
30788	Call indicator.....	313.12	10.58	11.17	39.67	30788
30789	Call indicator c/w buzzer unit.....	711.09	11.05	11.60	43.93	30789
30790	Power supply unit 220/ 24V or 220/ 28V for multi-zone nurse/ emergency/ staff call system .....	12,615.59	27.33	29.96	151.57	30790

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>DETECTION SENSOR</b>					
	Occupancy/ Motion Sensor :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
30791	Wall mounted occupancy sensor, single pole switching, 400W 150° field of view, switches lights ON by passive infrared technology and OFF after an adjustable time delay, with manual overriding switch.....	360.72	12.09	14.64	36.35	30791
30792	Ditto but single pole and 3 way switching, 180° field of view.....	477.41	12.09	14.64	36.35	30792
30793	Ceiling mounted occupancy sensor, 10A, 360° detection using passive infrared technology, effective coverage up to 74 m² at 2.4 m ceiling height.....	1,053.49	12.09	15.52	37.94	30793
	Dual Technology Occupancy Sensor: -					
	<i>Each</i>					
30794	Ceiling mounted occupancy sensor, 360° detection using passive infrared heat change and frequency shifts in ultrasonic wave, effective coverage up to 40 m² at 2.4 m ceiling height, switches lights ON either by passive infrared technology or ultrasonic wave or both and OFF after an adjustable time delay, with manual overriding switch.....	2,350.71	12.09	15.52	37.94	30794
	<b>PHOTOVOLTAIC SYSTEM</b>					
	Photovoltaic system with photovoltaic modules to IEC 60904, mounted on fixed rack with approximate 22 degree titling angle with aluminium frame, inverter, circuit breaker, connectors, wiring works, structurally support, controller and all necessary accessories: -					
	Mono-crystalline type photovoltaic panel :- (Total maximum power of PV module under standard test condition)					
	<i>Each</i>	A \$	B \$	C \$	D \$	
30795	180 - 360 Wp .....	32,015.29	4,063.18	6,138.27	11,164.99	30795
30796	540 - 720 Wp.....	64,419.07	7,016.65	10,560.46	22,202.70	30796
30797	720 - 900 Wp.....	80,809.84	9,972.67	15,008.64	27,880.94	30797
30798	Extra 180 Wp, up to 3,000 Wp.....	16,489.27	2,468.94	3,688.66	5,582.49	30798
	Multi-crystalline type photovoltaic panel :- (Total maximum power of PV module under standard test condition)					
	<i>Each</i>					
30799	180 - 360 Wp .....	30,887.92	3,848.20	5,727.45	11,004.03	30799
30800	540 - 720Wp.....	62,048.94	6,599.63	9,873.16	21,608.08	30800
30801	720 - 900Wp.....	77,991.73	9,335.49	13,917.54	27,130.89	30801
30802	Extra 180 Wp, up to 3,000 Wp.....	15,819.20	2,308.22	3,459.13	5,671.68	30802

Item	Item						
<b>RECONDITIONING OF LAMP POLE</b>							
Refurbishment of lamp pole including surface reconditioning, apply coating with priming paint and finishing paint of identical colours, replacement of safety chain, safety platform and scaffolding where applicable :-							
<i>Each</i>							
30803	For lamp pole height up to 4.5 m.....						
30804	For lamp pole height 4.5 m to 7.5 m.....						
30805	For lamp pole height 7.5 m to 12 m.....						
30806	For lamp pole height above or equal to 12 m.....						
	<table border="1"> <thead> <tr> <th data-bbox="1353 259 1437 416">Rate</th> </tr> <tr> <th data-bbox="1353 416 1437 488">A \$</th> </tr> </thead> <tbody> <tr> <td data-bbox="1353 501 1437 519">4,280.84</td> </tr> <tr> <td data-bbox="1353 551 1437 568">5,568.45</td> </tr> <tr> <td data-bbox="1353 600 1437 618">7,302.09</td> </tr> <tr> <td data-bbox="1353 649 1437 667">9,697.66</td> </tr> </tbody> </table>	Rate	A \$	4,280.84	5,568.45	7,302.09	9,697.66
Rate							
A \$							
4,280.84							
5,568.45							
7,302.09							
9,697.66							
	30803						
	30804						
	30805						
	30806						

Item			Item
	<b>SUNDRIES</b>		
	Labour to disconnect all existing electrical installation for an area inside a building, take down and clear the entire electrical installation inside the area (area shall be measured net on the gross floor area of the building covered by the electrical installation) :-	Take down and clear away	
	<i>Per square metre</i>	A \$	
30807	For area up to 100 m <sup>2</sup> .....	23.16	30807
30808	For area 101 - 500 m <sup>2</sup> .....	22.81	30808
30809	For area above 500 m <sup>2</sup> .....	22.39	30809

Item					Item
	<b>GEARED MOTOR</b>				
	Geared motor, 24V DC, brushed finishes, including enclosure: -				
	<i>Each</i>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
30810	For power rating up to 10W.....	1,224.63	22.51	28.62	87.13
30811	For power rating 10W - 20W.....	1,676.29	22.51	28.62	87.13
30812	For power rating 20W - 30W.....	2,497.94	22.51	28.62	87.13

**Section 31**

**LOW VOLTAGE CUBICLE SWITCHBOARD**

## SECTION 31

### LOW VOLTAGE CUBICLE SWITCHBOARD

#### SPECIAL CONDITIONS

**Measurement  
generally**

**SC31.01**

For the avoidance of doubt, all rates in this Section shall only apply to the works executed by the Approved Suppliers of Materials and Specialist Contractors for Public Works : Low Voltage Cubicle Switchboard Installation.

Unless otherwise specified separately in items under this Section, switchboard cubicle shall be measured on the basis of complete unit.

All electrical and other related work items except those items specifically included in this Section shall be measured and paid for at the appropriate rates under Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.

**Measurement  
of multi-cubicle  
type switchboard**

**SC31.02**

The multi-cubicle type switchboard shall consist of cubicle columns (items are included in this Section) to accommodate different arrangement of switchgear, protective and metering units. To facilitate payment, the basic cubicle column shall consist of two base types basing on their panel widths :-

Type A Cubicle Column : cubicle width - 750mm to 900mm

The cubicle column with this width shall accommodate the major switchgear units, such as air circuit breakers (ACB), automatic changeover units, MCCBs, fuseswitches and overcurrent and earth fault relays units for ACBs etc. It may also accommodate some switchgear units of smaller ratings together with the major units in the same cubicle column as indicated in the Works Order.

Type B Cubicle Column : cubicle width - 350mm to 450mm

The cubicle column with this width shall accommodate largely the smaller switchgear units, such as MCCBs, fuseswitches, switchfuses, isolators etc. of smaller ratings.

The arrangement of a whole cubicle switchboard as specified by the Works Order shall be a combination of different cubicle columns with the abovementioned width types to suit different requirements as required by the Works Order. The rate for the combined switchboard cubicle shall be the summation of the single and/or multiples of the rates of the cubicle columns items under this Section which also describes the requirements on the height and depth of the cubicle columns. The side end panels of the utmost left and right cubicle columns shall be deemed to be included in the rates.

### SPECIAL CONDITIONS

**Measurement  
of temporary  
supply**

**SC31.03**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

**Rates generally**

**SC31.04**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including drilling of the background and provision of all supporting frames, fixings, hangers, brackets, nails, bolts, nuts, holes, screws, plugs, shotfired pins and the like.
- (g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.
- (h) Provision of all indication lamps.
- (i) Earth/equipotential bonding.
- (j) Design and submission of design drawings and the like.



**SPECIAL CONDITIONS**

**Rates generally  
(Cont'd)**

**SC31.04  
(Cont'd)**

- (k) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (l) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (m) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (n) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (o) Provision all necessary power, labour and testing instrument of approved type for testing and commissioning.
- (p) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (q) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (r) Provision of complete set of spare fuses complete with spare fuse board as specified.
- (s) Provision of manufacturer's guarantee.

**Rates for "Take  
down and clear  
away" or "Take  
down and set aside  
for re-use"**

**SC31.05**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with low voltage cubicle switchboard installation shall further include for : -

- (a) Taking down all associated building services works.
- (b) Plugging off remaining ends with plugs or caps as required.
- (c) Preparing remaining ends of building services works to receive connections with new work if required.
- (d) Making good all works disturbed.

**Particular  
Specification**

**SC31.06**

The Particular Specification for low voltage cubicle switchboard can be found in the Contract.

Item					Item	
	<b>LOW VOLTAGE CUBICLE SWITCHBOARD</b>					
	Multi-cubicle type switchboard, factory built assembly (suitable for incoming/ outgoing cabling from top or bottom), height : 2 to 2.2 m, depth : 1 to 1.5 m c/w compartments for switchgear/ busbars/ cables, segregations, door/ panels, indication labels, engraved labels, push buttons, selector switches, all interconnecting, control and ancillary wiring and fixings, earth terminals, rubber insulating mat, operating handles and all necessary accessories :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
31001	Type A cubicle column (750 - 900 mm).....	26,642.04	2,373.66	2,460.11	3,669.34	31001
31002	Type B cubicle column (350 - 450 mm).....	21,219.32	2,015.65	2,122.28	3,457.33	31002
	Draw-out type air-circuit breaker c/w DC shunt trip coil/ release, electrical and mechanical interlock device and keys, control wiring and all necessary accessories :-					
	<b>Each</b>					
31003	400A; 3-pole.....	16,798.63	1,293.18	1,433.38	2,292.52	31003
31004	500A; 3-pole.....	17,211.23	1,293.18	1,433.38	2,292.52	31004
31005	600A; 3-pole.....	17,564.88	1,293.18	1,433.38	2,292.52	31005
31006	800A; 3-pole.....	17,800.65	1,342.78	1,483.21	2,399.97	31006
31007	1000A; 3-pole.....	19,156.34	1,345.60	1,490.82	2,419.98	31007
31008	1200A; 3-pole.....	20,394.12	1,348.43	1,497.78	2,438.38	31008
31009	1500/ 1600A; 3-pole.....	22,575.00	1,407.71	1,564.67	2,532.80	31009
31010	2000A; 3-pole.....	26,642.04	1,472.16	1,649.58	2,670.41	31010
31011	2500A; 3-pole.....	29,589.16	1,477.76	1,659.19	2,695.65	31011
31012	3000/ 3200A; 3-pole.....	32,772.07	1,538.54	1,728.04	2,820.61	31012
31013	400A; 4-pole.....	17,393.95	1,309.00	1,458.43	2,357.29	31013
31014	500A; 4-pole.....	17,676.88	1,309.00	1,458.43	2,357.29	31014
31015	600A; 4-pole.....	17,859.60	1,309.00	1,458.43	2,357.29	31015
31016	800A; 4-pole.....	18,384.19	1,359.86	1,510.05	2,471.06	31016
31017	1000A; 4-pole.....	19,910.79	1,361.79	1,515.48	2,485.63	31017
31018	1200A; 4-pole.....	21,007.13	1,365.33	1,520.50	2,499.18	31018
31019	1500/ 1600A; 4-pole.....	22,834.34	1,420.95	1,588.05	2,594.64	31019
31020	2000A; 4-pole.....	30,885.90	1,484.07	1,669.80	2,723.84	31020
31021	2500A; 4-pole.....	34,304.57	1,487.80	1,678.56	2,747.19	31021
31022	3000/ 3200A; 4-pole.....	38,790.11	1,546.83	1,742.75	2,860.04	31022

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)</b>						
	Four-pole air-circuit breaker (ACB) for automatic transfer switch c/w DC shunt trip coil/ release, electrical and mechanical interlock device and keys, control wiring and all necessary accessories : -					
	<i>Each</i>					
31023	1500/ 1600A.....	34,186.69	2,369.47	2,660.88	5,524.67	31023
31024	2000A.....	36,544.39	2,422.18	2,715.95	5,625.98	31024
	Four-pole automatic changeover switch c/w E&M interlock : -					
	<i>Each</i>					
31025	200A.....	7,367.82	193.51	205.16	496.07	31025
31026	300A.....	8,375.74	193.51	205.16	496.07	31026
	Four-pole automatic changeover contactor c/w E&M interlock : -					
	<i>Each</i>					
31027	400A.....	10,609.66	189.12	201.16	461.83	31027
31028	500A.....	14,735.65	189.12	201.16	461.83	31028
31029	600/ 630A.....	22,398.17	189.12	201.16	461.83	31029
31030	800A.....	28,881.86	191.64	204.87	468.96	31030
31031	1000A.....	30,650.13	191.64	204.87	468.96	31031
	Moulded case circuit breaker (MCCB) for automatic transfer switch c/w electrical and mechanical interlock device and all necessary accessories; four-pole type : -					
	<i>Each</i>					
31032	200A.....	22,398.17	189.12	201.16	461.83	31032
31033	300A/ 400A.....	30,650.13	189.12	201.16	461.83	31033
31034	500A/ 600A.....	34,363.52	189.12	201.16	461.83	31034

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)</b>						
Moulded case circuit breaker (MCCB); breaking capacity 50 kA r.m.s. c/w shunt trip coil, wiring and all necessary accessories; three-pole type : -						
<i>Each</i>						
31035	32A to 63A.....	1,673.97	223.11	235.02	432.27	31035
31036	100A to 225A.....	2,251.61	229.50	243.96	463.52	31036
31037	225A to 400A.....	3,259.53	241.96	254.01	495.76	31037
31038	500A.....	4,597.52	260.59	275.90	573.06	31038
31039	600/ 630A.....	5,198.73	261.25	276.51	589.71	31039
31040	800A.....	7,002.38	263.81	280.69	609.02	31040
Moulded case circuit breaker (MCCB); breaking capacity 50 kA r.m.s. c/w shunt trip coil, wiring and all necessary accessories; four-pole type : -						
<i>Each</i>						
31041	100A to 225A.....	2,664.20	240.29	249.65	484.52	31041
31042	225A to 400A.....	4,061.15	244.40	256.49	510.98	31042
31043	500A.....	6,466.01	262.19	278.45	584.19	31043
31044	600/ 630A.....	6,466.01	262.86	279.09	601.50	31044
31045	800A.....	8,175.34	264.85	282.53	617.72	31045
Fuse-switch; TP&N c/w fuses : -						
<i>Each</i>						
31046	32A.....	1,060.97	157.43	159.90	310.70	31046
31047	63A.....	1,178.85	157.43	159.90	310.70	31047
31048	100A.....	1,296.74	157.43	159.90	310.70	31048
31049	200A.....	1,650.39	162.14	167.70	341.57	31049
31050	300A.....	2,829.24	173.30	178.37	411.01	31050
31051	400A.....	3,065.02	178.91	181.97	414.00	31051
31052	500A.....	3,595.50	190.64	200.20	535.27	31052
31053	600A.....	4,597.52	190.89	200.37	535.75	31053

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)</b>		A	B	C	D	
		\$	\$	\$	\$	
	Isolating switch; TP & N :-					
	<b>Each</b>					
31054	32A.....	736.79	165.17	182.72	392.83	31054
31055	63A.....	943.08	165.17	182.72	392.83	31055
31056	100A.....	1,090.44	165.17	182.72	392.83	31056
31057	200A.....	1,473.57	169.44	182.72	417.92	31057
31058	300A.....	2,475.59	176.46	191.03	477.78	31058
31059	400A.....	2,876.39	176.46	191.03	477.78	31059
31060	500A.....	3,448.14	188.29	205.03	550.80	31060
31061	600A.....	4,008.09	188.29	205.03	550.80	31061
	Power factor correction module; 25kVAr at 380V nominal voltage per stage control c/w capacitor banks, automatic switching facilities, fuses, control relays, contactors, ammeters and all necessary control accessories; wiring and interconnection with other devices for functioning :-					
	<b>Each</b>					
31062	150 kVAr.....	17,340.90	519.03	545.48	1,525.79	31062
31063	200 kVAr.....	23,335.37	682.59	710.24	1,851.73	31063
31064	250 kVAr.....	28,587.14	846.40	875.13	2,104.85	31064
31065	300 kVAr.....	33,632.63	1,009.61	1,040.64	2,971.78	31065
31066	Add to last item for each additional 50 kVAr.....	4,597.52	163.15	165.61	538.80	31066
	Real time power factor correction module; 25/ 50kVAr at 380V nominal voltage per stage control c/w capacitor banks, automatic switching facilities, fuses, control relays, ammeters and all necessary control accessories; wiring and interconnection with other devices for functioning :-					
	<b>Each</b>					
31067	150 kVAr.....	85,466.72	519.03	545.48	1,525.79	31067
31068	200 kVAr.....	94,190.21	682.59	710.24	1,851.73	31068
31069	250 kVAr..... (The actual rate should be : \$100,791.80 for Item 31069A)	10,079.18	846.40	875.13	2,104.85	31069
31070	300 kVAr..... (The actual rate should be : \$107,275.50 for Item 31070A)	10,727.55	1,009.61	1,040.64	2,971.78	31070

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)</b>	A	B	C	D	
		\$	\$	\$	\$	
	Sundries :-					
	<i>Each</i>					
31071	Electro-mechanical type earth fault relay (single element) c/w wiring and accessories.....	3,837.16	207.53	224.59	488.99	31071
31072	Electro-mechanical type overcurrent relay (three element) c/w wiring and accessories.....	8,735.29	289.55	320.89	667.38	31072
31073	Microprocessor-based digital protection relay c/w wiring and accessories.....	9,566.38	270.09	298.26	564.24	31073
31074	Secondary battery system comprising trickle type battery chargers, sealed Ni-Cd/ Ni-MH batteries, voltmeter, ammeter and battery test facilities, for voltage rating below 50V D.C.....	7,145.19	394.91	429.61	864.54	31074
31075	Voltmeter and associated wiring.....	1,402.83	239.79	245.33	371.07	31075
31076	Ammeter and associated wiring.....	1,314.42	239.79	245.33	371.07	31076
31077	Power factor meter and associated wiring.....	2,475.59	230.11	242.56	549.06	31077
31078	Maximum demand indicating meter and associated wiring.....	854.67	176.39	197.35	239.96	31078
31079	Microprocessor based digital multifunction power meter c/w all necessary interconnection wiring for functioning.....	4,025.95	255.88	282.87	475.24	31079
31080	Microprocessor based digital power analyzer c/w all necessary interconnection wiring for functioning.....	7,695.09	368.16	527.42	601.92	31080
31081	Anti-condensation heaters and thermostats in switchboard c/w with wiring and accessories .....	1,427.64	233.05	236.59	355.14	31081
31082	Undervoltage relay.....	666.05	156.26	177.06	207.93	31082

Item	Item								
<b>LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)</b>									
Current transformer (for protection) including all wiring and accessories :-									
<i>Each</i>									
	<table border="1"> <thead> <tr> <th style="text-align: center;">Supply and fix</th> <th style="text-align: center;">Take down and clear away</th> <th style="text-align: center;">Take down and set aside for re-use</th> <th style="text-align: center;">Fix only</th> </tr> <tr> <th style="text-align: center;">A \$</th> <th style="text-align: center;">B \$</th> <th style="text-align: center;">C \$</th> <th style="text-align: center;">D \$</th> </tr> </thead> </table>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	A \$	B \$	C \$	D \$
Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only						
A \$	B \$	C \$	D \$						
31083	200 or 300 or 400 or 500/ 5A..... 530.48 145.45 162.81 246.84 31083								
31084	600 or 800 or 1000/ 5A..... 559.96 145.45 162.81 246.84 31084								
31085	1200 or 1500/ 5A..... 577.64 145.45 162.81 246.84 31085								
31086	1600 or 2000/ 5A..... 601.21 148.01 165.48 250.70 31086								
31087	2250 or 2500/ 5A..... 618.91 152.13 169.87 260.20 31087								
31088	3000/ 5A..... 677.84 153.82 171.71 265.22 31088								
31089	3200/ 5A..... 736.79 153.82 171.71 265.22 31089								
Current transformer (for measurement) including all wiring and accessories :-									
<i>Each</i>									
31090	200/ 5A..... 353.65 145.45 162.81 246.84 31090								
31091	300 or 400/ 5A..... 365.44 145.45 162.81 246.84 31091								
31092	500 or 600/ 5A..... 371.35 145.45 162.81 246.84 31092								

Item					Item	
<b>LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)</b>						
Current transformer (for measurement) including all wiring and accessories : - (Cont'd)						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
31093	800/ 5A.....	383.13	145.45	162.81	246.84	31093
31094	1000/ 5A.....	412.60	145.45	162.81	246.84	31094
31095	1200/ 5A.....	424.39	145.45	162.81	246.84	31095
31096	1500 or 1600/ 5A.....	442.07	145.45	162.81	246.84	31096
31097	2000/ 5A.....	453.87	145.45	162.81	246.84	31097
31098	2250/ 5A.....	459.76	145.45	162.81	246.84	31098
31099	2500/ 5A.....	483.33	145.45	162.81	246.84	31099
31100	3000 or 3200/ 5A.....	506.91	145.45	162.81	246.84	31100
Copper busbar, triple pole and full neutral, enclosed inside switchboard c/w insulation and all necessary accessories : -						
<i>Per linear meter</i>						
31101	400A.....	2,452.01	93.49	100.57	279.94	31101
31102	600A.....	2,699.57	99.31	108.42	298.52	31102
31103	800A.....	3,230.06	103.77	113.01	316.84	31103
31104	1000A.....	3,548.35	109.37	118.68	333.66	31104
31105	1500A.....	5,033.69	114.11	124.17	347.39	31105
31106	2000A.....	6,112.34	118.60	128.66	360.83	31106
31107	2500A.....	7,585.91	128.21	139.00	397.08	31107
31108	3000A.....	8,841.39	128.21	139.00	397.08	31108
<i>Each</i>						
31109	Portable earthing equipment for main incoming air circuit breaker.....	3,312.58	172.35	183.56	447.98	31109
31110	Hydraulic operated truck for handling air circuit breaker, and all necessary accessories.....	5,882.46	278.45	368.79	787.93	31110
<i>Per square meter</i>						
31111	Rubber mats; ribbed surface comply with BS 921:1976 or IEC 6111:2009, laid in front of and at the rear of switchboard; minimum 10mm thick continuous sheet.....	589.43	35.36	42.43	176.83	31111



**Section 32**

**EMERGENCY GENERATOR INSTALLATION**

## SECTION 32

### EMERGENCY GENERATOR INSTALLATION

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC32.01</b>	<p>All works of electrical power supply up to power supply points (e.g. switchfuse or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.</p>
<b>Measurement of temporary supply</b>	<b>SC32.02</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>
<b>Rates generally</b>	<b>SC32.03</b>	<p>The rates for all items shall generally include for : -</p> <ul style="list-style-type: none"> <li>(a) Colour band and colour identification work.</li> <li>(b) Lettering and engraving for identification, signs, labels in both English and Chinese.</li> <li>(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.</li> <li>(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.</li> <li>(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.</li> </ul>

**SPECIAL CONDITIONS**

**Rates generally  
(Cont'd)**

**SC32.03  
(Cont'd)**

- (f) Any kind of fixing method including drilling of the background and provision of all fixings, hangers, nails, bolts, nuts, holes, screws, washers, plugs, shotfired pins and the like.
- (g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.
- (h) All brackets and methods of supports including supporting frames and anti-vibration mounting.
- (i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (j) Submission of catalogues, technical literature, data, calculations, original official birth certificate, manufacturing certificates, official test certificates for major components and approval documentation covering the equipment and materials being supplied.
- (k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (n) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (o) Submitting all relevant documentation to Fire Services Department and obtaining necessary approval.
- (p) Obtaining necessary approval from Environment Protection Department including submission of all relevant documentation.
- (q) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (r) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (s) Provision of manufacturer's guarantee. Submission of sample board for all materials and accessories, and supply of samples of materials for testing (including testing to destruction).
- (t) Submission of sample board for all compact sized materials and accessories, and supply of samples of materials for testing (including testing to destruction).

**SPECIAL CONDITIONS****Rates for  
emergency  
generator set****SC32.04**

The rates for emergency generator set shall further include for : -

- (a) All necessary assembly, orientation, alignment, levelling, lifting and bolting down facilities, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.
- (b) Electric starting equipment including starter motor, starting battery with hardwood stand and cover, battery charger and all necessary wiring and switchgear.
- (c) Alternator complete with exciter, automatic voltage regulator and termination box including insulation as specified.
- (d) Engine mounted instrument panel including gauges, tachometer and hourmeter.
- (e) Protective screens for flywheel and coupling (if exposed) and other exposed moving parts.
- (f) Engine cooling system including pumps, pipework and valves, regulating devices, radiator with fan, heat exchanger, expansion tank if required, ductwork and silencers.
- (g) All necessary pipework and associated fittings for filling, overflow, outlet, drain, return and vent including necessary connection and jointing, valves, pipework hangers, supports, anchor and the like.
- (h) Engine exhaust system including fan, silencer, bellows, hangers with anti-vibration spring mechanism, pipework, ductwork, insulation, cladding, clamps, flange couplings, heat resisting jointing and the like.
- (i) All necessary operational and control accessories (e.g. selector switch, key switch, fuel control solenoid, relays, fuses, contactors, push button, indication lamp, meters and the like) that are required to put the generator set in proper operation.
- (j) Anti-vibration materials and sound insulation materials in generator set bases.
- (k) Earth/ equipotential bonding.
- (l) All lubricating oil and greases, including initial charge and subsequent replenishment during warranty period.

**SPECIAL CONDITIONS**

**Rates for fuel  
oil supply system**

**SC32.05**

The rates for fuel oil supply system shall further include for : -

- (a) Daily services fuel tank complete with socket connections for filling, overflow, outlet, drain, return and vent including all necessary fittings, union couplings, strainers, valves and the like, content gauge units, oil drip trays and all necessary accessories.
- (b) All necessary pipework and associated fittings for filling, overflow, outlet, drain, return and vent including necessary connections and jointing with diesel resistant jointing materials, valves, pipework hangers, supports, anchors and the like.
- (c) Oil transfer pump, injection pump, oil hand pump, injectors and filters.
- (d) Dial gauge, float switch, quick closing mechanism comprising break glass unit, pull handle, pulley, steel wire rope and the like.
- (e) Mild steel stand and all necessary accessories required for the completion of the system.
- (f) Hydraulic test on the system including draining, drying and flushing all pipework, fittings and valves after the test.

**Rates for  
lifting hoist**

**SC32.06**

The rates for lifting hoist shall further include for : -

- (a) Geared trolley, load chain, hooks with catch and ball or roller bearings.
- (b) Submission of test certificate for the load chain.
- (c) Submission of test certificate for the lift hoist.
- (d) Structural calculation and surveyor's certificate of I-beam.

**Rates for  
acoustic  
treatment  
installation**

**SC32.07**

The rates for acoustic treatment installation shall further include for providing all necessary suitable acoustic treatment to achieve acceptable noise levels as specified, including : -

- (a) Pipework acoustic sleeving to all pipes penetrating building structure and provision of split clamping rings, resilient hangers and seals.
- (b) Acoustic treatment to walls, doors, louvres and ceiling of the emergency generator room and provision of galvanized steel framing with fixing accessories, polyester membrane lining and protective perforated steel sheeting.
- (c) Duct silencers for ventilation fans, air inlet louvres, air discharge louvres, coupled radiators and all other air passage.
- (d) Mufflers for engine exhaust air system.

**SPECIAL CONDITIONS**

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC32.08**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with emergency generator set shall further include for :-

- (a) Taking down all associated plumbing works and building services works.
- (b) Plugging off remaining ends with plugs or caps as required.
- (c) Preparing remaining ends of plumbing works and building services works to receive connections with new work if required.
- (d) Making good all works disturbed.

**Particular Specification**

**SC32.09**

The Particular Specification for emergency generator set can be found in the Contract.

Item	Item																																												
<b>EMERGENCY GENERATOR SET</b>																																													
Emergency generator installation comprising diesel engine, alternator, electrical starting system, cooling system, fresh air supply/ exhaust air system, exhaust air ductwork, exhaust pipework with cladding and thermal insulation (each within 10m), intake/ discharge silencers, protection device and all necessary accessories : -																																													
	<table border="1"> <thead> <tr> <th style="text-align: center;">Supply and fix</th> <th style="text-align: center;">Take down and clear away</th> <th style="text-align: center;">Take down and set aside for re-use</th> <th style="text-align: center;">Fix only</th> </tr> <tr> <th style="text-align: center;">A \$</th> <th style="text-align: center;">B \$</th> <th style="text-align: center;">C \$</th> <th style="text-align: center;">D \$</th> </tr> </thead> </table>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	A \$	B \$	C \$	D \$																																				
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A \$	B \$	C \$	D \$																																										
	<i>Per item</i>																																												
32001	Not exceeding 100 kVA ..... (The actual rate should be : \$252,611.00 for Item 32001A)																																												
32002	100 - 150 kVA..... (The actual rate should be : \$294,712.80 for Item 32002A)																																												
32003	150 - 200 kVA..... (The actual rate should be : \$336,814.60 for Item 32003A)																																												
32004	200 - 250 kVA..... (The actual rate should be : \$378,916.50 for Item 32004A)																																												
32005	250 - 300 kVA..... (The actual rate should be : \$463,120.10 for Item 32005A)																																												
32006	300 - 350 kVA..... (The actual rate should be : \$530,483.00 for Item 32006A)																																												
32007	350 - 400 kVA..... (The actual rate should be : \$589,425.60 for Item 32007A)																																												
32008	400 - 450 kVA..... (The actual rate should be : \$715,731.10 for Item 32008A)																																												
32009	450 - 500 kVA..... (The actual rate should be : \$757,832.90 for Item 32009A)																																												
32010	500 - 550 kVA..... (The actual rate should be : \$842,036.60 for Item 32010A)																																												
32011	550 - 600 kVA..... (The actual rate should be : \$926,240.20 for Item 32011A)																																												
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25,261.10	2,324.27	2,574.21	6,955.21																																										
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92,624.02	3,821.27	4,149.55	16,166.92																																										

Item	Item								
<b>EMERGENCY GENERATOR SET (CONT'D)</b>									
Emergency generator installation (remote radiator type) comprises with diesel engine, alternator, electrical starting system, cooling system (excluding remote radiator), fresh air supply/ exhaust air system, exhaust air ductwork, exhaust pipework with cladding and thermal insulation (each within 10m), intake/ discharge silencers, protection device and all necessary accessories : -									
<i>Per item</i>									
	<table border="1"> <thead> <tr> <th style="text-align: center;">Supply and fix</th> <th style="text-align: center;">Take down and clear away</th> <th style="text-align: center;">Take down and set aside for re-use</th> <th style="text-align: center;">Fix only</th> </tr> <tr> <th style="text-align: center;">A \$</th> <th style="text-align: center;">B \$</th> <th style="text-align: center;">C \$</th> <th style="text-align: center;">D \$</th> </tr> </thead> </table>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	A \$	B \$	C \$	D \$
Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only						
A \$	B \$	C \$	D \$						
32012	for generator set n.e. 100 kVA ..... 50,522.19 2,324.27 2,574.21 6,955.21 32012								
32013	for generator set 100 - 150 kVA..... 51,925.59 2,663.10 2,904.24 8,530.53 32013								
32014	for generator set 150 - 200 kVA..... 53,328.98 2,832.08 3,068.81 9,682.55 32014								
32015	for generator set 200 - 250 kVA..... 54,732.38 3,124.25 3,359.23 10,951.62 32015								
32016	for generator set 250 - 300 kVA..... 57,138.20 3,177.06 3,407.64 11,346.76 32016								
32017	for generator set 300 - 350 kVA..... 59,544.02 3,338.11 3,615.34 12,705.59 32017								
32018	for generator set 350 - 400 kVA..... 61,949.83 3,338.11 3,615.34 12,705.59 32018								
32019	for generator set 400 - 450 kVA..... 64,355.65 3,485.08 3,765.84 13,837.36 32019								
32020	for generator set 450 - 500 kVA..... 66,761.47 3,485.08 3,765.84 13,837.36 32020								
32021	for generator set 500 - 550 kVA..... 69,167.29 3,821.27 4,149.54 16,166.92 32021								
32022	for generator set 550 - 600 kVA..... 71,573.11 3,821.27 4,149.54 16,166.92 32022								
Remote radiator for emergency generator set c/w remote radiator system, cooling system and pipework, fresh air supply/ exhaust air system, exhaust air ductwork, intake/ discharge silencers, protection device, all cabling and wiring works and all necessary accessories : -									
<i>Per item</i>									
32023	for generator set n.e. 100 kVA ..... 58,942.56 2,324.27 2,574.21 6,955.21 32023								
32024	for generator set 100 - 150 kVA..... 60,345.95 2,663.10 2,904.24 8,530.53 32024								
32025	for generator set 150 - 200 kVA..... 61,749.35 2,832.08 3,068.81 9,682.55 32025								
32026	for generator set 200 - 250 kVA..... 63,152.74 3,124.25 3,359.23 10,951.62 32026								
32027	for generator set 250 - 300 kVA..... 65,558.56 3,177.06 3,407.64 11,346.76 32027								
32028	for generator set 300 - 350 kVA..... 67,964.38 3,338.11 3,615.34 12,705.59 32028								
32029	for generator set 350 - 400 kVA..... 70,370.20 3,338.11 3,615.34 12,705.59 32029								
32030	for generator set 400 - 450 kVA..... 72,776.02 3,485.08 3,765.84 13,837.36 32030								
32031	for generator set 450 - 500 kVA..... 75,181.84 3,485.08 3,765.84 13,837.36 32031								
32032	for generator set 500 - 550 kVA..... 77,587.66 3,821.27 4,149.54 16,166.92 32032								
32033	for generator set 550 - 600 kVA..... 79,993.48 3,821.27 4,149.54 16,166.92 32033								



Item					Item	
<b>EMERGENCY GENERATOR SET (CONT'D)</b>						
Exhaust pipework c/w cladding, thermal insulation and necessary accessories : -						
<i>Per linear metre</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
32034	for generator set n.e. 100 kVA .....	2,736.62	74.80	88.01	337.07	32034
32035	for generator set 100 - 150 kVA.....	2,947.13	74.80	88.01	337.07	32035
32036	for generator set 150 - 200 kVA.....	3,157.64	91.53	101.21	381.08	32036
32037	for generator set 200 - 250 kVA.....	3,368.15	91.53	113.53	417.16	32037
32038	for generator set 250 - 300 kVA.....	3,713.98	95.05	116.17	427.71	32038
32039	for generator set 300 - 350 kVA.....	4,059.82	117.05	136.41	504.28	32039
32040	for generator set 350 - 400 kVA.....	4,405.66	120.58	140.81	541.25	32040
32041	for generator set 400 - 450 kVA.....	4,751.49	129.36	164.58	581.74	32041
32042	for generator set 450 - 500 kVA.....	5,097.33	159.30	188.33	682.94	32042
32043	for generator set 500 - 550 kVA.....	5,443.17	179.53	211.24	765.66	32043
32044	for generator set 550 - 600 kVA.....	5,789.00	199.79	227.95	852.79	32044
Fuel oil supply system including daily services fuel tank c/w socket connections for filling, overflow, outlet, drain, return and vent including all necessary fittings, union couplings, strainer, valve and the like, content gauge unit, oil drip tray and all necessary accessories : -						
<i>Per item</i>						
32045	for generator set n.e. 100 kVA .....	50,522.19	631.02	689.10	1,563.01	32045
32046	for generator set 100 - 150 kVA.....	53,584.15	780.64	847.51	1,950.24	32046
32047	for generator set 150 - 200 kVA.....	56,646.10	824.62	908.23	2,017.12	32047
32048	for generator set 200 - 250 kVA.....	59,708.05	886.24	975.13	2,172.02	32048
32049	for generator set 250 - 300 kVA.....	62,770.00	935.52	1,014.73	2,326.91	32049
32050	for generator set 300 - 350 kVA.....	65,831.95	1,093.91	1,173.13	2,756.38	32050
32051	for generator set 350 - 400 kVA.....	68,893.90	1,134.41	1,284.90	3,042.42	32051
32052	for generator set 400 - 450 kVA.....	71,955.85	1,258.50	1,332.43	3,223.70	32052
32053	for generator set 450 - 500 kVA.....	75,017.80	1,318.35	1,382.60	3,595.08	32053
32054	for generator set 500 - 550 kVA.....	78,079.76	1,412.51	1,489.96	3,749.99	32054
32055	for generator set 550 - 600 kVA.....	81,141.71	1,623.73	1,807.66	4,218.18	32055

Item					Item	
<b>EMERGENCY GENERATOR SET (CONT'D)</b>						
Topping up of fuel oil tanks with fuel of 0.005% sulphur content and of capacity : -						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
32056	Not exceeding 300 litres .....	3,789.15	-	-	-	32056
32057	300 - 400 litres.....	5,052.22	-	-	-	32057
32058	400 - 500 litres.....	6,315.26	-	-	-	32058
32059	500 - 600 litres.....	7,578.33	-	-	-	32059
32060	600 - 700 litres.....	8,841.37	-	-	-	32060
32061	700 - 800 litres.....	10,104.44	-	-	-	32061
32062	800 - 900 litres.....	11,367.48	-	-	-	32062
32063	900 -1000 litres.....	12,630.55	-	-	-	32063
32064	Add to last item for each additional 100 litres or part thereof.....	1,263.04	-	-	-	32064
Lifting hoist c/w geared trolley and all necessary accessories : -						
<i>Per item</i>						
32065	for generator set n.e. 100 kVA .....	18,462.30	725.18	807.02	2,479.15	32065
32066	for generator set 100 - 150 kVA.....	22,476.09	863.34	961.03	3,013.37	32066
32067	for generator set 150 - 200 kVA.....	23,267.53	863.34	961.03	3,013.37	32067
32068	for generator set 200 - 250 kVA.....	24,640.20	946.08	1,056.97	3,336.35	32068
32069	for generator set 250 - 300 kVA.....	25,928.62	1,002.41	1,112.42	3,530.85	32069
32070	for generator set 300 - 350 kVA.....	29,846.86	1,161.70	1,290.19	4,093.21	32070
32071	for generator set 350 - 400 kVA.....	32,228.37	1,196.89	1,312.20	4,174.17	32071
32072	for generator set 400 - 450 kVA.....	34,244.34	1,232.99	1,341.23	4,336.99	32072
32073	for generator set 450 - 500 kVA.....	36,660.86	1,272.58	1,387.88	4,516.53	32073
32074	for generator set 500 - 550 kVA.....	38,829.96	1,314.83	1,439.79	4,684.63	32074
32075	for generator set 550 - 600 kVA.....	41,809.14	1,384.35	1,496.12	4,923.99	32075

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>EMERGENCY GENERATOR SET (CONT'D)</b>						
Acoustic treatment installation to the whole emergency generator set; all as necessary to achieve the specified noise levels : -						
<i>Per item</i>						
32076	for generator set n.e. 100 kVA .....	61,299.81	3,371.56	3,468.36	11,633.67	32076
32077	for generator set 100 - 150 kVA.....	67,164.43	3,626.78	3,727.98	12,649.26	32077
32078	for generator set 150 - 200 kVA.....	71,109.93	3,829.19	3,945.36	13,355.96	32078
32079	for generator set 200 - 250 kVA.....	76,056.44	4,072.09	4,193.53	14,304.68	32079
32080	for generator set 250 - 300 kVA.....	81,849.95	4,335.23	4,460.20	15,341.41	32080
32081	for generator set 300 - 350 kVA.....	86,400.45	4,593.98	4,724.23	16,332.36	32081
32082	for generator set 350 - 400 kVA.....	91,247.51	4,852.72	4,997.04	17,306.61	32082
32083	for generator set 400 - 450 kVA.....	95,301.25	5,109.69	5,248.76	18,266.77	32083
32084	for generator set 450 - 500 kVA..... (The actual rate should be : \$101,951.00 for Item 32084A)	10,195.10	5,364.04	5,503.97	19,267.39	32084
32085	for generator set 500 - 550 kVA..... (The actual rate should be : \$106,166.70 for Item 32085A)	10,616.67	5,641.25	5,789.99	20,260.13	32085
32086	for generator set 550 - 600 kVA..... (The actual rate should be : \$112,953.80 for Item 32086A)	11,295.38	5,924.63	6,076.02	21,213.25	32086
Electrical installation c/w all cabling and wiring works including sensor cables, motor starters, conduits and trunking from switches to the equipment, earthing system and all necessary accessories : -						
<i>Per item</i>						
32087	for generator set n.e. 100 kVA .....	38,715.49	1,614.93	1,760.14	5,184.50	32087
32088	for generator set 100 - 150 kVA.....	41,268.69	1,631.66	1,775.98	5,518.94	32088
32089	for generator set 150 - 200 kVA.....	43,134.84	1,686.23	1,829.67	5,731.03	32089
32090	for generator set 200 - 250 kVA.....	45,000.99	1,740.79	1,883.37	5,943.12	32090
32091	for generator set 250 - 300 kVA.....	46,391.82	1,757.50	1,898.31	6,128.82	32091
32092	for generator set 300 - 350 kVA.....	48,563.82	1,792.71	1,934.41	6,387.55	32092
32093	for generator set 350 - 400 kVA.....	50,149.53	1,830.55	1,972.23	6,558.29	32093
32094	for generator set 400 - 450 kVA.....	52,712.33	1,863.10	2,004.80	6,678.86	32094
32095	for generator set 450 - 500 kVA.....	54,484.01	1,900.08	2,041.76	6,861.05	32095
32096	for generator set 500 - 550 kVA.....	55,406.48	1,933.51	2,070.81	6,994.81	32096
32097	for generator set 550 - 600 kVA.....	56,999.08	1,966.97	2,104.25	7,117.14	32097

Item					Item	
	<b>EMERGENCY GENERATOR SET (CONT'D)</b>					
	Control cubicle c/w switchgear, wiring, contactors, starters, relays, meters, air circuit breaker, switches, battery charger, push buttons, cable terminal box, safety and protection devices, timers, control equipment, indicator lights, alarm, rubber mats and all necessary accessories : -					
	<i>Per item</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
32098	for generator set n.e. 100 kVA .....	53,638.05	1,035.86	1,132.64	3,441.96	32098
32099	for generator set 100 - 150 kVA.....	56,626.69	1,172.24	1,218.02	3,975.29	32099
32100	for generator set 150 - 200 kVA.....	71,594.17	1,242.66	1,346.51	4,375.72	32100
32101	for generator set 200 - 250 kVA.....	86,561.65	1,313.07	1,474.99	4,776.15	32101
32102	for generator set 250 - 300 kVA.....	88,798.64	1,344.75	1,504.92	4,852.72	32102
32103	for generator set 300 - 350 kVA..... (The actual rate should be : \$110,090.80 for Item 32103A)	11,009.08	1,451.23	1,580.61	5,316.51	32103
32104	for generator set 350 - 400 kVA..... (The actual rate should be : \$112,709.90 for Item 32104A)	11,270.99	1,480.28	1,607.02	5,393.96	32104
32105	for generator set 400 - 450 kVA..... (The actual rate should be : \$126,850.20 for Item 32105A)	12,685.02	1,589.40	1,719.66	5,753.03	32105
32106	for generator set 450 - 500 kVA..... (The actual rate should be : \$129,479.20 for Item 32106A)	12,947.92	1,615.81	1,744.29	5,826.95	32106
32107	for generator set 500 - 550 kVA..... (The actual rate should be : \$141,437.90 for Item 32107A)	14,143.79	1,681.82	1,804.14	6,207.15	32107
32108	for generator set 550 - 600 kVA..... (The actual rate should be : \$143,994.70 for Item 32108A)	14,399.47	1,704.69	1,826.14	6,280.18	32108

**Section 33**

**BURGLAR ALARM AND SECURITY**

## SECTION 33

### BURGLAR ALARM AND SECURITY

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC33.01</b>	<p>All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.</p>
<b>Measurement of security alarm control panel</b>	<b>SC33.02</b>	<p>The interconnecting cables and the cable containment for the control panel connecting to external equipment or existing panel shall be measured separately.</p>
<b>Measurement of coaxial cables and shield cables</b>	<b>SC33.03</b>	<p>Cables for the equipment, control panels, push buttons, door contacts, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for coaxial cables and shield cables where specifically ordered by the Maintenance Surveyor in writing.</p> <p>Coaxial cables and shield cables shall be measured the net length as fixed in linear metres.</p>
<b>Measurement of temporary supply</b>	<b>SC33.04</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>

**SPECIAL CONDITIONS**

<b>Rates generally</b>	<b>SC33.05</b>	<p>The rates for all items shall generally include for : -</p> <ul style="list-style-type: none"> <li>(a) Colour band and colour identification work.</li> <li>(b) Lettering and engraving for identification, signs, labels in both English and Chinese.</li> <li>(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.</li> <li>(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.</li> <li>(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.</li> <li>(f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.</li> <li>(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.</li> <li>(h) All brackets and methods of supports.</li> <li>(i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.</li> <li>(j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.</li> <li>(k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.</li> <li>(l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.</li> <li>(m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.</li> <li>(n) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.</li> <li>(o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.</li> <li>(p) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.</li> <li>(q) Provision of manufacturer's guarantee.</li> </ul>
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### SPECIAL CONDITIONS

<b>Rates for equipment</b>	<b>SC33.06</b>	<p>The rates for equipment shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Interfacing, connecting, interconnecting cables, jointing and making all bus bar, cable, conduit, trunking and cable tray connections and the like and provision of all associated components.</li> <li>(b) Provision of all components forming part of the equipment including batteries and chargers with all supply and interconnecting wiring and the like and provision of software including back-up copies (if required).</li> <li>(c) All necessary sensors, instruments, devices and the like including appropriate connections thereto.</li> <li>(d) Cables, conduits including flexible conduits and adaptors, trunkings, trays, ladders, outlet boxes, junction boxes, universal boxes including special boxes, all fixings, bending, cutting, screwing and jointing.</li> <li>(e) Earth/ equipotential bonding.</li> </ul>
<b>Rates for push buttons, door contacts, etc.</b>	<b>SC33.07</b>	<p>The rates for push buttons, door contacts, window contacts, detectors, tamper switches, alarm sirens, kick bars and keyswitches shall further include for cables, conduits, trunkings and all necessary accessories including provision of all associated fixing components for connection to the security alarm control panel.</p>
<b>Rates for control panels</b>	<b>SC33.08</b>	<p>Control panel shall be measured on the basis of complete unit monitoring and controlling the number of zones as specified. The rates for control panels shall further include for all necessary relays, alarms, indicating lamps, buzzers, zone isolation switches, test key switches, internal wiring and all necessary accessories. The cables and cable containment between the equipment and the control/ indicating panel and/ or for connection to existing control/ indicating panel shall be measured separately and paid for at appropriate rates under this Section and Sections 27 to 30.</p>
<b>Rates for coaxial cables and shield cables</b>	<b>SC33.09</b>	<p>The rates for coaxial cables and shield cables shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.</li> <li>(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.</li> <li>(c) Making cable-joints.</li> <li>(d) All necessary fixings complete with accessories and fittings as required.</li> <li>(e) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.</li> </ul>



**SPECIAL CONDITIONS**

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC33.10**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with burglar alarm and security installation shall further include for : -

- (a) Taking down all associated building services works.
- (b) Plugging off remaining ends with plugs or caps as required.
- (c) Preparing remaining ends of building services works to receive connections with new work if required.
- (d) Making good all works disturbed.

**Particular Specification**

**SC33.11**

The Particular Specification for burglar alarm and security installation can be found in the Contract.

Item					Item	
	<b>CENTRAL CONTROL STATION EQUIPMENT</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Equipment/ components c/w all necessary accessories :-					
	<i>Per set</i>					
33001	Security system computer designed for multi-user, multi-tasking point monitoring and control c/w CPU and mother board, disk drives/ streamer/ DVD writer drive, interface connection parts, keyboard, I/O card, mouse, cables, standard application software, software programmes for burglar alarm and security installation with unlimited usage licences.....	12,630.55	56.33	71.28	381.95	33001
33002	Standby computer c/w CPU and mother board, disk drives/ streamer/ DVD writer drive, interface connection ports, keyboard, I/O card, mouse, cables, standard application software.....	12,630.55	56.33	71.28	327.38	33002
33003	Uninterrupted power supply for the operation of the security computer and terminal, and matrix switcher of the Closed Circuit Television System, for a minimum of 10 Ah c/w changeover switch, isolation switches, static bypass, manual bypass, microprocessor managed mimic and control panel, LCD display and keyboard .....	5,052.22	25.53	26.40	107.38	33003
	<i>Each</i>					
33004	Video display units, flat square type, active screen size 380 mm minimum diagonally measured, super high resolution colour monitor, 1024 x 768 pixels resolutions multiscanning with tilt/ swivel base c/w add-on anti-glare high quality circular polarizer screen filter .....	1,560.05	9.69	11.43	26.40	33004
33005	LCD video display unit, active screen size 350mm diagonally measured, colour display, minimum of 1024 x 768 pixels resolutions with tilt/ swivel base.....	1,676.38	9.69	11.43	26.40	33005
33006	Ditto active screen size 380 mm.....	1,753.48	9.69	11.43	26.40	33006
33007	Ditto active screen size 430 mm.....	2,083.40	9.69	11.43	26.40	33007
33008	Ditto active screen size 480 mm.....	2,348.75	9.69	11.43	26.40	33008
33009	Report printer, dry-type laser type, monochrome, random access memory, paper tray .....	1,668.34	9.69	11.43	58.96	33009
33010	Event printer, ink jet type.....	823.33	9.69	11.43	58.96	33010
33011	Intelligent local control units, microprocessor based controller, housed in tamper-proof housing c/w tampering switches, control programme, backup battery, database file and connector plugs and all necessary accessories.....	2,545.13	25.53	30.80	109.12	33011

Item					Item	
	<b>CENTRAL CONTROL STATION EQUIPMENT (CONT'D)</b>					
	Alarm/ security control panel, stainless steel type c/w battery and chargers, ammeter, control components and all other necessary accessories : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
33012	Panel of 4 zones or less.....	3,447.92	76.56	80.97	306.28	33012
33013	Panel of 5 - 8 zones.....	4,790.54	81.84	86.25	323.00	33013
33014	Panel of 9 - 12 zones.....	6,074.97	87.13	91.53	338.83	33014
33015	Panel of 13 - 18 zones.....	7,264.79	92.43	95.93	354.67	33015
33016	Panel of 19 - 24 zones.....	8,364.32	97.68	101.21	365.22	33016
	Standby battery set :-					
33017	Standby battery set.....	1,481.60	25.53	26.40	51.92	33017
	Sundries :-					
33018	Interconnection point for with F.S. panel .....	193.08	28.15	29.91	108.24	33018
33019	Interconnection point for matrix switching system of the CCTV system .....	188.75	28.15	29.91	108.24	33019
33020	Security equipment console and racks, hairline stainless steel, c/w a 1500 x 700 mm deep (min) horizontal flat surface section finished with plastic laminate and 1500 mm high vertical rack sections attached together to form a continuous rack system including full height locking doors, front below counter solid doors with recessed handle and lock, a armrest swivel leather chair and all necessary accessories.....	19,137.23	141.70	151.37	364.37	33020
	<b>Per lot</b>					
33021	Provide system grounding for the burglar alarm and security system.....	1,287.45	-	-	-	33021
33022	Provide direct link to the security control centre including the first year rental charge .....	4,782.66	-	-	-	33022

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>ACCESS CONTROL SYSTEM</b>						
Proximity card system components : -						
<i>Each</i>						
33023	Proximity card reader c/w 12V power supply, tamper-proof housing with tampering switches.....	1,263.05	29.91	32.56	46.65	33023
33024	Interfacing module.....	2,484.01	29.91	32.56	46.65	33024
33025	Central card access controller.....	10,104.44	29.91	32.56	54.56	33025
33026	Emergency break glass; for card access reader.....	210.51	49.29	55.45	100.33	33026
33027	Proximity card.....	8.42	-	-	-	33027
Video door phone system component including conduits, trunkings, cables, and all other accessories, and connection to the control panel : -						
33028	Intercom video handset c/w door release button.....	2,601.19	78.32	84.49	174.24	33028
33029	Wall mounted s.s. intercom panel c/w camera & all necessary accessories .....	3,669.96	81.84	87.13	232.34	33029
Intercom door lock system component including conduits, trunkings, cables and all other accessories, and connection to the control panel : -						
33030	Intercom handset c/w door release button.....	1,684.07	78.32	84.49	174.24	33030
33031	Wall mounted s.s. intercom panel c/w camera & all necessary accessories.....	2,132.92	81.84	87.13	232.34	33031

Item					Item	
	<b>FIELD ALARM DEVICES SYSTEM</b>					
	Equipment/ components c/w all necessary accessories :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per set</i>	A \$	B \$	C \$	D \$	
33032	Personal attack push button c/w necessary accessories.....	421.01	49.29	51.04	95.93	33032
33033	Magnetic door contact for door, concealed/ surface type c/w necessary accessories .....	210.51	51.92	52.80	100.33	33033
33034	Magnetic door contact, heavy duty type, concealed/ surface, for roller shutter/ strong room c/w necessary accessories .....	421.01	51.92	52.80	100.33	33034
33035	Motion detector, combined infrared and ultrasonic detection type c/w necessary accessories .....	673.63	51.92	52.80	100.33	33035
33036	Magnetic window contact c/w necessary accessories.....	421.01	51.92	52.80	100.33	33036
33037	Glass break detectors, housed in tamper-proof housing with tampering switches c/w necessary accessories .....	673.63	51.92	52.80	100.33	33037
33038	Kick bar underneath counter, 450 mm length c/w necessary accessories .....	842.04	51.92	52.80	108.24	33038
33039	Duress push button, self-locking type c/w necessary accessories .....	421.01	49.29	50.16	95.05	33039
33040	Tamper switch, plunger type c/w necessary accessories.....	421.01	49.29	50.16	95.05	33040
33041	Alarm shunt key switch unit c/w necessary accessories.....	421.01	49.29	50.16	95.05	33041
33042	Alarm push button, stainless steel vandal resistant type c/w necessary accessories.....	421.01	49.29	50.16	95.05	33042
33043	Over-ride key switch c/w necessary accessories.....	210.51	49.29	50.16	95.05	33043
33044	Alarm siren c/w necessary accessories.....	421.01	51.92	52.80	108.24	33044
33045	Alarm siren, weatherproof type c/w necessary accessories.....	673.63	51.92	52.80	108.24	33045

Item					Item	
	<b>EXIT CONTROL LOCK SYSTEM</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Equipment/ components c/w all necessary accessories :-	A	B	C	D	
	<i>Per set</i>	\$	\$	\$	\$	
33046	Exit device, fail-secure or fail-open electric lock strikes, c/w internal thumb-turn, pushbar and cylinder for single door .....	1,179.99	16.72	19.37	51.92	33046
33047	Exit device, fail-secure or fail-open electric lock strikes, c/w internal thumb-turn, pushbar and cylinder for double door .....	1,783.12	16.72	19.37	58.09	33047
33048	Weather proof electronic digital keypad c/w stainless steel panel and box, numeric keypad, suitable for outdoor environment .....	688.81	16.72	19.37	53.69	33048
	Power supply unit :-					
33049	Power supply unit for electronic digital security c/w 6 Ah maintenance free standby-battery, 12V charger and metal box .....	673.63	25.53	26.40	51.92	33049
	Door lock system :-					
33050	Scramble door lock system including cable containments, cables, electronic digital push-button c/w stainless steel panel & box, combination lock, touch screen access reader, scramble keypad, suitable for outdoor environment and all other accessories and connection to the alarm panel .....	3,466.61	85.37	88.01	202.42	33050
33051	Push button door lock system including cable containments, trunkings, cables, electronic digital push-button c/w stainless steel panel & box, numeric keypad, combination lock, suitable for outdoor environment and all other accessories and connection to the alarm panel .....	2,659.36	85.37	88.01	202.42	33051
33052	Push button door lock system c/w remote door release button including cable containments, cables, electronic digital push-button c/w stainless steel panel & box, numeric keypad, combination lock, suitable for outdoor environment and all other accessories and connection to the alarm panel .....	2,871.64	101.21	106.49	275.46	33052
33053	Screening area door lock system for two access doors with interlock door locks and two remote release buttons, door indicator unit and associated cable containments to ensure the two doors not to be opened at one time .....	3,855.32	97.68	102.09	232.34	33053
	Control panel :-					
33054	Door release control panel connection to digital keypad locking devices and to a designated power supply point .....	1,675.96	81.84	87.13	232.34	33054
33055	Fire alarm interface control panel connection to the dry contact of fire alarm panel & door release control panel and to a designated power supply point .....	1,644.49	81.84	87.13	232.34	33055

Item					Item	
<b>CLOSED CIRCUIT TELEVISION SURVEILLANCE SYSTEM</b>						
Equipment/ components c/w all necessary accessories :-						
<i>Per set</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
33056	Colour CCD video camera c/w lens, housing & bracket.....	1,804.74	45.77	52.80	168.97	33056
33057	Digital Colour CCD video camera c/w auto-iris lens, housing & bracket.....	2,436.58	45.77	52.80	168.97	33057
33058	Dome colour camera c/w lens.....	1,141.68	45.77	52.80	157.53	33058
33059	Matrix switcher c/w control keypad, 16-way.....	36,666.23	25.53	27.28	80.97	33059
33060	Colour CRT CCTV monitor, 390 mm.....	-	22.00	23.76	53.69	33060
33061	Colour CRT CCTV monitor, 550 mm.....	-	22.00	23.76	53.69	33061
33062	Black and white CRT CCTV monitor, 390 mm.....	-	22.00	23.76	53.69	33062
33063	Colour TFT LCD CCTV monitor, 430 mm with BNC in/ out.....	3,268.37	22.00	23.76	53.69	33063
33064	Colour TFT LCD CCTV monitor, 480 mm with BNC in/ out.....	3,901.89	22.00	23.76	53.69	33064
33065	Colour TFT LCD CCTV monitor, 550 mm with BNC in/ out.....	5,638.71	22.00	23.76	53.69	33065
33066	1/ 3" CCD colour dome camera.....	2,214.36	45.76	52.80	168.98	33066
33067	High resolution network/ IP based camera.....	1,330.24	45.76	52.80	168.98	33067
33068	DVI extender.....	5,174.79	25.52	27.28	80.97	33068
33069	IP based KVM with LCD display panel.....	6,441.19	22.00	23.76	53.69	33069
33070	Video server (32 Channels).....	30,331.82	22.00	23.76	53.69	33070
33071	Video multiplexer, 16-way, duplex type.....	6,708.39	32.56	34.32	95.93	33071
33072	Quad unit, 4-way.....	2,731.37	32.56	34.32	74.80	33072
33073	Video cassette recorder, 24 hours time lapse type.....	-	22.00	24.64	53.69	33073
33074	Digital video recorder, DVD recording operation, with built-in hard disk of minimum 1 TB storage capacity, can record 9/ 16 channels video to up to 25 fps per channel.....	2,459.74	22.00	24.64	53.69	33074
33075	Extra for each additional 500 GB hard disk storage.....	598.60	-	-	-	33075
33076	CD-recordable (CD-R) computer disc of minimum 680 MB storage capacity, supports recording speed at least 24x.....	0.99	-	-	-	33076
33077	CD-rewritable (CD-RW) computer disc of minimum 680 MB storage capacity, supports rewriting speed at least 12x .....	3.51	-	-	-	33077
33078	DVD recordable computer disc of minimum 4.7 GB storage capacity, support recording speed at least 8x.....	1.95	-	-	-	33078

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CLOSED CIRCUIT TELEVISION SURVEILLANCE SYSTEM (CONT'D)</b>						
Equipment/ components c/w all necessary accessories :- (Cont'd)						
<i>Per set</i>		A \$	B \$	C \$	D \$	
33079	DVD rewritable computer disc of minimum 4.7 GB storage capacity, support writing speed at least 4x.....	7.44	-	-	-	33079
33080	Super VHS video tapes - 180 mins.....	19.47	-	-	-	33080
33081	Video distribution amplifier.....	451.55	22.00	24.64	53.69	33081
33082	Pan/ tilt driver, 360° pan, ±75° tilt (minimum).....	6,075.29	78.32	84.49	174.24	33082
33083	Pan/ tilt controller.....	2,251.93	22.00	24.64	53.69	33083
33084	Video splitter.....	84.46	4.40	6.16	15.85	33084
<b>DIGITAL VIDEO MOTION DETECTION SYSTEM</b>						
Equipment/ components c/w all necessary accessories :-						
<i>Per set</i>		A \$	B \$	C \$	D \$	
33085	Video motion detector, able to handle 16 cameras simultaneously and independently c/w remote keyboard for set up, control and all other accessories, connection to the central control station located at the same floor .....	28,123.85	143.45	150.48	404.82	33085
<b>WATCHMAN TOUR SYSTEM</b>						
Equipment/ components c/w all necessary accessories :-						
<i>Per set</i>		A \$	B \$	C \$	D \$	
33086	Data collector, handheld intelligent type, vandal proof and weatherproof construction, LCD readout, record minimum 2000 checkpoint readings, 99 user programmable incident codes, automatic downloading capability, pass word controller.....	11,704.53	-	-	-	33086
33087	Check point, magnetic type, tamper-proof, vandal resistant.....	261.43	25.53	26.40	53.69	33087
33088	Data transfer unit; able to transmit and receives data from data collector c/w battery charge, and necessary accessories .....	7,252.94	8.81	10.55	31.67	33088



Item					Item	
	<b>RADIO FREQUENCY DISTRIBUTION SYSTEM</b>					
	Equipment/ components c/w all necessary accessories :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per set</i>	A \$	B \$	C \$	D \$	
33089	Radio frequency distribution system for long distance signal transmission between camera multi-channel video signals and monitors .....	2,593.05	50.16	60.72	213.85	33089
33090	Fibre optics transmission system c/w transmitter and receiver for convey single and multi video signals through optical fibre over long distance. Fibre optics cable shall be measured separately.....	3,078.92	50.16	60.72	176.89	33090
	<b>CALL BELL SYSTEM</b>					
	Call bell control/ indication panel, stainless steel type c/w all necessary accessories and connection to a designated power supply point :-					
	<i>Each</i>					
33091	Panel of 4 zones or less.....	2,758.73	65.12	76.56	268.42	33091
33092	Panel of 5 - 8 zones.....	3,918.85	70.39	81.84	283.39	33092
33093	Panel of 9 - 12 zones.....	5,005.24	75.67	86.25	295.70	33093
	Call push button					
33094	Call push button c/w necessary accessories and connection to the call bell control/ indication panel .....	358.48	70.39	73.05	168.97	33094

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>COAXIAL CABLES AND SHIELDED CABLES</b>						
(Note : The following five items will only be paid for if ordered by the Maintenance Surveyor in writing)						
Coaxial cables : -						
<i>Per linear metre</i>						
33095	Coaxial cables, RG-6 / RG-11 / RG-58 / RG-59.....	11.29	1.75	2.65	6.17	33095
Twisted pair shielded cables : -						
33096	1-pair.....	10.17	2.04	2.46	6.17	33096
33097	2-pair.....	12.27	2.04	2.46	6.17	33097
33098	4-pair.....	14.99	2.24	2.75	7.05	33098
33099	8-pair.....	23.63	3.00	3.59	7.93	33099

## **Section 34**

### **PUBLIC ADDRESS SYSTEM**

## SECTION 34

### PUBLIC ADDRESS SYSTEM

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC34.01</b>	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
<b>Measurement of excavations, ducts, chases, holes and other subsidiary work</b>	<b>SC34.02</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work and Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.
<b>Measurement of microphone cables and loudspeaker cables</b>	<b>SC34.03</b>	<p>Cables for the equipment have been allowed in the rates under this Section. No measurement shall be made for cables except for microphone cables and loudspeaker cables where specifically ordered by the Maintenance Surveyor in writing.</p> <p>Microphone cables and loudspeaker cables shall be measured the net length as fixed in linear metres.</p>
<b>Measurement of temporary supply</b>	<b>SC34.04</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>

**SPECIAL CONDITIONS**

**Rates generally**

**SC34.05**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.
- (g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.
- (h) All brackets and methods of supports.
- (i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (n) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.
- (o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (p) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (q) Provision of manufacturer's guarantee.

### SPECIAL CONDITIONS

<b>Rates for equipment</b>	<b>SC34.06</b>	<p>The rates for equipment shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Connecting, interconnecting cables, jointing and making all cable, conduit, trunking and cable tray connections and the like and provision of all associated components.</li> <li>(b) Provision of all components forming part of the equipment complete with all supply and interconnecting wiring and the like.</li> <li>(c) All necessary instruments, devices and the like including appropriate connections thereto.</li> <li>(d) Cables, conduits including flexible conduits and adaptors, trunkings, trays, ladders, outlet boxes, junction boxes, universal boxes including special boxes, all fixings, bending, cutting, screwing and jointing.</li> <li>(e) Earth/ equipotential bonding.</li> </ul>
<b>Rates for microphone cables and loudspeaker cables</b>	<b>SC34.07</b>	<p>The rates for microphone cables and loudspeaker cables shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.</li> <li>(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.</li> <li>(c) Making cable-joints.</li> <li>(d) All necessary fixings completed with accessories and fittings as required.</li> <li>(e) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.</li> </ul>
<b>Rates for "Take down and clear away" or "Take down and set aside for re-use"</b>	<b>SC34.08</b>	<p>The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with public address installation shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Taking down all associated building services works.</li> <li>(b) Plugging off remaining ends with plugs or caps as required.</li> <li>(c) Preparing remaining ends of building services works to receive connections with new work if required.</li> <li>(d) Making good all works disturbed.</li> </ul>
<b>Particular Specification</b>	<b>SC34.09</b>	<p>The Particular Specification for public address system can be found in the Contract.</p>

Item					Item	
<b>PUBLIC ADDRESS SYSTEM</b>						
Equipment/ component c/w all necessary accessories : -						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
34001	Ceiling panel speaker, surface-mount type, 3W c/w matching transformer.....	609.07	25.42	28.02	102.09	34001
34002	Ceiling panel speaker, surface-mount type, 6W c/w matching transformer.....	637.14	25.42	28.02	102.09	34002
34003	Ceiling panel speaker, ceiling-recessed, 3W c/w matching transformer .....	844.84	25.42	28.02	106.49	34003
34004	Ceiling panel speaker, ceiling-recessed, 6W c/w matching transformer.....	943.08	25.42	28.02	106.49	34004
34005	Box speaker, 3W.....	842.04	25.42	28.02	102.09	34005
34006	Box speaker, 6W.....	905.20	25.42	28.02	102.09	34006
34007	Horn speaker, 3W.....	861.67	25.42	28.02	102.09	34007
34008	Horn speaker, 6W.....	945.89	25.42	28.02	102.09	34008
34009	Speaker column; 95 dB/ W (min.); four dynamic cone speaker units (min.); wooden enclosure c/w front grille cloth, insulation, matching transformer.....	3,811.63	28.06	30.16	107.37	34009
34010	Desk top microphone c/w chime unit.....	1,922.64	4.00	5.03	14.96	34010
34011	Unidirectional microphone c/w built-in blast and pop protection, microphone holder, mike cable and connector.....	2,801.19	4.00	5.03	14.96	34011
34012	Paging microphone c/w desk stand, microphone holder, mike cable and connector .....	3,592.70	4.00	5.03	15.85	34012
34013	Miniature omnidirectional lavalier microphone c/w long-life-cable and lavalier holder.....	3,761.10	1.48	1.96	4.41	34013
34014	Microphone floor stand and boom arm c/w 900 to 1600 mm nominal length floor stand, 700 mm minimum length boom arm of 360° adjustment direction, locking device and microphone and boom adaptor.....	1,627.93	4.00	5.03	15.85	34014
34015	Microphone desk stand and flexible gooseneck shaft c/w 100 to 200 mm adjustable support and connector.....	1,981.59	4.00	5.03	14.96	34015
34016	Volume control unit with wall mounting box, 30W c/w all necessary accessories .....	771.88	65.98	78.67	233.22	34016
34017	UHF Hand-held (vocal) Wireless Microphone.....	1,781.76	1.48	1.96	4.41	34017
34018	UHF Tuner.....	1,945.13	65.98	78.67	233.22	34018
34019	UHF Wireless Tuner.....	3,905.57	65.98	78.67	233.22	34019
34020	UHF Wireless Antenna.....	1,016.83	65.98	78.67	233.22	34020

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>PUBLIC ADDRESS SYSTEM (CONT'D)</b>						
Equipment/ component c/w all necessary accessories : - (Cont'd)						
<i>Each</i>						
34021	Mixer power amplifier, 60W r.m.s., 3 inputs.....	3,508.49	20.40	22.41	59.86	34021
34022	Mixer power amplifier, 120W r.m.s., 3 inputs.....	4,881.01	20.40	22.41	59.86	34022
34023	Mixer pre-amplifier panel with 6-channel pre-amplifier unit (4 microphone inputs) .....	7,140.47	20.40	22.41	59.86	34023
34024	Cassette deck c/w tape recorder and player, microphone and headphone jacks, input/ output level control and meters, 3-digital resettable tape counter, automatic shut-off and noise reduction system .....	1,852.48	20.40	22.41	59.86	34024
34025	Background music CD/ DVD player.....	1,801.96	20.40	22.41	59.86	34025
34026	Remote microphone unit in sheet metal cabinet comprising of 1 no. flexible gooseneck microphone and zone selection buttons (6 zone) .....	8,799.28	10.11	11.20	21.12	34026
34027	Monitor panel; stainless steel enclosure c/w monitor speaker with volume control, system power on/ off switch, sound level meter, channel selector switch and line voltage selector switch.....	7,788.84	60.67	80.34	307.14	34027
Sundries :-						
34028	Jack point c/w jack plug and socket, conduit and wiring and all necessary accessories.....	294.71	65.98	78.67	237.62	34028
34029	Speaker point c/w 2A - 3pin plug and socket, conduit and wiring and all necessary accessories .....	273.66	65.98	78.67	237.62	34029
Equipment cabinet :-						
<i>Per linear metre</i>						
34030	Equipment cabinet; well ventilated 483 mm standard high; teakwood construction c/w locking doors and 3-pin power sockets and all necessary accessories .....	3,704.96	17.36	18.33	25.53	34030
34031	Equipment cabinet; well ventilated 483mm standard high; stainless steel construction c/w locking doors and 3-pin power sockets and all necessary accessories .....	4,631.20	17.36	18.33	25.53	34031



Item					Item	
	<b>PUBLIC ADDRESS SYSTEM (CONT'D)</b>					
	Microphone cables and loudspeaker cables : - (Note : The following six items will only be paid for if ordered by the Maintenance Surveyor in writing)					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
34032	Microphone cable.....	13.81	2.05	3.04	6.16	34032
34033	Loudspeaker cable.....	17.77	2.05	3.04	6.16	34033
34034	Underground microphone cable.....	35.41	1.96	2.84	5.29	34034
34035	Underground loudspeaker cable.....	53.99	1.96	2.84	5.29	34035
34036	Waterproof type microphone cable.....	31.20	2.05	3.04	6.16	34036
34037	Waterproof type loudspeaker cable.....	51.89	2.05	3.04	6.16	34037

**Section 35**

**BROADCAST RECEPTION**

## SECTION 35

### BROADCAST RECEPTION

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC35.01</b>	<p>All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.</p>
<b>Measurement of coaxial cables</b>	<b>SC35.02</b>	<p>Cables for the equipment have been allowed in the rates under this Section. No measurement shall be made for cables except for coaxial cables where specifically ordered by the Maintenance Surveyor in writing.</p> <p>Coaxial cables shall be measured the net length as fixed in linear metres.</p>
<b>Measurement of temporary supply</b>	<b>SC35.03</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>
<b>Rates generally</b>	<b>SC35.04</b>	<p>The rates for all items shall generally include for : -</p> <ul style="list-style-type: none"> <li>(a) Colour band and colour identification work.</li> <li>(b) Lettering and engraving for identification, signs, labels in both English and Chinese.</li> <li>(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.</li> </ul>

**SPECIAL CONDITIONS**

<b>Rates generally (Cont'd)</b>	<b>SC35.04 (Cont'd)</b>	<ul style="list-style-type: none"> <li>(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.</li> <li>(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.</li> <li>(f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.</li> <li>(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.</li> <li>(h) All brackets and methods of supports.</li> <li>(i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.</li> <li>(j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.</li> <li>(k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.</li> <li>(l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.</li> <li>(m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.</li> <li>(n) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.</li> <li>(o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.</li> <li>(p) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.</li> <li>(q) Provision of manufacturer's guarantee.</li> </ul>
<b>Rates for equipment</b>	<b>SC35.05</b>	<p>The rates for equipment shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Interfacing, connecting, interconnecting cables, jointing and making all bus bar, cable, conduit, trunking and cable tray connections and the like and provision of all associated components.</li> <li>(b) Provision of all components forming part of the equipment including batteries and chargers with all supply and interconnecting wiring and the like.</li> </ul>

**SPECIAL CONDITIONS**

<b>Rates for equipment (Cont'd)</b>	<b>SC35.05 (Cont'd)</b>	<ul style="list-style-type: none"> <li>(c) All necessary sensors, instruments, devices and the like including appropriate connections thereto.</li> <li>(d) Cables, conduits including flexible conduits and adaptors, trunkings, trays, ladders, outlet boxes, junction boxes, universal boxes including special boxes, all fixings, bending, cutting, screwing and jointing.</li> <li>(e) Earth/ equipotential bonding.</li> </ul>
<b>Rates for coaxial cables</b>	<b>SC35.06</b>	<p>The rates for coaxial cables shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.</li> <li>(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.</li> <li>(c) Making cable-joints.</li> <li>(d) All necessary fixings complete with accessories and fittings as required.</li> <li>(e) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.</li> </ul>
<b>Rates for "Take down and clear away" or "Take down and set aside for re-use"</b>	<b>SC35.07</b>	<p>The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with broadcast reception installation shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Taking down all associated building services works.</li> <li>(b) Plugging off remaining ends with plugs or caps as required.</li> <li>(c) Preparing remaining ends of building services works to receive connections with new work if required.</li> <li>(d) Making good all works disturbed.</li> </ul>
<b>Particular Specification</b>	<b>SC35.08</b>	<p>The Particular Specification for broadcast reception installation can be found in the Contract.</p>

Item					Item	
<b>BROADCAST RECEPTION INSTALLATION</b>						
Equipment/ components c/w necessary accessories :-						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
35001	FM aerial c/w stainless steel aerial masts/ poles.....	2,563.73	94.15	100.69	403.06	35001
35002	UHF multi-channel aerial including receiving high definition television signal, minimize ghost image type, c/w stainless steel aerial masts/ poles.....	2,948.88	94.15	100.69	403.06	35002
35003	Aerial, combining-unit, FM/ UHF including receiving high definition television signal, minimize ghost image type c/w stainless steel aerial masts/ poles.....	3,862.76	96.49	101.68	429.48	35003
35004	Pre-amplifiers.....	1,079.79	22.83	24.15	59.86	35004
35005	Frequency converter.....	2,261.56	25.40	28.84	72.16	35005
35006	Wideband and channel amplifier.....	3,253.31	25.40	28.84	72.16	35006
35007	TV bandpass pre-amplifier.....	1,099.52	22.83	24.15	59.86	35007
35008	FM bandpass pre-amplifier.....	846.40	22.83	24.15	59.86	35008
35009	TV bandpass filter.....	784.29	22.83	24.15	59.86	35009
35010	FM bandpass filter.....	594.89	22.83	24.15	59.86	35010
Sundries :-						
35011	TV/ FM socket outlet c/w coaxial cables, conduits (surface or concealed type) and all necessary accessories .....	501.84	81.03	95.32	288.65	35011
35012	Splitter unit.....	68.43	2.35	2.94	8.81	35012
35013	Tee unit.....	70.70	2.35	2.94	8.81	35013
35014	Lockable well-ventilated metal enclosure to house all headend circuit components.....	1,183.31	56.68	62.80	204.18	35014
Coaxial cable :-						
<i>Per linear metre</i>						
35015	Coaxial cable, 75 ohm..... (Note : The above item will only be paid for if ordered by the Maintenance Surveyor in writing)	14.27	2.29	2.87	7.05	35015

Item					Item	
<b>BROADCAST RECEPTION INSTALLATION (CONT'D)</b>						
The satellite master antenna TV sub-system c/w steel supporting framework, stray wires and certification by a Registered Structural Engineer under Section 3 of the Building Ordinance (Cap123)						
Diameter of the antenna : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
35016	4 metres..... (The actual rate should be : \$111,841.10 for Item 35016A)	11,184.11	2,279.19	3,453.79	5,991.52	35016
35017	6 metres..... (The actual rate should be : \$277,930.10 for Item 35017A)	27,793.01	2,882.62	4,596.14	8,299.08	35017
Feedhorn c/w low noise block down converter and mounting supports : -						
35018	Ku-Band.....	4,922.86	23.14	34.20	59.86	35018
35019	C-Band.....	4,524.71	23.14	34.20	59.86	35019
Satellite receivers/ modulators c/w racks : -						
35020	Analogue type.....	7,869.76	23.14	34.20	59.86	35020
35021	Digital type.....	4,942.27	23.14	34.20	59.86	35021
35022	Satellite amplifier.....	2,727.55	25.60	29.09	71.30	35022

## **Section 36**

### **HEATING, VENTILATION AND AIR-CONDITIONING - PIPEWORK**



## SECTION 36

### HEATING, VENTILATION AND AIR-CONDITIONING

#### SPECIAL CONDITIONS

(Note: The following special conditions shall apply equally where appropriate to rates under Sections 36 to 39)

<b>Measurement of power supply</b>	<b>SC36.01</b>	All works of electrical power supply up to power supply points (e.g. MCB switchboard or switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Sections 28 to 30 or other applicable Work Sections of this Schedule.
<b>Measurement of water supply or gas supply</b>	<b>SC36.02</b>	All works of water supply and gas supply up to the respective termination points for the equipment and boilers shall be measured separately and paid for at the appropriate rates under applicable Work Sections of this Schedule.
<b>Measurement of pipework</b>	<b>SC36.03</b>	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches (but not through the items of in-line equipment, headers and trapping sets).
<b>Measurement of ductwork</b>	<b>SC36.04</b>	Ductwork rectangular in section shall be measured in square metres whereas ductwork circular and oval in section shall be measured in linear metres. All types of ductwork shall be measured over all in-line fittings, short running lengths and branches (but not through the items of in-line equipment).  Ductwork rectangular in section shall be measured net as the area of sheet material fabricated. Allowance for seams, joints and the like shall be included in the rates.
<b>Measurement of insulation to rectangular ductwork</b>	<b>SC36.05</b>	Insulation to ductwork rectangular in section shall be measured in square metres and to the net area in contact with the base of all ducting as installed and over all ducting fittings and joints.
<b>Measurement of insulation to pipework</b>	<b>SC36.06</b>	Insulation to pipework shall be measured in linear metres for the diameter of the pipes to be insulated.

### SPECIAL CONDITIONS

**Measurement  
of temporary  
supply**

**SC36.07**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

**Rates  
generally**

**SC36.08**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All supports in outdoor environment which shall be hot dip galvanized, unless they are part of the ex-factory painted proprietary equipment in which case the ex-factory paint finish may be accepted.
- (f) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (g) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, spring compensated and seismic restraints and isolated components and the like.
- (h) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

**SPECIAL CONDITIONS**

**Rates generally (Cont'd)**

**SC36.08 (Cont'd)**

- (i) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (j) Preparing and submitting detail working drawings and combined services drawings as required and all shop drawings for the fabrication and installation.
- (k) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (l) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (m) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (n) Submitting all relevant documentation to Fire Services Department and obtaining necessary approval.
- (o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works including soft copies as required.
- (p) Provision of schematic diagrams in plastic envelopes including fixing to wall.
- (q) Provision of manufacturer's guarantee.
- (r) Attending fault and complaint during the Maintenance Period.
- (s) Meeting statutory requirements for disposal of waste materials
- (t) Submission of sample board for all compact sized materials and accessories, and supply of samples of materials for testing (including testing to destruction).

**Rates for equipment**

**SC36.09**

The rates for equipment (e.g. chillers, heat pumps, air handling units, variable refrigerant volume air-conditioning units, fresh air pre-conditioner, split type air-conditioning units, fan coil units, room coolers, fans, pumps, tanks, heat exchangers and the like) shall further include for : -

- (a) All necessary assembly, orientation, alignment, levelling, lifting and bolting down facilities, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.
- (b) All supporting frames required for proper installation of equipment except the supporting frames for floor slab structure, reinforcement or other special requirements. When the equipment supporting beams have to be extended beyond the requirements, or have to be incorporated into the elevated structure, the extra structural cost of the supporting frames shall be measured separately and paid for at the appropriate rates under Section 10 Steel and Metal Work. For major equipment or equipment as requested by the Maintenance Surveyor, the Contractor shall submit the installation and structural details of the supporting frames for endorsement by the Maintenance Surveyor before carrying out the installation works.

**SPECIAL CONDITIONS**

**Rates for  
equipment  
(Cont'd)**

**SC36.09  
(Cont'd)**

- (c) Connections including flexible joints between pipework and equipment.
- (d) All necessary operational and control accessories (e.g. valves, gauges, mechanical flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.
- (e) Condensate drain pipes forming part of the equipment.
- (f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.
- (g) Anti-vibration mountings for plant, machinery and the like.
- (h) Anti-vibration materials and sound insulating materials in plant and machinery bases, so that when the installed equipment is put into operation, the resulting noise and vibration level at the location within the building and at the building adjacent or nearby shall not exceed the acceptable limit as promulgated by the latest statutory requirements of the Environmental Protection Department.
- (i) Thermal insulation for plant, machinery and the like if required.
- (j) Direct-on-line or Star-Delta motor starters (if the equipment requires motor starters).
- (k) Earth/ equipotential bonding.

**Rates for ductwork  
generally**

**SC36.10**

The rates for ductwork (rectangular in section or circular or oval in section) shall further include for :-

- (a) All short lengths, cutting and waste, joints including stiffeners and flanges in the running length and forming openings for branches.
- (b) All connections to fittings, equipment and ancillaries including flexible connections and providing all necessary materials, bolts, nuts, washers, brackets, supports, hangers and everything necessary for making joints and connections.
- (c) Alternative method of jointing and fixing as specified (if any).
- (d) Connections between ductwork of different materials.
- (e) Spring compensated components of ductwork supports.
- (f) Ductwork turns, splitter dampers, mid-feathers, air duct cleaning points, access doors and openings, test holes and covers, flashing plates, companion frames and the like.
- (g) In-line fittings (e.g. bends, branches, elbows, reducers, tees, air turning vanes and the like).
- (h) All necessary components for earth continuity as specified.

**SPECIAL CONDITIONS**

**Rates for ductwork circular or oval in section**

**SC36.11**

The rates for ductwork circular or oval in section shall, in addition to the appropriate sub-clauses of Clause SC36.10, include for insulation including working or cutting around supports, small drains, vents or similar obstructions, joints, bends, tees, duct fittings, stiffeners, access doors, ancillaries and the like, and provision of adhesive, sealing tapes and vapour barriers, and finishing with aluminium foil or cement plaster and painting or metal cladding as required.

**Rates for pipework**

**SC36.12**

The rates for pipework shall further include for : -

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All in-line pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Spring compensated components of pipework supports.
- (g) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.
- (h) Trapping sets.
- (i) Any flanges, unions or other devices used solely for erection purposes.
- (j) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.
- (k) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.
- (l) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.
- (m) Fixing in any position to floors, walls and ceilings and fixing in chases, ducts, false ceilings and similar positions.

**SPECIAL CONDITIONS**

**Rates for  
in-line pipework  
equipment**

**SC36.13**

The rates for in-line pipework equipment (e.g. valves, mechanical flow meters, gauges, strainers and the like) shall further include for : -

- (a) Cutting and jointing to pipes and fittings.
- (b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

**Rates for  
supervisory  
panel**

**SC36.14**

The supervisory panel shall be measured on the basis of complete unit monitoring and controlling a series of equipment with interaction. Rates for supervisory panel shall further include for all necessary relays, contactors, circuit protection devices, indicating lamps, push button package and selector switches and the like for the supervising the operation of the whole series of equipment. The cable and cable containment to existing equipment or existing panel shall be measured separately and paid for at the appropriate rates under Sections 28 to 30.

For the avoidance of doubt, every set of pump (i.e. one duty pump and one standby pump), condenser, condensation unit, air handling unit, package chiller, heat pump, contactor for a group of fans or fan coil units shall mean one set of equipment. An evaporator and an outdoor condensing unit of a split unit shall also mean one set of equipment. An actuator for operating a motorized valve or damper shall also be regarded as one set of equipment. Switches and devices (e.g. pressure switch, thermostat, humidistat, level switch, sail switch and the like) that provide contacts for control functions shall not be measured as equipment.

Furthermore, the local control panel which is an integral part of the equipment shall be regarded as a complete monitoring and controlling unit including all necessary relays, contactors, circuit protection devices, indicating lamps, push button package and switches and the like for the efficient operation of the equipment and thus shall not be measured separately. Rather, the costs of which shall be deemed to have been included in the rates of the concerned equipment. Only those switches and devices (sensors/ controllers) for additional functions shall be measured separately and the rates thereof shall include for all necessary control wiring to the local control panel.

**Rates for  
boilers**

**SC36.15**

The rates for boilers shall further include for : -

- (a) All necessary assembly, orientation, alignment, levelling, lifting and bolting down facilities, together with the provision of shims and packing pieces, strainers, instrumentation and the like.
- (b) Supporting frames.
- (c) Provision of associated components.
- (d) All necessary operational and control accessories (e.g. heat exchanger, air nozzle, valves, thermostat, control panels, gauges, pumps, switches and the like), connection and termination.

**SPECIAL CONDITIONS**

**Rates for  
boilers  
(Cont'd)**

**SC36.15  
(Cont'd)**

- (e) Thermal insulation.
- (f) Storage tank with copper lining internally and thermal insulation and decoration as specified externally.
- (g) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing, water supply and/or gas supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.
- (h) Earth/ equipotential bonding.

**Rates for  
"Take down  
and clear away"  
or "Take down  
and set aside  
for re-use"**

**SC36.16**

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing pipework, ductwork, equipment, boiler and the like shall further include for where applicable : -

- (a) All in-line pipework fittings and in-line pipework equipment including brackets, supports, hangers and the like.
- (b) Cutting into existing pipework, ductwork and the like in position.
- (c) Preparing remaining ends to receive joints with new work if required.
- (d) Plugging off remaining ends with plugs or caps as required.
- (e) In the case of equipment, boiler and the like, taking down all associated plumbing works and/ or building services work.
- (f) Making good all works disturbed.

**Rates for  
insulation to  
rectangular  
ductwork**

**SC36.17**

The rates for insulation to ductwork rectangular in section shall further include for : -

- (a) All fixings, adhesive, sealing tapes, vapour barriers and the like.
- (b) Forming laps, welts, cut outs, recesses and the like.
- (c) Pointing, sealing, trowelling smooth, chamfered and sealed edges and the like.
- (d) Working around supports, small drains, vents or similar obstructions.
- (e) Working around ducting fittings, stiffeners, joints, access doors, ancillaries and the like.
- (f) Forming of angles and all other labour.
- (g) Finishing with aluminium foils or cement plaster and painting or metal cladding as required.

**SPECIAL CONDITIONS**

**Rates for  
insulation  
to pipework**

**SC36.18**

The rates for insulation to pipework shall further include for : -

- (a) Cutting into existing insulation to pipework in position.
- (b) Taking down existing insulation either in whole or in part as required.
- (c) All preparation work including preparing remaining ends to receive new insulation if required.
- (d) All fixings, adhesive, sealing tapes, vapour barriers and the like.
- (e) Forming laps, welts, cut outs, recesses and the like.
- (f) Pointing, sealing, trowelling smooth, chamfered and sealed edges and the like.
- (g) Working around supports, small drains, vents or similar obstructions.
- (h) Working around in-line fittings, joints and the like.
- (i) Forming of angles and all other labour.
- (j) Finishing with aluminium foil or cement plaster or metal cladding and painting as required.
- (k) Making good all works disturbed.

**Cooling capacity  
criteria**

**SC36.19**

Cooling capacity shall be based on the following criteria except otherwise specified : -

- |       |                           |                                       |                     |
|-------|---------------------------|---------------------------------------|---------------------|
| (i)   | Condenser                 | Condensing air temperature            | 35°C                |
|       |                           | (for air-cooled chiller only)         |                     |
|       |                           | Condensing water entering temperature | 32°C                |
|       |                           | (for water-cooled chiller only)       |                     |
|       |                           | Condensing water leaving temperature  | 37°C                |
|       |                           | (for water-cooled chiller only)       |                     |
| (ii)  | Chiller                   | Chilled water return temperature      | 12.5°C              |
|       |                           | Chilled water leaving temperature     | 7°C                 |
| (iii) | Air handling<br>equipment | Entering air on evaporator            | 27°C DB<br>21°C WB  |
|       |                           | Supply air                            | 13°C DB (Saturated) |
|       |                           |                                       |                     |
| (iv)  | PAU                       | Entering air                          | 33°C DB<br>28°C WB  |



**SPECIAL CONDITIONS****Rates for  
pressure  
vessels****SC36.20**

The rates for pressure vessels shall further include for : -

- (a) Supply and installation in accordance with the manufacturer's instructions.
- (b) Providing and fixing all accessories, fittings and the like as recommended by the manufacturer.
- (c) Any colour and shape.
- (d) Providing and fixing with anchor bolts.
- (e) Cutting mortice, sinking or drilling in concrete, brick, stone or other surfaces as required.
- (f) Grouting into new or existing mortice or holes.
- (g) Making good disturbed surfaces.
- (h) Masking, protecting and cleaning.
- (i) Submission of catalogues, technical literature, operation manuals and manufacturer's guarantee for the approval of the Maintenance Surveyor.
- (j) Testing and providing test certificates.
- (k) Providing Statutory Inspection Certificate.

**SPECIAL CONDITIONS**

**Rates for Buildings Energy Efficiency Ordinance**

**SC36.21**

- (a) In order to fulfill the energy efficiency requirements by the Buildings Energy Efficiency Ordinance, the Contractor is required to appoint a Registered Energy Assessors (REA) at his own cost for the completion and submission of the Form of Compliance - Form EE4 to the EMSD for approval including but not limited to compilation and certification of the required forms and worksheets for the electrical installations, lighting installations and air-conditioning installations, where applicable, including any necessary endorsement fees.
- (b) The rates as separately scheduled for the Buildings Energy Efficiency Ordinance submission shall generally include for the preparation of the installation summaries, worksheets, relevant drawings, drawing lists and other supportive documents by the Contractor. The Contractor shall further coordinate with the REA and provide the required information at no extra cost for his submission of the Form of Compliance to the EMSD as required to fulfill the latest requirements of the Buildings Energy Efficiency Ordinance.

**Rates for interfacing control for monitoring and /or controlling of existing equipment**

**SC36.22**

The interfacing control shall be measured on the basis of connections between a set of existing equipment/panel and network for controlling and/or monitoring equipment, such as central control and monitoring system or automatic fire alarm system, etc. permitting information exchange. Rates for interfacing control shall further include for all necessary control modules, relays, cables and cable containments, and the like for the efficient operation of the whole series of equipment.

For the avoidance of doubt, every set of pump (i.e. one duty pump and one standby pump), condenser, condensation unit, air handling unit, package chiller, heat pump, contactor for a group of fans or fan coil units shall mean one set of equipment. An evaporator and an outdoor condensing unit of a split unit shall also mean one set of equipment. Equipment/panel connecting to other network/ panel shall also be regarded as one set of equipment. Switches and devices (e.g. pressure switch, thermostat, humidistat, level switch, sail switch and the like) that provide contacts for control functions shall not be measured as equipment.

**Particular Specification**

**SC36.23**

The Particular Specification for air-conditioning, heating and ventilation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>REFRIGERANT CIRCUIT</b>					
	Copper refrigerant pipes without insulation of pipe diameter : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36001	9 mm.....	103.94	3.67	3.92	58.07	36001
36002	15 mm.....	126.98	3.84	4.08	66.16	36002
36003	18 mm.....	139.10	4.08	4.26	70.49	36003
36004	22 mm.....	159.31	4.70	4.87	74.88	36004
36005	28 mm.....	192.08	4.95	5.29	84.12	36005
36006	35 mm.....	235.27	5.60	5.90	90.19	36006
	Copper refrigerant pipes c/w polystyrene insulation, cement plaster, painting and finish of pipe diameter : -					
	<i>Per linear metre</i>					
36007	9 mm.....	198.27	6.28	6.82	97.19	36007
36008	15 mm.....	238.89	6.63	7.17	111.20	36008
36009	18 mm.....	261.92	6.82	7.34	117.48	36009
36010	22 mm.....	292.59	7.83	8.51	124.85	36010
36011	28 mm.....	346.38	8.69	9.06	138.46	36011
36012	35 mm.....	404.68	9.43	9.96	150.00	36012
	Copper refrigerant pipes c/w phenolic foam insulation of pipe diameter : -					
	<i>Per linear metre</i>					
36013	9 mm.....	171.00	4.52	4.74	67.46	36013
36014	15 mm.....	211.54	4.74	5.00	78.10	36014
36015	18 mm.....	239.64	4.74	5.16	82.92	36015
36016	22 mm.....	264.47	5.60	5.86	88.79	36016
36017	28 mm.....	311.31	5.97	6.23	98.50	36017
36018	35 mm.....	368.85	6.60	6.83	107.86	36018

Item					Item	
	<b>REFRIGERANT CIRCUIT (CONT'D)</b>					
	Copper refrigerant pipes c/w phenolic foam insulation, cement plaster, painting and finish of pipe diameter : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36019	9 mm.....	227.84	6.28	6.82	98.33	36019
36020	15 mm.....	277.42	6.63	7.17	112.47	36020
36021	18 mm.....	306.48	6.82	7.34	119.40	36021
36022	22 mm.....	348.36	7.83	8.51	126.67	36022
36023	28 mm.....	416.46	8.69	9.06	141.34	36023
36024	35 mm.....	511.92	9.43	9.96	152.90	36024
	Copper refrigerant pipes c/w flexible closed cell elastomeric insulation of pipe diameter : -					
	<i>Per linear metre</i>					
36025	9 mm.....	151.88	4.52	4.74	66.62	36025
36026	15 mm.....	184.20	4.74	5.00	77.50	36026
36027	18 mm.....	199.52	4.74	5.16	82.92	36027
36028	22 mm.....	222.09	5.60	5.86	89.07	36028
36029	28 mm.....	263.45	5.97	6.23	98.78	36029
36030	35 mm.....	321.08	6.60	6.83	106.82	36030
	Refrigerant circuit accessories					
	Refrigerant stop valves for copper refrigerant pipe diameter : -					
	<i>Each</i>					
36031	9 mm.....	115.07	18.86	24.60	31.05	36031
36032	15 mm.....	192.71	21.25	27.75	37.76	36032
36033	18 mm.....	256.78	21.36	28.50	39.56	36033
36034	22 mm.....	334.72	21.78	29.01	44.83	36034
36035	28 mm.....	369.30	22.09	29.53	49.23	36035
36036	35 mm.....	529.20	22.47	30.39	54.56	36036

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>REFRIGERANT CIRCUIT (CONT'D)</b>					
	Refrigerant solenoid valves for copper refrigerant pipe diameter :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
36037	9 mm.....	449.09	19.42	24.75	29.34	36037
36038	15 mm.....	533.11	22.92	28.02	34.30	36038
36039	18 mm.....	782.49	23.09	28.64	36.69	36039
36040	22 mm.....	1,107.39	23.75	29.14	39.62	36040
36041	28 mm.....	1,453.71	24.24	29.67	46.87	36041
36042	35 mm.....	2,124.27	24.89	30.55	51.04	36042
	Cartridge refrigerant filter/dryer for copper refrigerant pipe diameter :-					
	<i>Each</i>					
36043	9 mm.....	104.31	20.68	26.37	31.31	36043
36044	15 mm.....	142.57	24.43	29.82	36.60	36044
36045	18 mm.....	265.58	24.60	30.53	39.16	36045
36046	22 mm.....	378.40	25.31	31.05	42.28	36046
36047	28 mm.....	851.66	25.84	31.63	50.00	36047
36048	35 mm.....	1,029.38	26.51	32.54	54.45	36048
	Refrigerant oil separator for copper refrigerant pipe diameter :-					
	<i>Each</i>					
36049	9 mm.....	421.45	20.68	26.37	33.74	36049
36050	15 mm.....	664.79	24.43	29.82	39.74	36050
36051	18 mm.....	777.99	24.60	30.53	42.33	36051
36052	22 mm.....	900.37	25.31	31.05	45.69	36052
36053	28 mm.....	949.49	25.84	31.63	52.73	36053
36054	35 mm.....	1,053.35	26.51	32.54	57.06	36054

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>REFRIGERANT CIRCUIT (CONT'D)</b>						
	Refrigerant sight glass of copper refrigerant pipe diameter :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
36055	9 mm.....	148.50	19.42	24.75	31.64	36055
36056	15 mm.....	172.93	22.92	28.02	37.26	36056
36057	18 mm.....	191.40	23.09	28.64	39.70	36057
36058	22 mm.....	214.68	23.75	29.14	42.83	36058
36059	28 mm.....	242.79	24.24	29.67	49.46	36059
36060	35 mm.....	579.20	24.89	30.55	52.62	36060
	Liquid receiver c/w liquid level gauge, purge valve, pressure relief valve and accessories :-					
	<i>Each</i>					
36061	0.02 - 0.03 m <sup>3</sup> .....	2,339.12	20.01	21.92	41.13	36061
36062	0.03 - 0.14 m <sup>3</sup> .....	2,823.58	26.23	28.19	54.35	36062
36063	0.14 - 0.2 m <sup>3</sup> .....	3,508.54	29.21	31.12	59.72	36063
36064	0.2 - 0.3 m <sup>3</sup> .....	4,168.47	32.38	34.25	62.55	36064
36065	0.3 - 0.52 m <sup>3</sup> .....	6,210.59	35.43	37.34	70.67	36065
	Gauges c/w stop valve :-					
	<i>Each</i>					
36066	Refrigerant high pressure gauge.....	261.10	24.13	28.84	39.39	36066
36067	Refrigerant low pressure gauge.....	261.10	24.13	28.84	39.39	36067
	Refrigerant :-					
	<i>Per kg</i>					
36068	Refrigerant (R134a) c/w charging.....	61.97	-	-	14.42	36068
36069	Refrigerant (R407C) c/w charging.....	191.22	-	-	14.42	36069
36070	Refrigerant (R410a) c/w charging.....	249.16	-	-	14.42	36070
36071	Lubricating oil c/w charging.....	197.73	-	-	14.48	36071

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>REFRIGERANT CIRCUIT (CONT'D)</b>					
	Hi /Lo pressure cut-out :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
36072	Hi /Lo pressure cut-out c/w manual reset.....	387.01	20.17	24.38	33.10	36072
	Aluminium metal cladding not less than 0.8mm for insulated refrigerant pipe work of diameter :-					
	<i>Per linear metre</i>					
36073	9 mm.....	101.30	0.52	0.64	8.39	36073
36074	15 mm.....	109.14	0.59	0.69	9.07	36074
36075	18 mm.....	114.02	0.64	0.80	9.92	36075
36076	22 mm.....	116.70	0.75	0.89	10.58	36076
36077	28 mm.....	121.46	0.89	1.05	11.31	36077
36078	35 mm.....	130.78	1.05	1.23	12.05	36078

Item					Item	
<b>VALVE, PIPE WORKS AND ACCESSORIES</b>						
Chilled water pipes						
Chilled water pipework (bare pipe) of pipe diameter: -						
<i>Per linear metre</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36079	25 mm.....	148.52	3.55	3.93	49.67	36079
36080	32 mm.....	159.00	3.93	4.42	52.81	36080
36081	40 mm.....	178.65	4.32	4.80	56.71	36081
36082	50 mm.....	229.46	4.70	5.11	65.69	36082
36083	65 mm.....	271.57	5.57	6.02	75.07	36083
36084	80 mm.....	322.31	6.49	6.97	84.64	36084
36085	100 mm.....	405.24	7.29	7.83	96.70	36085
36086	125 mm.....	515.10	10.81	11.71	112.86	36086
36087	150 mm.....	605.64	12.06	13.08	128.53	36087
36088	200 mm.....	805.24	14.14	15.63	156.94	36088
36089	250 mm.....	848.92	16.00	17.38	186.90	36089
36090	300 mm.....	947.71	18.25	20.93	223.12	36090
Chilled water pipework c/w 50 mm polystyrene insulation, cement plaster, painting & finish of pipe diameter : -						
<i>Per linear metre</i>						
36091	20 mm or below.....	193.52	5.45	6.28	79.99	36091
36092	25 mm.....	216.96	6.17	6.85	86.87	36092
36093	32 mm.....	235.74	6.85	7.71	92.52	36093
36094	40 mm.....	258.02	7.53	8.39	99.36	36094
36095	50 mm.....	306.15	8.23	8.95	115.10	36095
36096	65 mm.....	357.63	9.71	10.51	131.63	36096
36097	80 mm.....	415.38	11.34	12.17	148.36	36097
36098	100 mm.....	509.25	12.76	13.71	169.97	36098
36099	125 mm.....	602.40	16.05	17.38	194.02	36099
36100	150 mm.....	732.08	20.70	22.59	225.21	36100



Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Chilled water pipes (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Chilled water pipework c/w 50 mm polystyrene insulation, cement plaster, painting & finish of pipe diameter : - (Cont'd)					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36101	200 mm.....	855.90	22.40	23.43	265.18	36101
36102	250 mm.....	1,021.00	25.17	26.72	325.57	36102
36103	300 mm.....	1,151.31	28.85	31.96	388.74	36103
	Chilled water pipework c/w 50 mm phenolic foam insulation, cement plaster, painting & finish of pipe diameter : -					
	<i>Per linear metre</i>					
36104	20 mm or below.....	321.01	5.45	6.28	79.99	36104
36105	25 mm.....	371.59	6.17	6.85	86.87	36105
36106	32 mm.....	415.26	6.85	7.71	92.52	36106
36107	40 mm.....	451.33	7.53	8.39	99.36	36107
36108	50 mm.....	539.31	8.23	8.95	115.10	36108
36109	65 mm.....	639.40	9.71	10.51	131.63	36109
36110	80 mm.....	726.85	11.34	12.17	148.36	36110
36111	100 mm.....	886.26	12.76	13.71	169.97	36111
36112	125 mm.....	1,223.03	16.05	17.38	194.02	36112
36113	150 mm.....	1,273.01	20.70	22.59	225.21	36113
36114	200 mm.....	1,734.43	22.40	23.43	265.18	36114
36115	250 mm.....	2,095.12	25.17	26.72	325.57	36115
36116	300 mm.....	2,692.99	28.85	31.96	388.74	36116

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Chilled water pipes (Cont'd)					
	Chilled water pipework c/w 50 mm phenolic foam insulation of pipe diameter : -					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36117	20 mm or below.....	243.39	3.39	3.96	52.00	36117
36118	25 mm.....	278.05	3.84	4.46	56.40	36118
36119	32 mm.....	310.60	4.34	4.95	60.02	36119
36120	40 mm.....	339.85	4.84	5.45	64.54	36120
36121	50 mm.....	398.63	5.33	5.94	74.38	36121
36122	65 mm.....	473.98	6.17	6.78	85.32	36122
36123	80 mm.....	552.13	7.20	7.76	96.17	36123
36124	100 mm.....	685.06	8.15	8.86	122.29	36124
36125	125 mm.....	819.27	11.61	12.66	142.19	36125
36126	150 mm.....	1,013.50	13.40	14.38	162.56	36126
36127	200 mm.....	1,140.79	13.94	15.24	186.05	36127
36128	250 mm.....	1,390.48	16.50	17.87	232.03	36128
36129	300 mm.....	1,618.75	18.55	20.18	280.39	36129
	Chilled water pipework c/w 25 mm flexible closed cell elastomeric insulation, cement plaster, painting & finish of pipe diameter : -					
	<i>Per linear metre</i>					
36130	20 mm or below.....	165.88	5.45	6.28	79.99	36130
36131	25 mm.....	188.60	6.17	6.85	86.87	36131
36132	32 mm.....	209.64	6.85	7.71	92.52	36132
36133	40 mm.....	229.97	7.53	8.39	99.36	36133
36134	50 mm.....	280.55	8.23	8.95	115.10	36134
36135	65 mm.....	332.85	9.71	10.51	131.63	36135
36136	80 mm.....	388.90	11.34	12.17	148.36	36136
36137	100 mm.....	480.23	12.76	13.71	169.97	36137
36138	150 mm.....	714.27	21.08	22.87	225.82	36138

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Chilled water pipes (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Chilled water pipe c/w 20 mm flexible closed cell elastomeric insulation & finish of pipe diameter : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36139	25 mm or below.....	153.26	5.90	6.54	67.75	36139
36140	32 mm.....	171.81	6.34	7.08	72.17	36140
36141	40 mm.....	187.45	7.08	7.78	77.12	36141
36142	50 mm.....	216.85	8.23	8.95	88.82	36142
36143	65 mm.....	256.40	9.71	10.51	101.80	36143
36144	80 mm.....	304.58	11.34	12.17	113.44	36144
36145	100 mm.....	377.93	12.76	13.71	130.87	36145
36146	125 mm.....	467.15	16.49	16.72	149.71	36146
36147	150 mm.....	565.50	21.08	22.87	173.51	36147
36148	200 mm.....	739.96	29.68	30.27	204.28	36148
36149	250 mm.....	894.90	40.06	43.36	254.95	36149
36150	300 mm.....	1,045.11	51.26	56.60	343.94	36150

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Chilled water pipes (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Chilled water pipe c/w 25 mm flexible closed cell elastomeric insulation & finish of pipe diameter : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36151	20 mm or below.....	138.59	3.81	4.26	58.15	36151
36152	25 mm.....	156.48	4.30	4.78	64.02	36152
36153	32 mm.....	181.53	4.87	5.33	67.59	36153
36154	40 mm.....	211.72	5.37	6.02	71.91	36154
36155	50 mm.....	247.71	5.96	6.69	84.37	36155
	Chilled water pipe c/w 50 mm flexible closed cell elastomeric insulation & finish of pipe diameter : -					
	<i>Per linear metre</i>					
36156	65 mm.....	342.15	5.73	7.78	77.86	36156
36157	80 mm.....	398.26	6.79	9.03	84.64	36157
36158	100 mm.....	481.74	8.81	10.25	104.50	36158
36159	150 mm.....	623.45	13.64	18.13	141.17	36159
	Chilled water pipe c/w 50 mm flexible closed cell elastomeric insulation, cement plaster, painting & finish of pipe diameter : -					
	<i>Per linear metre</i>					
36160	20 mm or below.....	187.80	4.68	5.18	70.08	36160
36161	25 mm.....	217.67	5.11	5.76	76.03	36161
36162	32 mm.....	239.86	5.86	6.47	81.18	36162
36163	40 mm.....	260.75	6.41	7.06	87.37	36163
36164	50 mm.....	316.36	7.00	7.61	100.54	36164
36165	65 mm.....	370.23	8.30	8.90	113.07	36165
36166	80 mm.....	442.15	9.67	10.25	125.65	36166
36167	100 mm.....	539.27	10.58	11.63	145.15	36167
36168	150 mm.....	802.77	17.53	19.22	198.99	36168

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Chilled water pipes (Cont'd)					
	Pre-insulated chilled water pipe c/w galvanized iron metal jacket for outdoor conditions :-					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36169	25 mm diameter chilled water pipe c/w 50 mm thick insulation .....	299.22	4.12	4.73	61.03	36169
36170	32 mm diameter chilled water pipe c/w 50 mm thick insulation .....	333.49	4.57	5.14	66.33	36170
36171	40 mm diameter chilled water pipe c/w 50 mm thick insulation .....	357.30	5.14	5.75	70.90	36171
36172	50 mm diameter chilled water pipe c/w 65 mm thick insulation .....	531.42	5.60	6.28	75.92	36172
36173	65 mm diameter chilled water pipe c/w 65 mm thick insulation .....	586.55	6.16	6.78	87.84	36173
36174	80 mm diameter chilled water pipe c/w 65 mm thick insulation .....	667.37	7.13	7.83	100.40	36174
36175	100 mm diameter chilled water pipe c/w 65 mm thick insulation .....	788.30	8.40	9.13	112.56	36175
36176	125 mm diameter chilled water pipe c/w 65 mm thick insulation .....	932.61	9.58	10.24	129.80	36176
36177	150 mm diameter chilled water pipe c/w 75 mm thick insulation .....	1,329.85	15.75	17.03	172.21	36177
36178	200 mm diameter chilled water pipe c/w 75 mm thick insulation .....	1,671.69	23.65	25.44	223.03	36178
36179	250 mm diameter chilled water pipe c/w 75 mm thick insulation .....	2,062.32	31.45	34.99	280.90	36179
36180	300 mm diameter chilled water pipe c/w 75 mm thick insulation .....	2,361.19	39.28	44.37	338.50	36180
	Pre-insulated chilled water pipe c/w galvanized iron metal jacket for indoor conditions :-					
	<i>Per linear metre</i>					
36181	25 mm diameter chilled water pipe c/w 25 mm thick insulation .....	199.84	4.12	4.73	60.72	36181
36182	32 mm diameter chilled water pipe c/w 25 mm thick insulation .....	224.81	4.57	5.14	66.01	36182
36183	40 mm diameter chilled water pipe c/w 25 mm thick insulation .....	244.47	5.14	5.75	70.58	36183
36184	50 mm diameter chilled water pipe c/w 40 mm thick insulation .....	365.50	5.60	6.28	75.72	36184
36185	65 mm diameter chilled water pipe c/w 40 mm thick insulation .....	422.39	6.16	6.78	87.52	36185
36186	80 mm diameter chilled water pipe c/w 40 mm thick insulation .....	466.22	7.13	7.83	100.28	36186
36187	100 mm diameter chilled water pipe c/w 40 mm thick insulation .....	616.91	8.40	9.13	112.51	36187
36188	125 mm diameter chilled water pipe c/w 40 mm thick insulation .....	707.40	9.58	10.24	129.76	36188
36189	150 mm diameter chilled water pipe c/w 50 mm thick insulation .....	922.77	15.75	17.03	171.55	36189
36190	200 mm diameter chilled water pipe c/w 50 mm thick insulation .....	1,153.32	23.65	25.44	222.99	36190
36191	250 mm diameter chilled water pipe c/w 50 mm thick insulation .....	1,442.74	31.45	34.99	280.84	36191
36192	300 mm diameter chilled water pipe c/w 50 mm thick insulation .....	1,728.00	39.28	44.37	337.51	36192

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Condensate drain					
	GI drain pipe c/w 50 mm phenolic foam insulation, cement plaster, painting & finish of pipe diameter : -					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36193	20 mm or below.....	330.95	5.45	6.28	79.99	36193
36194	25 mm.....	386.60	6.17	6.85	86.87	36194
36195	32 mm.....	433.06	6.85	7.71	92.52	36195
36196	40 mm.....	465.48	7.53	8.39	99.36	36196
36197	50 mm.....	564.78	8.23	8.95	115.10	36197
36198	65 mm.....	673.91	9.71	10.51	131.63	36198
36199	80 mm.....	782.19	11.34	12.17	148.36	36199
	GI drain pipe c/w 50 mm polystyrene insulation, cement plaster, painting & finish of pipe diameter : -					
	<i>Per linear metre</i>					
36200	20 mm or below.....	202.76	5.45	6.28	79.99	36200
36201	25 mm.....	235.77	6.17	6.85	86.87	36201
36202	32 mm.....	262.63	6.85	7.71	92.52	36202
36203	40 mm.....	281.85	7.53	8.39	99.36	36203
36204	50 mm.....	343.82	8.23	8.95	115.10	36204
36205	65 mm.....	401.91	9.71	10.51	131.63	36205
36206	80 mm.....	474.04	11.34	12.17	148.36	36206
	GI drain pipe c/w 20 mm flexible closed cell elastomeric insulation and finish of pipe diameter : -					
	<i>Per linear metre</i>					
36207	20 mm or below.....	172.56	5.45	6.28	79.99	36207
36208	25 mm.....	207.01	6.17	6.85	86.87	36208
36209	32 mm.....	234.84	6.85	7.71	92.52	36209
36210	40 mm.....	253.37	7.53	8.39	99.36	36210
36211	50 mm.....	314.90	8.23	8.95	115.10	36211

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Condensate drain (Cont'd)					
	PVC drain pipe c/w 20 mm flexible closed cell elastomeric insulation and finish of pipe diameter :-					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36212	20 mm or below.....	152.94	5.57	6.42	82.02	36212
36213	25 mm.....	168.65	6.31	7.01	89.08	36213
36214	32 mm.....	184.21	7.01	7.87	94.94	36214
	PVC flexible drain pipe of pipe diameter :-					
	<i>Per linear metre</i>					
36215	20 mm or below.....	30.80	4.20	4.59	20.73	36215
36216	25 mm.....	43.43	5.57	6.08	29.07	36216
36217	32 mm.....	48.46	6.31	6.67	32.16	36217
	GI drain pan c/w insulation of size :-					
	<i>Each</i>					
36218	Up to 0.55 m <sup>2</sup> .....	310.88	6.33	6.67	45.89	36218
36219	0.55 - 0.73 m <sup>2</sup> .....	393.49	13.55	19.56	68.82	36219
36220	0.73 - 0.9 m <sup>2</sup> .....	497.24	29.05	35.23	91.33	36220

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Condensate drain (Cont'd)					
	GI drain pan of size :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36221	Up to 0.55 m <sup>2</sup> .....	182.94	5.09	5.11	41.69	36221
36222	0.55 - 0.73 m <sup>2</sup> .....	221.87	10.66	15.92	59.05	36222
36223	0.73 - 0.9 m <sup>2</sup> .....	269.45	25.37	30.60	78.89	36223
	Stainless steel drain pan c/w insulation of size :-					
	<i>Each</i>					
36224	Up to 0.55 m <sup>2</sup> .....	377.23	6.33	6.67	45.89	36224
36225	0.55 - 0.73 m <sup>2</sup> .....	501.37	13.55	19.56	68.82	36225
36226	0.73 - 0.9 m <sup>2</sup> .....	654.01	29.05	35.23	91.33	36226
	Stainless steel drain pan of size :-					
	<i>Each</i>					
36227	Up to 0.55 m <sup>2</sup> .....	245.09	5.09	5.11	41.69	36227
36228	0.55 - 0.73 m <sup>2</sup> .....	319.98	10.66	15.92	59.05	36228
36229	0.73 - 0.9 m <sup>2</sup> .....	413.78	25.37	30.60	78.89	36229
	uPVC pipework of diameter :-					
	<i>Per linear metre</i>					
36230	25 mm or below.....	78.53	3.68	4.32	28.00	36230
36231	32 mm.....	93.03	4.17	4.77	29.46	36231
36232	40 mm.....	120.00	4.59	5.27	31.53	36232
36233	50 mm.....	153.72	5.11	5.70	36.26	36233



Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Condensate drain (Cont'd)					
	uPVC pipework of diameter : - (Cont'd)					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36234	65 mm.....	205.63	5.87	6.55	41.32	36234
36235	80 mm.....	271.86	6.92	7.59	46.70	36235
36236	100 mm.....	304.51	7.81	8.66	59.95	36236
36237	150 mm.....	443.30	12.89	14.09	79.72	36237
	Chilled water valves					
	Chilled water gate valves :-					
	<i>Each</i>					
36238	20 mm or below.....	155.52	19.78	24.86	31.33	36238
36239	25 mm.....	196.31	20.16	25.41	34.08	36239
36240	32 mm.....	269.71	20.51	25.75	36.65	36240
36241	40 mm.....	342.61	21.19	26.38	39.34	36241
36242	50 mm.....	557.52	22.24	27.24	41.98	36242
36243	65 mm.....	1,110.48	23.46	28.48	44.63	36243
36244	80 mm.....	1,297.14	24.69	30.04	46.80	36244
36245	100 mm.....	1,558.19	28.44	34.00	52.68	36245
36246	150 mm.....	2,772.29	37.64	44.34	68.05	36246
	Chilled water check valves :-					
	<i>Each</i>					
36247	20 mm or below.....	245.57	19.78	24.86	31.33	36247
36248	25 mm.....	270.19	20.16	25.41	34.08	36248
36249	32 mm.....	317.34	20.51	25.75	36.65	36249
36250	40 mm.....	401.85	21.19	26.38	39.34	36250
36251	50 mm.....	527.20	22.24	27.24	41.98	36251

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>		A	B	C	D	
		\$	\$	\$	\$	
	Chilled water valves (Cont'd)					
	Chilled water check valves : - (Cont'd)					
	<i>Each</i>					
36252	65 mm.....	567.71	23.46	28.48	44.63	36252
36253	80 mm.....	685.51	24.69	30.04	46.80	36253
36254	100 mm.....	1,127.46	28.44	34.00	52.68	36254
36255	150 mm.....	1,876.21	37.64	44.34	68.05	36255
	Chilled water globe valves : -					
	<i>Each</i>					
36256	20 mm or below.....	325.95	19.78	24.86	31.33	36256
36257	25 mm.....	387.03	20.16	25.41	34.08	36257
36258	32 mm.....	397.05	20.51	25.75	36.65	36258
36259	40 mm.....	520.39	21.19	26.38	39.34	36259
36260	50 mm.....	753.93	22.24	27.24	41.98	36260
36261	65 mm.....	912.94	23.46	28.48	44.63	36261
36262	80 mm.....	1,181.61	24.69	30.04	46.80	36262
36263	100 mm.....	1,559.88	28.44	34.00	52.68	36263
36264	150 mm.....	2,808.91	37.64	44.34	68.05	36264
	Pressure reducing valve : -					
	<i>Each</i>					
36265	15 mm or below.....	492.70	15.55	19.42	22.74	36265
36266	20 mm.....	611.20	16.07	19.89	26.15	36266
36267	25 mm.....	715.84	16.51	20.42	27.95	36267
36268	32 mm.....	886.75	16.94	20.82	30.55	36268
36269	40 mm.....	1,048.25	17.25	21.29	33.10	36269

Item					
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>				
	Chilled water valves (Cont'd)				
	Balancing valve : -				
	<i>Each</i>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
36270	20 mm or below.....	373.45	14.81	18.79	25.98 36270
36271	25 mm.....	400.54	16.28	20.03	28.22 36271
36272	32 mm.....	430.42	16.69	20.42	31.13 36272
36273	40 mm.....	515.22	17.35	21.01	32.98 36273
36274	50 mm.....	1,081.79	17.71	21.79	35.17 36274
36275	65 mm.....	1,696.18	18.91	22.70	37.52 36275
36276	80 mm.....	3,023.74	20.01	24.05	39.28 36276
36277	100 mm.....	4,700.67	23.17	26.78	44.23 36277
36278	150 mm.....	7,053.38	31.58	46.42	71.14 36278
	Chilled water valves c/w 50 mm phenolic foam insulation				
	Chilled water gate valves c/w filled galvanized steel split boxes : -				
	<i>Each</i>				
36279	n.e. 20 mm.....	202.32	25.08	30.72	37.26 36279
36280	25 mm.....	243.96	25.50	31.45	40.78 36280
36281	32 mm.....	317.95	25.92	31.90	43.85 36281
36282	40 mm.....	391.93	26.51	32.33	47.31 36282
36283	50 mm.....	609.90	27.63	33.39	50.51 36283
36284	65 mm.....	1,170.62	29.18	34.40	53.80 36284
36285	80 mm.....	1,359.92	30.71	36.59	57.10 36285
36286	100 mm.....	1,623.93	32.42	38.23	59.21 36286
36287	150 mm.....	2,853.69	41.12	47.04	72.16 36287

Item					
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>				
	Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)				
	Chilled water check valves c/w filled galvanized steel split boxes :-				
	<i>Each</i>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
36288	n.e. 20 mm .....	295.49	25.08	30.72	37.26 36288
36289	25 mm.....	319.88	25.50	31.45	40.78 36289
36290	32 mm.....	367.05	25.92	31.90	43.85 36290
36291	40 mm.....	452.44	26.51	32.33	47.31 36291
36292	50 mm.....	578.99	27.63	33.39	50.51 36292
36293	65 mm.....	620.34	29.18	34.40	53.80 36293
36294	80 mm.....	739.90	30.71	36.59	57.10 36294
36295	100 mm.....	1,188.18	32.42	38.23	59.21 36295
36296	150 mm.....	1,946.62	41.12	47.04	72.16 36296
	Chilled water globe valves c/w filled galvanized steel split boxes :-				
	<i>Each</i>				
36297	n.e. 20 mm .....	378.17	25.08	30.72	37.26 36297
36298	25 mm.....	436.60	25.50	31.45	40.78 36298
36299	32 mm.....	447.13	25.92	31.90	43.85 36299
36300	40 mm.....	572.19	26.51	32.33	47.31 36300
36301	50 mm.....	809.23	27.63	33.39	50.51 36301
36302	65 mm.....	970.43	29.18	34.40	53.80 36302
36303	80 mm.....	1,243.10	30.71	36.59	57.10 36303
36304	100 mm.....	1,626.20	32.42	38.23	59.21 36304
36305	150 mm.....	2,893.30	41.12	47.04	72.16 36305

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>						
Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)						
Chilled water 3 way modulating control valve c/w electric motors couplings, unions, adapters and filled galvanized steel split box :-						
<i>Each</i>		A \$	B \$	C \$	D \$	
36306	n.e. 20 mm .....	442.42	20.07	24.50	31.79	36306
36307	25 mm.....	558.53	20.64	25.23	34.48	36307
36308	32 mm.....	984.79	31.49	38.59	53.21	36308
36309	40 mm.....	1,609.41	32.07	39.17	57.43	36309
36310	50 mm.....	2,104.68	33.35	40.56	61.54	36310
36311	65 mm.....	4,708.48	34.10	41.90	64.32	36311
36312	80 mm.....	6,812.01	37.47	44.63	69.81	36312
36313	100 mm.....	9,608.06	39.55	46.70	72.75	36313
36314	150 mm.....	12,883.04	41.07	49.72	78.42	36314
Chilled water 3 way, 2 position electric control valve c/w motor, couplings, unions, adapters and filled galvanized steel split boxes :-						
<i>Each</i>						
36315	n.e. 20 mm .....	391.49	20.07	24.50	31.79	36315
36316	25 mm.....	505.51	20.64	25.23	34.48	36316
36317	32 mm.....	804.84	31.49	38.59	53.21	36317
36318	40 mm.....	1,193.14	32.07	39.17	57.43	36318
36319	50 mm.....	1,703.19	33.35	40.56	61.54	36319
36320	65 mm.....	3,791.39	34.10	41.90	64.32	36320
36321	80 mm.....	5,927.72	37.47	44.63	69.81	36321
36322	100 mm.....	8,755.12	39.55	46.70	72.75	36322
36323	150 mm.....	10,909.62	41.07	49.72	78.42	36323

Item					Item	
<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>						
Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)						
Chilled water 2 way electric operated solenoid valve c/w unions, adapters, filled galvanized steel split box, insulation and finish : -						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36324	n.e. 20 mm .....	396.63	28.10	34.69	46.44	36324
36325	25 mm.....	587.46	28.59	35.15	49.75	36325
36326	32 mm.....	715.96	29.15	35.68	51.53	36326
36327	40 mm.....	1,061.35	29.79	36.29	57.43	36327
36328	50 mm.....	1,472.16	31.09	37.52	60.78	36328
36329	65 mm.....	3,223.22	31.71	38.75	62.45	36329
36330	80 mm.....	5,051.00	34.70	41.13	67.90	36330
36331	100 mm.....	7,560.60	36.37	42.98	70.65	36331
36332	150 mm.....	11,342.11	43.36	51.16	84.34	36332
Chilled water double regulating valve c/w metering station, insulation and finish, filled galvanized iron split boxes : -						
<i>Each</i>						
36333	40 mm.....	923.93	29.79	36.29	57.43	36333
36334	50 mm.....	1,221.77	31.09	37.52	60.78	36334
36335	65 mm.....	2,561.49	31.71	38.75	62.45	36335
36336	80 mm.....	3,944.40	34.70	41.13	67.90	36336
36337	100 mm.....	4,152.74	36.37	42.98	70.65	36337
36338	150 mm.....	4,897.28	41.57	47.04	75.87	36338
Pressure reducing valve : -						
<i>Each</i>						
36339	15 mm or below.....	595.14	16.56	20.45	25.02	36339
36340	20 mm.....	739.49	16.92	20.88	29.07	36340
36341	25 mm.....	861.48	17.27	21.23	30.65	36341
36342	32 mm.....	1,075.81	17.71	21.84	33.92	36342
36343	40 mm.....	1,273.30	18.13	22.20	36.37	36343

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>						
Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)						
Balancing valve : -						
<i>Each</i>						
36344	n.e. 20 mm .....	384.27	16.39	19.95	27.39	36344
36345	25 mm.....	412.98	16.91	20.74	29.55	36345
36346	32 mm.....	526.25	20.68	25.41	37.84	36346
36347	40 mm.....	582.78	21.15	25.84	40.66	36347
36348	50 mm.....	692.28	22.06	26.69	43.40	36348
36349	65 mm.....	1,397.01	22.50	27.53	45.25	36349
36350	80 mm.....	2,229.18	24.67	29.29	49.05	36350
36351	100 mm.....	4,060.94	25.93	30.61	50.95	36351
36352	150 mm.....	6,242.90	33.00	37.79	62.99	36352
Chilled water pipe work accessories : -						
<i>Each</i>						
36353	Water flow switch.....	683.99	4.34	6.25	11.47	36353
36354	Direct reading type electromagnetic/ultrasonic water flow meter c/w flow sensor, an integral signal converter/transmitter and a digital display unit.....	6,835.49	32.67	33.58	60.85	36354
36355	Pressure gauge & cock.....	178.46	4.34	6.25	11.47	36355
36356	Thermometer & stainless steel thermometer well.....	2,318.15	15.54	18.79	40.87	36356
36357	Low temperature cutout thermostat with manual reset.....	278.39	4.34	6.25	11.47	36357
Gate valve for sea water application 316 stainless steel : -						
<i>Each</i>						
36358	25 mm.....	809.25	20.18	24.82	34.53	36358
36359	32 mm .....	860.59	20.68	25.41	37.84	36359
36360	40 mm.....	945.52	21.15	25.84	40.66	36360
36361	50 mm.....	1,034.83	22.06	26.69	43.40	36361
36362	65 mm.....	1,148.10	22.50	27.53	45.25	36362

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Gate valve for sea water application 316 stainless steel : - (Cont'd)					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36363	80 mm.....	1,334.54	24.67	29.29	49.05	36363
36364	100 mm.....	1,849.30	25.93	30.61	50.95	36364
36365	125 mm.....	2,417.12	29.07	32.86	56.04	36365
36366	150 mm.....	2,983.78	33.00	37.79	62.99	36366
36367	200 mm.....	5,219.64	39.55	44.38	72.64	36367
	Globe valve for sea water application 316 stainless steel : -					
	<i>Each</i>					
36368	25 mm.....	595.59	20.18	24.82	34.53	36368
36369	32 mm .....	718.66	20.68	25.41	37.84	36369
36370	40 mm.....	892.58	21.15	25.84	40.66	36370
36371	50 mm.....	1,077.31	22.06	26.69	43.40	36371
36372	65 mm.....	1,357.34	22.50	27.53	45.25	36372
36373	80 mm.....	1,618.08	24.67	29.29	49.05	36373
36374	100 mm.....	2,155.18	25.93	30.61	50.95	36374
36375	125 mm.....	2,846.50	29.07	32.86	56.04	36375
36376	150 mm.....	4,357.21	33.00	37.79	62.99	36376
36377	200 mm.....	7,785.54	39.55	44.38	72.64	36377
	Swing check valve for sea water application 316 stainless steel : -					
	<i>Each</i>					
36378	25 mm.....	425.49	20.18	24.82	34.53	36378
36379	32 mm .....	475.66	20.68	25.41	37.84	36379
36380	40 mm.....	597.24	21.15	25.84	40.66	36380
36381	50 mm.....	741.00	22.06	26.69	43.40	36381
36382	65 mm.....	974.00	22.50	27.53	45.25	36382



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>		A	B	C	D	
		\$	\$	\$	\$	
	Swing check valve for sea water application 316 stainless steel : - (Cont'd)					
	<i>Each</i>					
36383	80 mm.....	1,142.74	24.67	29.29	49.05	36383
36384	100 mm.....	1,629.12	25.93	30.61	50.95	36384
36385	150 mm.....	2,840.01	33.00	37.79	62.99	36385
36386	200 mm.....	4,979.18	39.55	44.38	72.64	36386
	Drain cock : -					
	<i>Each</i>					
36387	25 mm diameter or below.....	202.90	20.18	24.82	34.53	36387
36388	50 mm diameter.....	248.00	22.06	26.69	43.40	36388
	Strainer : -					
	<i>Each</i>					
36389	32 mm diameter or below.....	226.04	18.35	22.55	33.35	36389
36390	50 mm diameter.....	264.56	19.58	23.68	38.26	36390
36391	80 mm diameter.....	315.90	21.88	25.99	43.26	36391
36392	100 mm diameter.....	344.57	23.02	27.18	44.96	36392
36393	125 mm diameter.....	359.97	24.74	28.73	47.87	36393
36394	150 mm diameter.....	390.08	29.29	33.54	55.51	36394
	Pipework vibration isolation					
	Pipe flexible rubber connector : -					
	<i>Each</i>					
36395	50 mm.....	427.12	19.58	23.68	38.26	36395
36396	65 mm.....	562.04	19.95	24.43	39.91	36396
36397	80 mm.....	640.60	21.88	25.99	43.26	36397
36398	100 mm.....	701.77	23.02	27.18	44.96	36398
36399	125 mm.....	1,075.59	26.15	28.73	50.10	36399
36400	150 mm.....	1,982.75	29.29	33.54	55.51	36400

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Pipework vibration isolation (Cont'd)					
	Pipe flexible metallic hose : -					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
36401	50 mm.....	525.77	0.97	1.08	12.49	36401
36402	65 mm.....	647.25	1.11	1.31	14.20	36402
36403	80 mm.....	724.59	1.31	1.40	16.33	36403
36404	100 mm.....	791.30	1.40	1.49	20.79	36404
36405	125 mm.....	1,187.50	1.79	1.98	24.06	36405
36406	150 mm.....	2,038.30	2.21	2.41	27.41	36406
	Sundries : -					
	<i>Each</i>					
36407	Chiller sequence controller including transmitter, etc.....	647.62	10.50	12.13	21.36	36407
36408	Water flow sensor c/w all necessary mounting accessories.....	519.95	8.48	9.66	17.08	36408
36409	Temperature sensor.....	222.80	8.48	9.66	18.41	36409
36410	Sail switch.....	242.66	7.64	9.19	16.02	36410
36411	Electromagnetic flow meter c/w digital display unit.....	3,765.00	72.85	104.80	226.50	36411
36412	Chemical storage tank.....	5,944.47	63.58	97.29	168.49	36412
36413	Chemical feed pump.....	4,120.75	54.80	77.54	152.63	36413
36414	Manual air vent.....	94.14	13.74	15.58	28.44	36414
36415	Automatic air vent.....	152.18	14.95	16.62	29.99	36415
36416	Temperature gauge with pocket.....	690.03	13.28	15.00	28.72	36416
36417	Testing point.....	309.82	10.50	11.56	20.17	36417

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>						
	Butterfly valve :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
36418	25 mm or below.....	323.03	18.63	22.90	31.74	36418
36419	32 mm.....	407.37	19.08	23.46	34.76	36419
36420	40 mm.....	507.76	19.53	23.85	37.37	36420
36421	50 mm.....	612.25	20.37	24.64	39.89	36421
36422	65 mm.....	1,266.54	20.76	25.41	41.60	36422
36423	80 mm.....	1,335.25	22.76	27.03	45.10	36423
36424	100 mm.....	1,437.67	23.93	28.26	46.87	36424
36425	125 mm.....	1,544.55	26.19	30.75	52.86	36425
36426	150 mm.....	1,761.18	30.47	34.88	57.86	36426
	Protection coating paint :-					
	<i>Per linear metre</i>					
36427	Protection coating paint for thermal insulation (flexible closed cell elastomeric) of same manufacturer as the thermal insulation for refrigerant pipework (25mm diameter or below) at outdoor area.....	99.10	-	-	-	36427

Item					Item	
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Insulation to pipework	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Polystyrene insulation c/w cement plaster, finish and painting for chilled water pipework of diameter : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36428	25 mm or below.....	94.30	4.34	4.85	27.70	36428
36429	32 mm.....	101.05	4.52	5.14	29.35	36429
36430	40 mm.....	107.69	4.81	5.37	31.05	36430
36431	50 mm.....	121.86	5.90	6.46	36.05	36431
36432	65 mm.....	137.86	6.36	6.93	41.31	36432
36433	80 mm.....	152.90	6.84	7.45	47.68	36433
36434	100 mm.....	180.86	9.00	9.64	55.96	36434
36435	125 mm.....	210.09	10.58	11.18	62.62	36435
36436	150 mm.....	238.12	12.13	12.69	73.26	36436
36437	200 mm.....	289.30	14.57	15.34	88.32	36437
36438	250 mm.....	367.20	18.84	19.61	113.83	36438
36439	300 mm.....	558.64	28.99	31.63	171.37	36439
	Flexible closed cell elastomeric insulation c/w cement plaster, painting and finish for chilled water pipework of diameter : -					
	<i>Per linear metre</i>					
36440	25 mm or below.....	70.76	4.34	4.85	27.70	36440
36441	32 mm.....	78.01	4.52	5.14	29.35	36441
36442	40 mm.....	83.38	4.81	5.37	31.05	36442
36443	50 mm.....	97.49	5.90	6.46	36.05	36443
36444	65 mm.....	112.12	6.36	6.93	41.31	36444
36445	80 mm.....	128.32	6.84	7.45	47.68	36445
36446	100 mm.....	149.57	9.00	9.64	55.96	36446
36447	150 mm.....	209.67	12.13	12.69	73.26	36447

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>						
	Insulation to pipework (Cont'd)					
	Aluminium metal cladding for insulated chilled water pipes of diameter : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36448	25 mm or below.....	97.82	0.66	0.80	9.25	36448
36449	32 mm.....	104.07	0.80	0.89	9.94	36449
36450	40 mm.....	110.32	0.89	0.97	10.61	36450
36451	50 mm.....	120.50	0.97	1.08	12.22	36451
36452	65 mm.....	135.67	1.13	1.23	14.22	36452
36453	80 mm.....	150.84	1.23	1.32	16.41	36453
36454	100 mm.....	168.77	1.32	1.41	20.98	36454
36455	125 mm.....	188.46	1.84	2.04	23.61	36455
36456	150 mm.....	213.36	2.21	2.41	26.15	36456
36457	200 mm.....	246.96	2.51	2.68	30.05	36457
36458	250 mm.....	300.71	3.04	3.30	37.26	36458
36459	300 mm.....	362.09	3.75	4.11	45.91	36459
	Phenolic foam insulation c/w cement plaster, painting and finish for chilled water pipework of diameter : -					
	<i>Per linear metre</i>					
36460	25 mm or below.....	217.82	4.34	4.85	27.70	36460
36461	32 mm.....	244.83	4.52	5.14	29.35	36461
36462	40 mm.....	264.26	4.81	5.37	31.05	36462
36463	50 mm.....	310.01	5.90	6.46	36.05	36463
36464	65 mm.....	363.11	6.36	6.93	41.31	36464
36465	80 mm.....	408.78	6.84	7.45	47.68	36465
36466	100 mm.....	483.06	9.00	9.64	55.96	36466
36467	150 mm.....	694.59	12.13	12.69	73.26	36467

Item					Item
	<b>VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)</b>				
	Insulation to pipework (Cont'd)				
	Phenolic foam insulation for chilled water pipework of diameter :-				
	<i>Per linear metre</i>				
		A	B	C	D
		\$	\$	\$	\$
36468	25 mm or below.....	148.10	0.66	0.80	9.25
36469	32 mm.....	164.63	0.80	0.89	9.94
36470	40 mm.....	177.40	0.89	0.97	10.61
36471	50 mm.....	204.67	0.97	1.08	12.22
36472	65 mm.....	243.75	1.08	1.23	14.22
36473	80 mm.....	273.49	1.23	1.32	16.41
36474	100 mm.....	329.71	1.32	1.41	20.98
36475	150 mm.....	473.31	2.21	2.41	26.15
	Flue pipe :-				
	<i>Per linear metre</i>				
36476	200 mm stainless steel flue pipe c/w fittings, 50 mm thick fiberglass insulation and 0.8 mm galvanized iron sheet cladding rain cap and steel wire .....	2,587.12	10.70	18.39	32.26

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>STEAM AND HOT WATER SYSTEM</b>					
	Black mild steel steam return pipeworks c/w preformed rigid glass fiber insulation system, hammered aluminium sheeting of pipe diameter : -					
	Heavy quality					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36477	15 mm.....	150.40	4.93	5.60	62.70	36477
36478	20 mm.....	176.01	5.21	5.92	76.87	36478
36479	25 mm.....	205.69	5.91	6.57	83.49	36479
36480	32 mm.....	236.71	6.57	7.19	89.22	36480
36481	40 mm.....	259.93	7.26	7.97	95.85	36481
36482	50 mm.....	330.97	8.12	8.61	111.08	36482
36483	65 mm.....	404.37	9.35	10.18	127.21	36483
36484	80 mm.....	490.47	10.98	11.61	143.34	36484
36485	100 mm.....	684.18	12.35	13.19	165.19	36485
36486	150 mm.....	911.50	20.70	21.87	219.31	36486
	Copper pipe for cold water system of pipe diameter : -					
	<i>Per linear metre</i>					
36487	below 12 mm.....	69.36	3.10	3.33	46.29	36487
36488	12 mm.....	81.12	3.18	3.44	49.71	36488
36489	15 mm.....	96.33	3.24	3.54	53.76	36489
36490	18 mm.....	111.11	3.44	3.68	56.10	36490
36491	22 mm.....	130.94	4.21	4.37	60.44	36491
36492	28 mm.....	158.92	4.37	4.54	67.55	36492
36493	35 mm.....	215.61	4.98	5.18	71.56	36493
36494	42 mm.....	248.74	5.30	5.52	78.05	36494
36495	54 mm.....	304.81	5.91	6.08	89.72	36495
36496	67 mm.....	414.62	6.02	6.24	98.99	36496

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>STEAM AND HOT WATER SYSTEM (CONT'D)</b>					
	Copper pipe for cold water system of pipe diameter : - (Cont'd)					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36497	76 mm.....	553.23	7.19	7.58	107.47	36497
36498	108 mm.....	721.72	8.31	8.60	138.00	36498
36499	133 mm.....	840.31	9.88	10.13	160.30	36499
36500	159 mm.....	971.87	11.17	11.48	184.58	36500
	Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation.					
	Y-type strainers c/w filled aluminium split boxes : -					
	<i>Each</i>					
36501	32 mm or below.....	394.93	25.25	31.34	49.88	36501
36502	40 mm.....	417.55	25.93	31.97	53.65	36502
36503	50 mm.....	455.27	27.18	32.93	56.46	36503
36504	65 mm.....	505.66	27.84	34.48	59.89	36504
36505	80 mm.....	514.80	30.86	36.41	64.79	36505
36506	100 mm.....	613.89	32.49	38.63	67.55	36506
36507	150 mm.....	686.65	40.77	46.65	83.98	36507
	Globe valve c/w filled aluminium split boxes : -					
	<i>Each</i>					
36508	15 mm.....	107.99	24.83	30.86	39.80	36508
36509	20 mm.....	137.98	25.50	31.37	43.60	36509
36510	25 mm.....	175.23	26.00	31.96	47.91	36510
36511	32 mm.....	237.96	26.51	32.51	51.85	36511
36512	40 mm.....	310.04	27.23	32.84	55.35	36512
36513	50 mm.....	467.09	28.29	33.85	59.21	36513



Item					Item	
<b>STEAM AND HOT WATER SYSTEM (CONT'D)</b>						
Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation. (Cont'd)						
Parallel slide valve c/w filled aluminium split boxes : -						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
36514	65 mm.....	2,126.54	27.25	33.49	59.16	36514
36515	80 mm.....	3,696.98	30.08	35.60	64.42	36515
36516	100 mm.....	5,601.04	32.15	37.66	66.63	36516
36517	150 mm.....	10,515.27	40.13	46.47	82.45	36517
Safety and relief valve c/w filled aluminium split boxes : -						
	<i>Each</i>					
36518	32 mm or below.....	1,248.29	27.45	33.58	53.43	36518
36519	40 mm.....	1,843.27	28.00	34.04	57.61	36519
36520	50 mm.....	2,228.77	29.32	35.34	61.93	36520
36521	65 mm.....	4,471.91	29.86	36.54	64.56	36521
36522	80 mm.....	6,667.57	32.63	38.87	69.83	36522
36523	100 mm.....	9,654.02	34.60	40.65	72.68	36523
36524	150 mm.....	12,379.03	43.78	50.01	89.57	36524
Pressure reducing valve c/w filled aluminium split boxes : -						
	<i>Each</i>					
36525	32 mm or below.....	1,986.06	27.45	33.58	53.43	36525
36526	40 mm.....	2,465.51	28.00	34.04	57.61	36526
36527	50 mm.....	3,050.19	29.32	35.34	61.93	36527
36528	65 mm.....	3,926.72	29.86	36.54	64.56	36528
36529	80 mm.....	5,814.52	32.63	38.87	69.83	36529
36530	100 mm.....	6,545.16	34.60	40.65	72.68	36530
36531	150 mm.....	8,199.99	43.78	50.01	89.57	36531

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>STEAM AND HOT WATER SYSTEM (CONT'D)</b>					
	Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation. (Cont'd)					
	Temperature and pressure gauge : -					
	<i>Each</i>	A	B	C	D	
		\$	\$	\$	\$	
36532	Temperature gauge c/w filled aluminium split boxes.....	984.22	16.00	18.57	37.76	36532
36533	Pressure gauge c/w filled aluminium split boxes.....	266.43	16.00	18.57	37.76	36533
	Steam separator c/w filled aluminium split boxes : -					
	<i>Each</i>					
36534	32 mm or below.....	2,949.89	27.45	33.58	53.43	36534
36535	40 mm.....	3,683.63	28.00	34.04	57.61	36535
36536	50 mm.....	4,598.93	29.32	35.34	61.93	36536
36537	65 mm.....	5,950.18	29.86	36.54	64.56	36537
36538	80 mm.....	7,224.86	32.63	38.87	69.83	36538
36539	100 mm.....	8,983.42	34.60	40.65	72.68	36539
36540	150 mm.....	13,078.79	43.78	50.01	89.57	36540
	Steam trap set comprising of globe valve, strainer, float operated steam trap, sight glass, check valve, gate valve and all union c/w filled aluminium split boxes; connect to pipe diameter of : -					
	<i>Per set</i>					
36541	32 mm or below.....	6,589.10	118.88	143.76	529.70	36541
36542	40 mm.....	8,663.93	139.57	160.94	561.27	36542
36543	50 mm.....	9,818.56	155.96	179.27	585.39	36543
36544	65 mm.....	11,718.25	175.86	193.80	625.29	36544
36545	80 mm.....	13,350.91	194.27	214.02	658.45	36545
36546	100 mm.....	15,894.88	208.99	232.41	705.08	36546
36547	150 mm.....	21,505.47	227.32	251.95	734.32	36547

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>STEAM AND HOT WATER SYSTEM (CONT'D)</b>					
	Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation. (Cont'd)					
	Check valve c/w filled aluminium split boxes :-					
	<i>Each</i>	A	B	C	D	
		\$	\$	\$	\$	
36548	65 mm.....	602.13	27.44	33.72	59.62	36548
36549	80 mm.....	726.03	30.08	35.07	64.19	36549
36550	100 mm.....	1,155.59	31.31	37.10	65.13	36550
36551	150 mm.....	1,899.19	39.09	45.41	79.31	36551
	Drain valve c/w hose union ends and loose key and filled aluminium split box :-					
	<i>Each</i>					
36552	50 mm.....	639.28	26.99	32.58	56.97	36552
36553	65 mm.....	838.07	27.67	34.03	57.87	36553
36554	80 mm.....	1,053.73	30.33	37.10	64.47	36554
36555	100 mm.....	1,348.60	31.78	38.88	65.76	36555
36556	150 mm.....	2,078.47	40.80	46.24	80.77	36556
	Gate valve c/w filled aluminium split boxes :-					
	<i>Each</i>					
36557	50 mm.....	856.41	26.99	32.58	56.97	36557
36558	65 mm.....	963.30	27.67	34.03	57.87	36558
36559	80 mm.....	1,130.92	30.33	37.10	64.47	36559
36560	100 mm.....	1,439.27	31.78	38.88	65.76	36560
36561	150 mm.....	2,702.83	40.80	46.24	80.77	36561

Item					Item	
	<b>STEAM AND HOT WATER SYSTEM (CONT'D)</b>					
	Insulation of pipeworks	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Preformed rigid glass fiber insulation c/w hammered aluminium cladding for black mild steel condensate pipe of diameter : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36562	15 mm.....	59.62	4.28	4.44	22.07	36562
36563	20 mm.....	69.92	4.87	5.00	27.38	36563
36564	25 mm.....	79.42	4.98	5.09	30.78	36564
36565	32 mm.....	85.79	5.11	5.52	32.31	36565
36566	40 mm.....	94.14	5.57	6.34	34.48	36566
36567	50 mm.....	109.62	6.49	7.37	39.32	36567
36568	65 mm.....	127.65	7.37	7.97	45.52	36568
36569	80 mm.....	147.11	8.05	8.78	51.95	36569
36570	100 mm.....	172.03	10.28	10.97	59.12	36570
36571	150 mm.....	280.57	14.18	14.95	78.44	36571
	Preformed rigid glass fiber insulation c/w hammered aluminium cladding for black mild steel steam pipe of diameter : -					
	<i>Per linear metre</i>					
36572	15 mm.....	82.00	4.28	4.44	22.07	36572
36573	20 mm.....	93.73	4.87	5.00	27.38	36573
36574	25 mm.....	102.78	4.98	5.09	30.78	36574
36575	32 mm.....	112.78	5.11	5.52	32.31	36575
36576	40 mm.....	121.74	5.57	6.34	34.48	36576
36577	50 mm.....	162.29	6.49	7.37	39.32	36577
36578	65 mm.....	186.16	7.37	7.97	45.52	36578
36579	80 mm.....	238.20	8.05	8.78	51.95	36579
36580	100 mm.....	365.20	10.28	10.97	59.12	36580
36581	150 mm.....	452.55	14.18	14.95	78.44	36581

Item					Item	
	<b>STEAM AND HOT WATER SYSTEM (CONT'D)</b>					
	Insulation of pipeworks (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Preformed rigid glass fiber insulation c/w hammered aluminium cladding for copper pipe of hot water system of diameter : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
36582	n.e. 12 mm.....	72.70	4.14	4.79	32.31	36582
36583	12 mm.....	78.55	4.59	5.18	35.95	36583
36584	15 mm.....	81.90	5.01	5.52	38.16	36584
36585	18 mm.....	86.91	5.39	5.99	40.73	36585
36586	22 mm.....	114.61	5.83	6.45	42.72	36586
36587	28 mm.....	128.08	6.19	6.79	47.71	36587
36588	35 mm.....	141.41	6.72	7.24	50.69	36588
36589	42 mm.....	151.49	7.19	7.89	55.97	36589
36590	54 mm.....	172.28	7.82	8.33	63.29	36590
36591	67 mm.....	196.97	8.39	8.99	71.54	36591
36592	76 mm.....	213.97	9.71	11.06	78.81	36592
36593	108 mm.....	309.05	12.07	13.13	97.62	36593
36594	133 mm.....	397.80	14.28	16.25	115.07	36594
36595	159 mm.....	452.77	17.11	17.87	131.49	36595
	Plugged branch : -					
	<i>Each</i>					
36596	25 mm plugged branch.....	38.40	4.87	6.13	14.73	36596

**Section 37**

**HEATING, VENTILATION AND AIR-CONDITIONING - DUCTWORK**

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES</b>						
Sheet metal ducts (rates for taking down of ductwork shall include for taking down of ALL duct accessories including dampers, registers, diffuser, heater, batteries, etc.)						
GI sheet metal ductwork/ air plenum; un-insulated : -						
<i>Per square metre</i>						
37001	0.6 mm thick.....	374.97	8.76	11.31	21.28	37001
37002	0.8 mm thick.....	426.44	10.06	11.78	24.15	37002
37003	1.0 mm thick.....	450.88	10.59	12.43	25.09	37003
37004	1.2 mm thick.....	507.00	11.14	13.00	26.01	37004
37005	1.5 mm thick.....	599.59	11.79	13.67	26.97	37005
Glass fibre duct (rectangular/round/oval shape) : -						
<i>Per square metre</i>						
37006	48 kg/ m <sup>3</sup> .....	595.95	9.96	11.68	23.92	37006
37007	64 kg/ m <sup>3</sup> .....	618.32	10.50	12.32	24.89	37007
Factory made GI round/oval spiral duct c/w insulation equivalent round diameter for equal capacity and friction loss : -						
<i>Per linear metre</i>						
37008	Up to 165 mm diameter.....	865.30	41.27	44.58	333.47	37008
37009	165 - 255 mm diameter.....	907.78	47.12	50.53	362.01	37009
37010	255 - 355 mm diameter.....	1,029.23	49.92	53.49	389.41	37010
37011	355 - 470 mm diameter.....	1,158.06	52.90	56.43	417.53	37011
37012	470 - 546 mm diameter.....	1,277.54	55.89	59.42	445.71	37012
37013	546 - 622 mm diameter.....	1,385.41	58.82	65.31	483.80	37013
37014	622 - 800 mm diameter.....	1,602.78	61.60	68.07	511.45	37014
Ductboard air duct : -						
<i>Per square metre</i>						
37015	Ductboard air duct/ air plenum (phenolic foam or PU) .....	465.82	10.39	12.17	24.94	37015

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>					
	0.8 mm thick grade 316 stainless steel round duct with hairline finish c/w stainless steel frame support and all necessary accessories : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
37016	150 mm diameter.....	804.73	3.22	5.60	9.94	37016
37017	200 mm diameter.....	1,423.45	4.28	7.46	13.25	37017
37018	250 mm diameter.....	2,239.93	5.36	9.34	16.56	37018
37019	600 mm diameter.....	7,299.85	12.84	22.40	39.74	37019
37020	700 mm diameter.....	8,725.06	14.99	26.13	46.37	37020
37021	800 mm diameter.....	9,103.13	17.13	29.87	52.99	37021
	Stainless steel grade 304 sheet metal air duct/ air plenum : -					
	<i>Per square metre</i>					
37022	0.6 mm thick.....	718.54	8.76	11.31	21.28	37022
37023	0.8 mm thick.....	911.97	10.06	11.78	24.15	37023
37024	1.0 mm thick.....	1,103.34	10.59	12.43	25.09	37024
37025	1.2 mm thick.....	1,191.05	11.14	13.00	26.01	37025
37026	1.5 mm thick.....	1,559.46	11.79	13.67	26.97	37026
	Stainless steel grade 304 sheet metal air duct/ air plenum with colour powder coating on one surface : -					
	<i>Per square metre</i>					
37027	0.6 mm thick.....	832.82	8.76	11.31	21.28	37027
37028	0.8 mm thick.....	1,014.93	10.06	11.78	24.15	37028
37029	1.0 mm thick.....	1,197.55	10.59	12.43	25.09	37029
	Stainless steel 316 sheet metal air duct/ air plenum : -					
	<i>Per square metre</i>					
37030	0.6 mm thick.....	893.94	8.76	11.31	21.28	37030
37031	0.8 mm thick.....	1,075.38	10.06	11.78	24.15	37031
37032	1.0 mm thick.....	1,278.03	10.59	12.43	25.09	37032
37033	1.2 mm thick.....	1,456.15	11.14	13.00	26.01	37033
37034	1.5 mm thick.....	1,820.42	11.79	13.67	26.97	37034



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>					
	Factory made aluminium flexible duct bare without insulation :-					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
37035	Up to 153 mm diameter.....	265.65	9.66	11.32	23.17	37035
37036	153 - 204 mm diameter.....	293.70	10.17	11.94	24.09	37036
37037	204 - 254 mm diameter.....	339.16	10.72	12.49	24.98	37037
37038	254 - 305 mm diameter.....	474.15	11.33	13.12	25.90	37038
	Factory made aluminium flexible duct with 25 mm thick fiberglass insulation :-					
	<i>Per linear metre</i>					
37039	Up to 153 mm diameter.....	374.78	14.53	18.93	38.66	37039
37040	153 - 204 mm diameter.....	439.89	15.02	19.57	39.46	37040
37041	204 - 254 mm diameter.....	525.25	15.54	20.09	40.33	37041
37042	254 - 305 mm diameter.....	688.52	16.13	20.58	41.27	37042
	UPVC seamless circular duct :-					
	<i>Per linear metre</i>					
37043	150 mm diameter.....	188.77	9.66	11.31	23.32	37043
37044	200 mm diameter.....	242.32	10.73	12.49	25.09	37044
37045	250 mm diameter.....	296.37	11.91	13.69	26.89	37045

Item					Item	
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>					
	Slim duct in associated with air-conditioning installation	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Slim duct system, suitable in use at corrosive environment (Rates shall include all associated mounting bracket, support and fittings including all straight runs, joints, flanges, tees and elbows etc.), U.V. resistant and fireproof to BS 476 Part 7 Class I :-					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
37046	Slim duct; n.e. 300 mm girth.....	198.99	1.46	8.95	11.66	37046
37047	Slim duct; 300 - 400 mm girth.....	299.43	1.46	8.95	11.66	37047
37048	Slim duct; 400 - 500 mm girth.....	355.68	1.46	9.94	14.40	37048
	Insulation for air duct/ air plenum					
	Polystyrene insulation c/w cement plaster, galvanized wire netting, painting and finish :-					
	<i>Per square metre</i>					
37049	25 mm thick.....	383.31	10.60	15.02	32.58	37049
37050	50 mm thick.....	442.59	11.17	15.58	33.64	37050
	Fiberglass insulation :-					
	<i>Per square metre</i>					
37051	25 mm thick; density 32 kg/ m <sup>3</sup> .....	106.05	4.71	7.66	16.14	37051
37052	50 mm thick; density 32 kg/ m <sup>3</sup> .....	149.13	5.27	8.18	17.11	37052
37053	25 mm thick; density 48 kg/ m <sup>3</sup> .....	177.84	5.27	8.18	17.11	37053
37054	50 mm thick; density 48 kg/ m <sup>3</sup> .....	238.06	5.79	8.83	18.08	37054
37055	25 mm thick; density 64 kg/ m <sup>3</sup> .....	268.04	5.79	8.83	18.08	37055
37056	50 mm thick; density 64 kg/ m <sup>3</sup> .....	332.79	6.42	9.36	18.93	37056
	Phenolic foam insulation :-					
	<i>Per square metre</i>					
37057	25 mm thick.....	280.24	4.52	5.68	15.26	37057
37058	50 mm thick.....	415.20	5.03	6.82	17.11	37058

Item					Item	
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>						
Insulation for air duct/ air plenum (Cont'd)						
Phenolic foam insulation c/w cement plaster, galvanized wire netting, painting and finish :-						
<i>Per square metre</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
37059	25 mm thick.....	442.54	9.93	14.07	30.56	37059
37060	50 mm thick.....	584.73	10.50	17.01	32.74	37060
Elastomeric insulation :-						
<i>Per square metre</i>						
37061	25 mm thick.....	315.83	4.52	5.68	15.26	37061
37062	50 mm thick.....	458.81	5.03	6.82	17.11	37062
Elastomeric insulation c/w cement plaster, galvanized wire netting, painting and finish :-						
<i>Per square metre</i>						
37063	25 mm thick.....	477.41	9.93	14.07	30.56	37063
37064	50 mm thick.....	626.17	10.50	17.01	32.74	37064
Flexible closed cell elastomeric insulation to air duct/ air plenum :-						
<i>Per square metre</i>						
37065	19 mm thick.....	327.30	4.52	5.68	15.26	37065
37066	25 mm thick.....	392.46	5.03	6.19	16.14	37066
Flexible closed cell elastomeric internal lining to air duct/ air plenum :-						
<i>Per square metre</i>						
37067	19 mm thick.....	357.26	4.52	5.68	15.26	37067
37068	25 mm thick.....	425.97	5.03	6.19	16.14	37068
37069	Vapour barrier of double faced aluminium foil .....	35.01	4.42	5.54	14.79	37069
37070	Aluminium cladding for air ductwork; hammer finish.....	364.86	4.42	5.54	14.79	37070

Item					Item	
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>					
	Proprietary fire protection ductwork of non-combustible calcium silicate board reinforced with selected fibres and fillers. The board has smooth surface on one face and a lightly textured sanded surface on the other, without insulation : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per square metre</i>	A \$	B \$	C \$	D \$	
37071	9 mm thick.....	902.00	9.64	12.64	35.91	37071
37072	12 mm thick.....	1,223.88	10.03	13.71	41.50	37072
37073	25 mm thick.....	1,566.46	11.73	15.24	43.90	37073
	Proprietary fire protection ductwork of non-combustible composite panel of fibre reinforced cement, mechanically bonded to punched steel sheet on both surfaces, without insulation : -					
	<i>Per square metre</i>					
37074	9 mm thick.....	1,271.69	13.41	16.10	39.25	37074
37075	12 mm thick.....	1,804.01	14.15	17.07	44.92	37075
37076	25mm thick.....	2,189.90	16.20	18.80	47.38	37076
	Air registers and diffusers					
	Air registers (aluminium type) c/w volume control damper of size : -					
	<i>Each</i>					
37077	Up to 0.1 m <sup>2</sup> .....	280.29	4.41	5.52	12.78	37077
37078	0.1 - 0.3 m <sup>2</sup> .....	552.39	5.40	6.62	14.81	37078
37079	0.3 - 0.5 m <sup>2</sup> .....	1,211.07	6.52	7.63	16.62	37079
37080	0.5 - 0.8 m <sup>2</sup> .....	1,915.58	7.63	8.74	18.32	37080

Item					Item	
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>						
Air registers and diffusers (Cont'd)						
Air registers (metal type c/w painting) c/w volume control damper of size :-						
<b>Each</b>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
37081	Up to 0.1 m <sup>2</sup> .....	216.63	4.41	5.52	12.78	37081
37082	0.1 - 0.3 m <sup>2</sup> .....	418.00	5.40	6.62	14.81	37082
37083	0.3 - 0.5 m <sup>2</sup> .....	815.94	6.52	7.63	16.62	37083
37084	0.5 - 0.8 m <sup>2</sup> .....	1,613.52	7.63	8.74	18.32	37084
Ceiling diffusers of all shape (aluminium type) with volume control damper of size :-						
<b>Each</b>						
37085	Up to 0.1 m <sup>2</sup> .....	315.53	4.41	5.90	14.81	37085
37086	0.1 - 0.2 m <sup>2</sup> .....	512.28	4.95	6.56	15.68	37086
37087	0.2 - 0.3 m <sup>2</sup> .....	716.67	5.45	7.42	16.56	37087
37088	0.3 - 0.5 m <sup>2</sup> .....	1,149.85	6.06	8.35	17.43	37088
Ceiling diffusers of all shape (metal type c/w painting) with volume control damper of size :-						
<b>Each</b>						
37089	Up to 0.1 m <sup>2</sup> .....	218.02	4.41	5.90	14.81	37089
37090	0.1 - 0.2 m <sup>2</sup> .....	416.48	4.95	6.56	15.68	37090
37091	0.2 - 0.3 m <sup>2</sup> .....	666.89	5.45	7.42	16.56	37091
37092	0.3 - 0.5 m <sup>2</sup> .....	1,110.82	6.06	8.35	17.43	37092

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>					
	Linear diffusers					
	Aluminium linear slot diffuser c/w adjustable damper and accessories :-					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
37093	1 slot.....	374.46	5.44	7.13	13.86	37093
37094	2 slots.....	449.05	5.44	7.13	13.86	37094
37095	3 slots.....	525.79	5.44	7.13	13.86	37095
37096	4 slots.....	598.79	5.44	7.13	13.86	37096
	Linear air grille					
	Aluminium linear bar grille c/w blank-off plate where applicable :-					
	<i>Per linear metre</i>					
37097	Up to 100 mm width.....	339.00	6.78	10.17	19.77	37097
37098	100 mm - 200 mm width.....	406.80	6.78	10.17	19.77	37098
37099	200 mm - 300 mm width.....	474.60	6.78	10.17	19.77	37099
	Aluminium linear bar grille with volume control damper c/w blank-off plate where applicable :-					
	<i>Per linear metre</i>					
37100	Up to 100 mm width.....	440.70	8.14	12.20	23.72	37100
37101	100 mm -200 mm width.....	508.50	8.14	12.20	23.72	37101
37102	200 mm - 300 mm width.....	576.30	8.14	12.20	23.72	37102

Item					Item	
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>						
Linear air grille (Cont'd)						
Aluminium linear bar grille with detachable core and volume control damper c/w blank-off plate where applicable : -						
<b>Per linear metre</b>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
37103	Up to 100 mm width.....	508.50	10.17	13.56	26.36	37103
37104	100 mm - 200 mm width.....	576.30	10.17	13.56	26.36	37104
37105	200 mm - 300 mm width.....	644.10	10.17	13.56	26.36	37105
Return air grille						
Return air grille (metal type c/w painting) c/w air filter (including hinged type) : -						
<b>Each</b>						
37106	Up to 0.1 m <sup>2</sup> .....	337.89	4.41	6.01	12.78	37106
37107	0.1 - 0.3 m <sup>2</sup> .....	692.63	5.40	7.65	13.64	37107
37108	0.3 - 0.5 m <sup>2</sup> .....	1,088.32	6.52	8.26	14.43	37108
37109	0.5 - 0.8 m <sup>2</sup> .....	1,454.67	7.06	8.77	15.37	37109
37110	0.8 - 1.1 m <sup>2</sup> .....	1,821.02	7.06	8.77	15.37	37110
Return air grille (aluminium type) c/w air filter : -						
<b>Each</b>						
37111	Up to 0.1 m <sup>2</sup> .....	404.42	5.44	7.13	12.78	37111
37112	0.1 - 0.3 m <sup>2</sup> .....	1,090.63	6.03	8.24	14.81	37112
37113	0.3 - 0.5 m <sup>2</sup> .....	1,479.56	6.54	8.74	16.61	37113
37114	0.5 - 0.8 m <sup>2</sup> .....	1,780.88	7.63	10.30	18.32	37114
37115	0.8 - 1.1 m <sup>2</sup> .....	2,082.21	7.63	10.30	18.32	37115
Exhaust air grille c/w volume control damper						
Aluminium type : -						
<b>Each</b>						
37116	Up to 0.2 m <sup>2</sup> .....	382.12	5.44	7.13	13.64	37116
37117	0.2 - 0.4 m <sup>2</sup> .....	600.62	6.03	7.65	14.43	37117
37118	0.4 - 0.6 m <sup>2</sup> .....	889.39	6.54	8.26	15.37	37118

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>					
	Exhaust air grille c/w volume control damper (Cont'd)					
	Metal type with painting : -					
	<b>Each</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	
		\$	\$	\$	\$	
37119	Up to 0.2 m <sup>2</sup> .....	288.24	5.44	7.13	13.64	37119
37120	0.2 - 0.4 m <sup>2</sup> .....	408.29	6.03	7.65	14.43	37120
37121	0.4 - 0.6 m <sup>2</sup> .....	698.94	6.54	8.26	15.37	37121
	<b>Per square metre</b>					
37122	Stainless steel 316 exhaust air grille.....	2,214.75	12.27	15.36	27.01	37122
	Duct work accessories : -					
	<b>Each</b>					
37123	Ventglass L.A.....	263.30	4.99	6.26	11.79	37123
37124	Ventglass L.A. c/w insulation .....	397.72	4.99	6.78	12.69	37124
	Dampers					
	Fire damper (all type c/w holding frame, enclosure, access panel, electro-thermal link etc.) of F.S.D. approved type : -					
	<b>Each</b>					
37125	Up to 0.1 m <sup>2</sup> .....	726.57	8.59	12.87	29.23	37125
37126	0.1 - 0.3 m <sup>2</sup> .....	1,102.21	9.59	13.89	31.39	37126
37127	0.3 - 0.5 m <sup>2</sup> .....	1,430.26	10.59	14.88	32.70	37127
37128	0.5 - 0.8 m <sup>2</sup> .....	1,951.06	11.77	16.06	34.48	37128



Item					Item	
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>					
	Dampers (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Fire damper (all type c/w stainless steel blades, galvanised steel holding frame, enclosure, access panel, electro thermal link etc.) of F.S.D. approved type : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
37129	Up to 0.1 m <sup>2</sup> .....	994.50	8.59	12.87	29.23	37129
37130	0.1 - 0.3 m <sup>2</sup> .....	1,508.66	9.59	13.89	31.39	37130
37131	0.3 - 0.5 m <sup>2</sup> .....	1,957.69	10.59	14.88	32.70	37131
37132	0.5 - 0.8 m <sup>2</sup> .....	2,670.54	11.77	16.06	34.48	37132
	Fire damper (all type c/w holding frame, enclosure, access panel, fusible link etc.) of F.S.D. approved type : -					
	<b>Each</b>					
37133	Up to 0.1 m <sup>2</sup> .....	668.44	4.70	7.14	16.55	37133
37134	0.1 - 0.3 m <sup>2</sup> .....	1,014.03	5.27	7.71	17.60	37134
37135	0.3 - 0.5 m <sup>2</sup> .....	1,315.84	5.80	8.25	18.35	37135
37136	0.5 - 0.8 m <sup>2</sup> .....	1,794.98	6.45	8.90	19.24	37136
	Fire damper (all type c/w stainless steel blades, galvanised steel holding frame, enclosure, access panel, fusible link etc.) of F.S.D. approved type : -					
	<b>Each</b>					
37137	Up to 0.1 m <sup>2</sup> .....	914.94	4.70	7.14	16.55	37137
37138	0.1 - 0.3 m <sup>2</sup> .....	1,387.97	5.27	7.71	17.60	37138
37139	0.3 - 0.5 m <sup>2</sup> .....	1,801.07	5.80	8.25	18.35	37139
37140	0.5 - 0.8 m <sup>2</sup> .....	2,456.90	6.45	8.90	19.24	37140
	Combined smoke and fire damper c/w holding frame, enclosure, access panel, fusible link or electromagnet release of F.S.D. approved type : -					
	<b>Each</b>					
37141	Up to 0.1 m <sup>2</sup> .....	2,945.69	4.99	7.58	17.68	37141
37142	0.1 - 0.3 m <sup>2</sup> .....	3,988.39	5.57	8.15	18.77	37142
37143	0.3 - 0.5 m <sup>2</sup> .....	5,407.09	6.14	8.74	19.60	37143
37144	0.5 - 0.8 m <sup>2</sup> .....	6,976.08	6.84	9.43	20.60	37144

Item					Item	
	<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Dampers (Cont'd)					
	Combined smoke and fire damper c/w actuator and electrical connection :-					
	<b>Each</b>					
37145	Up to 0.1 m <sup>2</sup> .....	2,395.31	4.46	6.78	15.60	37145
37146	0.1 - 0.3 m <sup>2</sup> .....	3,376.32	4.83	7.13	16.64	37146
37147	0.3 - 0.5 m <sup>2</sup> .....	4,399.37	5.24	7.56	18.13	37147
37148	0.5 - 0.8 m <sup>2</sup> .....	5,114.67	5.96	8.16	20.34	37148
	Fire damper to louver door c/w all necessary accessories of F.S.D. approved type :-					
	<b>Each</b>					
37149	Up to 0.1 m <sup>2</sup> .....	901.66	94.88	100.94	257.73	37149
37150	0.1 - 0.3 m <sup>2</sup> .....	1,107.71	107.16	112.60	300.74	37150
37151	0.3 - 0.5 m <sup>2</sup> .....	1,296.41	116.37	122.85	343.13	37151
37152	0.5 - 0.8 m <sup>2</sup> .....	1,582.61	128.03	133.89	428.96	37152
	Motorized damper c/w actuator, coupling, electrical connection, connected to an electricity supply point :-					
	<b>Each</b>					
37153	Up to 0.1 m <sup>2</sup> .....	1,244.83	18.38	29.86	117.75	37153
37154	0.1 - 0.3 m <sup>2</sup> .....	2,472.43	26.55	37.26	137.28	37154
37155	0.3 - 0.5 m <sup>2</sup> .....	3,292.48	29.54	46.13	152.37	37155
37156	0.5 - 0.8 m <sup>2</sup> .....	4,064.75	34.01	51.92	165.34	37156
	Stainless Steel 304 Volume Control Damper (Motorized type) :-					
	<b>Each</b>					
37157	150 x 150 x 150 mm.....	2,930.77	13.59	20.07	31.14	37157
37158	400 x 300 x 200 mm.....	4,076.93	13.59	20.07	31.14	37158
37159	500 x 300 x 200 mm.....	5,239.26	13.59	20.07	31.14	37159

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>						
Dampers (Cont'd)						
Stainless Steel 316 Volume Control Damper (Motorized type) :-						
<i>Each</i>						
37160	150 x 150 x 150 mm.....	3,757.10	13.59	20.07	31.14	37160
37161	400 x 300 x 200 mm.....	4,863.04	13.59	20.07	31.14	37161
37162	500 x 300 x 200 mm.....	6,111.20	13.59	20.07	31.14	37162
37163	Damper actuator that shall be of the linear or rotary type for either modulating or two-positioning control.....	1,358.32	14.59	23.57	98.91	37163
Self-closing (non-return) damper c/w device for position and locking the damper blades, access panel and label etc. :-						
<i>Each</i>						
37164	Up to 0.1 m <sup>2</sup> .....	163.07	4.10	6.21	15.39	37164
37165	0.1 - 0.3 m <sup>2</sup> .....	316.95	4.54	6.67	16.20	37165
37166	0.3 - 0.5 m <sup>2</sup> .....	613.45	5.03	7.13	17.23	37166
37167	0.5 - 0.8 m <sup>2</sup> .....	1,221.52	5.57	7.66	18.61	37167
Air filter c/w enclosure, holding frame and air gasket :-						
<i>Per square metre of surface area facing air stream</i>						
37168	Filter for FCU/fresh air filter/pre-filter.....	1,530.05	8.10	10.92	17.79	37168
37169	Main filter cartridge type.....	1,911.74	8.10	10.92	17.79	37169
37170	HEPA filter.....	3,821.53	8.10	10.92	17.79	37170
37171	Bag filter of high efficiency with extended area, deep pleated type mounted to modular sections and equipped with holding frames & c/w at least four heavy duty spring type positive sealing latches (Air velocity flow rate of 1.0 to 3.5 m <sup>3</sup> /s ).....	1,291.76	8.15	11.62	18.91	37171
Perforated diffuser c/w volume control damper and HEPA filter :-						
<i>Per set</i>						
37172	1200 mm x 600 mm.....	10,699.83	18.85	25.34	41.76	37172
37173	600 mm x 600 mm.....	5,699.59	15.03	20.20	33.58	37173

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>						
Electro-static filter and accessories						
Nominal airflow rate : -						
<i>Per set</i>						
37174	Up to 0.5 m³/s.....	5,333.40	12.96	15.66	49.33	37174
37175	0.5 - 1 m³/s.....	10,599.44	15.58	18.27	54.24	37175
37176	1 - 2 m³/s.....	21,316.47	18.04	20.84	59.20	37176
37177	2 - 3 m³/s.....	22,789.34	20.60	23.38	64.18	37177
37178	3 - 4 m³/s.....	25,008.41	23.20	25.99	73.83	37178
37179	4 - 5 m³/s.....	28,600.89	25.67	28.72	78.70	37179
37180	5 - 6 m³/s.....	32,960.59	28.24	31.12	87.94	37180
Active carbon filter c/w high-grade activated carbon filters and pre-filter and housed in a frame structure						
Nominal airflow rate : -						
<i>Per set</i>						
37181	Up to 0.5 m³/s.....	4,778.67	8.42	11.35	26.79	37181
37182	0.5 - 1 m³/s.....	7,139.68	11.22	14.06	32.17	37182
37183	1 - 2 m³/s.....	11,154.96	14.03	16.93	37.55	37183
37184	2 - 3 m³/s.....	15,967.98	16.84	19.75	42.92	37184
37185	3 - 4 m³/s.....	19,053.54	19.50	22.50	48.15	37185
37186	4 - 5 m³/s.....	25,251.05	22.20	25.20	53.53	37186
37187	5 - 6 m³/s.....	30,065.94	25.01	28.02	58.82	37187
Electric duct heater of black sheathed element type c/w enclosure, access panel, safety cut-off, thermostat, sail switch and accessories : -						
<i>Each</i>						
37188	Up to 3 kW.....	1,889.18	7.85	9.41	22.24	37188
37189	3 - 6 kW.....	2,366.88	8.34	9.98	23.23	37189
37190	6 - 9 kW.....	2,824.52	8.93	10.50	24.19	37190
37191	9 - 12 kW.....	3,143.22	9.41	11.04	25.17	37191

Item	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item	
A \$	B \$	C \$	D \$			
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>						
Duct silencers : -						
<i>Per set</i>						
37192	Up to 0.5 m <sup>3</sup> /s.....	2,487.78	16.02	26.77	87.06	37192
37193	0.5 - 0.75 m <sup>3</sup> /s.....	2,627.27	19.59	30.36	94.98	37193
37194	0.75 - 1.0 m <sup>3</sup> /s.....	3,608.27	24.00	34.89	102.66	37194
37195	Add to last item for each additional 0.25 m <sup>3</sup> /s or part thereof.....	994.41	3.70	4.28	8.17	37195
Ductwork acoustic insulation : -						
<i>Per square metre</i>						
37196	Ductwork acoustic insulation, 50mm thick including metal perforated sheet.....	912.88	9.17	13.41	31.07	37196
Duct access panel : -						
<i>Each</i>						
37197	Up to 0.1 m <sup>2</sup> .....	269.93	6.93	8.11	15.26	37197
37198	0.1 - 0.25 m <sup>2</sup> .....	401.93	8.12	9.32	17.11	37198
37199	0.25 - 0.5 m <sup>2</sup> .....	708.41	9.86	11.04	19.83	37199
Regulation damper : -						
<i>Each</i>						
37200	Regulation damper c/w operating handle, access panel, device for position and locking the damper blades, label etc. ....	253.73	13.57	18.06	34.70	37200
Galvanized iron wire mesh : -						
<i>Per square metre</i>						
37201	Galvanized iron wire mesh (straight lattice mesh/diamond mesh).....	140.43	9.34	11.17	21.49	37201
Galvanized iron air duct c/w volume control damper, painted with anti-corrosive paint : -						
<i>Per square metre</i>						
37202	1.0 mm thick.....	522.15	10.53	15.48	32.84	37202
37203	1.2 mm thick.....	588.83	11.68	16.76	34.82	37203

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>AIR DUCTS, THERMAL INSULATION &amp; ACCESSORIES (CONT'D)</b>						
Anti-acidic/anti-corrosive PVC duct for exhaust fans of diameter : -						
<i>Per linear metre</i>						
37204	150 mm.....	935.93	5.27	9.17	16.24	37204
37205	250 mm .....	979.47	6.47	10.53	20.25	37205
37206	300 mm.....	1,136.69	7.83	11.88	24.27	37206
Air duct cleaning : -						
<i>Each</i>						
37207	Air duct cleaning point c/w metal flange and air tight screw plug fixing on air duct with no work on ceiling or demountable ceiling .....	49.33	-	-	-	37207
37208	Air duct cleaning point c/w metal flange, extended collar, air tight screw plug fixing on air duct with fixed ceiling .....	59.26	-	-	-	37208
<i>Per linear metre</i>						
37209	Air duct cleaning and disinfection process with proprietary type compressed air lance, disinfection application lance, sampling probe and necessary accessories, video recording, video inspection and reporting.....	92.60	-	-	-	37209
<i>Per point</i>						
37210	Inspection and photograph taking using borescope, c/w particulate and micro-biological monitoring report .....	418.08	-	-	-	37210
Protection coating paint : -						
<i>Per square metre</i>						
37211	Protection coating paint for thermal insulation (flexible closed cell elastomeric) of same manufacturer as the thermal insulation for ductwork at outdoor area.....	1,238.68	-	-	-	37211

**Section 38**

**HEATING, VENTILATION AND AIR-CONDITIONING - EQUIPMENT**

Item					Item
	<b>UNITARY AIR CONDITIONERS</b>				
	Air to air packaged air conditioner (refrigerant R22) c/w motors, compressors, filter, filter chamber, noise control equipment, copper tube with pre-corrosion resisting treated aluminium fins cooling coils, condensers, blowers, starters, refrigerant, drain pan, emergency stop button, probe type smoke detector, local control panel.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
	External or internally mounted, of cooling capacity : -				
	<i>Each</i>	A \$	B \$	C \$	D \$
38001	Up to 15 kW.....	-	183.06	202.32	701.38 38001
38002	15 - 21 kW.....	-	198.53	210.05	718.73 38002
38003	21 - 30 kW.....	-	203.45	229.36	732.61 38003
38004	30 - 50 kW.....	-	208.40	240.73	756.32 38004
	Air to air packaged air conditioner (refrigerant zero ODP) c/w motors, compressors, filter, filter chamber, noise control equipment, copper tube with pre-corrosion resisting treated aluminium fins cooling coils, condensers, blowers, starters, refrigerant, drain pan, emergency stop button, probe type smoke detector, local control panel.				
	External or internally mounted, of cooling capacity : -				
	<i>Each</i>				
38005	Up to 15 kW.....	22,245.46	183.06	202.32	701.38 38005
38006	15 - 21 kW.....	28,654.38	198.53	210.05	718.73 38006
38007	21 - 30 kW.....	41,728.53	203.45	229.36	732.61 38007
38008	30 - 50 kW.....	52,687.30	208.40	240.73	756.32 38008
38009	50 - 61 kW.....	60,574.07	215.12	249.40	780.58 38009
38010	61 - 91 kW.....	71,976.34	217.13	260.16	805.75 38010



Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air cooled packaged heat recovery chiller (refrigerant zero ODP) c/w motor, compressor, condenser, blower, noise control equipment, copper tube with pre-corrosion resisting treated copper fins evaporators, filter drier, water strainer, crank case heater, switch, muffler, refrigerant, oil separator, safety cutout, control metering device, temperature thermometers, starter, receiver, seamless copper tubing, weather-proof cabinet, emergency stop button.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Cooling capacity :-					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38011	300 - 400 kW..... (The actual rate should be : \$1,007,590.00 for Item 38011A)	10,075.90	3,908.06	5,258.53	14,454.64	38011
38012	400 - 500 kW..... (The actual rate should be : \$1,120,936.00 for Item 38012A)	11,209.36	4,317.50	5,800.29	16,043.20	38012
38013	500 - 600 kW..... (The actual rate should be : \$1,314,527.00 for Item 38013A)	13,145.27	5,096.00	6,361.36	18,327.51	38013
38014	600 - 700 kW..... (The actual rate should be : \$1,573,764.00 for Item 38014A)	15,737.64	5,586.63	7,220.16	19,915.53	38014
38015	700 - 800 kW..... (The actual rate should be : \$1,758,541.00 for Item 38015A)	17,585.41	5,850.98	7,322.48	21,039.82	38015
38016	800 - 900 kW..... (The actual rate should be : \$1,921,165.00 for Item 38016A)	19,211.65	6,003.01	7,527.39	21,845.17	38016
	Acoustic enclosure for above chillers :-					
	<b>Each</b>					
38017	300 - 400 kW..... (The actual rate should be : \$105,783.50 for Item 38017A)	10,578.35	695.88	1,062.38	2,449.72	38017
38018	400 - 500 kW..... (The actual rate should be : \$118,766.70 for Item 38018A)	11,876.67	799.16	1,139.27	2,890.40	38018
38019	500 - 600 kW..... (The actual rate should be : \$147,204.20 for Item 38019A)	14,720.42	1,023.40	1,488.88	3,902.30	38019
38020	600 - 700 kW..... (The actual rate should be : \$185,481.90 for Item 38020A)	18,548.19	1,196.87	1,668.77	4,568.88	38020
38021	700 - 800 kW..... (The actual rate should be : \$206,063.50 for Item 38021A)	20,606.35	1,355.43	2,028.76	5,115.18	38021
38022	800 - 900 kW..... (The actual rate should be : \$222,467.80 for Item 38022A)	22,246.78	1,495.62	2,244.77	5,643.20	38022

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air cooled packaged water chiller (refrigerant zero ODP) for external mounting c/w motors, compressors, condensers, blowers, noise control equipment, copper tube with pre-corrosion resisting treated copper fins, evaporators, filter drier, water strainer, capacity controller, liquid receivers, starters, refrigerant, weather-proof cabinet, emergency stop button, local control panel.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Cooling capacity : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38023	Up to 44 kW..... (The actual rate should be : \$124,576.60 for Item 38024A)	93,036.82	1,075.49	1,299.80	4,094.45	38023
38024	44 - 68 kW..... (The actual rate should be : \$124,576.60 for Item 38024A)	12,457.66	1,326.78	1,946.69	5,447.66	38024
38025	68 - 100 kW..... (The actual rate should be : \$187,656.30 for Item 38025A)	18,765.63	1,770.78	2,626.75	7,074.15	38025
38026	100 - 150kW..... (The actual rate should be : \$262,467.50 for Item 38026A)	26,246.75	2,184.69	3,245.04	7,520.09	38026
38027	150 - 200 kW..... (The actual rate should be : \$326,574.90 for Item 38027A)	32,657.49	2,731.04	3,916.50	9,105.16	38027
38028	200 - 300 kW..... (The actual rate should be : \$377,251.70 for Item 38028A)	37,725.17	2,888.49	4,213.72	10,089.50	38028
38029	300 - 350 kW..... (The actual rate should be : \$603,835.30 for Item 38029A)	60,383.53	3,489.86	4,641.97	10,694.92	38029
38030	350 - 450 kW..... (The actual rate should be : \$690,510.80 for Item 38030A)	69,051.08	4,109.62	5,621.77	12,080.36	38030
	Acoustic enclosure for above chillers : -					
	<b>Each</b>					
38031	Up to 100 kW.....	37,005.71	309.45	508.99	1,661.69	38031
38032	100 - 150 kW.....	51,666.49	370.91	625.70	1,800.49	38032
38033	150 - 200 kW.....	64,456.99	437.94	852.34	2,176.22	38033
38034	200 - 300 kW.....	74,893.51	527.26	979.80	2,292.33	38034
38035	300 - 350 kW..... (The actual rate should be : \$120,491.40 for Item 38035A)	12,049.14	618.84	1,075.68	2,633.82	38035
38036	350 - 450 kW..... (The actual rate should be : \$146,918.60 for Item 38036A)	14,691.86	745.48	1,189.59	2,779.13	38036

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air cooled packaged water chiller (refrigerant zero ODP) for external mounting c/w motors, 'scroll' compressor, condensers, blowers, copper tube with pre-corrosion resisting treated aluminium fins, evaporator, filter drier, water strainer, capacity controller, starters, refrigerant, weather-proof cabinet, emergency stop button, local control panel, expansion vessel and circulating pump set.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Cooling capacity :-					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38037	Up to 25 kW.....	65,464.15	874.02	1,115.95	4,125.88	38037
38038	25 - 45 kW.....	89,916.88	1,061.44	1,246.35	4,830.58	38038
38039	45 - 100 kW..... (The actual rate should be : \$215,150.80 for Item 38039A)	21,515.08	1,430.82	2,084.61	5,796.66	38039
38040	100 - 140 kW..... (The actual rate should be : \$256,498.00 for Item 38040A)	25,649.80	2,084.61	2,956.19	7,205.53	38040
38041	140 - 170 kW..... (The actual rate should be : \$289,392.30 for Item 38041A)	28,939.23	2,182.78	3,262.32	7,768.18	38041
38042	170 - 230 kW..... (The actual rate should be : \$375,118.00 for Item 38042A)	37,511.80	2,743.62	3,733.01	8,806.78	38042
38043	230 - 300 kW..... (The actual rate should be : \$475,131.20 for Item 38043A)	47,513.12	3,397.93	4,282.15	10,018.48	38043
38044	300 - 350 kW..... (The actual rate should be : \$546,569.20 for Item 38044A)	54,656.92	3,865.30	4,674.39	10,883.99	38044
38045	350 - 400 kW..... (The actual rate should be : \$618,007.20 for Item 38045A)	61,800.72	4,332.67	5,066.64	11,749.49	38045

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air cooled packaged water chiller (refrigerant zero ODP) for external mounting c/w motors, 'screw' compressor, condensers, blowers, copper tube with pre-corrosion resisting treated aluminium fins, evaporator, filter drier, water strainer, capacity controller, starters, refrigerant, weather-proof cabinet, emergency stop button, local control panel, expansion vessel and circulating pump set.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Cooling capacity : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38046	Up to 25 kW.....	44,480.51	789.19	1,006.42	3,731.53	38046
38047	25 - 45 kW.....	79,941.52	955.80	1,119.29	4,369.84	38047
38048	45 - 100 kW..... (The actual rate should be : \$168,762.00 for Item 38048A)	16,876.20	1,282.21	1,863.01	5,243.79	38048
38049	100 - 140 kW..... (The actual rate should be : \$252,797.70 for Item 38049A)	25,279.77	1,863.01	2,633.97	6,502.77	38049
38050	140 - 170 kW..... (The actual rate should be : \$323,658.10 for Item 38050A)	32,365.81	1,952.00	2,910.58	6,996.13	38050
38051	170 - 230 kW..... (The actual rate should be : \$389,606.60 for Item 38051A)	38,960.66	2,450.37	3,322.00	7,917.53	38051
38052	230 - 300 kW..... (The actual rate should be : \$466,546.50 for Item 38052A)	46,654.65	3,031.81	3,801.99	8,992.50	38052
38053	300 - 350 kW..... (The actual rate should be : \$521,503.50 for Item 38053A)	52,150.35	3,447.11	4,144.85	9,760.32	38053
38054	350 - 400 kW..... (The actual rate should be : \$576,460.60 for Item 38054A)	57,646.06	3,862.42	4,487.70	10,528.17	38054

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Water-cooled packaged chiller (refrigerant zero ODP) c/w motor, semi-hermetic screw type compressor, shell and tube evaporator / condenser, refrigeration components, and control panel :-					
	Cooling capacity :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38055	400 - 500 kW..... (The actual rate should be : \$654,131.80 for Item 38055A)	65,413.18	3,499.48	4,728.26	10,703.52	38055
38056	500 - 600 kW..... (The actual rate should be : \$760,116.00 for Item 38056A)	76,011.60	4,200.72	5,676.98	12,806.28	38056
38057	600 - 700 kW..... (The actual rate should be : \$907,319.60 for Item 38057A)	90,731.96	4,838.60	6,550.30	15,321.70	38057
38058	700 - 800 kW..... (The actual rate should be : \$1,068,491.00 for Item 38058A)	10,684.91	5,680.88	7,688.56	18,028.25	38058
38059	800 - 900 kW..... (The actual rate should be : \$1,346,959.00for Item 38059A)	13,469.59	7,733.97	9,988.73	22,953.29	38059
38060	900 - 1000 kW..... (The actual rate should be : \$1,558,526.00 for Item 38060A)	15,585.26	9,954.80	12,994.26	27,351.29	38060
	Automatic tube cleaning system for above chiller :-					
	<i>Each</i>					
38061	400 - 500 kW.....	15,973.85	49.76	51.98	327.29	38061
38062	500 - 600 kW.....	17,920.54	54.71	57.06	359.84	38062
38063	600 - 700 kW.....	19,215.91	58.82	61.38	385.10	38063
38064	700 - 800 kW.....	20,141.40	62.00	64.72	413.64	38064
38065	800 - 900 kW.....	21,380.07	65.28	68.10	430.39	38065
38066	900 - 1000 kW.....	22,316.59	66.55	70.09	461.63	38066

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air to air split type air conditioners (refrigerant zero ODP) of cooling capacity as specified (direct expansion)					
	Condensing units c/w motors, compressors, condenser, copper tubes and pre-painted anti-corrosion resin coated aluminium fins, blowers, filter drier, refrigerant, refrigerant pipework to the internally mounted AHU/ FCU, starters, weather-proof cabinet, emergency stop button, liquid receivers.					
	Cooling capacity :-					
	<b>Each</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38067	Up to 14 kW.....	17,587.98	466.94	653.15	1,822.00	38067
38068	14 - 20 kW.....	22,739.44	559.36	701.48	2,140.33	38068
38069	20 - 30 kW.....	31,353.80	579.10	734.47	2,370.03	38069
38070	30 - 44 kW.....	40,885.00	637.41	783.95	2,581.96	38070
38071	44 - 58 kW.....	61,826.09	688.53	839.31	2,789.23	38071
38072	58 - 86 kW.....	80,967.46	763.10	917.22	2,972.55	38072
	Condensing units c/w motors, compressors, condenser, copper tubes and pre-painted anti-corrosion resin coated aluminium fins, blowers, filter drier, refrigerant, refrigerant pipework to the internally mounted PAU, starters, weather-proof cabinet, emergency stop button, liquid receivers.					
	Cooling capacity :-					
	<b>Each</b>					
38073	Up to 14 kW.....	18,653.62	483.39	699.91	2,499.71	38073
38074	14 - 20 kW.....	23,530.44	537.76	786.57	2,499.71	38074
38075	20 - 30 kW.....	33,632.66	604.74	799.06	2,499.71	38075
38076	30 - 44 kW.....	46,240.83	623.23	937.04	2,723.24	38076
38077	44 - 58 kW.....	74,583.88	696.31	1,019.98	2,888.58	38077
38078	58 - 86 kW.....	93,378.14	783.48	1,110.28	3,103.51	38078

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air to air split type air conditioners (refrigerant zero ODP) of cooling capacity as specified (direct expansion) (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Internal mounted DX AHU/ FCU of copper tube and pre-treated anti-corrosion aluminium fin cooling coil, c/w filter chamber, flexible connector, air filters, filter clog indicator, starters, emergency stop button, local control panel.					
	Cooling capacity : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38079	Up to 14 kW.....	8,775.20	147.39	238.58	742.29	38079
38080	14 - 20 kW.....	10,636.77	165.17	254.57	785.24	38080
38081	20 - 30 kW.....	13,505.31	173.14	261.05	827.94	38081
38082	30 - 44 kW.....	20,969.85	182.53	265.62	871.53	38082
38083	44 - 58 kW.....	27,532.51	200.65	279.58	915.02	38083
38084	58 - 86 kW.....	33,153.28	206.55	290.52	941.02	38084
	Internal mounted DX PAU of copper tube and pre-treated anti-corrosion aluminium fin cooling coil, c/w filter chamber, flexible connector, air filters, filter clog indicator, starters, emergency stop button, local control panel.					
	Cooling capacity : -					
	<b>Each</b>					
38085	Up to 14 kW.....	8,766.55	151.67	240.22	786.34	38085
38086	14 - 20 kW.....	10,620.64	169.33	255.14	860.51	38086
38087	20 - 30 kW.....	13,486.08	177.73	261.53	913.32	38087
38088	30 - 44 kW.....	22,340.35	187.66	265.73	970.38	38088
38089	44 - 58 kW.....	29,182.65	200.70	281.41	1,031.56	38089
38090	58 - 86 kW.....	34,297.09	206.86	294.19	1,076.66	38090

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air to air split type room air conditioner (direct expansion type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work not exceeding manufacturer's maximum permitted length, refrigerant, local control panel.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Complete set with indoor unit of wall mounted type, cooling only					
	Cooling capacity : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38091	Up to 3.5 kW.....	10,089.59	348.44	420.87	1,347.52	38091
38092	3.5 - 5.2 kW.....	13,828.35	378.03	452.25	1,447.46	38092
38093	5.2 - 6.5 kW.....	17,754.10	406.76	481.19	1,629.87	38093
38094	6.5 - 7.5 kW.....	21,229.49	435.42	511.02	1,719.80	38094
38095	7.5 - 9.5 kW.....	25,168.01	463.94	540.54	1,796.45	38095
38096	9.5 - 12 kW.....	31,155.50	492.42	565.70	1,890.91	38096
	Complete set with indoor unit of ceiling suspended type, cooling only					
	Cooling capacity : -					
	<b>Each</b>					
38097	Up to 6.5 kW.....	16,964.56	451.48	532.83	1,689.45	38097
38098	6.5 - 7.5 kW.....	19,165.42	481.95	566.91	1,759.09	38098
38099	7.5 - 9 kW.....	23,825.08	511.75	598.36	1,809.42	38099
38100	9 - 11 kW.....	28,424.14	541.25	629.20	1,904.72	38100
38101	11 - 13 kW.....	34,060.37	601.22	693.98	1,998.54	38101
38102	13 - 17 kW.....	41,670.92	656.91	749.94	2,102.92	38102
	Complete set with indoor unit of ceiling cassette type, cooling only					
	Cooling capacity : -					
	<b>Each</b>					
38103	Up to 5 kW.....	14,767.26	428.20	484.33	1,280.95	38103
38104	5 - 6 kW.....	17,429.79	437.75	505.68	1,430.33	38104
38105	6 - 8 kW.....	22,754.87	456.84	548.39	1,729.10	38105
38106	8 -11 kW.....	30,817.09	522.42	596.46	1,902.30	38106
38107	11 - 13 kW.....	36,348.94	541.25	629.20	1,984.33	38107
38108	13 - 16.5 kW.....	46,433.69	606.43	696.85	2,071.91	38108



Item					
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>				
	Air to air split type room air conditioner (direct expansion type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)				
	Complete set with indoor unit of ceiling mounted ducted type, cooling only				
	Cooling capacity : -				
	<i>Each</i>				
38109	Up to 5 kW.....	11,813.81	428.20	484.33	1,280.95
38110	5 - 6 kW.....	13,943.83	437.75	505.68	1,430.33
38111	6 - 8 kW.....	18,203.89	456.84	548.39	1,729.10
38112	8 -11 kW.....	24,653.67	522.42	596.46	1,902.30
38113	11 - 13 kW.....	29,079.15	541.25	629.20	1,984.33
38114	13 - 16.5 kW.....	37,146.95	606.43	696.85	2,071.91
	Complete set with indoor unit of wall mounted type; cooling/ heating (heat pump)				
	Cooling and heating capacity : -				
	<i>Each</i>				
38115	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	17,533.44	440.66	514.16	1,631.56
38116	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	22,254.21	478.75	554.11	1,757.46
38117	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	29,335.34	535.85	614.05	1,946.32

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air to air split type room air conditioner (direct expansion type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)					
	Complete set with indoor unit of ceiling suspended type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	<b>Each</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38118	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	19,474.36	438.86	512.35	1,803.74	38118
38119	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	24,518.16	517.49	599.18	1,907.42	38119
38120	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	32,083.88	635.43	729.42	2,062.95	38120
	Complete set with indoor unit of ceiling cassette type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	<b>Each</b>					
38121	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	20,741.94	435.05	541.40	1,680.17	38121
38122	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	26,701.68	500.66	597.18	1,819.72	38122
38123	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	35,641.30	599.08	680.87	2,029.03	38123
	Complete set with indoor unit of ceiling mounted ducted type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	<b>Each</b>					
38124	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	16,593.55	435.05	541.40	1,680.17	38124
38125	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	21,361.34	500.66	597.18	1,819.72	38125
38126	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	28,513.04	599.08	680.87	2,029.03	38126

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air to air split type room air conditioner (Inverter type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work not exceeding manufacturer's maximum permitted length, refrigerant, local control panel.					
	Complete set with indoor unit of wall mounted type, cooling only					
	Cooling capacity : -					
	<b>Each</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38127	Up to 3.5 kW.....	10,961.00	348.44	420.87	1,347.52	38127
38128	3.5 - 5.2 kW.....	14,803.00	378.03	452.25	1,447.46	38128
38129	5.2 - 6.5 kW.....	18,475.50	406.76	481.19	1,629.87	38129
38130	6.5 - 7.5 kW.....	22,035.00	435.42	511.02	1,719.80	38130
38131	7.5 - 9.5 kW.....	25,990.00	463.94	540.54	1,796.45	38131
38132	9.5 - 12.0 kW.....	31,640.00	492.42	565.70	1,890.91	38132
	Complete set with indoor unit of ceiling suspended type, cooling only					
	Cooling capacity : -					
	<b>Each</b>					
38133	Up to 6.5 kW.....	19,886.97	451.48	532.83	1,689.45	38133
38134	6.5 - 7.5 kW.....	23,673.81	481.95	566.91	1,759.09	38134
38135	7.5 - 9 kW.....	27,441.36	511.75	598.36	1,809.42	38135
38136	9 - 11 kW.....	32,397.62	541.25	629.20	1,904.72	38136
38137	11 - 13 kW.....	41,069.62	601.22	693.98	1,998.54	38137
38138	13 - 17 kW.....	46,892.78	656.91	749.94	2,102.92	38138
	Complete set with indoor unit of ceiling cassette type, cooling only					
	Cooling capacity : -					
	<b>Each</b>					
38139	Up to 5 kW.....	15,356.23	428.20	484.33	1,280.95	38139
38140	5 - 6 kW.....	18,732.89	437.75	505.68	1,430.33	38140
38141	6 - 8 kW.....	23,725.88	456.84	548.39	1,729.10	38141
38142	8 -11 kW.....	31,527.19	522.42	596.46	1,902.30	38142
38143	11 - 13 kW.....	37,477.02	541.25	629.20	1,984.33	38143
38144	13 - 16.5 kW.....	47,246.44	606.43	696.85	2,071.91	38144

Item					Item	
<b>UNITARY AIR CONDITIONERS (CONT'D)</b>						
Air to air split type room air conditioner (Inverter type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)						
Complete set with indoor unit of ceiling mounted ducted type, cooling only						
Cooling capacity : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38145	Up to 5 kW.....	15,274.87	428.20	484.33	1,280.95	38145
38146	5 - 6 kW.....	20,468.57	437.75	505.68	1,430.33	38146
38147	6 - 8 kW.....	23,762.25	456.84	548.39	1,729.10	38147
38148	8 -11 kW.....	32,744.12	522.42	596.46	1,902.30	38148
38149	11 - 13 kW.....	39,945.55	541.25	629.20	1,984.33	38149
38150	13 - 16.5 kW.....	44,483.07	606.43	696.85	2,071.91	38150
Complete set with indoor unit of wall mounted type, cooling/ heating (heat pump)						
Cooling and heating capacity : -						
<i>Each</i>						
38151	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	20,452.84	440.66	514.16	1,631.56	38151
38152	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	28,024.40	478.75	554.11	1,757.46	38152
38153	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	39,381.76	535.85	614.05	1,946.32	38153
Complete set with indoor unit of ceiling suspended type, cooling/ heating (heat pump)						
Cooling and heating capacity : -						
<i>Each</i>						
38154	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	25,985.29	438.86	512.35	1,803.74	38154
38155	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	33,857.49	517.49	599.18	1,907.42	38155
38156	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	39,176.67	635.43	729.42	2,062.95	38156

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Air to air split type room air conditioner (Inverter type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)					
	Complete set with indoor unit of ceiling cassette type, cooling/ heating (heat pump)					
	Cooling and heating capacity :-					
	<b>Each</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38157	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	29,341.42	435.05	541.40	1,680.17	38157
38158	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	36,689.60	500.66	597.18	1,819.72	38158
38159	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	45,689.92	599.08	680.87	2,029.03	38159
	Complete set with indoor unit of ceiling mounted ducted type, cooling/ heating (heat pump)					
	Cooling and heating capacity :-					
	<b>Each</b>					
38160	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	20,840.45	435.05	541.40	1,680.17	38160
38161	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	27,190.48	500.66	597.18	1,819.72	38161
38162	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	34,071.31	599.08	680.87	2,029.03	38162
	Window-split type air-conditioner with remote controller					
	Cooling capacity :-					
	<b>Each</b>					
38163	Up to 2.8 kW.....	9,549.87	378.64	457.11	1,462.83	38163
38164	2.8 - 3.7 kW.....	12,349.33	410.75	490.77	1,602.57	38164
38165	3.7 - 5.5 kW.....	16,125.44	442.77	524.34	1,778.03	38165
38166	3.7 - 5.5 kW for dual indoor units.....	19,277.89	509.46	607.02	2,112.65	38166
38167	5.5 - 7.0 kW.....	19,272.21	469.45	552.32	1,924.24	38167

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>UNITARY AIR CONDITIONERS (CONT'D)</b>						
	Window-split type air-conditioner with remote controller (Cont'd)					
	Cooling capacity : - (Cont'd)					
	<i>Each</i>					
38168	7.0 - 7.9kW.....	21,160.26	491.69	575.64	2,046.08	38168
	Stainless steel 316 panel housing; weatherproof type : -					
	<i>Each</i>					
38169	Panel for housing gauges for split type A/C outdoor units (gauges measured separately).....	810.93	86.13	148.80	336.33	38169
	Computer room air conditioning unit (direct expansion type with refrigerant zero ODP), indoor and outdoor unit (outdoor unit shall consist of copper pipes and pre-treated anti-corrosion aluminium fins) with electrode boiler humidifier, electric reheat, microprocessor control with local alarm and BMS interface provisions, high efficient filter, refrigerant pipework with length not exceeding manufacturer's maximum permitted length, local control panel. Operating room conditions are 22°C, 50% RH at ambient 35°C.					
	Cooling capacity : -					
	<i>Each</i>					
38170	Up to 13 kW.....	68,440.46	537.10	701.77	2,246.90	38170
38171	13 - 26 kW.....	89,700.64	652.71	812.98	2,635.51	38171
38172	26 - 35 kW..... (The actual rate should be : \$105,308.30 for Item 38172A)	10,530.83	714.84	882.15	2,811.26	38172
38173	35 - 50 kW..... (The actual rate should be : \$119,396.20 for Item 38173A)	11,939.62	776.54	943.97	2,985.49	38173
38174	50 - 75 kW..... (The actual rate should be : \$156,283.90 for Item 38174A)	15,628.39	827.66	981.13	3,110.84	38174
38175	75 - 84 kW..... (The actual rate should be : \$169,563.50 for Item 38175A)	16,956.35	846.06	994.51	3,155.97	38175
	Acoustic enclosure for above computer room air conditioning units c/w acoustic panels and supporting framework: -					
	<i>Each</i>					
38176	Up to 13 kW.....	7,488.17	154.54	274.81	911.89	38176
38177	13 - 26 kW.....	8,407.22	173.51	308.54	1,023.81	38177
38178	26 - 35 kW.....	10,420.25	215.05	382.42	1,268.95	38178
38179	35 - 50 kW.....	13,129.85	270.97	481.86	1,598.91	38179
38180	50 - 75 kW.....	14,586.77	301.03	535.33	1,776.34	38180
38181	75 - 84 kW.....	15,747.99	325.00	577.95	1,917.75	38181

Item					Item	
<b>UNITARY AIR CONDITIONERS (CONT'D)</b>						
	Water detection system :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
38182	Water detection system with control panel providing audio and visual alarm, location of leak and BMS interface provisions connected to water-sensing cable for operation .....	18,022.31	257.96	279.86	873.44	38182
	<i>Per linear metre</i>					
38183	Water sensing cable complete with branch connector, zone connector, compatible with the above water detection system c/w all necessary mountings .....	207.14	2.68	6.14	24.97	38183
	<i>Each</i>					
38184	Water leakage detection sensor; point type, complete with detection module, stainless steel probes, controller with buzzer, control panel, cables and cable containments, and all necessary accessories and BMS interface provisions.....	5,217.66	145.46	193.95	242.43	38184
38185	Water leakage detection sensor; point type, complete with cables and containments.....	448.95	13.99	18.65	23.31	38185
	<i>Per set</i>					
38186	Temperature and humidity recorder.....	6,733.05	5.54	7.02	43.83	38186
	Reheat coil air conditioners for dehumidity Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat humidistat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit.					
	Ceiling concealed type :-					
	<i>Per set</i>					
38187	Up to 5.8 kW.....	44,661.78	117.15	593.03	622.59	38187
38188	5.8 - 14.5 kW.....	61,221.50	117.15	832.37	909.15	38188
	Ceiling suspended type :-					
	<i>Per set</i>					
38189	Up to 5.8 kW.....	40,032.44	117.15	593.03	684.54	38189
38190	5.8 - 14.5 kW.....	56,117.62	117.15	832.37	909.15	38190

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Variable refrigerant volume (VRV) system (refrigerant zero ODP)					
	Outdoor condensing units c/w insulated gate bipolar transistor type inverter or the equivalent, hermetic scroll compressor, anti-corrosion resin coated condensing fin, propeller fan, accumulator, high pressure switch, crank case heater, over current protection for inverter, short recycling timer and oil recovery system, refrigerant (zero ODP), refrigerant pipework (with length not exceeding manufacturer's maximum permitted length) to the indoor units, weather proof cabinet, emergency stop button, local control panel for operation.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Cooling and heating (heat pump), capacity : -					
	<i>Per set</i>	A \$	B \$	C \$	D \$	
38191	Up to 8 kW.....	33,900.00	621.50	678.00	2,260.00	38191
38192	8 - 14 kW.....	68,420.72	678.00	734.50	2,373.00	38192
38193	14 - 20 kW.....	93,707.27	706.26	848.98	2,740.71	38193
38194	20 - 30 kW.....	98,692.46	815.31	970.44	2,948.80	38194
38195	30 - 44 kW..... (The actual rate should be : \$135,464.10 for Item 38195A)	13,546.41	925.37	1,087.07	3,130.49	38195
38196	44 - 58 kW..... (The actual rate should be : \$177,871.50 for Item 38196A)	17,787.15	1,031.23	1,182.11	3,317.25	38196
38197	58 - 86 kW..... (The actual rate should be : \$245,709.10 for Item 38197A)	24,570.91	1,166.16	1,366.77	3,531.35	38197
38198	86 - 90 kW..... (The actual rate should be : \$255,400.20 for Item 38198A)	25,540.02	1,185.44	1,393.15	3,561.93	38198
	Cooling only, capacity : -					
	<i>Per set</i>					
38199	Up to 8 kW.....	31,640.00	621.50	678.00	2,260.00	38199
38200	8 - 14 kW.....	63,827.58	678.00	734.50	2,373.00	38200
38201	14 - 20 kW.....	78,991.20	706.26	848.98	2,740.71	38201
38202	20 - 30 kW.....	94,886.86	815.31	970.44	2,948.80	38202
38203	30 - 44 kW..... (The actual rate should be : \$130,980.90for Item 38203A)	13,098.09	925.37	1,087.07	3,130.49	38203
38204	44 - 58 kW..... (The actual rate should be : \$171,256.80 for Item 38204A)	17,125.68	1,031.23	1,182.11	3,317.25	38204
38205	58 - 86 kW..... (The actual rate should be : \$234,557.10 for Item 38205A)	23,455.71	1,166.16	1,366.77	3,531.35	38205



Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Variable refrigerant volume (VRV) system (refrigerant zero ODP) (Cont'd)					
	Stainless steel 316 panel housing; weatherproof type :-					
	<i>Each</i>					
38206	Panel for housing gauges for VRV outdoor units (gauges measured separately).....	810.93	86.13	148.80	336.33	38206
	Variable refrigerant volume (VRV) system (refrigerant zero ODP)					
	Water cooled outdoor condensing units c/w insulated gate bipolar transistor type inverter or the equivalent, hermetic scroll compressor, over current protection for inverter, and short recycling timer, refrigerant (zero ODP), refrigerant pipework (with length not exceeding manufacturer's maximum permitted length) to the indoor units, weather proof cabinet, emergency stop button, local control panel for operation.					
	Cooling and heating (heat pump), capacity :-					
	<i>Per set</i>					
38207	up to 22.7 kW..... (The actual rate should be : \$102,106.30 for Item 38207A)	10,210.63	761.24	904.50	2,799.07	38207
38208	22.7 - 27.0 kW..... (The actual rate should be : \$123,417.70 for Item 38208A)	12,341.77	889.92	1,049.66	3,149.29	38208
38209	27 - 45.4 kW..... (The actual rate should be : \$143,990.50 for Item 38209A)	14,399.05	994.36	1,184.24	3,465.77	38209
38210	45.4 - 49.7 kW..... (The actual rate should be : \$182,554.80 for Item 38210A)	18,255.48	1,169.50	1,350.14	3,942.19	38210
38211	49.7- 54.0 kW..... (The actual rate should be : \$229,003.40 for Item 38211A)	22,900.34	1,395.13	1,636.25	4,494.47	38211

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Internally mounted refrigerant distributing and recirculating unit c/w valves, wiring and all necessary devices for controlling refrigerant flows and distributions :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per set</i>	A \$	B \$	C \$	D \$	
38212	Up to 6 branches..... (The actual rate should be : \$112,984.60 for Item 38212A)	11,298.46	286.05	1,460.42	1,710.69	38212
38213	Up to 10 branches..... (The actual rate should be : \$181,999.00 for Item 38213A)	18,199.90	341.46	1,735.52	2,050.43	38213
	VRV master controller :-					
	<i>Per set</i>					
38214	VRV air-conditioning unit master controller.....	16,077.75	381.39	1,144.18	2,288.37	38214
	Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit.					
	Ceiling cassette type/ concealed type; cooling only					
	Cooling capacity :-					
	<i>Per set</i>					
38215	Up to 3.8 kW.....	11,667.24	100.12	111.72	438.42	38215
38216	3.8 - 5.8 kW.....	12,662.17	112.41	124.73	475.72	38216
38217	5.8 - 9.4 kW.....	15,453.05	122.81	135.98	513.85	38217
38218	9.4 - 14.5 kW.....	17,671.23	133.48	147.23	552.03	38218
38219	14.5 - 22.3 kW.....	22,785.92	199.88	226.59	786.47	38219
38220	22.3 - 29.1 kW.....	27,360.08	266.53	290.50	1,176.00	38220
	Ceiling suspended type; cooling only					
	Cooling capacity :-					
	<i>Per set</i>					
38221	Up to 3.8 kW.....	10,965.97	83.49	91.87	385.36	38221
38222	3.8 - 5.8 kW.....	12,442.27	95.21	104.10	427.15	38222
38223	5.8 - 9.4 kW.....	12,894.12	107.52	113.27	470.04	38223
38224	9.4 - 14.5 kW.....	13,798.80	112.88	130.13	512.35	38224

Item					Item	
<b>UNITARY AIR CONDITIONERS (CONT'D)</b>						
Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit. (Cont'd)						
Ceiling mounted ducted type, cooling only						
Cooling capacity :-						
<i>Per set</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38225	Up to 3.8 kW.....	9,880.24	83.49	91.87	385.36	38225
38226	3.8 - 5.8 kW.....	10,816.92	95.21	104.10	427.15	38226
38227	5.8 - 9.4 kW.....	13,181.16	107.52	113.27	470.04	38227
38228	9.4 - 14.5 kW.....	14,937.13	112.88	130.13	512.35	38228
Exposed wall mounted type, cooling only						
Cooling capacity :-						
<i>Per set</i>						
38229	Up to 3.8 kW.....	10,522.25	70.68	77.98	323.87	38229
38230	3.8 - 5.8 kW.....	11,987.18	80.51	87.99	359.51	38230
38231	5.8 - 9.4 kW.....	12,404.81	90.70	95.43	411.33	38231
38232	9.4 - 14.5 kW.....	13,298.11	95.21	109.37	449.69	38232
Ceiling cassette type/ concealed type; cooling and heating (heat pump)						
Cooling and heating capacity :-						
<i>Per set</i>						
38233	Up to 3.8 kW.....	12,343.24	100.12	111.72	438.42	38233
38234	3.8 - 5.8 kW.....	13,500.43	112.41	124.73	475.72	38234
38235	5.8 - 9.4 kW.....	16,482.08	122.81	135.98	513.85	38235
38236	9.4 - 14.5 kW.....	18,634.94	133.48	147.23	552.03	38236

Item					Item	
<b>UNITARY AIR CONDITIONERS (CONT'D)</b>						
Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit. (Cont'd)						
Ceiling suspended type; cooling and heating (heat pump)						
Cooling and heating capacity :-						
<i>Per set</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38237	Up to 3.8 kW.....	13,549.17	83.49	91.87	385.36	38237
38238	3.8 - 5.8 kW.....	14,172.07	95.21	104.10	427.15	38238
38239	5.8 - 9.4 kW.....	14,711.87	107.52	113.27	470.04	38239
38240	9.4 - 14.5 kW.....	15,639.59	112.88	130.13	512.35	38240
Ceiling mounted ducted type, cooling and heating (heat pump)						
Cooling and heating capacity :-						
<i>Per set</i>						
38241	Up to 3.8 kW.....	10,533.22	83.49	91.87	385.36	38241
38242	3.8 - 5.8 kW.....	11,530.84	95.21	104.10	427.15	38242
38243	5.8 - 9.4 kW.....	14,110.11	107.52	113.27	470.04	38243
38244	9.4 - 14.5 kW.....	15,929.71	112.88	130.13	512.35	38244
Exposed wall mounted type, cooling and heating (heat pump)						
Cooling and heating capacity :-						
<i>Per set</i>						
38245	Up to 2.3 kW.....	8,145.79	281.30	341.69	958.03	38245
38246	2.3 - 2.9 kW.....	10,046.32	302.23	365.63	1,109.11	38246
38247	2.9 - 3.7 kW.....	13,471.50	328.92	390.67	1,251.73	38247
38248	3.7 - 4.7 kW.....	16,897.54	355.84	416.21	1,308.04	38248
38249	4.7 - 5.8 kW.....	21,697.26	380.02	441.59	1,372.79	38249
38250	5.8 - 7.3 kW.....	26,113.57	404.34	464.94	1,426.99	38250

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Room cooler, (refrigerant R22), c/w aluminium supporting frame, drain pan (size of drain pan to match with room cooler)					
	Cooling capacity :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38251	Up to 2.8 kW.....	-	60.13	75.72	306.10	38251
38252	2.8 - 3.7 kW.....	-	76.35	112.38	370.04	38252
38253	3.7 - 4.6 kW.....	-	101.82	140.38	405.45	38253
38254	4.6 - 5.5 kW.....	-	110.92	166.43	538.35	38254
38255	5.5 - 6.3 kW.....	-	156.90	220.93	590.74	38255

Item					Item
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>				
	Room cooler, (refrigerant zero ODP), c/w aluminium supporting frame, drain pan (size of drain pan to match with room cooler)				
	Cooling capacity :-				
	<i>Each</i>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
38256	Up to 2.8 kW.....	5,424.41	61.42	77.35	312.71
38257	2.8 - 3.7 kW.....	6,508.79	78.00	114.79	378.01
38258	3.7 - 4.6 kW.....	7,419.57	104.02	143.42	414.19
38259	4.6 - 5.5 kW.....	8,595.44	113.32	169.66	549.90
38260	5.5 - 6.3 kW.....	10,465.31	159.89	225.71	603.41
38261	6.3 - 7.2 kW.....	11,344.32	176.16	266.78	729.17
	Internal mounted direct expansion fan coil unit for all fresh air intake with copper tube and aluminium fins, connection to VRV outdoor unit, c/w all necessary accessories. Opening outside condition are 33°C DB / 28°C WB for summer and 0°C DB / -2.9°C WB for winter				
	Cooling and heating capacity :-				
	<i>Each</i>				
38262	Up to 9 kW.....	26,522.65	925.86	1,163.75	1,659.71
38263	9 kW - 16 kW.....	34,931.79	925.86	1,163.75	1,659.71
38264	16 kW - 22 kW.....	47,650.42	1,282.62	1,734.27	2,472.30
38265	22 kW - 28 kW.....	54,684.16	1,282.62	1,734.27	2,472.30

Item					Item	
	<b>UNITARY AIR CONDITIONERS (CONT'D)</b>					
	Cold room air conditioning unit (direct expansion type), indoor and outdoor unit c/w refrigerant (zero ODP), pipework not exceeding manufacturer's maximum permitted length, local control panel c/w 1 set point.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Cold room of not less than 2.5 m height at 35°C ambient and indoor condition of 0°C - 4°C : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38266	Cold room size up to 10 m <sup>2</sup> ..... (The actual rate should be : \$307,431.90 for Item 38266A)	30,743.19	1,146.17	1,503.55	5,042.73	38266
38267	Cold room size 10 - 20 m <sup>2</sup> ..... (The actual rate should be : \$326,860.90 for Item 38267A)	32,686.09	1,311.18	1,663.54	5,481.92	38267
38268	Cold room size 20 - 30 m <sup>2</sup> ..... (The actual rate should be : \$378,618.80 for Item 38268A)	37,861.88	1,524.30	1,873.39	5,956.25	38268
38269	Cold room size 30 - 40 m <sup>2</sup> ..... (The actual rate should be : \$426,847.70 for Item 38269A)	42,684.77	1,654.36	2,061.96	6,459.77	38269
38270	Cold room size 40 - 50 m <sup>2</sup> ..... (The actual rate should be : \$476,981.50 for Item 38270A)	47,698.15	1,851.33	2,213.13	6,910.82	38270
38271	Cold room size 50 - 60 m <sup>2</sup> ..... (The actual rate should be : \$595,840.20 for Item 38271A)	59,584.02	1,968.81	2,449.33	7,351.07	38271
	Air cooled rooftop unit c/w direct-driven, hermetic, scroll type compressor, centrifugal supply air fans, outdoor fans, motors, copper tube aluminium FC fins coil selection, 25mm throwaway filters, temperature sensors, remote human interface, refrigerant (zero ODP) fully charged, emergency stop button, local control panel. Supply and fix with standard delivery and lifting method, such as using goods lifts of the building. (Remark: extra cost for delivery in case good lifts are not available shall be quoted separately)					
	Nominal air flow rate and (cooling capacity) : -					
	<b>Each</b>					
38272	2.3 m <sup>3</sup> s (44 kW) to 2.9 m <sup>3</sup> s (50 kW)..... (The actual rate should be : \$110,363.70 for Item 38272A)	11,036.37	964.33	2,121.54	3,875.58	38272
38273	2.9 m <sup>3</sup> s (50 kW) to 3.8 m <sup>3</sup> s (69 kW)..... (The actual rate should be : \$128,783.40 for Item 38273A)	12,878.34	1,202.17	2,300.11	4,107.99	38273
38274	3.8 m <sup>3</sup> s (69 kW) to 4.3 m <sup>3</sup> s (88 kW)..... (The actual rate should be : \$168,732.70 for Item 38274A)	16,873.27	1,442.06	2,488.07	4,351.30	38274
38275	4.3 m <sup>3</sup> s (88 kW) to 5.7 m <sup>3</sup> s (126 kW)..... (The actual rate should be : \$209,055.00 for Item 38275A)	20,905.50	1,675.02	2,680.17	4,584.98	38275
38276	5.7 m <sup>3</sup> s (126 kW) to 6.8 m <sup>3</sup> s (149 kW)..... (The actual rate should be : \$263,539.90 for Item 38276A)	26,353.99	1,913.77	2,870.60	5,771.14	38276
38277	6.8 m <sup>3</sup> s (149 kW) to 7.3 m <sup>3</sup> s (160 kW)..... (The actual rate should be : \$288,305.70 for Item 38277A)	28,830.57	2,022.30	2,957.16	6,310.30	38277

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT</b>					
	Air handling units (chilled/ hot water) of copper tube aluminium fin cooling / heating coil, c/w double skin insulated galvanized iron casing, motor, blower, water pipe work, filter chamber, pre-filters and high efficiency filters, starters, thermostat/ humidistat, emergency stop button, probe type smoke detector, filter clog indicator, stainless steel drain pan, associated power and control wiring.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Nominal air supply rate : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38278	Up to 1 m <sup>3</sup> s.....	38,706.72	228.79	339.24	1,038.75	38278
38279	1 - 2 m <sup>3</sup> s.....	51,176.11	277.10	372.06	1,120.94	38279
38280	2 - 3 m <sup>3</sup> s.....	66,235.81	287.19	428.97	1,245.18	38280
38281	3 - 4 m <sup>3</sup> s.....	85,219.49	374.86	474.60	1,341.67	38281
38282	4 - 5 m <sup>3</sup> s.....	98,197.31	415.71	516.32	1,422.81	38282
38283	5 - 6 m <sup>3</sup> s..... (The actual rate should be : \$111,895.40 for Item 38283A)	11,189.54	465.31	561.31	1,507.99	38283
	Air handling units (chilled/ hot water) of copper tube aluminium fin cooling / heating coil, c/w double skin insulated galvanized iron casing, dual motors, blower, water pipe work, filter chamber, pre-filters and high efficiency filters, starters, thermostat/ humidistat, emergency stop button, probe type smoke detector, filter clog indicator, stainless steel drain pan, associated power and control wiring.					
	Nominal air supply rate : -					
	<b>Each</b>					
38284	Up to 1 m <sup>3</sup> s.....	48,956.38	228.79	339.24	1,038.75	38284
38285	1 - 2 m <sup>3</sup> s.....	61,344.71	277.10	372.06	1,120.94	38285
38286	2 - 3 m <sup>3</sup> s.....	76,602.76	287.19	428.97	1,245.18	38286
38287	3 - 4 m <sup>3</sup> s.....	96,655.83	374.86	474.60	1,341.67	38287
38288	4 - 5 m <sup>3</sup> s..... (The actual rate should be : \$109,145.30 for Item 38288A)	10,914.53	415.71	516.32	1,422.81	38288
38289	5 - 6 m <sup>3</sup> s..... (The actual rate should be : \$121,700.60 for Item 38289A)	12,170.06	465.31	561.31	1,507.99	38289



Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	AHU system (multi zone control) of copper tube aluminium fin cooling / heating coil for energy saving (energy saving in design and during operation) and space saving (4 different temperatures of air can be supplied in one machine), c/w PU double skin cold insulated aluminium frame casing, 2-speed motor, centrifugal fans, pre-filter, medium filter, 1-4 zones supply air motorized damper, fresh air motorized damper, return air motorized damper, motorized water valve, fresh air temp. sensor, humidity sensor, room air temp. sensor, supply air temp. sensor, pressure switch, CCMS controller, associated power and control wiring	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Nominal air supply rate : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38290	Up to 2 m <sup>3</sup> s..... (The actual rate should be : \$111,364.50 for Item 38290A)	11,136.45	380.87	526.16	1,829.78	38290
38291	2 - 4 m <sup>3</sup> s..... (The actual rate should be : \$116,883.40 for Item 38291A)	11,688.34	459.81	637.92	1,898.56	38291
38292	4 - 6 m <sup>3</sup> s..... (The actual rate should be : \$136,775.50 for Item 38292A)	13,677.55	589.51	730.73	2,077.12	38292
38293	6 - 8 m <sup>3</sup> s..... (The actual rate should be : \$167,070.60 for Item 38293A)	16,707.06	622.89	774.48	2,214.77	38293
38294	8 - 10 m <sup>3</sup> s..... (The actual rate should be : \$194,024.10 for Item 38294A)	19,402.41	674.21	813.05	2,333.34	38294
38295	10 - 14 m <sup>3</sup> s..... (The actual rate should be : \$229,193.20 for Item 38295A)	22,919.32	700.68	857.65	2,495.36	38295
	Dehumidifier heat pipes of 2 rows copper tube aluminium fin coils, c/w zero ODP refrigerant, galvanised steel frame, G.I. steel casing, coating and condensate pans : -					
	<i>Each</i>					
38296	2.8 - 9.3 m <sup>2</sup> .....	28,314.68	167.61	248.95	779.91	38296
38297	9.3 - 16.3 m <sup>2</sup> .....	32,597.24	203.56	271.32	849.37	38297
38298	16.3 - 21 m <sup>2</sup> .....	36,426.70	210.01	311.08	942.01	38298
38299	21 - 25.6 m <sup>2</sup> .....	41,697.05	275.76	345.27	1,016.39	38299
38300	25.6 - 28 m <sup>2</sup> .....	43,226.95	305.84	376.88	1,080.36	38300
	Dehumidifier, wall/ ceiling mounted with drainage connection of daily moisture removal capacity : -					
	<i>Each</i>					
38301	Up to 15 litres.....	9,444.14	335.77	360.03	907.55	38301
38302	15 - 30 litres.....	39,677.68	371.96	402.71	1,128.26	38302
38303	30 - 60 litres.....	53,478.57	405.11	442.47	1,265.04	38303

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Dehumidifier, ceiling cassette type with drainage connection of daily moisture removal capacity : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
38304	Up to 15 litres.....	1,559.86	335.77	360.03	907.55	38304
38305	15 - 30 litres.....	6,553.43	371.96	402.71	1,128.26	38305
38306	30 - 60 litres.....	8,832.88	405.11	442.47	1,265.04	38306
	Computer room air conditioning unit (chilled water type), unit shall consist of copper pipes and aluminium fins, with electrode boiler humidifier, electric reheat, microprocessor control with local alarm and BMS interface provisions, high efficient filter, local control panel. Operating cooling capacity rated at 7°C/ 12.5°C chilled water in/ out temperature and 22°C, 50% RH.					
	Cooling capacity : -					
	<i>Each</i>					
38307	Up to 15 kW.....	58,562.52	966.94	1,213.07	4,155.71	38307
38308	15 - 33 kW.....	78,517.04	1,160.37	1,610.41	4,749.35	38308
38309	33 - 64 kW..... (The actual rate should be : \$103,815.00 for Item 38309A)	10,381.50	1,351.04	2,018.30	5,334.92	38309
38310	64 - 100 kW..... (The actual rate should be : \$138,460.80 for Item 38310A)	13,846.08	1,543.84	2,414.64	5,906.23	38310

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Air purifier unit, corona discharge type, c/w local control panel, removable electrode tubes, painted heavy steel power generator, remote control with regulator, stainless steel casing, fuse, on/ off switch, safety door switches, auto-off-manual switch, hour run meter, ampere meter, power electrode assemblies.					
	Nominal air supply rate : -					
	<i>Each</i>					
38311	Up to 0.5 m <sup>3</sup> s.....	11,585.75	80.15	134.64	615.54	38311
38312	0.5 - 1 m <sup>3</sup> s.....	17,157.98	85.56	140.39	646.41	38312
38313	1 - 2 m <sup>3</sup> s.....	25,630.71	90.72	145.68	700.81	38313
38314	2 -3 m <sup>3</sup> s.....	49,313.29	96.06	150.98	739.67	38314
38315	3 -4 m <sup>3</sup> s.....	66,093.56	98.95	153.93	792.97	38315
38316	4 - 5 m <sup>3</sup> s.....	82,124.15	101.78	156.71	839.02	38316
38317	5 - 6 m <sup>3</sup> s.....	97,837.21	107.11	162.15	914.51	38317
	Ultra violet sterilizer; factory assembled and tested, capable of killing airborne microbial contaminants with 90% of removal efficiency, UV lamps with control circuit, power generator, lamp support and inspection, access door with safety switch, manual control and CCMS control, local control panel, on/ off switch, overload protective device, auto-off-manual switch, hour run meter, ampere meter.					
	Nominal air supply rate : -					
	<i>Per set</i>					
38318	Up to 0.5 m <sup>3</sup> s.....	13,351.48	62.10	103.53	558.21	38318
38319	0.5 - 1 m <sup>3</sup> s.....	17,302.92	80.76	113.89	596.04	38319
38320	1 - 2 m <sup>3</sup> s.....	22,787.69	90.11	146.04	675.03	38320
38321	2 -3 m <sup>3</sup> s.....	38,491.50	105.55	174.20	715.49	38321
38322	3 -4 m <sup>3</sup> s.....	44,922.41	119.80	200.67	764.87	38322
38323	4 - 5 m <sup>3</sup> s.....	60,948.27	133.12	208.26	803.55	38323
38324	5 - 6 m <sup>3</sup> s.....	67,432.98	149.78	245.14	829.75	38324

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Air pressure stabilizer / air pressure control valves, imported proprietary manufacture, c/w high speed sealed-for-life ball bearings, adjustable centrally located balance weight mechanism.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Blade size 300 - 430 mm for number of : -					
	<i>Per set</i>	A \$	B \$	C \$	D \$	
38325	1 blade.....	6,671.73	109.41	113.17	421.28	38325
38326	2 blades.....	11,442.88	115.72	120.59	485.17	38326
38327	3 blades.....	16,996.58	117.93	128.32	550.55	38327
38328	4 blades.....	22,526.92	131.13	139.82	577.30	38328
38329	5 blades.....	29,073.42	138.56	152.88	614.70	38329
	Blade size 430 - 610 mm for number of : -					
	<i>Per set</i>					
38330	1 blade.....	13,099.99	106.45	113.38	417.11	38330
38331	2 blades.....	18,505.16	114.40	124.98	482.83	38331
38332	3 blades.....	24,566.45	117.20	128.22	582.57	38332
38333	4 blades.....	30,805.93	122.22	139.37	604.59	38333
38334	5 blades.....	37,239.18	127.23	152.80	647.77	38334
	2-hour fire rated; blade size 300 - 430 mm for number of : -					
	<i>Per set</i>					
38335	1 blade.....	10,558.33	109.41	113.17	421.28	38335
38336	2 blades.....	19,249.84	115.72	120.59	485.17	38336
38337	3 blades.....	28,173.47	117.93	128.32	550.55	38337
38338	4 blades.....	35,576.86	131.13	139.82	577.30	38338
38339	5 blades.....	46,622.53	138.56	152.88	614.70	38339

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Air pressure stabilizer / air pressure control valves, imported proprietary manufacture, c/w high speed sealed-for-life ball bearings, adjustable centrally located balance weight mechanism. (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	2-hour fire rated; blade size 430 - 610 mm for number of :-					
	<i>Per set</i>	A \$	B \$	C \$	D \$	
38340	1 blade.....	21,477.68	106.45	113.38	417.11	38340
38341	2 blades.....	29,067.88	114.40	124.98	482.83	38341
38342	3 blades.....	38,576.75	117.20	128.22	582.57	38342
38343	4 blades.....	47,814.54	122.22	139.37	604.59	38343
38344	5 blades.....	58,228.71	127.23	152.80	647.77	38344
	Chilled water fan-coil units of 2 rows copper tube aluminium fin cooling coils, c/w stepless DC fan motor, thermostat, controller, filters, chilled water pipes and condensate pans, c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)					
	Ceiling mounted, concealed type c/w casing with nominal supply air rate at medium speed :-					
	<i>Each</i>					
38345	Up to 0.095 m <sup>3</sup> s.....	5,650.00	124.30	214.70	847.50	38345
38346	0.095 - 0.141 m <sup>3</sup> s.....	6,102.00	146.90	248.60	904.00	38346
38347	0.141 - 0.192 m <sup>3</sup> s.....	6,780.00	180.80	271.20	960.50	38347
38348	0.192 - 0.284 m <sup>3</sup> s.....	7,458.00	203.40	305.10	1,017.00	38348
38349	0.284 - 0.384 m <sup>3</sup> s.....	8,136.00	254.25	339.00	1,073.50	38349
38350	0.384 - 0.479 m <sup>3</sup> s.....	8,814.00	293.80	372.90	1,130.00	38350
38351	0.479 - 0.565 m <sup>3</sup> s.....	9,492.00	327.70	395.50	1,186.50	38351
38352	0.565 - 0.665 m <sup>3</sup> s.....	10,848.00	361.60	452.00	1,243.00	38352

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Chilled water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w stepless DC fan motor, thermostat, controller, filters, chilled water pipes and condensate pans, c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Ceiling mounted, concealed type c/w casing with nominal supply air rate at medium speed :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38353	Up to 0.095 m <sup>3</sup> s.....	5,876.00	135.60	226.00	904.00	38353
38354	0.095 - 0.141 m <sup>3</sup> s.....	6,328.00	169.50	271.20	960.50	38354
38355	0.141 - 0.192 m <sup>3</sup> s.....	7,119.00	203.40	293.80	1,017.00	38355
38356	0.192 - 0.284 m <sup>3</sup> s.....	7,797.00	237.30	316.40	1,073.50	38356
38357	0.284 - 0.384 m <sup>3</sup> s.....	8,475.00	271.20	372.90	1,130.00	38357
38358	0.384 - 0.479 m <sup>3</sup> s.....	9,153.00	305.10	395.50	1,186.50	38358
38359	0.479 - 0.565 m <sup>3</sup> s.....	9,718.00	339.00	429.40	1,243.00	38359
38360	0.565 - 0.665 m <sup>3</sup> s.....	11,187.00	395.50	463.30	1,299.50	38360
	Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w stepless DC fan motor, thermostat, controller, filters, chilled water pipes and condensate pans, c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)					
	Ceiling mounted, concealed type c/w casing with nominal supply air rate at medium speed :-					
	<i>Each</i>					
38361	Up to 0.095 m <sup>3</sup> s.....	5,989.00	169.50	248.60	960.50	38361
38362	0.095 - 0.141 m <sup>3</sup> s.....	6,441.00	203.40	293.80	1,017.00	38362
38363	0.141 - 0.192 m <sup>3</sup> s.....	7,345.00	237.30	316.40	1,073.50	38363
38364	0.192 - 0.284 m <sup>3</sup> s.....	8,136.00	271.20	372.90	1,130.00	38364
38365	0.284 - 0.384 m <sup>3</sup> s.....	8,814.00	305.10	395.50	1,186.50	38365
38366	0.384 - 0.479 m <sup>3</sup> s.....	9,379.00	339.00	429.40	1,243.00	38366
38367	0.479 - 0.565 m <sup>3</sup> s.....	9,944.00	395.50	463.30	1,299.50	38367
38368	0.565 - 0.665 m <sup>3</sup> s.....	12,204.00	429.40	508.50	1,356.00	38368

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w filters, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Ceiling mounted, surface mounted c/w casing with nominal supply air rate at medium speed :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38369	Up to 0.095 m <sup>3</sup> s.....	5,803.95	122.63	223.00	712.75	38369
38370	0.095 - 0.142 m <sup>3</sup> s.....	6,135.34	152.38	255.52	756.87	38370
38371	0.142 - 0.190 m <sup>3</sup> s.....	6,653.48	186.21	279.34	786.78	38371
38372	0.190 - 0.284 m <sup>3</sup> s.....	7,775.02	209.55	308.94	876.44	38372
38373	0.284 - 0.378 m <sup>3</sup> s.....	8,884.44	260.21	330.68	919.35	38373
38374	0.378 - 0.473 m <sup>3</sup> s.....	12,221.79	261.39	361.17	1,012.82	38374
38375	0.473 - 0.567 m <sup>3</sup> s.....	13,354.08	293.84	392.55	1,075.05	38375
38376	0.567 - 0.659 m <sup>3</sup> s.....	14,426.07	321.41	424.33	1,118.19	38376

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w filters, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)					
	Ceiling mounted fan coil unit, concealed type without casing with nominal supply air rate at medium speed :-					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38377	Up to 0.095 m <sup>3</sup> s.....	4,067.89	140.81	239.03	745.45	38377
38378	0.095 - 0.142 m <sup>3</sup> s.....	4,375.13	173.21	275.31	783.64	38378
38379	0.142 - 0.190 m <sup>3</sup> s.....	4,668.40	206.78	305.77	820.99	38379
38380	0.190 - 0.284 m <sup>3</sup> s.....	5,399.59	257.22	341.93	918.05	38380
38381	0.284 - 0.378 m <sup>3</sup> s.....	5,998.32	272.29	366.80	957.07	38381
38382	0.378 - 0.473 m <sup>3</sup> s.....	7,246.83	279.09	397.08	1,053.21	38382
38383	0.473 - 0.567 m <sup>3</sup> s.....	7,861.72	311.40	427.72	1,116.52	38383
38384	0.567 - 0.659 m <sup>3</sup> s.....	8,435.83	349.76	457.20	1,173.09	38384
	Vertical floor/ wall mounted fan coil unit, surface mounting c/w casing with nominal supply air rate at medium speed :-					
	<i>Each</i>					
38385	Up to 0.095 m <sup>3</sup> s.....	5,891.54	77.80	167.53	648.77	38385
38386	0.095 - 0.142 m <sup>3</sup> s.....	6,158.39	109.60	197.48	687.77	38386
38387	0.142 - 0.190 m <sup>3</sup> s.....	6,650.98	127.37	221.53	716.48	38387
38388	0.190 - 0.284 m <sup>3</sup> s.....	7,621.22	151.23	251.92	802.99	38388
38389	0.284 - 0.378 m <sup>3</sup> s.....	8,652.18	178.44	273.48	847.74	38389
38390	0.378 - 0.473 m <sup>3</sup> s.....	11,548.67	204.16	304.45	935.13	38390
38391	0.473 - 0.567 m <sup>3</sup> s.....	12,464.71	237.42	335.39	996.60	38391
38392	0.567 - 0.659 m <sup>3</sup> s.....	13,430.35	265.81	367.62	1,037.78	38392



Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w filters, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Vertical floor/ wall mounted fan coil unit, concealed type, without casing with nominal supply air rate at medium speed : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38393	Up to 0.095 m <sup>3</sup> s.....	4,920.00	93.37	195.31	679.80	38393
38394	0.095 - 0.142 m <sup>3</sup> s.....	5,423.52	123.51	222.06	725.80	38394
38395	0.142 - 0.190 m <sup>3</sup> s.....	5,741.67	157.49	258.82	756.75	38395
38396	0.190 - 0.284 m <sup>3</sup> s.....	6,681.72	181.44	282.83	845.38	38396
38397	0.284 - 0.378 m <sup>3</sup> s.....	7,301.99	208.61	306.53	889.57	38397
38398	0.378 - 0.473 m <sup>3</sup> s.....	9,248.43	234.56	340.70	980.96	38398
38399	0.473 - 0.567 m <sup>3</sup> s.....	9,895.02	267.78	367.03	1,043.30	38399
38400	0.567 - 0.659 m <sup>3</sup> s.....	10,730.26	298.51	404.75	1,086.00	38400
	Chiller water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w filters, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)					
	Ceiling mounted, surface mounted c/w casing with nominal supply air rate at medium speed : -					
	<i>Each</i>					
38401	Up to 0.095 m <sup>3</sup> s.....	5,223.56	110.37	200.70	641.48	38401
38402	0.095 - 0.142 m <sup>3</sup> s.....	5,521.81	137.14	229.97	681.18	38402
38403	0.142 - 0.190 m <sup>3</sup> s.....	5,988.13	167.59	251.41	708.10	38403
38404	0.190 - 0.284 m <sup>3</sup> s.....	6,997.52	188.60	278.05	788.80	38404
38405	0.284 - 0.378 m <sup>3</sup> s.....	7,996.00	234.19	297.61	827.42	38405
38406	0.378 - 0.473 m <sup>3</sup> s.....	10,999.61	235.25	325.05	911.54	38406
38407	0.473 - 0.576 m <sup>3</sup> s.....	12,018.67	264.46	353.30	967.55	38407
38408	0.576 - 0.659 m <sup>3</sup> s.....	12,983.46	289.27	381.90	1,006.37	38408

Item					Item	
<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>						
Chiller water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w filters, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)						
Ceiling mounted fan coil unit, concealed type without casing with nominal supply air rate at medium speed : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38409	Up to 0.095 m <sup>3</sup> s.....	3,661.10	126.73	215.13	670.91	38409
38410	0.095 - 0.142 m <sup>3</sup> s.....	3,937.62	155.89	247.78	705.28	38410
38411	0.142 - 0.190 m <sup>3</sup> s.....	4,201.56	186.10	275.19	738.89	38411
38412	0.190 - 0.284 m <sup>3</sup> s.....	4,859.63	231.50	307.74	826.25	38412
38413	0.284 - 0.378 m <sup>3</sup> s.....	5,398.49	245.06	330.12	861.36	38413
38414	0.378 - 0.473 m <sup>3</sup> s.....	6,522.15	251.18	357.37	947.89	38414
38415	0.473 - 0.576 m <sup>3</sup> s.....	7,075.55	280.26	384.95	1,004.87	38415
38416	0.576 - 0.659 m <sup>3</sup> s.....	7,592.25	314.78	411.48	1,055.78	38416
Vertical floor / wall mounted fan coil unit, surface mounting c/w casing with nominal supply air rate at medium speed : -						
<i>Each</i>						
38417	Up to 0.095 m <sup>3</sup> s.....	5,302.39	70.02	150.78	583.89	38417
38418	0.095 - 0.142 m <sup>3</sup> s.....	5,542.55	98.64	177.73	618.99	38418
38419	0.142 - 0.190 m <sup>3</sup> s.....	5,985.88	114.63	199.38	644.83	38419
38420	0.190 - 0.284 m <sup>3</sup> s.....	6,859.10	136.11	226.73	722.69	38420
38421	0.284 - 0.378 m <sup>3</sup> s.....	7,786.96	160.60	246.13	762.97	38421
38422	0.378 - 0.473 m <sup>3</sup> s.....	10,393.80	183.74	274.01	841.62	38422
38423	0.473 - 0.576 m <sup>3</sup> s.....	11,218.24	213.68	301.85	896.94	38423
38424	0.576 - 0.659 m <sup>3</sup> s.....	12,087.32	239.23	330.86	934.00	38424

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Chiller water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w filters, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Vertical floor / wall mounted fan coil unit, concealed type without casing with nominal supply air rate at medium speed : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38425	Up to 0.095 m <sup>3</sup> s.....	4,428.00	84.03	175.78	611.82	38425
38426	0.095 - 0.142 m <sup>3</sup> s.....	4,881.17	111.16	199.85	653.22	38426
38427	0.142 - 0.190 m <sup>3</sup> s.....	5,167.50	141.74	232.94	681.08	38427
38428	0.190 - 0.284 m <sup>3</sup> s.....	6,013.55	163.30	254.55	760.84	38428
38429	0.284 - 0.378 m <sup>3</sup> s.....	6,571.79	187.75	275.88	800.61	38429
38430	0.378 - 0.473 m <sup>3</sup> s.....	8,323.59	211.10	306.63	882.86	38430
38431	0.473 - 0.567 m <sup>3</sup> s.....	8,905.52	241.00	330.33	938.97	38431
38432	0.567 - 0.659 m <sup>3</sup> s.....	9,657.23	268.66	364.28	977.40	38432

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Chilled water fan-coil unit of cassette type, ceiling concealed type, c/w condensate drain pump, overflow indication and alarm, chilled water pipes, condensate pans, coils, filters, face panel with discharge and return air grilles, ceiling mounted with nominal supply air rate at medium speed : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
38433	Up to 0.17 m <sup>3</sup> s.....	8,665.41	149.07	250.89	766.11	38433
38434	0.17 - 0.2 m <sup>3</sup> s.....	9,837.91	198.58	300.72	877.55	38434
38435	0.2 - 0.34 m <sup>3</sup> s.....	10,074.46	272.01	351.19	950.79	38435
38436	0.34 - 0.5 m <sup>3</sup> s.....	10,380.87	298.01	401.20	1,095.96	38436
	Chilled water fan-coil unit of cassette type, ceiling concealed type, c/w built-in heater, overheat protection device, condensate drain pump, overflow indication and alarm, face panel with discharge and return air grilles, coils, filters, chilled water pipes and condensate pans, ceiling mounted with nominal supply air rate at medium speed : -					
	<i>Each</i>					
38437	Up to 0.17 m <sup>3</sup> s.....	9,061.14	153.80	250.89	714.35	38437
38438	0.17 - 0.2 m <sup>3</sup> s.....	10,028.14	198.58	300.72	835.91	38438
38439	0.2 - 0.34 m <sup>3</sup> s.....	10,403.39	248.28	351.19	950.79	38439
38440	0.34 - 0.5 m <sup>3</sup> s.....	10,920.75	298.01	401.20	1,023.22	38440
	Fan coil unit controller : -					
	<i>Each</i>					
38441	Fan coil unit controller c/w thermostat, temperature and speed control/indicating, and all necessary accessories.....	551.97	12.24	15.12	70.66	38441

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A	B	C	D	
		\$	\$	\$	\$	
	Stainless steel 316 panel housing; weatherproof type :-					
	<i>Each</i>					
38442	Weatherproof sheet metal box/ panel c/ w contactors, fused spur units, cable terminals, mounting din rails for fan coil units.....	2,072.94	80.83	140.35	315.44	38442
	Chilled water fresh air pretreating unit c/w blower, blower motor, cooling/ heating coil of copper tube resin coated aluminium fins, double skin casing, insulated drip pan, thermostats/ humidistat, filter chamber and filters, starter, emergency stop button, probe type smoke detector, filter clog indicator, chilled water pipework (main chilled water distribution pipes to be measured separately)					
	Nominal supply air rate at medium speed :-					
	<i>Each</i>					
38443	Up to 1 m <sup>3</sup> s.....	36,952.18	252.28	350.17	939.16	38443
38444	1 - 2 m <sup>3</sup> s.....	50,099.17	344.73	487.44	1,311.73	38444
38445	2 - 3 m <sup>3</sup> s.....	56,340.05	388.45	550.61	1,473.75	38445
38446	3 - 4 m <sup>3</sup> s.....	75,170.15	503.34	720.16	1,934.18	38446
38447	4 - 5 m <sup>3</sup> s.....	86,650.97	576.51	820.48	2,208.56	38447
38448	5 - 6 m <sup>3</sup> s.....	96,553.44	660.37	925.47	2,507.83	38448
	Variable air volume equipment					
	VAV linear diffuser with acoustic air boot :-					
	<i>Each</i>					
38449	Up to 0.1 m <sup>3</sup> s.....	481.31	5.91	7.24	49.78	38449
38450	0.1 - 0.2 m <sup>3</sup> s.....	559.37	6.55	7.76	50.96	38450
38451	0.2 - 0.3 m <sup>3</sup> s.....	672.07	7.01	8.24	53.06	38451
38452	0.3 - 0.4 m <sup>3</sup> s.....	765.38	7.54	8.93	55.23	38452
	VAV diffuser of all shape c/w thermo actuator, constructed of pressed mild steel sheet with powder coating finish, auto air flow adjustment from 30% to 100% for normal flow rate only of neck size :-					
	<i>Each</i>					
38453	Up to 0.018 m <sup>2</sup> .....	5,424.58	65.03	130.95	376.68	38453
38454	0.018 - 0.032 m <sup>2</sup> .....	5,681.90	66.41	132.67	380.77	38454
38455	0.032 - 0.051 m <sup>2</sup> .....	5,907.53	67.77	134.41	385.60	38455
38456	0.051 - 0.073 m <sup>2</sup> .....	6,146.90	69.17	136.24	389.44	38456

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Variable air volume equipment (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	VAV multi-outlet air distribution box (octopus) connected to terminal box and ductwork : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38457	Up to 0.3 m <sup>3</sup> s.....	345.97	7.30	8.66	55.12	38457
38458	0.3 - 0.4 m <sup>3</sup> s.....	395.66	8.66	9.88	57.24	38458
38459	0.4 - 0.5 m <sup>3</sup> s.....	429.00	9.77	11.17	59.43	38459
38460	0.5 - 0.6 m <sup>3</sup> s.....	473.12	10.99	12.37	61.63	38460
	VAV thermostatic controller : -					
	<i>Each</i>					
38461	VAV thermostatic controller c/w all necessary accessories.....	-	13.02	-	-	38461
	VAV/ CAV terminal box c/w insulation, acoustical baffles, damper regulating controller and damper actuator : -					
	<i>Each</i>					
38462	Up to 0.3 m <sup>3</sup> s.....	5,906.92	61.39	117.36	363.20	38462
38463	0.3 - 0.4 m <sup>3</sup> s.....	6,317.15	62.41	118.90	367.83	38463
38464	0.4 - 0.5 m <sup>3</sup> s.....	6,764.71	63.51	119.99	369.95	38464
38465	0.5 - 0.6 m <sup>3</sup> s.....	6,843.43	64.62	121.11	374.71	38465
	Dry steam humidifier, steam injection type using electric elements/ electrodes, automatic water level control, overflow protection and drain connection.					
	<i>Each</i>					
38466	Up to 15 kg/ hr.....	37,362.40	176.77	178.61	443.18	38466
38467	15 - 30 kg/ hr.....	47,062.38	220.89	223.19	501.32	38467
38468	30 - 60 kg/ hr.....	65,598.37	264.94	267.68	555.83	38468

Item						
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Window / wall mounted paper plate type fresh air pre-conditioner c/w motor and 2 fans, air supply/ exhaust pipes, remote controller, a fresh air and washable air filters in both fresh and weatherproof covers in exhaust streams, casings and mounting; hinged access openable panel and outdoor-air shutter.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
38469	65 m <sup>3</sup> /hr - 105 m <sup>3</sup> /hr.....	4,610.18	231.74	244.52	957.22	38469
38470	105 m <sup>3</sup> /hr - 200 m <sup>3</sup> /hr.....	7,232.00	282.50	293.80	1,130.00	38470
	Desiccant type fresh air pre-conditioner c/w total energy wheel with desiccant coating, an exhaust fan motor, flanged collars, a fresh air and washable air filters in both fresh and exhaust streams, casings and mounting; hinged access openable panel.					
	Nominal supply air rate at medium speed : -					
	<i>Each</i>					
38471	Up to 0.125 m <sup>3</sup> /s.....	16,362.67	231.74	244.52	784.97	38471
38472	0.125 - 0.25 m <sup>3</sup> /s.....	22,017.98	293.94	305.95	808.77	38472
38473	0.25 - 0.5 m <sup>3</sup> /s.....	43,187.43	308.90	326.64	844.37	38473
38474	0.5 - 0.8 m <sup>3</sup> /s.....	53,122.44	317.18	343.61	862.55	38474
38475	0.8 - 1.4 m <sup>3</sup> /s.....	84,034.70	325.34	352.05	883.97	38475
38476	1.4 - 2 m <sup>3</sup> /s..... (The actual rate should be : \$112,380.30 for Item 38476A)	11,238.03	333.90	360.25	905.31	38476
38477	2 - 2.9 m <sup>3</sup> /s..... (The actual rate should be : \$125,705.40 for Item 38477A)	12,570.54	342.08	368.90	926.86	38477
38478	2.9 - 3.6 m <sup>3</sup> /s..... (The actual rate should be : \$148,257.50 for Item 38478A)	14,825.75	350.76	377.83	948.24	38478

Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Paper plate type fresh air pre-conditioner c/w supply air fan, non-flammable heat exchange element, exhaust air fan and resin set (washable) filter, motor, flanged collars, indoor and outdoor temperature sensors, remote controller.					
	Ceiling mounted ducted type, nominal supply air rate at medium speed : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38479	Up to 0.05 m <sup>3</sup> s.....	18,240.75	299.32	355.40	1,177.75	38479
38480	0.05 - 0.25 m <sup>3</sup> s.....	34,110.74	351.03	414.64	1,340.74	38480
38481	0.25 - 0.5 m <sup>3</sup> s.....	62,676.72	415.65	488.69	1,544.48	38481
38482	0.5 - 0.8 m <sup>3</sup> s.....	75,916.96	493.21	577.55	1,788.96	38482
38483	0.8 - 1.4 m <sup>3</sup> s.....	97,582.81	565.70	675.35	2,065.45	38483
38484	1.4 - 2 m <sup>3</sup> s..... (The actual rate should be : \$126,470.60 for Item 38484A)	12,647.06	658.57	762.57	2,340.89	38484
38485	2 - 2.9 m <sup>3</sup> s..... (The actual rate should be : \$162,580.40 for Item 38485A)	16,258.04	730.74	834.10	2,545.53	38485
38486	2.9 - 3.6 m <sup>3</sup> s..... (The actual rate should be : \$201,097.40 for Item 38486A)	20,109.74	846.87	936.92	2,808.77	38486
	Thermostat and humidistat : -					
	<i>Each</i>					
38487	Space thermostat/ controller c/w wiring, conduit and necessary accessories.....	303.52	7.45	9.27	47.26	38487
38488	Space thermostat/ controller with digital setting and monitoring display c/w wiring, conduit and all functional accessories.....	654.16	7.45	9.27	47.26	38488
38489	Space humidistat c/w wiring, conduit and necessary accessories.....	298.84	7.45	9.27	47.26	38489



Item					Item	
	<b>AIR HANDLING &amp; TREATMENT EQUIPMENT (CONT'D)</b>					
	Electrostatic precipitator c/w galvanized sheet metal housing, auto clean electrostatic filter c/w ioniser collector section and motorized washer/ adhesive applicator section, solenoid valve, manifold drive motor, manifold limit switch, timer control with field adjustable timer and timer bypass switch, access door with indicating light, internal panel with LED lights and digital readout, at least 10 to 15 steps of output voltage adjustment, remote relays, power supply indicating lamps, circuit breaker, manual reset button, time delay safety type door interlock switches :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Nominal air supply rate :-					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38490	Up to 1.5 m <sup>3</sup> s.....	30,898.44	1,125.17	1,716.71	6,015.24	38490
38491	1.5 - 3 m <sup>3</sup> s.....	41,508.10	1,362.59	2,019.23	6,780.25	38491
38492	3 - 4.5 m <sup>3</sup> s.....	57,120.14	1,650.12	2,375.08	7,642.57	38492
38493	4.5 - 6 m <sup>3</sup> s.....	65,077.39	1,998.32	2,793.62	8,614.54	38493
38494	6 - 9 m <sup>3</sup> s.....	90,414.96	2,419.99	3,285.93	9,710.13	38494
38495	9 - 12 m <sup>3</sup> s..... (The actual rate should be : \$105,445.30 for Item 38495A)	10,544.53	3,010.33	3,975.16	11,243.96	38495
38496	12 - 15 m <sup>3</sup> s..... (The actual rate should be : \$127,548.80 for Item 38496A)	12,754.88	3,541.74	4,712.80	12,633.06	38496
	Thermo ventilator					
	Ceiling mounted thermo ventilator c/w PTC heater, fan motors shall have minimum 2-step air flow rate changeover and c/w a remote controller of on/ off, Hi/ Lo speed operation, adjustable air direction, timer, filters, including all supporting framework and all necessary accessories :-					
	<b>Each</b>					
38497	Minimum air flow rate 175 m <sup>3</sup> hr.....	1,821.13	61.29	77.17	311.99	38497
	Portable type air-conditioner					
	Portable type air-conditioner using refrigerant R410A, fan motors shall have minimum 2-step air flow rate changeover and c/w a remote controller of on/ off, Hi/ Lo speed operation, timer, filters, casters :-					
	Cooling capacity :-					
	<b>Each</b>					
38498	Up to 3.0 kW.....	1,181.74	24.24	30.33	88.42	38498
38499	3.0 to 4.4 kW.....	1,467.40	24.24	30.33	88.42	38499

Item					Item	
<b>WATER TANK AND ACCESSORIES</b>						
Water tank						
Sheet metal water tank (feed & expansion) c/w ball valve, vent, overflow, drain and mild steel support, anti-rust painting & accessories of effective water capacity : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38500	Up to 250 litres.....	8,026.41	110.91	194.42	787.43	38500
38501	250 litres - 350 litres.....	8,840.30	138.25	223.52	887.79	38501
38502	350 litres - 500 litres.....	11,642.05	165.85	251.19	981.84	38502
Reinforced fiberglass water tank (feed & expansion) c/w ball valve, vent, overflow, drain and mild steel support, painting & accessories of effective water capacity : -						
<i>Each</i>						
38503	Up to 250 litres.....	4,948.90	154.14	249.17	883.06	38503
38504	250 litres - 350 litres.....	8,632.00	192.14	286.46	995.61	38504
38505	350 litres - 500 litres.....	9,077.98	230.49	321.93	1,101.08	38505
Water level controller : -						
<i>Each</i>						
38506	Three water level controller for water tank for pump control and alarm c/w probes, contacts, wiring and electrical connection to pump control panel and accessories.....	1,481.31	61.54	110.70	184.34	38506
Chilled water differential pressure by-pass valve system						
<i>Each</i>						
38507	Chilled water differential pressure by-pass valve system c/w 80 dia. ball valve comprise of modulating actuator with signal output & pressure controller.....	11,840.55	157.68	235.41	968.40	38507

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>PUMP &amp; ACCESSORIES</b>						
	Centrifugal fresh water pump for non-portable application, horizontal split casing type, c/w motor, strainer, drain and vent, orifice plates, starters and local control panel : -					
	<i>Each</i>					
38508	Up to 2.5 kW.....	20,746.80	93.50	126.17	686.05	38508
38509	2.5 - 5 kW.....	22,577.40	96.61	129.38	728.68	38509
38510	5 - 10 kW.....	40,679.74	101.27	134.19	792.62	38510
38511	10 - 15 kW.....	46,931.26	107.49	140.61	877.88	38511
38512	15 - 20 kW.....	53,201.19	113.78	146.44	1,022.96	38512
38513	20 - 30 kW.....	59,811.65	120.16	153.33	1,122.53	38513
	Centrifugal salt water pump, horizontal split casing type, c/w motor, strainer, drain and vent, orifice plates, starters and local control panel : -					
	<i>Each</i>					
38514	Up to 2.5 kW.....	36,001.80	93.50	126.17	686.05	38514
38515	2.5 - 5 kW.....	37,222.20	96.61	129.38	728.68	38515
38516	5 - 10 kW.....	48,195.14	101.27	134.19	792.62	38516
38517	10 - 15 kW.....	56,506.78	107.49	140.61	877.88	38517
38518	15 - 20 kW.....	62,832.81	113.78	146.44	1,022.96	38518
38519	20 - 30 kW.....	69,469.39	120.16	153.33	1,122.53	38519
38520	30 - 50 kW.....	76,991.30	126.55	159.33	1,222.92	38520
	Fresh water pump for portable application, vertical multi-stage centrifugal type, c/w motor, strainer, drain and vent, orifice plates, starters and local control panel : -					
	<i>Each</i>					
38521	Up to 2.5 kW.....	27,128.05	93.50	126.17	686.05	38521
38522	2.5 - 5 kW.....	32,459.08	96.61	129.38	728.68	38522
38523	5 - 10 kW.....	58,965.02	101.27	134.19	792.62	38523
38524	10 - 15 kW.....	80,203.88	107.49	140.61	877.88	38524
38525	15 - 20 kW.....	96,214.16	113.78	146.44	1,022.96	38525
38526	20 - 30 kW.....	14,919.77	120.16	153.33	1,122.53	38526
	(The actual rate should be : \$149,197.70 for Item 38526A)					

Item					Item	
	<b>PUMP &amp; ACCESSORIES</b>					
	Fresh water pump for non-portable application, vertical spindle type centrifugal type, multi-stage configuration (if required), c/w motor, strainer, drain and vent, orifice plates, starters and local control panel : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
38527	Up to 2.5 kW.....	16,686.85	93.50	126.17	686.05	38527
38528	2.5 - 5 kW.....	24,594.28	96.61	129.38	728.68	38528
38529	5 - 10 kW.....	31,980.62	101.27	134.19	792.62	38529
38530	10 - 15 kW.....	38,504.10	107.49	140.61	877.88	38530
38531	15 - 20 kW.....	45,027.58	113.78	146.44	1,022.96	38531
38532	20 - 30 kW.....	58,074.53	120.16	153.33	1,122.53	38532
	Waste water pump c/w motor, strainer, drain and vent, orifice plates, starters and local control panel : -					
	<i>Each</i>					
38533	Up to 2.5 kW.....	25,628.40	93.50	126.17	686.05	38533
38534	2.5 - 5 kW.....	26,848.80	96.61	129.38	728.68	38534
38535	5 - 10 kW.....	48,229.99	101.27	134.19	792.62	38535
38536	10 - 15 kW.....	56,072.88	107.49	140.61	877.88	38536
38537	15 - 20 kW.....	63,595.77	113.78	146.44	1,022.96	38537

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>PUMP &amp; ACCESSORIES (CONT'D)</b>						
	Water booster pump set (1 duty and 1 standby) c/w motor as a composite unit, strainer, drain and vent, starters, local control panel, membrane pressure vessel and sensors :-					
	<i>Each</i>					
38538	Up to 2.5 kW.....	62,381.68	336.99	491.70	1,361.68	38538
38539	2.5 - 5 kW.....	93,295.47	352.64	522.99	1,498.21	38539
38540	5 - 10 kW..... (The actual rate should be : \$117,862.20 for Item 38540A)	11,786.22	376.11	569.92	1,703.00	38540
38541	10 - 15 kW..... (The actual rate should be : \$133,211.40 for Item 38541A)	13,321.14	407.40	632.50	1,976.06	38541
38542	15 - 20 kW..... (The actual rate should be : \$142,860.90 for Item 38542A)	14,286.09	437.28	693.64	2,249.40	38542
	Flush water pump c/w motor, strainer, drain and vent, starters and local control panel :-					
	<i>Each</i>					
38543	Up to 2.5 kW.....	25,628.40	93.50	126.17	686.05	38543
38544	2.5 - 5 kW.....	26,848.80	96.61	129.38	728.68	38544
38545	5 - 10 kW.....	48,229.99	101.27	134.19	792.62	38545
38546	10 - 15 kW.....	56,072.88	107.49	140.61	877.88	38546
38547	15 - 20 kW.....	63,595.77	113.78	146.44	1,022.96	38547
	Centrifugal hot water pump, horizontal split casing type, c/w motor, starters and local control panel :-					
	<i>Each</i>					
38548	Up to 2.5 kW.....	51,415.00	93.50	126.17	686.05	38548
38549	2.5 - 5 kW.....	52,545.00	96.61	129.38	728.68	38549
38550	5 - 10 kW.....	87,001.61	101.27	134.19	792.62	38550
38551	10 - 15 kW..... (The actual rate should be : \$101,202.00 for Item 38551A)	10,120.20	107.49	140.61	877.88	38551
38552	15 - 20 kW..... (The actual rate should be : \$115,028.80 for Item 38552A)	11,502.88	113.78	146.44	1,022.96	38552

Item					Item	
	<b>PUMP &amp; ACCESSORIES (CONT'D)</b>					
	Submersible type sewage pump (max. 10m discharge head) up to 5m water depth, handling sewage containing solid particles up to 50 mm diameter, non-cocking, c/w electric motor, guide pole, starters and local control panel : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38553	Up to 1 kW.....	12,760.94	120.29	160.76	682.45	38553
38554	1 - 2 kW.....	14,931.32	120.29	160.76	682.45	38554
38555	2 - 3 kW.....	19,859.35	120.29	160.76	682.45	38555
38556	3 - 4 kW.....	19,989.83	120.29	160.76	682.45	38556
38557	4 - 5 kW.....	32,246.57	120.29	160.76	682.45	38557
	Sewage transfer pump sets (max. 10m discharge head); handling sewage containing solid particles up to 50 mm diameter; direct driven by motors; water seal connection; vents; drain; priming plug; associated pipeworks and associated pipeworks and anti-vibration mountings; adjacent emergency stops; all necessary components and accessories : -					
	<i>Each</i>					
38558	Up to 1 kW.....	29,608.64	120.29	160.76	682.45	38558
38559	1 - 2 kW.....	31,140.77	120.29	160.76	682.45	38559
38560	2 - 3 kW.....	39,178.35	120.29	160.76	682.45	38560
38561	3 - 4 kW.....	40,759.07	120.29	160.76	682.45	38561
38562	4 - 5 kW.....	40,893.20	120.29	160.76	682.45	38562

Item					Item	
	<b>PUMP &amp; ACCESSORIES (CONT'D)</b>					
	Sump pump, vertical centrifugal type, c/w submersible electric motor, pump control & H/L alarm, guide bars, cable supports & lifting chains, factory built-in suspension devices and discharge elbow for wet sump installation and cast iron/ steel base for dry sump installation, starter and local control panel :-					
	<i>Each</i>					
38563	Up to 2.5 kW.....	30,510.00	93.50	126.17	686.05	38563
38564	2.5 - 5 kW.....	31,120.20	96.61	129.38	728.68	38564
38565	5 - 10 kW.....	39,161.38	101.27	134.19	792.62	38565
38566	10 - 15 kW.....	43,418.43	107.49	140.61	877.88	38566
38567	15 - 20 kW.....	57,724.80	113.78	146.44	1,022.96	38567
38568	20 - 30 kW.....	76,197.64	120.16	153.33	1,122.53	38568
	End suction pump for portable application, centrifugal type, multi-stage configuration (if required), c/w anti-vibration mounting, flexible joints, drain, vent, motor, starter and local control panel and local wiring :-					
	<i>Each</i>					
38569	Up to 2.5 kW.....	21,026.05	93.50	126.17	686.05	38569
38570	2.5 - 5 kW.....	34,628.68	96.61	129.38	728.68	38570
38571	5 - 10 kW.....	38,760.62	101.27	134.19	792.62	38571
38572	10 - 15 kW.....	41,557.88	107.49	140.61	877.88	38572
38573	15 - 20 kW.....	45,255.43	113.78	146.44	1,022.96	38573
38574	20 - 30 kW.....	52,650.53	120.16	153.33	1,122.53	38574

Item					Item	
	<b>PUMP &amp; ACCESSORIES (CONT'D)</b>					
	End suction pump for non-portable application, multi-stage configuration (if required), c/w anti-vibration mounting, flexible joints , drain, vent, motor, starter and local control panel and local wiring :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
38575	Up to 2.5 kW.....	20,905.00	93.50	126.17	686.05	38575
38576	2.5 - 5 kW.....	33,088.04	96.61	129.38	728.68	38576
38577	5 - 10 kW.....	36,094.14	101.27	134.19	792.62	38577
38578	10 - 15 kW.....	39,319.49	107.49	140.61	877.88	38578
38579	15 - 20 kW.....	42,252.54	113.78	146.44	1,022.96	38579
38580	20 - 30 kW.....	48,118.60	120.16	153.33	1,122.53	38580
	Cooling tower c/w induced or forced draught fans, glass reinforced plastics (GRP) casing, open distribution pans or troughs fitted with coarse mesh grids, filled sheets with film-type vacuum-formed PVC c/w louvres and drift eliminators, metal parts with stainless steel to SS316 or the better equivalent, inlet/ outlet water gate valve, drain, strainer, starter panel and local control panel, plus all related necessary accessories with nominal heat rejection capacity :-					
	<i>Each</i>					
38581	22 - 45 kW.....	10,030.64	331.67	432.03	1,012.83	38581
38582	45 - 69 kW.....	10,849.04	378.62	477.84	1,134.47	38582
38583	69 - 100 kW.....	12,781.02	424.83	524.14	1,232.93	38583
38584	100 - 150 kW.....	15,475.51	472.95	573.01	1,377.79	38584
38585	150 - 200 kW.....	19,090.33	519.96	620.37	1,493.98	38585
38586	200 - 300 kW.....	24,385.62	571.56	672.75	1,615.67	38586
38587	300 - 350 kW.....	34,175.19	619.62	722.05	1,716.98	38587
38588	350 - 450 kW.....	39,354.97	666.19	768.76	1,850.59	38588
	Condensate drain sump pump :-					
	<i>Each</i>					
38589	Condensate drain sump pump c/w electrical connection.....	2,211.20	65.45	82.68	343.60	38589



Item					Item	
	<b>FANS &amp; VENTILATION SYSTEM</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Dark room cowl : -					
	<i>Each</i>					
38590	Dark room cowl for 230 mm diameter.....	1,422.58	16.27	21.64	46.75	38590
	S.S. vent washer system c/w pump, exhaust blower, exhaust air duct, inspection door : -					
	<i>Each</i>					
38591	2 m x 1.53 m x 0.683 m.....	73,242.50	420.42	530.70	1,808.59	38591
	Fan chamber c/w access panels for fans of diameter : -					
	<i>Each</i>					
38592	Up to 300 mm.....	2,001.50	13.40	17.84	35.16	38592
38593	300 - 380 mm.....	2,411.93	13.89	18.94	38.51	38593
38594	380 - 500 mm.....	2,803.57	14.50	20.05	41.83	38594
38595	500 - 610 mm.....	3,837.36	15.00	21.15	45.15	38595
38596	610 - 800 mm.....	5,025.40	15.49	24.89	48.49	38596
	Acoustic fan chamber c/w access panels for fans of diameter : -					
	<i>Each</i>					
38597	Up to 300 mm.....	3,194.72	18.97	23.55	52.39	38597
38598	300 - 380 mm.....	3,956.18	19.58	24.67	55.85	38598
38599	380 - 500 mm.....	4,923.68	20.09	25.76	59.20	38599
38600	500 - 610 mm.....	6,210.26	20.62	26.79	62.56	38600
38601	610 - 800 mm.....	7,723.95	21.23	30.65	65.91	38601

Item					Item	
	<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>					
	Axial-flow fan, aerofoil type c/w local control panel					
	Motor speed up to 1000 r.p.m., fan diameter : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38602	Up to 300 mm.....	3,876.24	36.80	46.51	140.89	38602
38603	300 - 380 mm.....	4,350.35	39.91	49.61	152.66	38603
38604	380 - 500 mm.....	5,780.04	43.01	52.72	164.41	38604
38605	500 - 610 mm.....	6,707.85	46.01	55.82	176.07	38605
38606	610 - 800 mm.....	9,072.19	49.11	58.92	187.83	38606
	Motor speed up to 1500 r.p.m., fan diameter : -					
	<i>Each</i>					
38607	Up to 300 mm.....	4,043.71	36.80	46.51	140.89	38607
38608	300 - 380 mm.....	5,517.59	39.91	49.61	152.66	38608
38609	380 - 500 mm.....	6,148.66	43.01	52.72	164.41	38609
38610	500 - 610 mm.....	7,096.92	46.01	55.82	176.07	38610
38611	610 - 800 mm.....	9,385.25	49.11	58.92	187.83	38611
	Air conducting fan, c/w fan mounting plate, remote controller and all necessary accessories.					
	Nominal supply air rate at medium speed : -					
	<i>Each</i>					
38612	Up to 0.375 m <sup>3</sup> s.....	5,087.74	190.71	266.98	411.91	38612
38613	0.375 - 0.583 m <sup>3</sup> s.....	7,139.24	228.84	343.26	495.81	38613
	Air swing fan, c/w fan mounting plate, remote controller and all necessary accessories.					
	Nominal supply air rate at medium speed : -					
	<i>Each</i>					
38614	Up to 0.0583 m <sup>3</sup> s.....	5,908.35	190.71	266.98	457.67	38614
38615	0.0583 - 0.1041 m <sup>3</sup> s.....	6,646.89	228.84	343.26	549.21	38615

Item					Item	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
Bifurcated fan : -						
<i>Each</i>						
Bifurcated fan type, minimum air volume flow rate at 820 1/ s and static pressure at						
38616	20 Pa.....	5,043.08	42.28	51.30	161.78	38616
Centrifugal fan, backward/ forward bladed type c/w motor, drive belt and pulley, casing, access panel, metal enclosure, air plenum, starters and local control panel.						
Fan diameter : -						
<i>Each</i>						
38617	Up to 300 mm.....	4,600.25	61.96	94.14	276.74	38617
38618	300 - 380 mm.....	6,405.77	70.45	98.26	300.18	38618
38619	380 - 500 mm .....	9,560.21	75.28	108.58	316.20	38619
38620	500 - 610 mm .....	14,792.74	83.57	114.52	329.91	38620
38621	610 - 800 mm.....	24,477.27	93.11	120.59	343.60	38621
Roof extraction fan c/w motor, centrifugal/ mixed flow blower, casing, cowl, base, back -draught damper, bird entry preventer guard, control switch and starter.						
Motor speed up to 900 r.p.m. (50-100 Pa), flow rate : -						
<i>Each</i>						
38622	Up to 0.5 m <sup>3</sup> s.....	3,648.70	68.09	100.88	288.86	38622
38623	0.5 - 1 m <sup>3</sup> s.....	4,344.79	77.01	105.20	314.20	38623
38624	1 - 1.5 m <sup>3</sup> s.....	4,731.39	81.90	115.50	330.38	38624
Motor speed up to 1400 r.p.m. (75-125 Pa), flow rate : -						
<i>Each</i>						
38625	Up to 1 m <sup>3</sup> s.....	4,719.50	77.01	105.20	314.20	38625
38626	1 - 1.5 m <sup>3</sup> s.....	6,057.99	81.90	115.50	330.38	38626
38627	1.5 - 2 m <sup>3</sup> s.....	9,325.64	91.41	122.77	347.08	38627
38628	2 - 4 m <sup>3</sup> s.....	14,007.88	104.46	136.73	375.99	38628

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
	In line mixed flow fan c/w stator vanes, motors, drivers, guards, casing, starters and local control panel of fan diameter : -					
	<i>Each</i>					
38629	Up to 200 mm diameter 900 r.p.m.....	4,075.63	41.37	53.32	179.11	38629
38630	200 - 300 mm diameter 900 r.p.m.....	6,922.58	43.18	56.38	183.51	38630
38631	300 - 450 mm diameter 900 r.p.m.....	8,339.21	44.99	59.42	189.26	38631
38632	Up to 200 mm diameter 1400 r.p.m.....	4,300.93	41.37	53.32	179.11	38632
38633	200 - 300 mm diameter 1400 r.p.m.....	7,399.52	43.18	56.38	183.51	38633
38634	300 - 450 mm diameter 1400 r.p.m.....	9,059.63	44.99	59.42	189.26	38634
	Propeller fan c/w galvanized iron casing with acoustic lining. Air flow rate based on static pressure 50 Pa : -					
	<i>Each</i>					
38635	Up to 0.3 m <sup>3</sup> s.....	3,452.62	64.28	97.84	287.23	38635
38636	0.3 - 0.6 m <sup>3</sup> s.....	3,605.02	73.20	102.12	311.96	38636
38637	0.6 - 0.8 m <sup>3</sup> s.....	3,990.51	78.25	112.85	328.64	38637
38638	0.8 - 1.0 m <sup>3</sup> s.....	4,142.67	86.86	119.02	342.87	38638
38639	1.0 - 1.2 m <sup>3</sup> s.....	4,677.84	96.77	125.32	357.08	38639
38640	1.2 - 1.8 m <sup>3</sup> s.....	6,283.33	126.48	144.24	399.71	38640
38641	1.8 - 2.4 m <sup>3</sup> s.....	7,888.84	156.20	163.17	442.34	38641
38642	2.4 - 2.6 m <sup>3</sup> s.....	8,424.00	166.10	169.47	456.55	38642
38643	2.6 - 3.2 m <sup>3</sup> s.....	10,029.51	188.39	195.82	499.18	38643
38644	3.2 - 3.8 m <sup>3</sup> s.....	11,635.00	207.31	225.55	541.81	38644
38645	3.8 - 4.4 m <sup>3</sup> s.....	13,240.50	226.23	255.27	584.46	38645
38646	4.4 - 5.0 m <sup>3</sup> s.....	14,846.00	245.18	284.97	627.10	38646
38647	5.0 - 5.6 m <sup>3</sup> s.....	16,451.50	264.07	314.70	669.74	38647
38648	5.6 - 6.2 m <sup>3</sup> s.....	18,057.01	282.99	344.41	712.38	38648
38649	6.2 - 6.8 m <sup>3</sup> s.....	19,662.50	301.91	374.12	755.03	38649
38650	6.8 - 7.0 m <sup>3</sup> s.....	20,197.66	308.23	384.03	769.25	38650

Item					Item	
	<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Direct-drive inline duct fan c/w acoustic casing and local control panel, fan diameter : -					
	<i>Each</i>					
38651	Up to 100 mm.....	2,078.72	136.56	169.71	388.32	38651
38652	100 - 200 mm.....	5,817.24	157.65	191.02	415.09	38652
38653	200 - 250 mm.....	8,515.62	168.08	201.56	428.46	38653
38654	250 - 280 mm.....	10,515.02	178.60	212.22	441.87	38654
38655	280 - 315 mm.....	11,780.48	189.14	222.75	468.61	38655
38656	315 - 400 mm.....	17,087.67	199.66	233.42	482.00	38656
	PVC direct-drive inline duct fan c/w acoustic casing and local control panel, fan diameter : -					
	<i>Each</i>					
38657	200 mm.....	13,663.05	157.65	191.02	415.09	38657
	Flameproof in-line fan : -					
	<i>Each</i>					
38658	Flameproof in-line fan, 880 r.p.m., fan diameter up to 330 mm.....	8,661.88	197.46	230.84	476.67	38658
	Exhaust fan c/w automatic motorized weather-proof louvre, propeller type, fan diameter : -					
	<i>Each</i>					
38659	150 mm.....	1,366.11	21.25	26.63	42.57	38659
38660	230 mm.....	2,079.25	23.41	28.80	47.85	38660
38661	300 mm.....	2,597.35	25.57	30.83	53.23	38661
	Aluminium acoustic box c/w propeller fan : -					
	<i>Each</i>					
38662	Aluminium acoustic box c/w 250 mm diameter propeller fan of duty (0.17 m <sup>3</sup> /s, 40 Pa) and air grilles. Nominal size 450 x 450 x 700 mm.....	3,584.22	177.41	213.82	471.11	38662

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
Blower fan, in-line silent centrifugal type, impeller diameter : -						
<i>Each</i>						
38663	Up to 100 mm .....	997.61	41.37	53.32	179.11	38663
38664	100 - 200 mm .....	1,995.21	43.18	56.38	183.51	38664
38665	200 - 300 mm .....	2,992.82	44.99	59.42	189.26	38665
Motor starter c/w push buttons, relays, circuit protective device : -						
<i>Each</i>						
38666	Up to 2.2 kW rating.....	447.19	8.59	11.57	43.64	38666
38667	2.2 - 5.5 kW rating.....	474.97	9.77	14.36	49.11	38667
38668	5.5 - 11 kW rating.....	2,357.14	11.48	17.27	54.59	38668
38669	11 - 15 kW rating.....	3,672.04	14.28	20.15	63.25	38669
Contactor : -						
<i>Each</i>						
38670	30 A SP & N.....	190.38	7.43	9.80	29.74	38670
38671	60 A SP & N.....	380.93	11.53	14.26	51.08	38671
38672	100 A SP & N.....	625.48	16.05	20.45	57.52	38672
38673	30 A TP & N.....	218.42	8.42	10.98	35.23	38673
38674	60 A TP & N.....	695.13	13.40	17.33	55.68	38674
38675	100 A TP & N.....	904.17	17.57	22.79	71.41	38675
Time switch c/w overriding switch : -						
<i>Each</i>						
38676	24-hour dial.....	513.20	4.83	7.26	18.13	38676
38677	7-day clock.....	826.38	4.83	7.26	18.13	38677
38678	with 3-minute delay.....	370.50	4.83	7.26	18.13	38678

Item					Item	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
Soft motor starter : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38679	Up to 2.2 kW rating.....	9,253.67	22.94	28.78	87.66	38679
38680	2.2 - 5.5 kW rating.....	10,791.93	28.81	34.76	98.65	38680
38681	5.5 - 12 kW rating.....	11,898.40	34.33	40.29	109.62	38681
38682	12 - 22 kW rating.....	12,824.32	40.33	46.28	120.51	38682
38683	22 - 37 kW rating.....	17,318.84	45.86	51.90	131.49	38683
Grease filter type kitchen exhaust hood						
Exhaust hood of 316 stainless steel sheet 1.2 mm thick with hair line finish c/w minimum 38 mm stainless steel angle iron frame and supports, 50 mm thick grease filters, filter washing facilities, flushed fluorescent lighting with heat resistant wired glass diffusers and accessories with height up to and including 1.2 m, with the hood bottom perimeter to reference dimension.						
Hood undersurface area of : -						
<i>Each</i>						
38684	Up to 3 m <sup>2</sup> .....	20,789.30	249.52	395.94	1,322.80	38684
38685	3 - 4 m <sup>2</sup> .....	26,055.37	376.74	509.69	1,646.35	38685
38686	4 - 5 m <sup>2</sup> .....	31,652.61	462.32	607.44	1,867.17	38686
38687	5 - 6 m <sup>2</sup> .....	37,720.51	582.66	680.93	1,909.89	38687
Washable grease filter : -						
<i>Each</i>						
38688	500 x 500 x 50 mm thick.....	508.16	5.18	8.20	16.00	38688
Cleaning tank : -						
<i>Each</i>						
38689	Stainless steel cleaning tank.....	5,821.03	26.29	33.22	102.53	38689
<i>Per litre</i>						
38690	Cleaning detergent.....	71.38	-	-	-	38690

Item					Item	
	<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>					
	Water scrubbing type exhaust hood of 316 stainless steel sheet 1.2 mm thick with hair line finish c/w minimum 38 mm stainless steel angle iron frame and support, grease filters filter washing facilities, rotary baffles, inspection door, water recirculation system, control panel, flushed fluorescent lighting with heat resistant wired glass diffusers and accessories (with height up to and including 1.2 m, with the hood bottom perimeter as reference dimension), jet spray nozzles.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Hood undersurface area of : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
38691	Up to 4 m <sup>2</sup> .....	61,799.78	408.75	555.83	1,749.40	38691
38692	4 - 5 m <sup>2</sup> ..... (The actual rate should be : \$117,661.90 for Item 38692A)	11,766.19	505.21	658.89	1,983.30	38692
38693	5 - 6 m <sup>2</sup> ..... (The actual rate should be : \$127,590.60 for Item 38693A)	12,759.06	637.15	783.26	2,193.47	38693
38694	Add to last item for each additional square metre or part thereof.....	10,106.77	114.20	124.38	222.04	38694
	Vehicle exhaust hose and hose reel : -					
	<b>Per set</b>					
38695	Vehicle exhaust hose reel c/w nozzle, hose clip, 10 m exhaust hose of 50 mm diameter c/w control panel and all necessary accessories .....	45,907.06	169.63	250.89	616.64	38695
38696	50 mm diameter. exhaust hose 10 m long.....	6,113.58	19.22	32.47	56.71	38696
	Sundries :-					
	<b>Each</b>					
38697	Acoustic enclosure for housing centrifugal fan.....	3,327.00	63.60	80.24	191.68	38697
38698	Silencer of 304 stainless steel construction c/w corrosion resistant flanges 300 mm (diameter) x 1200 mm (long) .....	5,902.68	18.52	33.61	99.24	38698
	Acoustic louver					
	<b>Per cubic metre</b>					
38699	Acoustic insulation silencer, stainless steel 316 c/w corrosion resistant.....	1,050.67	13.89	20.45	46.53	38699
	Acoustic enclosure for heat pump : -					
	<b>Each</b>					
38700	50 - 100 kW.....	48,929.55	265.22	437.85	1,482.33	38700
38701	100 - 150 kW.....	67,299.78	317.85	539.83	1,614.21	38701
38702	150 - 200 kW.....	83,236.78	376.74	738.04	1,956.98	38702
38703	200 - 300 kW.....	98,222.16	454.15	848.63	2,056.00	38703



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
	High pressure cleansing unit : -					
	<i>Per set</i>					
38704	Wall mounted unit flow rate 15.7 l/ min at 175 bar pressure.....	22,513.24	93.65	113.27	301.42	38704
	Full package 2 pump unit at 400 kPa working pressure : -					
	<i>Per set</i>					
38705	Up to 0.5 kW.....	5,654.00	51.68	73.03	241.52	38705
38706	0.5 - 2 kW.....	11,122.95	68.68	81.22	274.42	38706
38707	2 - 5 kW.....	20,544.40	74.62	86.04	285.42	38707
	Water scrubber/ multi-throat venture scrubber c/w packings, FRP centrifugal fan, mist eliminator, pipework, nozzle, sump, 3 nos. recycling pump c/w pump motor, flow sensor, flow switch, air release valve, chemical metering pump, ORP and pH analyzer transmitter, chemical tank, fully enclosed acoustic panel chamber, local control panel for design flow rate of : -					
	<i>Per set</i>					
38708	4.4 - 5.5 m <sup>3</sup> s..... (The actual rate should be : \$335,962.40 for Item 38708A)	33,596.24	1,998.32	2,793.62	8,614.54	38708
38709	5.5 - 8 m <sup>3</sup> s..... (The actual rate should be : \$523,385.90 for Item 38709A)	52,338.59	2,419.99	3,285.93	9,710.13	38709
38710	8 - 11.5 m <sup>3</sup> s..... (The actual rate should be : \$785,779.00 for Item 38710A)	78,577.90	3,010.33	3,975.16	11,243.96	38710
38711	11.5 - 14.5 m <sup>3</sup> s..... (The actual rate should be : \$975,180.40 for Item 38711A)	97,518.04	3,541.74	4,712.80	12,633.06	38711
	Silencer of PVC/ PP construction c/w corrosion resistant flanges : -					
	<i>Each</i>					
38712	Up to 0.5 m <sup>3</sup> s.....	6,112.02	22.30	35.61	121.68	38712
38713	0.5 - 1 m <sup>3</sup> s.....	9,986.08	30.21	44.34	148.84	38713
38714	1 - 1.5 m <sup>3</sup> s.....	11,390.15	47.03	56.59	170.10	38714
38715	1.5 - 2 m <sup>3</sup> s.....	15,047.34	56.59	71.16	191.47	38715
38716	Add to last item for each additional 0.5 m <sup>3</sup> s or part thereof.....	3,321.15	6.16	9.84	23.68	38716

Item					Item	
<b>FANS &amp; VENTILATION SYSTEM (CONT'D)</b>						
Sundries :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38717	Chemical dosing tank c/w accessories, chemical metering pump set.....	2,048.30	9.36	18.52	39.25	38717
38718	ORP analyzer c/w sensor, transmitter and accessories.....	1,562.46	9.74	12.64	29.68	38718
38719	pH analyzer c/w sensor, transmitter and accessories.....	1,557.93	9.74	12.64	29.68	38719
38720	Portable chemical pump for NaOH/ NaOCl.....	1,745.15	15.58	25.15	59.46	38720
<b>ENERGY SAVING CONTROL SYSTEM</b>						
Energy savings control system for mechanical ventilation integrated with natural ventilation :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38721	Wind speed sensor.....	12,474.58	65.13	85.08	237.10	38721
38722	Wind direction sensor.....	14,586.46	65.43	85.23	239.09	38722
38723	Wind speed and direction controller c/w power cables, control cables, contactors metal enclosure and all necessary accessories.....	6,417.35	188.24	282.74	713.58	38723
<b>VARIABLE SPEED MOTOR DRIVE</b>						
Variable speed motor drive of rating :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38724	Up to 5 kW.....	12,458.30	13.82	17.99	52.62	38724
38725	5 - 10 kW.....	14,792.94	18.52	24.73	70.95	38725
38726	10 - 15 kW.....	16,982.55	23.23	31.46	89.30	38726
38727	15 - 20 kW.....	18,942.70	28.11	37.31	106.37	38727
38728	20 - 30 kW.....	34,672.76	31.12	42.24	122.45	38728
38729	30 - 40 kW.....	38,547.34	37.53	50.78	136.17	38729
38730	40 - 50 kW.....	44,193.79	42.50	54.55	148.77	38730
38731	50 - 60 kW.....	50,641.72	46.59	57.96	152.14	38731

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>METAL WORKS IN ASSOCIATED WITH AIR-CONDITIONING INSTALLATION</b>					
	<i>Per square metre</i>	A \$	B \$	C \$	D \$	
38732	Elevated or overhauling platform for A/ C equipment c/w metal work, railing, cat ladder, painting as per Structural Engineer's recommended detail (to be measured on platform surface area).....	3,080.36	52.50	74.13	177.31	38732
	<i>Each</i>					
38733	Surveyor's certificate for steel service platform for maintenance of A/ C equipment.....	8,255.15	-	-	-	38733
	<b>STEAM AND HOT WATER SYSTEM</b>					
	Steam plant and equipment c/w steam boiler, combustion chamber, automatic burner with controls, blow-down valve, all necessary valves, tanks, thermometer, steam pressure gauge, boiler feed pump with controls, water level gauge glass, water level control, local control panel and protection, drip tray, cleaning tools, chemical dosing equipment, draught gauge, meters, quartz clock and condensate/ feed tank : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
38734	Water heating capacity 401 - 500 kg/ hr..... (The actual rate should be : \$748,595.60 for Item 38734A)	74,859.56	5,701.63	6,553.35	14,591.70	38734
	Air-water heat pump (zero ODP refrigerant) c/w motor, compressor, condenser, evaporator coil, centrifugal blower, automatic safety controls within common cabinet, refrigerant receiver, moisture indicator, sight glass, thermal expansion valve, filter drier, heat exchanger, lockout relay, fan motor, thermal overload protector, time delay, phase monitor, hour meter and control panel : -					
	<i>Each</i>					
38735	Water heating capacity 8 - 14 kW.....	49,932.97	383.80	460.74	1,957.70	38735
38736	Water heating capacity 14 - 28 kW.....	91,794.37	579.06	678.66	3,334.97	38736
38737	Water heating capacity 28 - 44 kW..... (The actual rate should be : \$203,551.90 for Item 38737A)	20,355.19	804.32	896.36	4,658.35	38737
38738	Water heating capacity 44 - 68 kW..... (The actual rate should be : \$251,675.80 for Item 38738A)	25,167.58	1,091.31	1,705.47	5,971.08	38738
38739	Water heating capacity 68 - 100 kW..... (The actual rate should be : \$302,538.50 for Item 38739A)	30,253.85	1,394.00	2,588.82	7,325.82	38739
38740	Water heating capacity 100 - 150 kW..... (The actual rate should be : \$370,894.40 for Item 38740A)	37,089.44	2,200.62	3,283.42	8,834.42	38740

Item					Item	
	<b>STEAM AND HOT WATER SYSTEM (CONT'D)</b>					
	Air-cooled packaged heat pump (zero ODP refrigerant) for external mounting c/w evaporators, condensers, fans, compressors, motors, water circulation pumps, pressure relief valves, expansion tanks, starters, refrigerant, expansion tank, buffer tank, noise equipment, copper tube with pre-corrosion resisting treated copper fins, filter driers, water strainer, capacity controller, liquid receivers, starters, weather-proof cabinet, emergency stop button, all necessary safety and operational control and accessories, local control panel connected to electricity supply point, proper mounting and support including I-beams and concrete plinth, flexible pipe connection, chilled water pipework for connection					
	Heat pump capacity : -					
	<i>Each</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
38741	8 - 14 kW..... (The actual rate should be : \$133,199.30 for Item 38742A)	95,044.38	576.84	737.70	2,592.35	38741
38742	14 - 28 kW..... (The actual rate should be : \$133,199.30 for Item 38742A)	13,319.93	711.22	909.07	2,788.89	38742
38743	28 - 44 kW..... (The actual rate should be : \$189,403.80 for Item 38743A)	18,940.38	976.65	1,185.17	2,979.21	38743
38744	44 - 68 kW..... (The actual rate should be : \$247,811.40 for Item 38744A)	24,781.14	1,155.41	1,718.89	4,796.77	38744
38745	68 - 100 kW..... (The actual rate should be : \$381,041.90 for Item 38745A)	38,104.19	1,549.20	2,320.41	6,226.55	38745
38746	100 - 150 kW..... (The actual rate should be : \$523,797.40 for Item 38746A)	52,379.74	1,920.82	2,857.75	6,614.44	38746
38747	150 - 200 kW..... (The actual rate should be : \$639,452.30 for Item 38747A)	63,945.23	2,401.24	3,427.58	8,035.64	38747
38748	200 - 300 kW..... (The actual rate should be : \$781,473.10 for Item 38748A)	78,147.31	2,547.48	3,726.07	8,929.39	38748

Item					Item	
	<b>PRESSURE VESSELS</b>					
	Pressure vessel complete with all necessary accessories in accordance with the manufacturer's recommendations : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per Set</i>	A \$	B \$	C \$	D \$	
38749	Pressure vessel, vertical type, of 10 bar working pressure and Up to 60 litres capacity .....	2,815.35	110.74	124.75	390.32	38749
38750	Ditto but 60 to 200 litres capacity .....	4,414.95	156.45	183.07	541.57	38750
38751	Ditto but 200 to 300 litres capacity .....	6,308.71	210.38	253.20	919.63	38751
38752	Ditto but 300 to 500 litres capacity .....	8,048.90	275.30	338.71	975.87	38752
38753	Ditto but 500 to 750 litres capacity .....	17,628.00	345.02	418.44	1,171.03	38753
38754	Ditto but 750 to 1,000 litres capacity .....	21,238.21	414.74	498.17	1,366.19	38754

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>SUNDRIES</b>					
	Solar hot water storage tank c/w insulation complying BS5500 c/w all necessary accessories :-					
	<i>Each</i>					
38755	Up to 100 litres.....	3,186.55	50.32	97.98	223.70	38755
38756	100 - 200 litres.....	3,475.35	53.73	101.10	234.85	38756
38757	200 - 300 litres.....	3,968.35	58.29	108.05	246.58	38757
38758	300 - 400 litres.....	7,347.43	61.12	113.37	258.77	38758
38759	400 - 500 litres.....	10,587.55	62.87	118.96	271.78	38759
	Pyranometer :-					
	<i>Each</i>					
38760	Pyranometer complying ISO 9060 c/w all functional accessories.....	2,267.85	50.38	95.75	193.30	38760
	Stainless steel plate type heat exchanger of heat transfer capacity :-					
	<i>Each</i>					
38761	Up to 25 kW.....	11,600.49	209.67	282.09	1,048.96	38761
38762	25 - 50 kW.....	34,160.15	229.50	287.21	1,153.84	38762
38763	50 - 100 kW.....	67,163.08	251.75	312.29	1,269.26	38763
38764	100 - 200 kW.....	81,458.94	280.37	344.19	1,396.28	38764
38765	200 - 300 kW.....	10,503.87	300.99	378.39	1,537.65	38765
	(The actual rate should be : \$105,038.70 for Item 38765A)					

Item					Item	
	<b>SUNDRIES (CONT'D)</b>					
	Solar collector panel complying BS EN 12975 with minimum efficiency 65% at 30K temperature difference between average fluid temperature and ambient air temperature with solar irradiation = 800W/ m2 :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per set</i>	A \$	B \$	C \$	D \$	
38766	Up to 1 m <sup>2</sup> .....	3,892.90	136.91	198.63	541.91	38766
38767	1 m <sup>2</sup> - 2 m <sup>2</sup> .....	5,670.88	165.09	234.93	646.23	38767
38768	2 m <sup>2</sup> - 3 m <sup>2</sup> .....	9,124.29	183.58	267.04	723.57	38768
38769	3 m <sup>2</sup> - 4 m <sup>2</sup> .....	12,649.16	205.67	298.84	801.71	38769
38770	4 m <sup>2</sup> - 5 m <sup>2</sup> .....	15,982.03	227.97	336.71	902.56	38770
38771	5 m <sup>2</sup> - 6 m <sup>2</sup> .....	19,324.41	257.63	375.50	1,018.42	38771
38772	6 m <sup>2</sup> - 7 m <sup>2</sup> .....	22,832.04	285.83	417.43	1,139.16	38772
	Labour to disconnect all existing air-conditioning and ventilation installation for an area inside a building, take down and clearing the entire air-conditioning and ventilation installation inside the area (area shall be measured net on the gross floor area of the building covered by the air-conditioning services installation)					
	<i>Per square metre</i>					
38773	For area up to 100 m <sup>2</sup> .....	-	30.26	-	-	38773
38774	For area 100 - 500 m <sup>2</sup> .....	-	29.35	-	-	38774
38775	For area above 500 m <sup>2</sup> .....	-	27.39	-	-	38775

Item			Item
	<b>MISCELLANEOUS</b>		
	Buildings Energy Efficiency Ordinance (BEEO) Submission		
	All heating, ventilation and air-conditioning installations, unless otherwise specified, in a prescribed building should be assessed in accordance with the energy efficient requirements, for the premises in accordance with the requirements as specified in the latest edition of Code of Practice for Energy Efficiency of Building Services Installation (Building Energy Code or BEC in abbreviation), preparation and completion of the installation summaries and worksheets including but not limited to Form EE-AC, AC-G1, AC-G2(1), AC-G2(2), AC-G3(1), AC-G3(2), AC-G3(3), AC-D1 and AC-EQ1 as required by the BEEO and to coordinate with the Registered Energy Assessor for submission.	Rate	
	<i>Each</i>	A \$	
38776	Water cooled/ Air cooled chillers.....	4,476.04	38776
38777	Ventilation fans.....	223.80	38777
38778	Air handling units/ Computer room air conditioning units.....	671.41	38778
38779	Split type air conditioning units.....	134.28	38779
38780	Window-split type air conditioners.....	223.80	38780
38781	Packaged air conditioners.....	268.57	38781
38782	Reheat coil air conditioners.....	290.93	38782
38783	Variable refrigerant volume (VRV) system.....	447.60	38783
38784	Fan coil units.....	335.72	38784
38785	Room coolers.....	44.76	38785
38786	Cold room air conditioning unit.....	44.76	38786
38787	Air cooled roof top units.....	447.60	38787
38788	Fresh air pre-conditioners/ Fresh air pretreating units.....	268.57	38788
38789	Air purifier units/ sterilizers.....	44.76	38789
38790	Air pressure stabilizers.....	44.76	38790
38791	Variable air volume equipment (VAV/ CAV).....	44.76	38791
38792	Dehumidifiers/ humidifiers.....	44.76	38792
38793	Electro-static precipitators.....	223.80	38793
38794	Thermo ventilators.....	111.91	38794
38795	Water pumps.....	111.91	38795
38796	Cooling towers.....	335.72	38796
38797	Grease filter type kitchen exhaust hood/ Water scrubbing type exhaust hood.....	447.60	38797



**Section 39**

**HEATING, VENTILATION AND AIR-CONDITIONING - ELECTRICAL**

**POWER SUPPLY, CONTROL AND MONITORING SYSTEM**

Item					Item	
	<b>CONTROL PANELS</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Lead-lag control/ control panel for pumps :-					
	<i>Each</i>					
39001	Lead-lag pump control c/w all necessary lead-lags relays, selectors, indicating lamps, wirings, including panel or in addition to the local control panels of the pumps (for control of 1 to 2 items).....	2,261.31	82.52	143.50	328.14	39001
	Interlocking control/ control panel for air handling and treatment equipment :-					
	<i>Each</i>					
39002	Interlocking control for an AHU/ a group of up to 4 nos. of fans/ damper actuator (ON/ OFF function is treated as one item) c/w relay, timer, indicating lamps, wirings and all necessary accessories including panel or in addition to the control panels (for control of 1 to 2 items).....	2,198.25	80.24	139.35	316.88	39002
	Supervisory/control panel for Air-Conditioning system :-					
	<i>Each</i>					
39003	Supervisory panel of sheet metal box and stainless steel metal front plate c/w push buttons, indicating lamps, relays (or electrical control), selectors, electrical wiring and all necessary functional and operational component for the complete unit monitoring and controlling of 1 set of equipment.....	3,472.66	144.93	251.82	569.89	39003
39004	Every additional set of equipment incorporating with supervisory panel as described in item 39003.....	2,892.71	15.81	16.40	116.81	39004
39005	Repeater/ Indicating panel of sheet metal box and stainless steel metal front plate c/w indicating lamps, relays, buzzer, mute button, lamp test button, electrical wiring and all necessary functional and operational component for the complete unit monitoring of a set of equipment/ a set of fan (up to 4 nos.)/ water detection system/ high or low temperature alarm system.....	2,712.00	144.93	251.82	569.89	39005
39006	Every additional set of equipment/ set of fan/ water detection system/ high or low temperature alarm system incorporating with repeater/ indicating panel as described in item 39005.....	1,130.00	15.81	16.40	116.81	39006
	Interface control for monitoring and/or controlling of existing equipment					
	<i>Each</i>					
39007	Interface control c/w control module, relay, cabling and all necessary accessories for monitoring and/or controlling of 1 set of existing equipment.....	1,756.91	15.09	16.17	79.75	39007
	Control panel for solar collector control system :-					
	<i>Each</i>					
39008	Solar collector control panel with solar hot water system controller, including the control of circulation pump, solar hot water storage tank, level switch, safety device & all necessary accessories.....	2,015.68	102.50	190.41	343.65	39008

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>SENSORS &amp; METERS</b>		A	B	C	D	
Meters :-		\$	\$	\$	\$	
<i>Each</i>						
39009	Hour run meter (all rating).....	701.10	5.37	9.13	21.77	39009
39010	Energy meter for chilled water.....	5,806.73	34.68	36.80	69.54	39010
39011	Sea water flow counter.....	3,586.95	22.30	24.98	56.45	39011
39012	Sea water direct reading flow meter (all size).....	10,039.99	34.68	36.80	69.54	39012
39013	Thermometers for chilled water.....	345.23	8.70	13.64	33.26	39013
39014	Digital temperature indicator.....	347.66	10.04	14.99	39.17	39014
39015	Digital temperature meter c/w interfacing unit suitable for computer download in Excel or CSV format.....	7,767.29	10.54	12.23	24.75	39015
Sensors & Detectors :-						
<i>Each</i>						
39016	Movement detector, combined infrared and ultrasonic detection type c/w necessary accessories and connection to the alarm panel.....	661.56	34.10	35.42	82.05	39016
39017	High temperature detector c/w control panel, indicating lights, alarm / buzzer and served with automatic "duty / standby" changeover switch.....	8,753.84	10.54	12.23	24.75	39017
39018	Duct type carbon dioxide (CO <sub>2</sub> ) sensor c/w associated DDC controller, control wiring and associated accessories .....	4,843.67	11.95	13.41	27.87	39018
39019	Duct type carbon monoxide (CO) sensor c/w associated DDC controller, control wiring and associated accessories .....	4,843.67	11.95	13.41	27.87	39019
39020	Room type carbon dioxide (CO <sub>2</sub> ) sensor c/w DDC controller, LCD display, control wiring and associated accessories.....	4,843.67	11.95	13.41	27.87	39020
39021	Room type carbon monoxide (CO) sensor c/w DDC controller, LCD display, control wiring and associated accessories.....	4,843.67	11.95	13.41	27.87	39021
39022	Temperature sensors.....	593.01	7.59	9.44	51.03	39022
39023	Humidity sensors.....	1,727.41	7.59	9.44	51.03	39023
39024	Absolute humidity (dew point) sensors.....	1,768.18	7.59	9.44	51.03	39024
39025	Combined type humidity and temperature sensors.....	1,800.09	7.59	9.44	51.03	39025
39026	Differential pressure sensors.....	1,787.13	7.59	9.44	51.03	39026

Item					Item	
<b>SENSORS &amp; METERS (CONT'D)</b>						
Sensors & Detectors : - (Cont'd)						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
39027	Probe type duct mounted smoke detector & indicator (tripping power supply is connected to F.S. panel), access panel, including modification of existing duct work and air-conditioner's control panel .....	1,529.49	64.97	68.05	240.00	39027
39028	Air velocity sensors.....	2,193.47	7.59	9.44	51.03	39028
39029	Contamination sensors.....	2,190.49	7.59	9.44	51.03	39029
39030	Flow sensors.....	543.12	7.59	9.44	51.03	39030
39031	Occupancy sensor.....	687.71	7.59	9.44	51.03	39031
39032	Carbon monoxide monitor/alarm sensors.....	442.34	7.46	9.40	47.50	39032
39033	Nitrogen dioxide sensors.....	1,313.46	7.46	9.40	47.50	39033
39034	Carbon dioxide (CO <sub>2</sub> ) sensor of non dispersive technology with sensing range of 0 to 2000 ppm, accuracy within 5%. Duct / wall mounted.....	1,852.80	7.46	9.40	47.50	39034

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>CENTRAL CONTROL AND MONITORING SYSTEM (CCMS)</b>		A	B	C	D	
<i>Each</i>		\$	\$	\$	\$	
39035	CCMS central control workstation c/w mouse and keyboard, TFT LCD monitor of viewable size 530mm (21" diagonally), A3 ink/laser printer capable of handling continuous paper, UPS capable of backup for 1 hour of operation for the PC, monitor and printer and 16-bit/full duplex audio system c/w speakers.....	20,212.62	28.11	37.84	118.72	39035
39036	Uninterrupted power supply capable for 1 hour operation for the PC.....	10,090.46	14.12	18.98	59.71	39036
39037	Portable operator terminal hardware c/w weight of less than 2 kg, run on rechargeable battery, capable of retrieving and storing information to and from CCMS server and DDC controllers and Input method can be keyboard, touch screen, track point and/or mouse.....	14,902.02	4.68	7.67	11.99	39037
39038	DDC hardware c/w RAM and the clock shall be provided with power backup of 72 hours instant recharged capacitor or 12-hour trickle recharged batteries, universal inputs and universal outputs.....	3,943.74	28.11	37.84	118.72	39038
39039	Unitary controller hardware with processor speed at least 10 MHz and minimum of 512 Kbytes RAM.....	4,957.88	9.51	14.28	24.01	39039
39040	Gateway/interfacing hardware c/w processor speed at least 16.7 MHz and minimum of 2 Mbytes RAM. The gateway, which also acts as a general purpose controller, shall have the same analog/digital input and output points.....	5,619.62	9.51	14.28	24.32	39040
39041	CCMS central database repository shall reside in the CCMS server. The database server shall use client/server technology and comply with Microsoft Open Database Connectivity (ODBC) latest version and support ISO/IEC 9075-9:2003.....	987.44	-	-	24.01	39041
39042	ACMV sub-system unitary controllers for temperature/humidity/pressure controllers with plug-in proportional type with integrated circuits controllers shall be available with either 0 to 20V DC / 4 to 20 mA proportional output, two-position output, or any combination.....	8,970.83	14.12	18.98	59.71	39042
39043	Programmable DDC for VAV Box.....	1,010.48	5.59	6.87	45.89	39043

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>SUNDRIES</b>					
	IAQ testing/assessment and report as described in Part D of A/C G.S. :-					
	<i>Per point</i>	A \$	B \$	C \$	D \$	
39044	Carbon dioxide.....	281.89	-	-	-	39044
39045	Carbon monoxide.....	279.88	-	-	-	39045
39046	Respirable suspended particulate.....	415.85	-	-	-	39046
39047	Nitrogen dioxide.....	278.42	-	-	-	39047
39048	Ozone.....	1,413.60	-	-	-	39048
39049	Formaldehyde.....	280.05	-	-	-	39049
39050	Total volatile organic compound.....	421.31	-	-	-	39050
39051	Radon.....	275.58	-	-	-	39051
39052	Airborne bacteria.....	414.22	-	-	-	39052
39053	Room temperature.....	139.27	-	-	-	39053
39054	Relative humidity.....	138.91	-	-	-	39054
39055	Air movement.....	141.49	-	-	-	39055
	Cables :-					
	<i>Per linear metre</i>					
39056	Low capacitance cable.....	14.82	2.64	3.22	8.71	39056
39057	Shield twist pair cable.....	18.49	2.64	3.22	8.71	39057
39058	Multi-mode 62.5/125 fiber optic cable.....	56.51	2.64	3.22	8.71	39058

**Section 40**

**FIRE SERVICES**

## SECTION 40

### FIRE SERVICES

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC40.01</b>	<p>All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.</p> <p>For the avoidance of doubt, all items for pump sets in this section shall only apply to the works executed for the Fire Services Installation by the Approved Suppliers of Materials and Specialist Contractors for Public Works : Fire Service Installation.</p>
<b>Measurement of excavations, ducts, chases, holes and other subsidiary work</b>	<b>SC40.02</b>	<p>All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct, Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.</p>
<b>Measurement of pipework</b>	<b>SC40.03</b>	<p>Unless otherwise stated, pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.</p> <p>Branch pipes of 32 mm diameter from tee-off for and including sprinkler points and dry pendant sprinkler points shall be grouped together and measured in numbers of sprinkler points. The rates for which shall include the associated pipework and sprinkler points and dry pendant sprinkler points.</p>
<b>Measurement of fire alarm indicating/ control panel</b>	<b>SC40.04</b>	<p>The interconnecting cables and the cable containment for the fire alarm indicating/ control panel shall be measured separately.</p>
<b>Measurement of heat resistant cables and low smoke zero halogen cables</b>	<b>SC40.05</b>	<p>Cables for the equipment, control/ indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing.</p> <p>Heat resistant cables and low smoke zero halogen cables shall be measured the net length as fixed in linear metres.</p>



## SPECIAL CONDITIONS (CONT'D)

**Measurement  
of temporary  
supply****SC40.06**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

**Rates generally****SC40.07**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.
- (g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

## SPECIAL CONDITIONS (CONT'D)

**Rates generally  
(Cont'd)****SC40.07  
(Cont'd)**

- (j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (m) Submitting all relevant documentation to Fire Services Department and obtaining necessary approval.
- (n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (o) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (p) Provision of manufacturer's guarantee.

**Rates for  
pipework****SC40.08**

The rates for pipework shall further include for :-

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.
- (g) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.
- (h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.
- (i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.
- (j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.

## SPECIAL CONDITIONS (CONT'D)

<b>Rates for in-line pipework equipment</b>	<b>SC40.09</b>	<p>The rates for in-line pipework equipment (e.g. valves, mechanical flow meters, gauges, strainers and the like) shall further include for : -</p> <p>(a) Cutting and jointing to pipes and fittings.</p> <p>(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.</p>
<b>Rates for fire alarm call points, fire alarm bell points, visual fire alarm, smoke detector points and heat detector points</b>	<b>SC40.10</b>	<p>The rates for fire alarm call points, fire alarm bell points, visual fire alarm points, smoke detector points and heat detector points shall further include for fire alarm push buttons, fire alarm bells, visual fire alarm, smoke detectors, heat detectors, re-programming work of existing addressable fire control/ indication panel and all necessary accessories for connection to the fire alarm control/ indication panel or the fire alarm system. The cables and cable containment shall be measured separately and paid for at appropriate rates under this Section and Sections 28 to 30.</p>
<b>Rates for sprinkler points and dry pendant sprinkler points</b>	<b>SC40.11</b>	<p>The rates for sprinkler points and dry pendant sprinkler points shall further include for sprinkler heads, arm pipes and all necessary accessories. The range pipes, distribution pipe, draining/ re-fill the sprinkler system and tee-off from existing sprinkler system shall be measured separately and paid for at appropriate rates under this Section.</p>
<b>Rates for control/ indicating panels</b>	<b>SC40.12</b>	<p>Control/ indicating panel shall be measured on the basis of complete unit monitoring and controlling the number of zones/ points as specified. The rates for control/ indicating panels shall further include for all necessary relays, indicating lamps, push button package and selector switches. The cables and cable containment to external equipment or existing panel shall be measured separately and paid for at appropriate rates under Sections 27 to 30.</p>
<b>Rates for equipment</b>	<b>SC40.13</b>	<p>The rates for equipment shall further include for : -</p> <p>(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.</p> <p>(b) Supporting frames.</p> <p>(c) Connections including flexible joints between pipework and equipment.</p> <p>(d) Flexible connections and anti-vibration connections between pipework and equipment.</p> <p>(e) All necessary operational and control accessories (e.g. valves, gauges, mechanical flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.</p>

## SPECIAL CONDITIONS (CONT'D)

<b>Rates for equipment (Cont'd)</b>	<b>SC40.13 (Cont'd)</b>	<ul style="list-style-type: none"> <li>(f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.</li> <li>(g) Anti-vibration mountings for machinery, equipment and apparatus of all kinds and the like to be supplied and installed by the Contractor.</li> <li>(h) Anti-vibration materials and sound insulating materials in equipment, apparatus of all kinds and machinery bases.</li> <li>(i) Motor starters (if motors in the equipment require motor starters).</li> <li>(j) Earth/ equipotential bonding as specified.</li> </ul>
<b>Rates for heat resistant cables and low smoke zero halogen cables</b>	<b>SC40.14</b>	<p>The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.</li> <li>(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.</li> <li>(c) Making cable-joints.</li> <li>(d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.</li> <li>(e) All necessary fixings complete with accessories and fittings as required.</li> <li>(f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.</li> </ul>
<b>Rates for "Take down and clear away" or "Take down and set aside for re-use"</b>	<b>SC40.15</b>	<p>The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with fire services installation shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) All in-line fittings including brackets, supports, hangers and the like.</li> <li>(b) Cutting into existing pipework and the like in position.</li> <li>(c) Plugging off remaining ends with plugs or caps as required.</li> <li>(d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.</li> <li>(e) In the case of equipment and the like, taking down all associated pipework and/ or building services works.</li> <li>(f) Making good all works disturbed.</li> </ul>

SPECIAL CONDITIONS (CONT'D)

**Particular  
Specification**

**SC40.16**

The Particular Specification for fire services installation can be found in the Contract.

Item					Item	
	<b>AUTOMATIC/ MANUAL FIRE ALARM SYSTEM</b>					
	Automatic/ manual fire alarm points c/w re-programming work of existing addressable fire control panel, if necessary, and all necessary mounting accessories and connected to the fire alarm control panel	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
40001	Fire alarm call point with break glass type alarm push c/w metal hammer and chains .....	365.96	15.09	16.17	79.75	40001
40002	Weatherproof type fire alarm call point with break glass type alarm push c/w metal hammer and chains .....	494.05	15.09	16.17	79.75	40002
40003	Fire alarm call point with break glass type alarm push c/w metal hammer and chains, addressable type.....	759.36	24.24	43.85	111.02	40003
40004	Weatherproof type fire alarm call point with break glass type alarm push c/w metal hammer and chains, addressable type.....	830.55	24.24	43.85	111.02	40004
40005	Fire alarm bell point; 150 - 250 mm diameter.....	569.91	15.09	16.17	79.75	40005
40006	Weatherproof type fire alarm bell point; 150 - 250 mm diameter.....	767.59	15.09	16.17	79.75	40006
40007	Smoke detector point, ionization type.....	518.06	21.56	23.71	79.75	40007
40008	Smoke detector point c/w remote indicator, ionization type.....	824.97	53.90	58.20	233.89	40008
40009	Smoke detector point; addressable type, ionization type.....	1,080.00	30.19	31.26	111.02	40009
40010	Smoke detector point, optical type.....	518.06	15.09	16.17	79.75	40010
40011	Smoke detector point c/w remote indicator, optical type.....	824.97	53.90	58.20	233.89	40011
40012	Smoke detector point; addressable type, optical type.....	1,099.19	24.24	43.85	111.02	40012
40013	Heat detector point; fixed temperature type, Class A2.....	487.88	15.09	16.17	79.75	40013
40014	Heat detector point; fixed temperature type, Class BR or CR.....	487.88	15.09	16.17	79.75	40014
40015	Heat detector point; fixed temperature type, Class CS, DS, ES, FS or GS.....	487.88	15.09	16.17	79.75	40015
40016	Heat detector point; fixed temperature type; addressable type, Class A2.....	1,072.24	24.24	43.85	111.02	40016
40017	Heat detector point: fixed temperature type, addressable type, Class BR or CR.....	1,072.24	24.24	43.85	111.02	40017
40018	Heat detector point; fixed temperature type; addressable type, Class CS, DS, ES, FS or GS.....	1,072.24	24.24	43.85	111.02	40018
40019	Heat detector point c/w remote indicator, Class A2.....	788.03	53.90	58.20	233.89	40019
40020	Heat detector point c/w remote indicator, Class BR or CR.....	788.03	53.90	58.20	233.89	40020
40021	Heat detector point c/w remote indicator, Class CS, DS, ES, FS or GS.....	788.03	53.90	58.20	233.89	40021
40022	Heat detector point; rate of rise temperature type, Class A2.....	524.61	15.09	16.17	79.75	40022
40023	Heat detector point; rate of rise temperature type, Class BR or CR.....	524.61	15.09	16.17	79.75	40023

Item					Item	
	<b>AUTOMATIC/ MANUAL FIRE ALARM SYSTEM (CONT'D)</b>					
	Automatic/ manual fire alarm points c/w re-programming work of existing addressable fire control panel, if necessary, and all necessary mounting accessories and connected to the fire alarm control panel (cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
40024	Heat detector point; rate of rise temperature type, CS, DS, ES, FS or GS.....	524.61	15.09	16.17	79.75	40024
40025	Heat detector point; rate of rise temperature type; addressable type, Class A2.....	1,072.24	24.24	43.85	111.02	40025
40026	Heat detector point; rate of rise temperature type; addressable type, Class BR or CR.....	1,072.24	24.24	43.85	111.02	40026
40027	Heat detector point; rate of rise temperature type; addressable type, CS, DS, ES, FS or GS.....	1,072.24	24.24	43.85	111.02	40027
40028	Heat detector point; combined rate of rise and fixed temperature type, Class A2.....	694.64	15.09	16.17	79.75	40028
40029	Heat detector point; combined rate of rise and fixed temperature type, Class BR or CR.....	694.64	15.09	16.17	79.75	40029
40030	Heat detector point; combined rate of rise and fixed temperature type, CS, DS, ES, FS or GS.....	694.64	15.09	16.17	79.75	40030
40031	Heat detector point; combined rate of rise and temp. type; addressable type, Class A2.....	1,164.53	24.24	43.85	111.02	40031
40032	Heat detector point; combined rate of rise and temp. type; addressable type, Class BR or CR.....	1,164.53	24.24	43.85	111.02	40032
40033	Heat detector point; combined rate of rise and temp. type; addressable type, Class CS, DS, ES, FS, or GS.....	1,164.53	24.24	43.85	111.02	40033
40034	Intrinsically safe heat detector point, Class A2.....	1,364.43	21.56	23.71	118.57	40034
40035	Intrinsically safe heat detector point, Class BR or CR.....	1,424.77	21.56	23.71	118.57	40035
40036	Intrinsically safe heat detector point, Class CS, DS, ES, FS, or GS.....	1,424.77	21.56	23.71	118.57	40036
40037	Intrinsically safe smoke detector point.....	1,672.53	21.56	23.71	118.57	40037
40038	Multi-sensor detector with 2 sensing elements (i.e. optical + heat).....	2,405.12	15.09	16.17	79.75	40038
40039	Probe unit.....	2,185.42	15.09	16.17	79.75	40039
40040	Interface control point c/w control module, relay and all necessary accessories.....	878.46	15.09	16.17	79.75	40040
40041	Remote indicator for smoke/ heat detector c/w interconnecting wiring and conduits .....	255.42	36.64	42.04	149.82	40041
40042	Weatherproof remote indicator for smoke/ heat detector c/w interconnecting wiring and conduits .....	453.47	36.64	42.04	149.82	40042
40043	End of line tester.....	177.69	19.39	21.56	88.39	40043
40044	Visual fire alarm point.....	785.18	50.67	59.28	212.33	40044
40045	Weatherproof type visual fire alarm point.....	949.20	50.67	59.28	212.33	40045
40046	Additional contactor/ relay/ electronic components in the fire alarm panel for shut down air-conditioning/ ventilation equipment .....	374.73	20.48	22.63	88.39	40046

Item						Item
	<b>AUTOMATIC/ MANUAL FIRE ALARM SYSTEM (CONT'D)</b>					
	Automatic/ manual fire alarm points c/w re-programming work of existing addressable fire control panel, if necessary, and all necessary mounting accessories and connected to the fire alarm control panel (cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per lot</i>	A \$	B \$	C \$	D \$	
40047	Provide direct link to the Fire Control Centre of Fire Services Department including all terminating equipment at each end of the link and the first year rental charge.....	7,409.92	-	-	-	40047
	Nickel-metal hydride battery c/w charger and metal box housing of the following capacity : -					
	<i>Each</i>					
40048	n.e. 10 ampere hour.....	1,010.44	18.33	20.48	121.81	40048
40049	10 - 20 ampere hour.....	1,347.26	18.33	20.48	121.81	40049
40050	20 - 30 ampere hour.....	1,684.07	18.33	20.48	121.81	40050
40051	30 - 40 ampere hour.....	2,694.52	19.39	21.56	130.43	40051
40052	40 - 50 ampere hour.....	4,041.78	19.39	21.56	130.43	40052
40053	50 - 60 ampere hour.....	4,715.40	19.39	21.56	130.43	40053
	Fire alarm control/ indicating panel c/w contacts/ auxiliary contacts for shut down of A/ C & ventilation equipment, connection of fire link/ lift homing and all necessary accessories (including design for the fire alarm control system, training & providing all passwords) : -					
	<i>Each</i>					
40054	Panel of 4 zones or less.....	5,052.22	50.67	53.90	288.87	40054
40055	Ditto 5 - 8 zones.....	6,736.29	53.90	57.12	303.96	40055
40056	Ditto 9 - 12 zones.....	9,046.83	57.12	60.36	323.36	40056
40057	Ditto 13 - 18 zones.....	16,840.73	60.36	63.59	337.38	40057
40058	Add to last item for each additional 4 zones or part thereof.....	2,008.15	3.43	6.13	15.09	40058



Item

Item

**AUTOMATIC/ MANUAL FIRE ALARM SYSTEM (CONT'D)**

Intelligent addressable type fire alarm control/ indicating panel c/w contacts/ auxiliary contacts for shut down of A/ C & ventilation equipment, connection of fire link/ lift homing and all necessary accessories (including design for the fire alarm control system, training & providing all passwords) :-

*Each*

Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
A \$	B \$	C \$	D \$
16,840.73	48.50	51.75	284.56
20,208.88	58.20	65.76	336.29
23,577.02	77.61	85.15	427.91
26,945.17	87.31	95.93	481.80
7,343.60	6.47	7.54	33.41
2,031.13	5.39	6.47	48.50

40059	Panel of 50 points or less.....	16,840.73	48.50	51.75	284.56	40059
40060	Ditto 51 - 100 points.....	20,208.88	58.20	65.76	336.29	40060
40061	Ditto 101 - 150 points.....	23,577.02	77.61	85.15	427.91	40061
40062	Ditto 151 - 200 points.....	26,945.17	87.31	95.93	481.80	40062
40063	Add to last item for each additional 50 points or part thereof.....	7,343.60	6.47	7.54	33.41	40063
40064	System printer.....	2,031.13	5.39	6.47	48.50	40064

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>SPRINKLER SYSTEM</b>						
	Sprinkler Point :-					
	<i>Each</i>					
40065	Sprinkler head (quartzoid bulb type), 68°C / 93°C c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	194.04	25.86	29.12	85.15	40065
40066	Sprinkler head (quartzoid bulb type), 68°C / 93°C for false ceiling, flush pattern, pendant type/ concealed pendant type c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	335.96	25.86	29.12	86.23	40066
40067	Sprinkler head (fast response type) c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	225.09	25.86	29.12	85.15	40067
40068	Sprinkler head (fast response type) for false ceiling, flush pattern, pendant type/ concealed pendant type c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	373.35	25.86	29.12	86.23	40068
40069	Sprinkler head, dry pendent type (quartzoid bulb type) c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	677.03	24.79	26.94	79.75	40069
40070	Sprinkler head (quartzoid bulb type), quick response and vandal type suitable for cell of prison, c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe (where applicable) and all necessary accessories (the fusible element assembly consistently breaks away when connected to 18.15 kg weight dropped 0.153 m) .....	375.57	24.79	26.94	89.46	40070
40071	Institutional style quick response flush pendent sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories.....	786.00	24.79	26.94	89.46	40071
40072	Institutional style quick response flush sidewall sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories.....	872.66	24.79	26.94	89.46	40072
40073	Cabinet for spare sprinkler.....	1,010.44	6.47	7.54	11.85	40073
40074	Sprinkler head guard.....	202.09	7.54	8.63	12.94	40074
40075	Sprinkler cover plate.....	18.36	7.54	8.63	12.94	40075
	Draining and refilling the sprinkler system :-					
	<i>Each sprinkler system</i>					
40076	Drain and refill the sprinkler system with all necessary accessories for AA&I works controlled by the main control valve set. The formal process in suspension of the FS system shall be included.....	2,694.52	-	-	-	40076
40077	Drain and refill the sprinkler system with all necessary accessories for AA&I works controlled by the subsidiary control valve set. The formal process in suspension of the FS system shall be included.....	2,694.52	-	-	-	40077

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>SPRINKLER SYSTEM (CONT'D)</b>		A	B	C	D	
<i>Each</i>		\$	\$	\$	\$	
	Sprinkler Point c/w 32 mm diameter sprinkler pipe connected from branch tee to sprinkler head : -					
40078	Sprinkler head (quartzoid bulb type), 68°C / 93°C c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	615.06	37.23	40.26	207.77	40078
40079	Sprinkler head (quartzoid bulb type), 68°C / 93°C for false ceiling, flush pattern, pendant type/ concealed pendant type, c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	756.98	37.23	40.26	208.94	40079
40080	Sprinkler head (fast response type) c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	646.11	37.23	40.26	207.77	40080
40081	Sprinkler head (fast response type) for false ceiling, flush pattern, pendant type/ concealed pendant type c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	794.37	37.23	40.26	208.94	40081
40082	Sprinkler head, dry pendent type (quartzoid bulb type) c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories .....	1,098.06	35.01	38.68	201.55	40082
40083	Sprinkler head (quartzoid bulb type), quick response and vandal type suitable for cell of prison, c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe (where applicable) and all necessary accessories (the fusible element assembly consistently breaks away when connected to 18.15 kg weight dropped 0.153 m) .....	796.59	36.35	38.93	211.21	40083
40084	Institutional style quick response flush pendent sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories.....	1,207.03	36.35	38.93	211.21	40084
40085	Institutional style quick response flush sidewall sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories.....	1,293.68	36.35	38.93	211.21	40085

Item					Item	
	<b>SPRINKLER SYSTEM (CONT'D)</b>					
	Sprinkler control valve set or subsidiary valve set c/w control wiring, all necessary accessories including valves, alarm valves, pressure gauges, pressure switch, water motor alarm gong retardation chamber, flow switch, security devices with warning labels and serial number, tamper-proof electric switch to indicate valve operational mode including remote indication valve operational on F.S. control panel, etc. :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per set</i>	A \$	B \$	C \$	D \$	
40086	100 mm diameter.....	10,104.44	242.53	274.85	810.54	40086
40087	150 mm diameter.....	13,472.59	259.77	293.18	920.48	40087
40088	Subsidiary stop valve.....	3,368.15	34.50	39.89	65.76	40088
	Pre-action valve package c/w control wiring, swing check valve, gate valve, proper size drain top, flow control valve, pressure gauges, alarm gong, detection control panel with 72 hrs standby period, and all necessary accessories including remote indication on F.S. control panel :-					
	T1 type					
	<i>Each</i>					
40089	Valve package for pipe of 80 mm diameter.....	17,327.50	253.29	284.56	980.76	40089
40090	Ditto 100 mm diameter.....	19,619.92	271.62	302.87	1,125.65	40090
40091	Ditto 150 mm diameter.....	24,392.77	288.87	319.04	1,273.69	40091
	T2 type					
	<i>Each</i>					
40092	Valve package for pipe of 80 mm diameter.....	17,006.61	253.29	284.56	980.76	40092
40093	Ditto 100 mm diameter.....	19,883.00	271.62	302.87	1,125.65	40093
40094	Ditto 150 mm diameter.....	24,171.19	288.87	319.04	1,273.69	40094
	Detection control for pre-action system :-					
	<i>Each</i>					
40095	Detection control panel for pre-action system c/w timer, valve trim box, solenoid valve, pressure switches, charger and nickel cadmium battery, alarm bell and all necessary accessories .....	5,389.03	54.97	59.28	336.29	40095
40096	Manual emergency push button station c/w cables, conduits (surface or concealed type) and all necessary accessories including connection to the detection control panel.....	559.89	54.97	59.28	336.29	40096

Item					Item	
	<b>SPRINKLER SYSTEM (CONT'D)</b>					
	Re-cycling pre-action valve package c/w control wiring, swing check valve, gate valve, proper size drain top flow control valve, pressure gauges, alarm gong and all necessary accessories including remote indication on F.S. control panel :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
40097	Valve package for pipe of 80 mm diameter.....	24,628.45	297.48	335.22	1,054.14	40097
40098	Ditto 100 mm diameter.....	28,669.61	320.12	356.76	1,174.86	40098
	Detection control for re-cycling pre-action system :-					
	<i>Each</i>					
40099	Detection control panel for re-cycling pre-action c/w timer, valve trim box, solenoid valve, pressure switches, charger and nickel cadmium battery for 72 hrs standby period, alarm bell and all necessary accessories .....	13,148.15	70.06	74.37	402.05	40099
40100	Heat detector for re-cycling pre-action system c/w low smoke fire resisting cables and all necessary accessories and connected to re-cycling pre-action detection panel.....	5,280.41	79.75	92.69	309.34	40100
40101	Manual emergency push button station c/w cables, conduits (surface or concealed type) and all necessary accessories including connection to the detection control panel.....	654.94	66.83	79.75	250.06	40101
	Dry pipe system c/w air compressor unit, air maintenance device, air supply copper pipes, pressure relief valve for air supply pipework, dryer or freezer for air supply system, restrictor for air supply system, alarm valve, shut off valves, clush valve mounting brackets, vibration eliminator to maintain system air pressure of 3.5 bar in 3 minutes, and testing facilities including quick-acting test valve :-					
	<i>Each</i>					
40102	System for protected area n.e. 50 m <sup>2</sup> .....	9,170.33	168.14	177.61	638.09	40102
40103	System for protected area 50 m <sup>2</sup> - 100 m <sup>2</sup> .....	14,790.22	171.37	181.09	643.47	40103
	Sprinkler inlet :-					
	<i>Each</i>					
40104	Fire services sprinkler inlet.....	1,684.07	54.97	58.20	121.81	40104

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>HYDRANT/ HOSE REEL SYSTEM</b>						
<i>Each</i>						
40105	30 m long hos reel c/w all necessary pipework and fittings including connection to the existing hose reel system (pipe within 3 m from existing pipe and up to 32 mm diameter shall be included, extra length measured separately) .....	1,684.07	71.14	76.54	394.50	40105
40106	Metal box for hose reel nozzle c/w glass front panel.....	269.45	8.40	8.96	15.09	40106
40107	Drain and refill the hydrant/ hose reel system for execution of work for wet system .....	2,694.52	-	-	-	40107
40108	Hydrant outlet (single) c/w all necessary fitting including connection to the existing hydrant system (pipe work measured separately) .....	1,347.26	54.97	57.12	199.40	40108
40109	Pedestal type cast iron, round head external street hydrant outlet c/w all necessary fitting including connection to the existing hydrant system (pipe work measured separately) .....	336.81	114.25	142.28	448.39	40109
40110	Fire Services inlet twin type.....	1,684.07	54.97	57.12	120.73	40110
40111	Parity valve (all sizes).....	2,020.89	37.72	44.19	70.06	40111
40112	Street hydrant outlet (single) c/w all necessary fitting including connection to existing hydrant system (pipework measured separately) .....	1,274.58	68.98	74.37	315.82	40112
40113	Ditto (twin outlet).....	1,434.91	74.37	79.75	381.55	40113
40114	Metal identification plate for F.S. inlet leather & lock for F.S. inlet.....	75.13	7.54	8.63	15.09	40114
40115	Direct reading flowmeter.....	9,212.00	42.04	43.12	82.99	40115
40116	Pressure reducing valve set.....	1,167.07	37.72	44.19	70.06	40116
40117	Carry out test on water pressure and flow at pedestal street hydrant installed by others using calibrated equipment .....	3,058.58	-	-	-	40117

Item					Item	
<b>PIPE WORK AND PUMPS</b>						
Galvanized steel pipes c/w all necessary accessories for fire services system : -						
<i>Per linear metre</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40118	25 mm diameter.....	134.73	2.97	3.51	38.80	40118
40119	32 mm diameter.....	168.41	3.46	3.82	40.98	40119
40120	40 mm diameter.....	188.62	3.63	4.20	44.19	40120
40121	50 mm diameter.....	235.77	4.14	4.61	51.75	40121
40122	65 mm diameter.....	269.45	4.64	5.29	58.20	40122
40123	80 mm diameter.....	370.50	5.39	6.47	65.76	40123
40124	100 mm diameter.....	437.86	6.38	6.72	85.15	40124
40125	150 mm diameter.....	606.27	9.70	10.77	112.10	40125
40126	200 mm diameter.....	1,010.44	11.85	14.01	136.90	40126
Ductile steel pipe c/w all necessary accessories for fire services system : -						
<i>Per linear metre</i>						
40127	150 mm diameter.....	855.93	7.24	7.89	88.39	40127
40128	200 mm diameter.....	1,618.12	8.63	9.70	111.02	40128
40129	250 mm diameter.....	2,380.31	10.77	11.85	117.48	40129
Underground ductile steel pipe c/w all necessary accessories for fire services system : -						
<i>Per linear metre</i>						
40130	150 mm diameter.....	1,163.96	5.54	5.90	71.14	40130
40131	200 mm diameter.....	1,557.85	6.76	7.13	87.31	40131
40132	250 mm diameter.....	1,951.74	8.10	8.61	104.55	40132

Item					Item	
<b>PIPE WORK AND PUMPS (CONT'D)</b>						
Tee off from Existing pipework :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40133	32 mm diameter.....	180.74	-	-	106.72	40133
40134	40 mm diameter.....	199.32	-	-	119.65	40134
40135	50 mm diameter.....	241.77	-	-	130.43	40135
40136	65 mm diameter.....	301.28	-	-	173.55	40136
40137	80 mm diameter.....	348.66	-	-	209.11	40137
40138	100 mm diameter.....	479.18	-	-	294.25	40138
40139	150 mm diameter.....	768.52	-	-	385.87	40139
40140	200 mm diameter.....	1,188.15	-	-	673.68	40140
40141	250 mm diameter.....	1,741.11	-	-	833.18	40141
Gate valve c/w padlock (where applicable) and all necessary accessories :-						
<i>Each</i>						
40142	25 mm diameter.....	151.62	22.62	27.21	36.64	40142
40143	32 mm diameter.....	190.93	23.06	27.67	40.98	40143
40144	40 mm diameter.....	230.25	23.66	28.14	44.19	40144
40145	50 mm diameter.....	279.28	24.79	29.12	47.42	40145
40146	65 mm diameter.....	873.07	25.86	30.19	49.59	40146
40147	80 mm diameter.....	1,004.99	28.03	32.33	52.81	40147
40148	100 mm diameter.....	1,364.15	30.19	34.50	58.20	40148
40149	150 mm diameter.....	2,126.24	39.89	50.67	78.68	40149
40150	200 mm diameter.....	3,658.12	49.59	57.12	99.17	40150
40151	250 mm diameter.....	5,512.91	58.20	63.59	115.33	40151



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>PIPE WORK AND PUMPS (CONT'D)</b>						
Gate valve for sprinkler system c/w tamper-proof electric switch to indicate valve operational mode including remote indication on F.S. control panel : -						
<i>Each</i>						
40152	32 mm diameter.....	751.28	37.67	43.08	122.88	40152
40153	40 mm diameter.....	799.22	38.23	43.52	125.04	40153
40154	50 mm diameter.....	872.78	39.16	44.48	129.34	40154
40155	65 mm diameter.....	1,666.17	40.98	46.35	132.58	40155
40156	80 mm diameter.....	1,931.26	42.04	47.42	134.73	40156
40157	100 mm diameter.....	2,266.82	44.19	49.59	139.04	40157
40158	150 mm diameter.....	3,484.32	53.90	60.36	160.60	40158
40159	200 mm diameter.....	4,875.09	63.59	71.14	180.00	40159
Globe valve : -						
<i>Each</i>						
40160	25 mm diameter.....	157.11	21.56	25.86	36.64	40160
40161	32 mm diameter.....	211.92	25.87	30.89	40.98	40161
40162	40 mm diameter.....	296.33	26.45	31.34	44.19	40162
40163	50 mm diameter.....	421.73	27.43	32.40	47.42	40163
40164	65 mm diameter.....	1,022.58	28.03	33.06	51.75	40164
40165	80 mm diameter.....	1,301.94	28.63	33.69	54.97	40165
40166	100 mm diameter.....	1,590.08	33.27	38.21	68.98	40166
40167	150 mm diameter.....	3,314.77	43.06	49.33	90.53	40167
40168	200 mm diameter.....	5,604.08	53.09	60.76	112.10	40168
40169	250 mm diameter.....	7,682.50	60.89	67.12	130.43	40169

Item					Item	
<b>PIPE WORK AND PUMPS (CONT'D)</b>						
	Globe valve for sprinkler system c/w tamper-proof electric switch to indicate valve operational mode including remote indication on F.S. control panel : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
40170	32 mm diameter.....	745.70	37.67	43.08	122.88	40170
40171	40 mm diameter.....	802.59	38.23	43.53	125.04	40171
40172	50 mm diameter.....	925.83	39.16	44.48	129.34	40172
40173	65 mm diameter.....	1,800.58	40.98	46.35	132.58	40173
40174	80 mm diameter.....	2,023.76	42.04	47.42	134.73	40174
40175	100 mm diameter.....	2,492.37	44.19	49.59	139.04	40175
40176	150 mm diameter.....	4,085.79	53.90	60.36	160.60	40176
40177	200 mm diameter.....	6,255.43	63.59	71.14	180.00	40177
40178	250 mm diameter.....	8,344.74	67.90	78.68	198.32	40178
	Non return valve : -					
	<i>Each</i>					
40179	32 mm diameter.....	234.34	23.06	27.67	40.98	40179
40180	40 mm diameter.....	289.98	23.66	28.13	44.19	40180
40181	50 mm diameter.....	405.80	24.79	29.12	47.42	40181
40182	65 mm diameter.....	723.60	25.86	30.19	49.59	40182
40183	80 mm diameter.....	1,163.56	28.03	32.33	52.81	40183
40184	100 mm diameter.....	1,364.15	30.19	34.50	58.20	40184
40185	150 mm diameter.....	2,342.39	39.89	45.27	78.68	40185
40186	200 mm diameter.....	3,958.93	50.67	57.12	99.17	40186
40187	250 mm diameter.....	5,984.57	58.20	63.59	115.33	40187

Item					Item	
<b>PIPE WORK AND PUMPS (CONT'D)</b>						
Y-type strainer :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40188	32 mm diameter.....	309.67	23.35	28.28	40.98	40188
40189	40 mm diameter.....	384.70	23.82	28.64	44.19	40189
40190	50 mm diameter.....	579.61	24.79	30.19	47.42	40190
40191	65 mm diameter.....	626.58	25.86	31.26	49.59	40191
40192	80 mm diameter.....	799.81	28.03	33.41	52.81	40192
40193	100 mm diameter.....	1,090.67	30.19	35.56	58.20	40193
40194	150 mm diameter.....	2,272.50	39.89	47.42	78.68	40194
40195	200 mm diameter.....	3,454.33	50.67	59.28	99.17	40195
40196	250 mm diameter.....	5,822.31	58.20	66.83	115.33	40196
Sluice valve, wedge type c/w spindle cap :-						
<i>Each</i>						
40197	150 mm diameter.....	2,390.13	40.98	47.42	80.83	40197
40198	200 mm diameter.....	3,758.29	50.67	59.28	101.32	40198
40199	250 mm diameter.....	5,813.50	59.28	66.83	116.41	40199
Puddle flange tank connector :-						
<i>Each</i>						
40200	100 mm diameter.....	762.65	33.41	38.80	62.52	40200
40201	150 mm diameter.....	876.12	44.19	50.67	85.15	40201
40202	200 mm diameter.....	1,148.66	54.97	63.59	107.79	40202
40203	250 mm diameter.....	1,545.47	63.59	71.14	125.04	40203

Item					Item	
<b>PIPE WORK AND PUMPS (CONT'D)</b>						
Sundries :-						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
40204	Vortex inhibitor (all sizes).....	4,753.78	33.41	38.80	62.52	40204
40205	Non-ferrous filter (all sizes).....	1,967.41	31.26	36.64	54.97	40205
40206	Air relief valve (all sizes).....	142.23	23.71	29.12	36.64	40206
40207	Anti-pollution valve (all sizes).....	797.86	28.03	33.41	48.50	40207
40208	Pressure gauge (all sizes).....	264.92	23.71	29.12	36.64	40208
40209	Oil dumped gauge for sprinkler system.....	446.85	24.79	30.19	39.89	40209
40210	Electric alarm pressure switch c/w conduits (surface or concealed type), trunkings, cables for connection to the fire alarm control/ indication panel and control equipment and all accessories .....	1,535.59	84.08	91.62	268.39	40210
40211	Water alarm flow switch c/w conduits (surface or concealed type), trunkings, cables for connection to the fire alarm control/ indication panel and control equipment and all accessories .....	770.02	89.46	99.17	302.87	40211
40212	Subsidiary monitor stop valve set per zone c/w limit switch, conduits (surface or concealed type), trunkings, cables for connection to the fire control indication panel and all accessories .....	2,571.52	95.93	103.48	293.18	40212
Centrifugal pump, horizontal split case type c/w drain and vent, orifice plates, electrical wirings, connected to a power supply switch, control wirings & associated conduit/ trunking, connected to and including start/ stop control panel in the same room and installed on a concrete plinth :-						
<i>Each</i>						
40213	Up to 5 kW.....	60,626.63	144.43	165.99	795.47	40213
40214	5 - 10 kW.....	87,571.80	151.98	173.55	827.79	40214
40215	10 - 15 kW.....	87,571.80	159.53	181.09	856.88	40215
40216	15 - 20 kW..... (The actual rate should be : \$121,253.30 for Item 40216A)	12,125.33	165.99	187.55	880.61	40216
40217	20 - 25 kW..... (The actual rate should be : \$134,725.90 for Item 40217A)	13,472.59	173.55	195.09	914.03	40217
40218	25 - 30 kW..... (The actual rate should be : \$168,407.30 for Item 40218A)	16,840.73	181.09	202.64	933.42	40218
40219	Add to last item for each additional 5 kW or part thereof.....	33,681.46	7.19	7.52	28.03	40219

Item					Item	
	<b>PIPE WORK AND PUMPS (CONT'D)</b>					
	Centrifugal pump, end-suction type c/w drain and vent, orifice plates, electrical wirings, connected to a power supply switch, control wirings & associated conduit/ trunking, connected to and including start/ stop control panel in the same room and installed on a concrete plinth : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
40220	Up to 5 kW.....	53,890.34	144.43	165.99	795.47	40220
40221	5 - 10 kW.....	74,099.22	151.98	173.55	827.79	40221
40222	10 - 15 kW.....	80,835.51	159.53	181.09	856.88	40222
40223	15 - 20 kW..... (The actual rate should be : \$101,044.40 for Item 40223A)	10,104.44	165.99	187.55	880.61	40223
40224	20 - 25 kW..... (The actual rate should be : \$121,253.30 for Item 40224A)	12,125.33	173.55	195.09	914.03	40224
40225	25 - 30 kW..... (The actual rate should be : \$134,725.90 for Item 40225A)	13,472.59	181.09	202.64	933.42	40225
40226	Add to last item for each additional 5 kW or part thereof.....	26,945.17	7.19	7.52	28.03	40226
	Centrifugal Jockey Pump, c/w drain and vent, orifice plates, electrical wirings, connected to a power supply switch, control wirings & associated conduit/ trunking, connected to and including start/ stop control panel in the same room and installed on a concrete plinth : -					
	<i>Each</i>					
40227	Up to 5 kW.....	60,626.63	144.43	165.99	795.47	40227
40228	5 - 10 kW.....	74,099.22	151.98	173.55	827.79	40228
40229	Add to last item for each additional 5 kW or part thereof.....	33,681.46	7.19	7.52	28.03	40229
	Sundries : -					
	<i>Each</i>					
40230	Remote supervisory/ start stop control panel for pump c/w all necessary accessories .....	13,472.59	50.67	53.90	308.27	40230
40231	High/ low level switch c/w conduits (surface or concealed type), trunking, sensing device, interconnection wiring and cables from water tank to indication and control panel for indication and control functions and all necessary for proper functioning of fire services system .....	4,041.78	58.20	66.83	251.14	40231
40232	Sprinkler proving pipe and all necessary accessories.....	5,725.85	31.26	34.50	58.20	40232

Item					Item	
<b>PIPE WORK AND PUMPS (CONT'D)</b>						
Expansion joint c/w all necessary accessories for fire services system :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40233	32 mm diameter.....	976.26	26.37	32.41	45.27	40233
40234	40 mm diameter.....	1,161.37	26.97	32.97	48.50	40234
40235	50 mm diameter.....	1,548.80	28.03	34.50	52.81	40235
40236	65 mm diameter.....	1,728.45	29.12	35.56	54.97	40236
40237	80 mm diameter.....	1,908.06	31.26	37.72	59.28	40237
40238	100 mm diameter.....	2,545.08	33.41	38.80	62.52	40238
40239	150 mm diameter.....	4,158.25	42.04	48.50	76.54	40239
40240	200 mm diameter.....	5,771.42	50.67	57.12	87.31	40240
Foot valve, globe type :-						
<i>Each</i>						
40241	50 mm diameter.....	1,356.00	45.20	203.40	135.60	40241
40242	65 mm diameter.....	2,260.00	56.50	339.00	226.00	40242
40243	80 mm diameter.....	2,712.00	67.80	339.00	226.00	40243
40244	100 mm diameter.....	3,179.53	79.10	452.00	316.40	40244
40245	125 mm diameter.....	4,319.56	90.40	508.50	361.60	40245
40246	150 mm diameter.....	5,459.59	113.00	565.00	452.00	40246
40247	200 mm diameter.....	9,227.39	158.20	678.00	565.00	40247
40248	250 mm diameter.....	13,948.71	226.00	791.00	678.00	40248
40249	300 mm diameter.....	18,670.03	339.00	904.00	791.00	40249

Item					Item	
	<b>FIRE RESISTANT CABLES</b>					
	(Note : The following Items 40250 to 40267 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing)					
	BS 6387 Category B heat resistant cables c/w all necessary accessories : -					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40250	1.5 mm <sup>2</sup> 1-core.....	19.39	1.11	1.45	4.30	40250
40251	2.5 mm <sup>2</sup> 1-core.....	22.12	1.11	1.45	4.30	40251
40252	1.5 mm <sup>2</sup> 7-core.....	128.60	5.39	6.47	20.48	40252
40253	2.5 mm <sup>2</sup> 7-core.....	151.00	6.47	7.54	23.71	40253
40254	1.5 mm <sup>2</sup> 12-core.....	171.59	5.39	6.47	20.48	40254
40255	2.5 mm <sup>2</sup> 12-core.....	199.31	6.47	7.54	23.71	40255
40256	1.5 mm <sup>2</sup> 19-core.....	234.20	6.17	6.41	22.63	40256
40257	2.5 mm <sup>2</sup> 19-core.....	312.62	6.47	7.54	25.86	40257
40258	1.5 mm <sup>2</sup> 27-core.....	322.09	6.47	7.54	25.86	40258
40259	2.5 mm <sup>2</sup> 27-core.....	380.32	7.54	8.63	28.03	40259
40260	1.5 mm <sup>2</sup> 7-core PVC/ SWA/ PVC.....	469.20	5.39	6.47	20.48	40260
40261	2.5 mm <sup>2</sup> 7-core PVC/ SWA/ PVC.....	534.43	6.47	7.54	23.71	40261
40262	1.5 mm <sup>2</sup> 12-core PVC/ SWA/ PVC.....	630.79	5.39	6.47	20.48	40262
40263	2.5 mm <sup>2</sup> 12-core PVC/ SWA/ PVC.....	656.05	6.47	7.54	24.79	40263
40264	1.5 mm <sup>2</sup> 19-core PVC/ SWA/ PVC.....	788.77	5.39	6.47	22.63	40264
40265	2.5 mm <sup>2</sup> 19-core PVC/ SWA/ PVC.....	868.24	6.47	7.54	25.86	40265
40266	1.5 mm <sup>2</sup> 27-core PVC/ SWA/ PVC.....	893.80	6.47	7.54	25.86	40266
40267	2.5 mm <sup>2</sup> 27-core PVC/ SWA/ PVC.....	971.28	7.54	8.63	28.03	40267

Item					Item	
	<b>FIRE RESISTANT CABLES (CONT'D)</b>					
	(Note : The following Items 40268 to 40283 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing)					
	BS 6387 Category CWZ heat resistant cables c/w all necessary accessories : -					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40268	10 mm <sup>2</sup> 1-core.....	61.36	1.70	2.04	5.39	40268
40269	16 mm <sup>2</sup> 1-core.....	81.09	1.70	2.04	5.39	40269
40270	25 mm <sup>2</sup> 1-core.....	101.34	2.15	2.60	7.54	40270
40271	35 mm <sup>2</sup> 1-core.....	234.46	2.15	2.60	8.63	40271
40272	50 mm <sup>2</sup> 1-core.....	271.58	2.62	3.18	9.70	40272
40273	70 mm <sup>2</sup> 1-core.....	325.01	2.86	3.41	9.70	40273
40274	95 mm <sup>2</sup> 1-core.....	387.96	3.23	4.30	12.94	40274
40275	120 mm <sup>2</sup> 1-core.....	458.32	4.30	5.39	15.09	40275
40276	10 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	245.38	10.77	12.94	39.89	40276
40277	16 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	274.26	10.77	12.94	40.98	40277
40278	25 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	401.25	11.85	14.01	42.04	40278
40279	35 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	450.31	11.85	14.01	43.12	40279
40280	50 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	548.60	12.94	15.09	44.19	40280
40281	70 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	695.70	12.94	15.09	47.42	40281
40282	95 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	808.72	14.01	17.25	52.81	40282
40283	120 mm <sup>2</sup> 4-core PVC/ SWA/ PVC.....	956.30	15.09	18.33	59.28	40283



Item					Item	
<b>FIRE RESISTANT CABLES (CONT'D)</b>						
(Note : The following Items 40284 to 40299 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing)						
Low smoke zero halogen type fire resistant cable complying with BS6387 CWZ, BS EN 50200, BE EN 61034-1, BE EN 50267-2 and BS 7629-1/ BS 7846 c/w all necessary accessories :-						
<i>Per linear metre</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40284	10 mm <sup>2</sup> 1-core.....	61.92	1.70	2.04	5.39	40284
40285	16 mm <sup>2</sup> 1-core.....	81.40	1.70	2.04	5.39	40285
40286	25 mm <sup>2</sup> 1-core.....	102.01	2.15	2.60	7.54	40286
40287	35 mm <sup>2</sup> 1-core.....	236.33	2.15	2.60	8.63	40287
40288	50 mm <sup>2</sup> 1-core.....	272.99	2.62	3.18	9.70	40288
40289	70 mm <sup>2</sup> 1-core.....	326.59	2.86	3.41	9.70	40289
40290	95 mm <sup>2</sup> 1-core.....	390.49	3.23	4.30	12.94	40290
40291	120 mm <sup>2</sup> 1-core.....	461.71	4.30	5.39	15.09	40291
40292	10 mm <sup>2</sup> 4-core.....	247.99	10.77	12.94	39.89	40292
40293	16 mm <sup>2</sup> 4-core.....	277.33	10.77	12.94	40.98	40293
40294	25 mm <sup>2</sup> 4-core.....	406.52	11.85	14.01	42.04	40294
40295	35 mm <sup>2</sup> 4-core.....	455.06	11.85	14.01	43.12	40295
40296	50 mm <sup>2</sup> 4-core.....	553.04	12.94	15.09	44.19	40296
40297	70 mm <sup>2</sup> 4-core.....	703.35	12.94	15.09	47.42	40297
40298	95 mm <sup>2</sup> 4-core.....	817.83	14.01	17.25	52.81	40298
40299	120 mm <sup>2</sup> 4-core.....	966.82	15.09	18.33	59.28	40299

Item	Item
<b>GAS TOTAL FLOODING SYSTEM</b>	
FM-200 gas cylinder c/w discharge valve with safety device, check valve, manifolds, pressure gauge, low pressure switch, dip tubes, liquid level indicator, mounting brackets, nameplate, signal wiring and all necessary accessories (including design and calculation for the gas total flooding system) : -	Supply and fix Take down and clear away Take down and set aside for re-use Fix only
<i>Each</i>	A \$      B \$      C \$      D \$
40300 27 - 40 kg.....	24,083.64    117.48    130.43    847.19    40300
40301 40 - 50 kg.....	28,384.80    130.43    143.35    949.59    40301
40302 50 - 70 kg.....	37,396.77    143.35    156.29    1,057.38    40302
40303 70 - 100 kg.....	50,084.28    156.29    169.23    1,160.85    40303
40304 100 - 140 kg.....	66,506.46    169.23    182.15    1,272.95    40304
40305 140 - 180 kg.....	83,831.24    182.15    195.09    1,377.50    40305
40306 Discharge nozzle.....	431.99      13.49      14.16      31.26      40306
FM-200 system control and indicating panel c/w control wiring, signal wiring with main fire alarm control panel, coincidence unit, electronic components, battery/ charger and all necessary accessories (including design and calculation for the gas total flooding system) : -	
<i>Each</i>	
40307 Panel of 2 zones.....	6,890.18    47.42    49.59    282.40    40307
40308 Panel of 4 zones.....	11,543.74    48.50    50.67    292.10    40308
40309 Panel of 8 zones.....	15,610.31    50.67    53.90    306.10    40309
40310 System odouriser.....	1,501.66    21.56    26.94    90.53    40310
Heavy galvanized steel pipework to BS EN 10255 but welded and fittings to BS EN 10241 c/w all necessary accessories (including design and calculation for the gas total flooding system) : -	
<i>Per linear metre</i>	
40311 20 mm diameter.....	95.19      3.84      4.11      63.59    40311
40312 25 mm diameter.....	115.03     4.41      4.54      68.98    40312
40313 32 mm diameter.....	135.83     5.06      5.20      73.31    40313
40314 40 mm diameter.....	148.36     5.54      5.60      79.75    40314

Item					Item	
<b>GAS TOTAL FLOODING SYSTEM (CONT'D)</b>						
Mild steel pipework to BS EN 10216-1 and BS EN 10217-1 and fittings to BE EN 10241 c/w all necessary accessories (including design and calculation for the gas total flooding system) :-						
<i>Per linear metre</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
40315	50 mm diameter.....	272.12	7.29	7.92	108.87	40315
40316	65 mm diameter.....	329.86	8.63	9.70	126.11	40316
40317	80 mm diameter.....	401.29	9.70	10.77	139.04	40317
40318	100 mm diameter.....	517.74	10.77	11.85	176.77	40318
Mild steel pipework to BS EN 10216-1 and BS EN 10217-1 and fittings to BS EN 1759-1 c/w all necessary accessories (including design and calculation for the gas total flooding system) :-						
<i>Per linear metre</i>						
40319	150 mm diameter.....	735.18	19.39	20.48	234.98	40319
Equipment/ components for FM-200 system c/w all necessary accessories and connected to control/ indication panel :-						
<i>Each</i>						
40320	Gas release actuator.....	1,657.52	77.61	93.78	324.43	40320
40321	Lock off/ indication panel.....	2,496.49	46.35	49.59	184.32	40321
40322	Gas discharge flashing light.....	391.57	37.72	42.04	154.14	40322
40323	Manual release pull unit.....	526.90	50.67	59.28	218.80	40323
40324	Yodalarm.....	890.32	50.67	59.28	218.80	40324
40325	Abort unit.....	754.36	50.67	59.28	218.80	40325
40326	Compartment protected by FM-200 system warning notice.....	165.38	3.08	3.65	19.39	40326
40327	Smoke detector point compatible with panel.....	645.62	50.67	59.28	218.80	40327
40328	Auto/ manual key switch unit with housing.....	983.49	50.67	59.28	227.42	40328
40329	Warning light for evacuation and gas discharge.....	552.63	50.67	59.28	218.80	40329
40330	Agent release module for parallel wiring of agent initiators c/w all necessary accessories .....	538.78	50.67	59.28	218.80	40330
Sundries :-						
<i>Per kg</i>						
40331	Charge/ recharge/ refilling gas into cylinder including all necessary works and delivery .....	468.15	-	-	-	40331

Item	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item	
A \$	B \$	C \$	D \$			
<b>PORTABLE EQUIPMENT</b>						
Portable equipment c/w mounting framework, bracket and all necessary accessories : -						
<i>Each</i>						
40332	2 kg or below dry powder fire extinguisher.....	366.73	11.85	12.94	70.06	40332
40333	2 - 4 kg dry powder fire extinguisher.....	428.53	11.85	12.94	70.06	40333
40334	4 - 5 kg dry powder fire extinguisher.....	536.68	11.85	12.94	70.06	40334
40335	5 - 9 kg dry powder fire extinguisher.....	613.93	11.85	12.94	73.31	40335
40336	4.5 litres water type fire extinguisher.....	302.01	11.85	12.94	70.06	40336
40337	9 litres water type fire extinguisher.....	336.81	11.85	12.94	73.31	40337
40338	2 kg or below CO <sub>2</sub> type fire extinguisher.....	215.44	11.85	12.94	70.06	40338
40339	2 - 4 kg CO <sub>2</sub> type fire extinguisher.....	323.69	11.85	12.94	70.06	40339
40340	4 - 5 kg CO <sub>2</sub> type fire extinguisher.....	486.07	11.85	12.94	70.06	40340
40341	5 - 9 kg CO <sub>2</sub> type fire extinguisher.....	973.19	11.85	12.94	73.31	40341
40342	4.5 litres foam type fire extinguisher.....	327.71	11.85	12.94	70.06	40342
40343	9 litres foam type fire extinguisher.....	334.91	11.85	12.94	73.31	40343
40344	9 litres CO <sub>2</sub> type water fire extinguisher.....	622.29	11.85	12.94	73.31	40344
Refilling of portable fire extinguisher : -						
<i>Per kg</i>						
40345	CO <sub>2</sub> refill.....	46.48	-	-	-	40345
<i>Per litres</i>						
40346	Water refill.....	33.30	-	-	-	40346
40347	Foam refill.....	33.30	-	-	-	40347
Sundries : -						
<i>Each</i>						
40348	Sand bucket.....	196.10	2.97	3.03	4.30	40348
40349	Fire blanket, heavy type.....	309.57	5.39	6.47	14.01	40349

Item					Item
	<b>AUTOMATIC FIXED SPRAYER UNITS</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
	HCFC-124 automatic type fixed sprayer unit and all necessary accessories :-				
	<i>Each</i>				
40350	Up to 5.7 kg.....	-	92.69	103.48	409.58
40351	5.7 - 7.2 kg.....	-	95.93	105.62	425.75
40352	7.2 - 10.7 kg.....	-	99.17	108.87	446.24
40353	10.7 - 13.8 kg.....	-	101.32	112.10	463.47
40354	13.8 - 15.3 kg.....	-	104.55	114.25	482.89
40355	15.3 - 19.5 kg.....	-	107.79	117.48	500.12
	NAFS-III automatic type fixed sprayer unit and all necessary accessories :-				
	<i>Each</i>				
40356	Up to 4 kg.....	-	93.78	106.72	418.21
40357	4 - 9 kg.....	-	100.25	113.17	466.71
40358	9 - 16 kg.....	-	142.28	162.75	647.79
	FM-200 automatic/ manual discharge fire extinguisher, wall/ ceiling mounted type c/w FM-200 warning plate and all necessary accessories :-				
	<i>Each</i>				
40359	Up to 3 kg.....	9,492.00	248.60	277.54	452.00
40360	3 - 6 kg.....	11,074.00	271.20	298.59	508.50
40361	6 - 9 kg.....	14,238.00	293.80	322.54	542.40
40362	9 - 12 kg.....	17,402.00	316.40	350.06	587.60
40363	12 - 15 kg.....	20,566.00	339.00	370.45	632.80
40364	15 - 18 kg.....	23,730.00	361.60	394.11	678.00
40365	18 - 21 kg.....	26,894.00	384.20	417.77	723.20
40366	21 - 24 kg.....	30,058.00	406.80	441.43	768.40
40367	24 - 27 kg.....	33,222.00	429.40	465.09	813.60
40368	27 - 30 kg.....	36,386.00	452.00	488.75	858.80

Item					Item	
	<b>AUDIO/ VISUAL ADVISORY SYSTEM</b>					
	Design, supply and install audio/ visual fire alarm equipment; electrical and control points c/w cables, conduit (surface or concealed in partitions and ceiling) and all necessary accessories and connected to the audio/ visual fire alarm control panel : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
40369	Loudspeakers; surface/ concealed mounted c/w metal enclosure.....	761.61	54.97	64.68	236.05	40369
40370	Flashing light directional sign boxes; single side; overall size up to 500 mm x 150 mm x 200 mm (H); comprising metal sign box, perspex backing and front sheeting, flashing unit, battery and charger, electrical gear and all necessary accessories; ceiling mounted.....	1,284.47	54.97	64.68	236.05	40370
40371	Ditto but double side.....	1,521.27	54.97	64.68	236.05	40371
	Audio-visual fire alarm control/ indicating panel c/w pre-amplifier and amplifier, automatic long play recorder, cassette tape, repeater, random access message module, master controller, multiplex alarm system, system/ auxiliary power supply, connection of fire link and all necessary accessories : -					
	<i>Each</i>					
40372	Panel of 4 zones or less.....	29,594.55	48.50	51.75	376.17	40372
40373	Ditto 5 - 8 zones.....	40,230.38	54.97	60.36	409.58	40373
40374	Ditto 9 - 12 zones.....	48,159.65	60.36	65.76	441.92	40374
40375	Ditto 13 - 18 zones.....	54,494.26	65.76	72.22	467.77	40375
40376	Add to last item for each additional 4 zones or part thereof.....	3,754.60	5.39	5.39	28.03	40376

Item					Item	
	<b>DISCONNECTION OF EXISTING FIRE SERVICES INSTALLATION</b>					
	Supply labour to disconnect all existing fire services installation for an area, take down and clear away entire fire services installation inside the area (area shall be measured net on the gross floor area of the building covered by the fire services installation) : -					
	<i>Per square metre</i>					
40377	Area with sprinkler (up to 100 m <sup>2</sup> ).....	-	17.25	-	-	40377
40378	Area with sprinkler (100 - 500 m <sup>2</sup> ).....	-	16.17	-	-	40378
40379	Area with sprinkler (above 500 m <sup>2</sup> ).....	-	15.09	-	-	40379
40380	Area without sprinkler (up to 100 m <sup>2</sup> ).....	-	7.54	-	-	40380
40381	Area without sprinkler (100 - 500 m <sup>2</sup> ).....	-	6.47	-	-	40381
40382	Area without sprinkler (above 500 m <sup>2</sup> ).....	-	6.04	-	-	40382
	Supply labour to disconnect the existing fire services installation, take down and clear away entire fire services installation					
	<i>Each</i>					
40383	9 kg NAFS III type fire extinguisher.....	-	11.85	-	-	40383

**Section 41**

**LIQUEFIED PETROLEUM GAS**



## SECTION 41

### LIQUEFIED PETROLEUM GAS

#### SPECIAL CONDITIONS

<b>Measurement of excavations, chases, holes and other subsidiary work</b>	<b>SC41.01</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All chases in, and holes through existing walls, ceilings, etc. for tubing and pipes, (but not mortices or holes for brackets) shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.
<b>Measurement of pipework</b>	<b>SC41.02</b>	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
<b>Measurement of pressure test of existing pipework</b>	<b>SC41.03</b>	Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests have been allowed in the rates under this Section. No measurement will be made for testing and commissioning except for pressure test of existing pipework where specifically ordered by the Maintenance Surveyor in writing.
<b>Measurement of temporary supply</b>	<b>SC41.04</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>

**SPECIAL CONDITIONS****Rates generally****SC41.05**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, brackets, hangers, supports and the like.
- (g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests, except pressure test of existing pipework. (Note : - Pressure test of existing pipework shall be measured separately if ordered by the Maintenance Surveyor in writing)
- (l) Provision of all necessary testing instrument of approved type for testing and commissioning.
- (m) Provision of mock-up work as specified.
- (n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (o) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (p) Provision of manufacturer's guarantee.

**SPECIAL CONDITIONS**

**Rates for  
pipework**

**SC41.06**

The rates for pipework shall further include for : -

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Wall, floor and ceiling plates.
- (g) All jointing including provision of flexible connections and/or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.
- (h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.
- (i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.
- (j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tape where required.

**Rates for in-line  
pipework equipment**

**SC41.07**

The rates for in-line pipework equipment (e.g. valves, flow meters, gauges and the like) shall further include for : -

- (a) Cutting and jointing to pipes and fittings.
- (b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

**SPECIAL CONDITIONS****Rates for equipment****SC41.08**

The rates for equipment shall further included for : -

- (a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, strainers, instrumentation and the like.
- (b) Provision of all associated components.
- (c) All necessary operational and control accessories forming part of the equipment.
- (d) Final connection and terminations to electrical supply, control, monitoring, interfacing and water supply and/or gas supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.
- (e) Earth/equipotential bonding.

**Rates for pressure test of existing pipework****SC41.09**

The rates for pressure test of existing pipework (including associated in-line pipework fittings and in-line pipework equipment and the like) shall include for : -

- (a) De-gasing and cleaning of pipeline by any means necessary before carrying out any test.
- (b) All preparation work including temporary sealing ends of pipes and connections.
- (c) Provision of all necessary testing instrument of approved type for pressure test.
- (d) Provision of test record.
- (e) Submission of Surveyor Certificate as specified.
- (f) Making good all works disturbed.
- (g) Purging into service.

**SPECIAL CONDITIONS**

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC41.10**

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with liquefied petroleum gas installation shall further include for : -

- (a) Taking down all associated pipework and building services works (if any).
- (b) All in-line fittings including brackets, supports, hangers and the like.
- (c) Cutting into existing pipework in position.
- (d) De-gasing of existing pipework (including associated in-line fittings and the like) as required.
- (e) Plugging off remaining ends with plugs or caps as required.
- (f) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.
- (g) Making good all works disturbed.

**Particular Specification**

**SC41.11**

The Particular Specification for liquefied petroleum gas installation can be found in the Contract.

Item					Item	
<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION</b>						
Cylinder storage system including the initial supply of 50 kg LPG cylinder of LP gas, changeover valve c/w indicator, flexible hose c/w adaptor, pigtailed, pressure gauge, manifold valve with or without check valve, safety devices and necessary pipeworks inside LP gas store :-						
<i>Per set</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
41001	1 - 4 cylinders.....	12,125.33	85.15	94.84	1,215.81	41001
41002	5 - 8 cylinders.....	13,422.06	97.01	108.87	1,357.03	41002
41003	9 - 12 cylinders.....	14,274.20	111.02	122.88	1,475.58	41003
41004	13 - 16 cylinders.....	18,524.80	123.96	137.95	1,598.46	41004
41005	17 - 20 cylinders.....	29,471.28	135.81	149.81	1,720.25	41005
Above ground bulk LPG storage vessel c/w saddle, pressure relief valve, shut off valve, emergency valve, liquid level device, contents and pressure gauges, manhole, vent pipes, filling and drain connections, and other associated accessories, for water capacity :-						
<i>Each</i>						
41006	Up to 2000 litres.....	39,627.09	5,486.27	5,937.89	17,440.74	41006
41007	2000 - 4000 litres..... (The actual rate should be : \$139,277.10 for Item 41007A)	13,927.71	5,760.04	6,267.71	35,824.61	41007
41008	4000 - 5000 litres..... (The actual rate should be : \$231,181.10 for Item 41008A)	23,118.11	5,852.75	6,418.62	36,766.65	41008
41009	5000 - 7000 litres..... (The actual rate should be : \$331,227.70 for Item 41009A)	33,122.77	5,967.00	6,586.76	38,652.90	41009
41010	7000 - 9000 litres..... (The actual rate should be : \$581,308.40 for Item 41010A)	58,130.84	6,392.74	7,068.56	39,594.94	41010

Item					Item	
	<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)</b>					
	Underground bulk LPG storage vessel c/w saddle, pressure relief valve, shut off valve, emergency valve, liquid level device, contents and pressure gauges, manhole, vent pipes, securing facilities against flotation, fittings made accessible above ground level, coating, cathodic protection if necessary, filling and drain connections, and other associated accessories, for water capacity : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
41011	Up to 2000 litres.....	37,891.65	5,673.82	6,126.52	17,911.77	41011
41012	2000 - 4000 litres..... (The actual rate should be : \$126,305.50 for Item 41012A)	12,630.55	5,948.67	6,456.33	36,766.65	41012
41013	4000 - 5000 litres..... (The actual rate should be : \$210,509.10 for Item 41013A)	21,050.91	6,041.37	6,606.15	37,709.77	41013
41014	5000 - 7000 litres..... (The actual rate should be : \$294,712.80 for Item 41014A)	29,471.28	6,155.61	6,775.37	39,594.94	41014
41015	7000 - 9000 litres..... (The actual rate should be : \$505,221.90 for Item 41015A)	50,522.19	6,581.37	7,257.18	40,538.06	41015
	Excess flow valve					
	<b>Per set</b>					
41016	Excess flow valve for cylinder liquid take-off line.....	842.04	21.56	22.63	188.62	41016
	Vaporizer, indirect heated type, flameproof/ explosion proof c/w necessary accessories, valves, rubber hose, etc. for vaporizing capacity : -					
	<b>Each</b>					
41017	25 kg/ hr.....	37,891.65	122.88	129.34	5,656.58	41017
41018	50 kg/ hr.....	47,154.05	122.88	129.34	5,656.58	41018

Item					Item	
<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)</b>						
Vaporizer, indirect heated type, flameproof/ explosion proof c/w necessary accessories, valves, rubber hose, etc. for vaporizing capacity : - (Cont'd)						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
41019	Changeover device for liquid withdrawal LPG.....	16,840.73	13.86	14.16	943.13	41019
41020	Changeover device for vapour withdrawal LPG.....	8,420.37	13.86	14.16	471.03	41020
41021	Medium/ low pressure regulator, fail shut off type (all size) c/w necessary accessories, valves, pressure gauge, etc.....	12,630.55	13.86	14.16	1,131.75	41021
41022	High/ medium pressure regulator c/w active & monitor regulator (all size) and necessary accessories, valves, pressure gauge, etc.....	12,630.55	13.86	14.16	1,131.75	41022
Galvanized mild steel gas pipe to BS EN 10255:2004 or ISO 65:1981, c/w all necessary accessories : -						
<i>Per linear metre</i>						
41023	15 mm diameter.....	400.84	6.41	7.64	88.39	41023
41024	20 mm diameter.....	440.92	7.05	8.30	104.55	41024
41025	25 mm diameter.....	481.00	7.24	8.38	115.33	41025
41026	32 mm diameter.....	521.10	8.85	9.60	136.90	41026
41027	40 mm diameter.....	556.72	10.18	11.02	159.53	41027
41028	50 mm diameter.....	601.27	11.78	12.61	187.55	41028
41029	65 mm diameter.....	714.03	13.90	15.16	222.03	41029
41030	80 mm diameter.....	874.37	17.28	18.18	270.54	41030
41031	100 mm diameter.....	1,066.68	20.62	21.57	335.22	41031
41032	150 mm diameter.....	1,661.62	37.96	40.69	530.31	41032



Item					Item	
<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)</b>						
Underground galvanized mild steel gas pipe to BS EN 10216-1:2002, BS EN 10217-1:2002 or ANSI/ API Spec 5L:2007 or ASTM A53/ A53M-10:2010, c/w all necessary accessories :-						
<i>Per linear metre</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
41033	20 mm diameter.....	470.32	7.64	8.10	126.11	41033
41034	25 mm diameter.....	513.08	7.82	8.38	140.11	41034
41035	32 mm diameter.....	555.84	8.85	9.91	160.60	41035
41036	40 mm diameter.....	593.84	10.36	11.48	188.62	41036
41037	50 mm diameter.....	641.35	11.78	12.90	230.66	41037
41038	65 mm diameter.....	761.62	14.59	15.73	269.47	41038
41039	80 mm diameter.....	932.67	17.60	18.74	301.80	41039
41040	100 mm diameter.....	1,137.79	19.78	21.66	398.81	41040
41041	150 mm diameter.....	1,772.39	32.69	35.23	559.41	41041
Third stage governor regulator :-						
<i>Each</i>						
41042	15 mm diameter.....	421.01	27.41	33.15	93.78	41042
41043	20 mm diameter.....	547.32	27.97	33.82	141.20	41043
41044	25 mm diameter.....	715.73	28.63	34.48	188.62	41044
Copper gas pipe c/w all necessary accessories :-						
<i>Per linear metre</i>						
41045	12 mm diameter.....	421.01	1.83	2.04	131.50	41045
LPG meter c/w all necessary accessories :-						
<i>Each</i>						
41046	Up to 2.5 m <sup>3</sup> hr.....	2,526.11	24.27	29.75	141.20	41046
41047	2.5 - 6.5 m <sup>3</sup> hr.....	5,894.26	30.30	35.69	141.20	41047
41048	6.5 - 10.5 m <sup>3</sup> hr.....	16,840.73	36.30	41.71	565.87	41048

Item					Item	
<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)</b>						
LPG isolating valve, globe type or ball type or gate type, including adaptors and flange as required :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
41049	15 mm diameter.....	235.14	27.41	33.15	93.78	41049
41050	20 mm diameter.....	285.46	27.97	33.82	141.20	41050
41051	25 mm diameter.....	335.75	28.63	34.48	188.62	41051
41052	32 mm diameter.....	406.17	29.29	35.04	236.05	41052
41053	40 mm diameter.....	486.66	29.96	35.70	264.07	41053
41054	50 mm diameter.....	587.26	31.17	37.02	282.40	41054
41055	80 mm diameter.....	889.08	35.04	38.77	565.87	41055
LPG cast steel isolating valve, globe type or ball type or gate type, stainless steel stem including adaptors and flange as required :-						
<i>Each</i>						
41056	65 mm diameter.....	1,276.68	32.91	38.77	471.03	41056
41057	80 mm diameter.....	1,747.06	34.96	40.58	565.87	41057
41058	100 mm diameter.....	3,366.36	37.48	42.93	659.65	41058
41059	150 mm diameter.....	8,588.06	49.92	56.99	754.49	41059

Item					Item	
	<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)</b>					
	LPG cast steel quick-action shut-off valve, fail safe, lever operated globe type or ball type, stainless stem including adaptors and flange as required :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
41060	15 mm diameter.....	716.91	28.44	34.59	93.78	41060
41061	20 mm diameter.....	819.23	29.00	35.29	141.20	41061
41062	25 mm diameter.....	921.68	29.67	35.97	188.62	41062
41063	32 mm diameter.....	1,280.14	30.38	36.53	236.05	41063
41064	40 mm diameter.....	1,515.67	31.05	37.20	264.07	41064
41065	50 mm diameter.....	1,843.35	32.30	38.57	282.40	41065
41066	65 mm diameter.....	3,891.63	34.14	40.44	471.03	41066
41067	80 mm diameter.....	4,631.20	36.22	42.32	565.87	41067
41068	100 mm diameter.....	6,753.69	38.82	44.84	659.65	41068
41069	150 mm diameter.....	14,279.39	51.67	59.54	754.49	41069
	LPG solenoid valve c/w all necessary accessories :-					
	<i>Each</i>					
41070	Up to 12 mm diameter.....	3,368.15	23.76	28.96	754.49	41070
41071	12 - 20 mm diameter.....	6,736.29	24.23	29.69	1,131.75	41071
	LPG equipment, with GU mark, c/w all necessary accessories :-					
	<i>Each</i>					
41072	LPG water heater with or without wall case 5 - 10 litres/ min.....	5,052.22	74.51	86.05	459.17	41072
41073	Build-in stove/ ring burner 1 ring.....	6,736.29	16.21	17.57	176.77	41073
41074	Build-in stove/ ring burner 2 rings.....	21,050.91	16.47	17.84	191.86	41074
41075	LPG rice cooker 5 - 10 litres.....	33,681.46	17.11	18.54	217.73	41075

Item					Item	
<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)</b>						
Gas cooker c/w open ring burners, oven, hot plates, a grill, standard baking tray, a roasting tin and a ring type wok adaptor suitable for 300 mm diameter nominal size Chinese wok.						
Cooking range power : -						
<b>Each</b>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
41076	Up to 11.5 kW.....	21,050.91	355.69	374.02	699.53	41076
41077	11.5 - 16.7 kW.....	37,891.65	469.95	494.75	746.96	41077
LPG Chinese cooking steamer c/w burners, air blowers, gas cock, 3 steam trays per steamer unit, rice pans, operational and safety controls, water faucet, flame failure device, automatic gas controller with solenoid valves, flue pipe, dim sum plates, dim sum tray stand, steamer funnel and all necessary accessories : -						
<b>Each</b>						
41078	Single unit.....	42,101.83	224.20	309.34	1,829.12	41078
41079	Double unit.....	67,362.93	268.39	353.54	1,934.73	41079
LPG Chinese cooking range c/w burners, air blowers, gas cock, operational and safety controls, splash plate, water faucet, water pot, flame failure device, automatic gas controller with solenoid valves, refractory brick lined combustion chamber, removable stainless steel plate for spice pots, flue pipes, tail pots and all necessary accessories : -						
<b>Each</b>						
41080	1 x 300 to 600 mm diameter wok.....	67,362.93	232.83	312.58	1,709.47	41080
41081	2 x 300 to 600 mm diameter wok..... (The actual rate should be : \$151,566.60 for Item 41081A)	15,156.66	260.84	434.38	2,803.49	41081
41082	1 x 800 mm diameter build-in wok..... (The actual rate should be : \$101,044.40 for Item 41082A)	10,104.44	261.92	325.51	1,725.65	41082
41083	2 x 800 mm diameter build-in wok..... (The actual rate should be : \$235,770.20 for Item 41083A)	23,577.02	301.80	482.89	2,950.08	41083

Item					Item	
	<b>LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)</b>					
	Pressure test of existing LPG pipework : - (Note : The following four items will only be paid for if ordered by the Maintenance Surveyor in writing)					
	<i>Per pipeline</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
41084	15 - 25 mm.....	3,507.33	-	-	-	41084
41085	25 - 50 mm.....	3,797.27	-	-	-	41085
41086	50 - 80 mm.....	4,405.18	-	-	-	41086
41087	80 - 200 mm.....	5,292.26	-	-	-	41087
	Sundries : -					
	<i>Each</i>					
41088	Stainless steel box 1.5 mm thick, glass-fronted; size 230 mm x 250 mm x 250 mm.....	842.04	11.12	11.48	46.35	41088
41089	LPG vaporizer, indirect heated type, flameproof/ explosion proof c/w necessary accessories, valves, rubber hose, etc. for vaporizing capacity 100 kg/ hr.....	50,522.19	183.23	187.55	7,541.73	41089
	LPG water heater c/w internal water tank, operational controls, safety features, control panel, flame failure device and all necessary accessories : -					
	Capacity : -					
	<i>Each</i>					
41090	200 to 300 Litres..... (The actual rate should be : \$294,712.80 for Item 41090A)	29,471.28	208.03	242.53	4,005.31	41090
41091	300 to 450 Litres..... (The actual rate should be : \$378,916.50 for Item 41091A)	37,891.65	208.03	242.53	5,755.73	41091

**Section 42**

**TOWN GAS**

## SECTION 42

### TOWN GAS

#### SPECIAL CONDITIONS

<b>Measurement of excavations, chases, holes and other subsidiary work</b>	<b>SC42.01</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All chases in, and holes through existing walls, ceilings, etc. for tubing and pipes, (but not mortices or holes for brackets) shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.
<b>Measurement of pipework</b>	<b>SC42.02</b>	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
<b>Measurement of pressure test of existing pipework</b>	<b>SC42.03</b>	Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests have been allowed in the rates under this Section. No measurement will be made for testing and commissioning except for pressure test of existing pipework where specifically ordered by the Maintenance Surveyor in writing.
<b>Measurement of temporary supply</b>	<b>SC42.04</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>

**SPECIAL CONDITIONS**

**Rates generally**

**SC42.05**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, brackets, hangers, supports and the like.
- (g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests, except pressure test of existing pipework. (Note : - Pressure test of existing pipework shall be measured separately if ordered by the Maintenance Surveyor in writing)
- (l) Provision of all necessary testing instrument of approved type for testing and commissioning.
- (m) Provision of mock-up work as specified.
- (n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (o) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (p) Provision of manufacturer's guarantee.



**SPECIAL CONDITIONS**

**Rates for  
pipework**

**SC42.06**

The rates for pipework shall further include for : -

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Wall, floor and ceiling plates.
- (g) All jointing including provision of flexible connections and/or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.
- (h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.
- (i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.
- (j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tape where required.

**Rates for  
in-line  
pipework  
equipment**

**SC42.07**

The rates for in-line pipework equipment (e.g. valves, flow meters, gauges and the like) shall further include for : -

- (a) Cutting and jointing to pipes and fittings.
- (b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

**SPECIAL CONDITIONS**

**Rates for pressure test of existing pipework**

**SC42.08**

The rates for pressure test of existing pipework (including associated in-line fittings and in-line pipework equipment and the like) shall include for : -

- (a) De-gasing and cleaning of pipeline by any means necessary before carrying out any test.
- (b) All preparation work including temporary sealing ends of pipes and connections.
- (c) Provision of all necessary testing instrument of approved type for pressure test.
- (d) Provision of test record.
- (e) Submission of Surveyor Certificate as specified.
- (f) Making good all works disturbed.
- (g) Purging into service.

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC42.09**

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with town gas installation shall further include for : -

- (a) Taking down all associated pipeworks and building services works (if any).
- (b) All in-line fittings including brackets, supports, hangers and the like.
- (c) Cutting into existing pipework in position.
- (d) De-gasing of existing pipework (including associated in-line fittings and the like) as required.
- (e) Plugging off remaining ends with plugs or caps as required.
- (f) Preparing remaining ends of pipeworks and building services works (if any) to receive connections with new work if required.
- (g) Making good all works disturbed.

**Particular Specification**

**SC42.10**

The Particular Specification for town gas installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
	<b>TOWN GAS INSTALLATION</b>					
	Galvanized mild steel gas pipe to BS EN 10255:2004 or ISO 65:1981, c/w all necessary accessories :-					
	<i>Per linear metre</i>					
42001	15 mm diameter.....	400.84	6.41	7.64	88.39	42001
42002	20 mm diameter.....	440.92	7.06	8.30	104.55	42002
42003	25 mm diameter.....	481.00	7.24	8.38	115.33	42003
42004	32 mm diameter.....	521.10	8.85	9.60	136.90	42004
42005	40 mm diameter.....	556.72	10.18	11.02	159.53	42005
42006	50 mm diameter.....	601.27	11.78	12.61	187.55	42006
42007	65 mm diameter.....	714.03	13.86	15.16	222.03	42007
42008	80 mm diameter.....	874.37	17.25	18.18	270.54	42008
42009	100 mm diameter.....	1,066.68	20.62	21.57	335.22	42009
42010	150 mm diameter.....	1,661.64	37.96	40.69	530.31	42010
	Underground galvanized mild steel gas pipe to BS EN 10216-1:2002, BS EN 10217-1:2002 or ANSI/ API Spec 5L:2007 or ASTM A53/ A53M-10:2010, c/w all necessary accessories :-					
	<i>Per linear metre</i>					
42011	20 mm diameter.....	470.32	7.64	8.10	126.11	42011
42012	25 mm diameter.....	513.08	7.82	8.38	140.11	42012
42013	32 mm diameter.....	555.84	8.85	9.91	160.60	42013
42014	40 mm diameter.....	593.84	10.36	11.48	188.62	42014
42015	50 mm diameter.....	641.35	11.78	12.90	230.66	42015
42016	65 mm diameter.....	761.62	14.59	15.73	269.47	42016
42017	80 mm diameter.....	932.67	17.60	18.74	301.80	42017
42018	100 mm diameter.....	1,137.79	19.78	21.66	398.81	42018
42019	150 mm diameter.....	1,772.39	32.69	35.23	559.41	42019

Item					Item	
<b>TOWN GAS INSTALLATION (CONT'D)</b>						
Bronze isolating valve, globe type or gate type or ball type, including adaptors and flanges as required :-						
<i>Each</i>						
A                      B                      C                      D						
\$                      \$                      \$                      \$						
42020	15 mm diameter.....	235.14	27.41	33.15	93.78	42020
42021	20 mm diameter.....	285.46	27.97	33.82	141.20	42021
42022	25 mm diameter.....	335.75	28.63	34.48	188.62	42022
42023	32 mm diameter.....	406.18	29.29	35.04	236.05	42023
42024	40 mm diameter.....	486.66	29.96	35.70	264.07	42024
42025	50 mm diameter .....	587.26	31.17	37.02	282.40	42025
42026	80 mm diameter.....	889.08	35.04	40.42	565.87	42026
Cast steel isolating valve, globe type or gate type or ball type, stainless steel stem including adaptors and flanges as required :-						
<i>Each</i>						
42027	65 mm diameter.....	2,723.61	32.91	38.77	471.03	42027
42028	80 mm diameter.....	3,314.44	34.96	40.58	565.87	42028
42029	100 mm diameter.....	4,536.55	37.48	42.93	659.65	42029
42030	150 mm diameter.....	10,632.84	49.92	56.99	754.49	42030
Bronze quick action shut-off valves, lever-operated ball type or globe type, including adaptors and flanges as required :-						
<i>Each</i>						
42031	20 mm diameter.....	236.76	27.97	33.82	141.20	42031
42032	25 mm diameter.....	335.75	28.63	34.48	188.62	42032
42033	32 mm diameter.....	420.77	29.29	35.04	236.05	42033
42034	40 mm diameter.....	534.35	29.96	35.70	264.07	42034
42035	50 mm diameter .....	717.56	31.17	37.02	282.40	42035

Item					Item	
<b>TOWN GAS INSTALLATION (CONT'D)</b>						
	Cast steel quick action shut-off valves, lever-operated ball type or globe type, stainless steel stem including adaptors and flanges as required :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
42036	65 mm diameter.....	3,497.34	32.91	38.77	471.03	42036
42037	80 mm diameter.....	3,795.70	34.96	40.58	565.87	42037
42038	100 mm diameter.....	5,326.86	37.48	42.93	659.65	42038
42039	150 mm diameter.....	13,025.64	49.92	56.99	754.49	42039
	Town gas outlet point c/w cocks, including adaptors and flanges as required :-					
	<i>Each</i>					
42040	20 mm diameter.....	363.10	28.92	36.93	45.27	42040
42041	25 mm diameter.....	371.12	29.57	37.59	47.42	42041
	Gas cock :-					
	<i>Each</i>					
42042	2-way flexible tube cock.....	600.24	36.83	45.12	57.12	42042
42043	2-way bench cock, laboratory type 15 mm diameter.....	624.88	36.83	45.12	57.12	42043
	Sundries :-					
	<i>Each</i>					
42044	Stainless steel box 1.5 mm thick, glass-fronted; size 230 mm x 250 mm x 250 mm.....	615.34	11.12	11.48	46.35	42044
	Pressure test of existing town gas pipeworks :- (Note : The following four items will only be paid for if ordered by the Maintenance Surveyor in writing)					
	<i>Per pipeline</i>					
42045	15 - 25 mm.....	3,507.33	-	-	-	42045
42046	25 - 50 mm.....	3,797.27	-	-	-	42046
42047	50 - 80 mm.....	4,405.18	-	-	-	42047
42048	80 - 200 mm.....	5,292.26	-	-	-	42048

**Section 43**

**MEDICAL GASES**

## SECTION 43

### MEDICAL GASES

#### SPECIAL CONDITIONS

<b>Measurement of excavations, chases, holes and other subsidiary work</b>	<b>SC43.01</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All chases in, and holes through existing walls, ceilings, etc. for tubing and pipes, (but not mortices or holes for brackets) shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.
<b>Measurement of power supply</b>	<b>SC43.02</b>	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting Systems and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
<b>Measurement of pipework</b>	<b>SC43.03</b>	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
<b>Measurement of indicating/control panel</b>	<b>SC43.04</b>	The indicating/control panel shall be assumed to be located on the same floor as the medical gas pipeline installation. When this panel is located on other floor, the interconnecting cables and the conduit facilities shall be measured separately from the control panel to the junction box on that floor for which the gas points of that floor are grouped for connection to the control panel. In such case, the junction box shall be assumed to be located as near as possible to the control panel.
<b>Measurement of tests on existing medical gases system</b>	<b>SC43.05</b>	Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests have been allowed in the rates under this Section. No measurement will be made for testing and commissioning except for tests on existing medical gases system where specifically ordered by the Maintenance Surveyor in writing.

**SPECIAL CONDITIONS**

**Measurement  
of temporary  
supply**

**SC43.06**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

**Rates generally**

**SC43.07**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, brackets, hangers, supports and the like.
- (g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.



**SPECIAL CONDITIONS**

**Rates generally  
(Cont'd)**

**SC43.07  
(Cont'd)**

- (i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests, except tests on existing medical gases system. (Note : - Tests on existing medical gases system shall be measured separately if ordered by the Maintenance Surveyor in writing)
- (l) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.
- (m) Provision of mock-up work as specified.
- (n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (o) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (p) Provision of manufacturer's guarantee.

**Rates for  
pipework**

**SC43.08**

The rates for pipework shall further include for : -

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Wall, floor and ceiling plates.
- (g) All jointing including provision of flexible connections and/or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

**SPECIAL CONDITIONS**

<b>Rates for pipework (Cont'd)</b>	<b>SC43.08 (Cont'd)</b>	<ul style="list-style-type: none"> <li>(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.</li> <li>(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.</li> <li>(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tape where required.</li> </ul>
<b>Rates for in-line pipework equipment</b>	<b>SC43.09</b>	<p>The rates for in-line pipework equipment (e.g. valves, flow meters, gauges and the like) shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Cutting and jointing to pipes and fittings.</li> <li>(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.</li> </ul>
<b>Rates for indicating/control panels</b>	<b>SC43.10</b>	<p>Indicating/control panel shall be measured on the basis of complete unit monitoring and controlling the number of zones as specified. Rates for indicating/control panels shall further include for all necessary control wiring, electronic components, relays, contacts, indicating lamp, push button package, selector switches, interconnecting cable and associated conduit/trunking between the equipment and the indicating/control panel and/or for connecting to existing indicating/control panel as required.</p>
<b>Rates for equipment</b>	<b>SC43.11</b>	<p>The rate for equipment shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, strainers, instrumentation and the like.</li> <li>(b) Provision of all associated components.</li> <li>(c) Final connection and terminations to gas supply including all necessary pipework, valves, gauges and necessary accessories required for energizing the equipment to properly operate at specified duties.</li> <li>(d) Earth/equipotential bonding.</li> </ul>

**SPECIAL CONDITIONS**

**Rates for tests on existing medical gases system**

**SC43.12**

The rates for tests on existing medical gases system shall include for : -

- (a) Cleaning of pipeline by any means necessary before carrying out any tests.
- (b) All preparation work including temporary sealing ends of pipes and connections.
- (c) Provision of all necessary testing instrument and material of approved type for the tests.
- (d) Provision of test record.
- (e) Making good all works disturbed.

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC43.13**

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with medical gases installation shall further include for : -

- (a) Taking down all associated pipework and building services works (if any).
- (b) All in-line fittings including brackets, supports, hangers and the like.
- (c) Cutting into existing pipework in position.
- (d) De-gasing of existing pipework (including associated in-line fittings and the like) as required.
- (e) Plugging off remaining ends with plugs or caps as required.
- (f) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.
- (g) Making good all works disturbed.

**SPECIAL CONDITIONS**

**Rates for rental charges for gas regulators, cylinders and other accessories**

**SC43.14**

The rates for rental charges for gas regulators, cylinders and other accessories shall include for : -

- (a) Mobilization and demobilization of gas regulators, cylinders and other accessories.
- (b) Maintenance and repair.
- (c) Installation in position including all necessary connection to the system.
- (d) Contractor's profit, establishment and overheads.
- (e) Licence fees, patent rights and royalties where applicable.

**Rates for charges for gas filling**

**SC43.15**

The rates for charges for gas filling shall include for : -

- (a) Filling up empty cylinders with gas by any means necessary.
- (b) Disconnecting before filling of gas and reconnecting to the system after completion of gas filling.

**Particular Specification**

**SC43.16**

The Particular Specification for medical gases installation can be found in the Contract.

Item					Item	
	<b>MEDICAL GASES INSTALLATION</b>					
	Medical gas pipework c/w all necessary accessories	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Degreased pipework of phosphorous de-oxidized non-arsenical copper to BS EN 1976:1998, BS EN 1057 and BS EN 13348 c/w lock to suit HTM2022's requirement : -					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
43001	12 mm diameter.....	288.70	9.94	10.87	181.09	43001
43002	15 mm diameter.....	314.48	10.87	12.09	189.73	43002
43003	22 mm diameter.....	355.77	12.88	13.71	204.47	43003
43004	28 mm diameter.....	405.10	14.12	15.32	220.22	43004
43005	35 mm diameter.....	503.05	15.32	16.50	231.82	43005
43006	42 mm diameter.....	612.66	16.78	17.99	268.53	43006
43007	54 mm diameter.....	721.99	17.99	19.45	304.34	43007
43008	76 mm diameter.....	1,065.90	22.83	24.30	358.87	43008
43009	108 mm diameter.....	1,401.09	27.67	30.35	448.82	43009
43010	159 mm diameter.....	2,123.54	37.18	39.83	591.93	43010
	Underground medical gas pipework c/w galvanized iron pipe of suitable size enclosing the underground medical gas pipe and all necessary accessories					
	Degreased pipework of phosphorous de-oxidized non-arsenical copper to BS EN 1976:1998, BS EN 1057 and BS EN 13348 c/w lock to suit HTM2022's requirement : -					
	<i>Per linear metre</i>					
43011	12 mm diameter.....	419.32	19.60	21.06	227.39	43011
43012	15 mm diameter.....	434.96	20.82	22.29	239.08	43012
43013	22 mm diameter.....	525.08	24.02	25.25	303.01	43013
43014	28 mm diameter.....	592.25	26.33	28.05	339.83	43014

Item					Item	
<b>MEDICAL GASES INSTALLATION (CONT'D)</b>						
	Underground medical gas pipework c/w galvanized iron pipe of suitable size enclosing the underground medical gas pipe and all necessary accessories (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Degreased pipework of phosphorous de-oxidized non-arsenical copper to BS EN 1976:1998, BS EN 1057 and BS EN 13348 c/w lock to suit HTM2022's requirement : - (Cont'd)					
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
43015	35 mm diameter.....	744.97	29.02	30.35	372.41	43015
43016	42 mm diameter.....	843.54	31.67	33.69	391.41	43016
43017	54 mm diameter.....	975.21	35.17	37.18	450.45	43017
43018	76 mm diameter.....	1,477.59	45.69	48.36	552.25	43018
43019	108 mm diameter.....	1,879.89	65.68	68.80	692.04	43019
43020	159 mm diameter.....	2,605.86	83.32	87.57	927.97	43020
	Lever operated ball type full way double seat valves c/w chained labels : -					
	<i>Each</i>					
43021	12 mm diameter.....	477.98	62.26	74.70	85.69	43021
43022	15 mm diameter.....	622.33	63.18	75.81	90.79	43022
43023	22 mm diameter.....	891.02	64.17	77.58	104.19	43023
43024	28 mm diameter.....	1,156.71	65.35	79.35	113.94	43024
43025	35 mm diameter.....	1,505.61	66.38	81.18	119.47	43025
43026	42 mm diameter.....	1,861.60	68.12	84.17	127.74	43026
43027	54 mm diameter.....	3,112.36	71.67	85.00	137.95	43027
43028	76 mm diameter.....	5,018.06	77.30	90.96	149.21	43028
43029	108 mm diameter.....	6,846.41	84.20	98.07	171.17	43029
43030	159 mm diameter.....	9,934.24	111.92	129.79	248.51	43030

Item					Item	
	<b>MEDICAL GASES INSTALLATION (CONT'D)</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Test point : -					
	<i>Each</i>					
43031	Test point.....	485.87	62.05	73.19	88.34	43031
	Oxygen terminal unit to HTM 2022 and BS EN ISO 9170-1 accepting probes to BS 5682 : -					
	<i>Each</i>					
43032	Wall mounted type.....	1,809.03	41.16	42.76	291.74	43032
43033	Bedhead rail type.....	1,845.06	41.16	42.76	291.74	43033
43034	Bench top type.....	1,809.03	41.16	42.76	291.74	43034
	Nitrous oxide terminal unit to HTM 2022 and BS EN ISO 9170-1 accepting probes to BS 5682 : -					
	<i>Each</i>					
43035	Wall mounted type.....	1,812.49	41.16	42.76	291.74	43035
43036	Bedhead rail type.....	1,848.62	41.16	42.76	291.74	43036
43037	Bench top type.....	1,812.49	41.16	42.76	291.74	43037
	Medical vacuum terminal unit to HTM 2022 and BS EN ISO 9170-1 accepting probes to BS5682 : -					
	<i>Each</i>					
43038	Wall mounted type.....	1,816.17	41.16	42.76	291.74	43038
43039	Bedhead rail type.....	1,852.41	41.16	42.76	291.74	43039
43040	Bench top type.....	1,816.17	41.16	42.76	291.74	43040
43041	V-shape mounting bracket for medical vacuum pot .....	351.31	25.00	29.31	46.36	43041

Item					Item
	<b>MEDICAL GASES INSTALLATION (CONT'D)</b>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
	Medical air terminal unit to HTM 2022 and BS EN ISO 9170-1 accepting probes to BS 5682 :-				
	<i>Each</i>				
43042	Wall mounted type.....	1,819.04	41.16	42.76	291.74
43043	Bedhead rail type.....	1,854.64	41.16	42.76	291.74
43044	Bench top type.....	1,819.04	41.16	42.76	291.74
	Surgical air terminal unit to HTM 2022 and BS EN ISO 9170-1 accepting probes to BS 5682 :-				
	<i>Each</i>				
43045	Wall mounted type.....	1,819.04	41.16	42.76	291.74
43046	Bedhead rail type.....	1,852.41	41.16	42.76	291.74
43047	Bench top type.....	1,819.04	41.16	42.76	291.74
	Emergency valve cabinet :-				
	<i>Each</i>				
43048	Wall mounted type.....	17,385.01	279.71	427.03	1,818.45
43049	Bedhead rail type.....	43,725.14	427.03	543.54	2,206.27
43050	Bench top type.....	17,905.27	279.71	427.03	1,856.59
	Medical gas plug-off unit for oxygen :-				
	<i>Each</i>				
43051	Restrictor valve type.....	3,137.28	66.27	67.73	302.46
43052	Air flow switch type.....	2,863.17	66.27	67.73	129.83
43053	Solenoid valve type.....	2,529.96	66.27	67.73	256.63



Item					Item	
	<b>MEDICAL GASES INSTALLATION (CONT'D)</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Medical gas plug-off unit for medical vacuum : -					
	<i>Each</i>					
43054	Restrictor valve type.....	3,159.17	66.27	67.73	302.46	43054
43055	Air flow switch type.....	2,880.92	66.27	67.73	129.83	43055
43056	Solenoid valve type.....	2,293.29	66.27	67.73	256.63	43056
	Medical gas plug-off unit for nitrous oxide : -					
	<i>Each</i>					
43057	Restrictor valve type.....	3,159.17	66.27	67.73	302.46	43057
43058	Air flow switch type.....	2,880.92	66.27	67.73	129.83	43058
43059	Solenoid valve type.....	2,293.29	66.27	67.73	256.63	43059
	Medical gas plug-off unit for medical air : -					
	<i>Each</i>					
43060	Restrictor valve type.....	3,159.17	66.27	67.73	302.46	43060
43061	Air flow switch type.....	2,880.92	66.27	67.73	129.83	43061
43062	Solenoid valve type.....	2,293.29	66.27	67.73	256.63	43062
	Medical gas plug-off unit for surgical air : -					
	<i>Each</i>					
43063	Restrictor valve type.....	3,159.17	66.27	67.73	302.46	43063
43064	Air flow switch type.....	2,880.92	66.27	67.73	129.83	43064
43065	Solenoid valve type.....	2,293.29	66.27	67.73	256.63	43065

Item					Item	
<b>MEDICAL GASES INSTALLATION (CONT'D)</b>						
	Complete manifold control system comprising monitoring panel, pressure control assembly and relief valve assembly, indicator panel, high pressure and discharge pressure gauges, warning, control wirings and alarm pressure switches, signs and notices, automatic changeover control to provide a continuous supply of gas from two banks of cylinders :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<b>Each</b>	A \$	B \$	C \$	D \$	
43066	Oxygen..... (The actual rate should be : \$133,979.20 for Item 43066A)	13,397.92	750.90	917.68	6,654.26	43066
43067	Nitrous oxide..... (The actual rate should be : \$133,979.20 for Item 43067A)	13,397.92	750.90	917.68	6,654.26	43067
43068	Medical air..... (The actual rate should be : \$133,979.20 for Item 43068A)	13,397.92	750.90	917.68	6,654.26	43068
43069	Surgical air..... (The actual rate should be : \$133,979.20 for Item 43069A)	13,397.92	750.90	917.68	6,654.26	43069
	Pipework header with copper pig tails for connections to cylinders at manifold :-					
	<b>Each</b>					
43070	Medical oxygen.....	16,788.03	188.01	200.20	1,010.11	43070
43071	Medical nitrous oxide.....	16,788.03	188.01	200.20	1,010.11	43071
43072	Medical compressed air.....	16,788.03	188.01	200.20	1,010.11	43072
43073	Surgical air.....	16,788.03	188.01	200.20	1,010.11	43073
	Sundries :-					
	<b>Each</b>					
43074	Mild steel contoured brackets for cylinders with retaining brass chains .....	5,109.50	41.16	46.06	295.79	43074
43075	Area alarm panel constantly monitoring local gas pressure for medical oxygen, nitrous oxide, medical vacuum, medical air, surgical air, c/w all necessary accessories.....	19,321.80	159.10	178.82	1,341.38	43075
43076	Central alarm panel constantly monitoring the complete medical gas services installed via fully integrated multiplexed system and capable to be linked with repeated panels, c/w all necessary accessories.....	65,020.07	332.26	412.38	2,339.64	43076
43077	Repeated panel linked to central alarm panel, c/w all necessary accessories.....	55,511.02	256.46	331.93	1,798.74	43077
43078	Glass panel for emergency valve cabinet.....	658.03	32.46	35.43	200.33	43078

Item					Item	
<b>MEDICAL GASES INSTALLATION (CONT'D)</b>						
Pressure relief valve c/w chained labels :-						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
43079	12 mm diameter.....	1,409.85	61.92	73.88	85.69	43079
43080	15 mm diameter.....	2,007.68	62.84	75.06	104.48	43080
43081	22 mm diameter.....	2,398.69	63.87	77.03	111.30	43081
43082	28 mm diameter.....	2,973.93	65.03	78.84	119.41	43082
43083	35 mm diameter.....	3,326.95	65.91	80.89	120.09	43083
43084	42 mm diameter.....	4,663.65	67.87	84.02	127.67	43084
43085	54 mm diameter.....	6,666.47	71.40	86.84	137.57	43085
43086	76 mm diameter.....	10,750.86	77.09	90.96	149.34	43086
Three way valves c/w chained labels :-						
	<i>Each</i>					
43087	12 mm diameter.....	797.73	61.92	73.88	85.69	43087
43088	15 mm diameter.....	1,076.38	62.84	75.06	104.48	43088
43089	22 mm diameter.....	1,425.80	63.87	77.03	111.30	43089
43090	28 mm diameter.....	1,815.53	65.03	78.84	119.41	43090
43091	35 mm diameter.....	2,250.12	65.91	80.89	120.09	43091
43092	42 mm diameter.....	3,299.12	67.87	84.02	127.67	43092
43093	54 mm diameter.....	5,275.41	71.40	86.84	137.57	43093
43094	76 mm diameter.....	7,380.38	77.09	90.96	149.34	43094

Item					Item	
<b>MEDICAL GASES INSTALLATION (CONT'D)</b>						
Bacterial filter c/w differential pressure gauge with penetration n.e. 0.05% to BS 3928						
Connecting pipe diameter : -						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
43095	28 mm diameter.....	21,460.00	43.88	45.57	105.19	43095
43096	35 mm diameter.....	24,251.35	50.64	52.13	114.22	43096
43097	42 mm diameter.....	26,947.80	53.95	55.72	122.87	43097
43098	54 mm diameter.....	29,864.50	60.79	62.74	142.15	43098
43099	76 mm diameter.....	35,942.10	76.10	78.27	173.78	43099
43100	108 mm diameter.....	42,140.64	100.73	102.50	222.03	43100
43101	159 mm diameter.....	51,657.54	139.38	141.14	296.05	43101
Non-return valve c/w chained labels : -						
<i>Each</i>						
43102	12 mm diameter.....	557.56	61.92	74.51	83.79	43102
43103	15 mm diameter.....	612.30	62.84	76.70	100.46	43103
43104	22 mm diameter.....	851.07	63.87	80.82	107.68	43104
43105	28 mm diameter.....	1,119.12	65.03	85.40	115.88	43105
43106	35 mm diameter.....	1,291.45	65.91	89.31	117.95	43106
43107	42 mm diameter.....	1,556.56	67.87	92.45	125.82	43107
43108	54 mm diameter.....	2,457.87	71.40	98.42	138.02	43108
43109	76 mm diameter.....	2,747.99	77.09	131.37	156.63	43109
43110	108 mm diameter.....	4,143.75	84.13	156.48	181.72	43110
43111	159 mm diameter.....	5,182.67	111.81	189.45	243.23	43111

Item					Item	
	<b>MEDICAL GASES INSTALLATION (CONT'D)</b>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Valve, terminal unit, pressure gauge and vacuum gauge :-					
	<i>Each</i>					
43112	Tee-piece and isolation valve for pressure switch c/w chained labels.....	930.61	63.04	94.74	122.47	43112
43113	Pendent type terminal unit.....	2,725.10	33.89	36.93	226.92	43113
43114	Pressure gauge c/w isolating ball valve & pipe fittings.....	1,333.97	53.09	66.20	254.02	43114
43115	Vacuum gauge c/w isolating ball valve & pipe fittings.....	1,355.03	53.09	66.20	254.02	43115
	Flexible hose :-					
	<i>Per linear metre</i>					
43116	Flexible hose for O.T. pendent terminal unit.....	2,529.49	33.00	44.15	175.61	43116
	Pressure transducer :-					
	<i>Each</i>					
43117	Pressure transducer c/w pressure switch.....	3,175.52	60.12	60.93	143.43	43117
	Earthing system :-					
	<i>Per item</i>					
43118	Earthing system for medical gases pipeline.....	4,984.44	-	-	-	43118
	Pressure regulating valve (O <sub>2</sub> ) c/w chained labels :-					
	<i>Each</i>					
43119	15 mm diameter.....	4,816.80	61.35	62.41	119.12	43119
43120	22 mm diameter.....	6,155.85	70.03	75.91	131.79	43120
43121	28 mm diameter.....	7,294.17	76.92	85.74	143.91	43121
43122	35 mm diameter.....	8,852.82	95.92	96.95	169.68	43122
43123	42 mm diameter.....	10,034.35	102.61	105.49	185.64	43123

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
		\$	\$	\$	\$	
<b>MEDICAL GASES INSTALLATION (CONT'D)</b>						
Pressure regulating valve (N <sub>2</sub> O) c/w chained labels : -						
<i>Each</i>						
43124	15 mm diameter.....	4,808.86	61.35	62.41	119.12	43124
43125	22 mm diameter.....	6,155.23	70.03	75.91	131.79	43125
43126	28 mm diameter.....	7,299.07	76.92	85.74	143.91	43126
43127	35 mm diameter.....	8,861.33	95.92	99.11	169.68	43127
Pressure regulating valve (medical air, surgical air) c/w chained labels : -						
<i>Each</i>						
43128	15 mm diameter.....	4,816.80	61.35	62.41	119.12	43128
43129	22 mm diameter.....	6,155.85	70.03	75.91	131.79	43129
43130	28 mm diameter.....	7,294.17	76.92	85.74	143.91	43130
43131	35 mm diameter.....	8,852.82	95.92	99.11	169.68	43131
43132	42 mm diameter.....	10,034.35	102.61	105.49	185.64	43132
Pressure reducing valve						
<i>Each</i>						
43133	Duplex medical gas pressure reducing valve set.....	22,575.00	190.41	197.02	353.29	43133
Oxygen concentration monitoring system						
<i>Per item</i>						
43134	Oxygen concentration monitoring system c/w monitoring alarm panel, built-in integral pump with minimum oxygen flow rate at 0.05 l/ min., facilities for DDC/ CCMS and continuous digital reading of oxygen concentration (0.1% - 99%) to unit HTM 2022..... (The actual rate should be : \$173,962.40 for Item 43134A)	17,396.24	334.47	418.17	2,050.01	43134

Item					Item	
	<b>MEDICAL VACUUM SYSTEM</b>					
	Packaged duplex medical vacuum set, F.A. aspired at 500 mm Hg c/w air-cooled rotary sliding/ low speed reciprocating vacuum pump and vibration isolators, plant capacity : -					
	<i>Each</i>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
43135	Up to 150 litres/ min..... (The actual rate should be : \$121,856.90 for Item 43135A)	12,185.69	329.54	409.01	1,750.50	43135
43136	150 - 300 litres/ min..... (The actual rate should be : \$173,840.00 for Item 43136A)	17,384.00	339.46	422.02	1,789.60	43136
43137	300 - 500 litres/ min..... (The actual rate should be : \$225,771.50 for Item 43137A)	22,577.15	347.59	430.48	1,878.90	43137
43138	500 - 750 litres/ min..... (The actual rate should be : \$330,635.70 for Item 43138A)	33,063.57	364.15	445.09	2,021.78	43138
43139	750 - 1000 litres/ min..... (The actual rate should be : \$417,010.60 for Item 43139A)	41,701.06	382.18	464.70	2,165.38	43139
43140	1000 - 1250 litres/ min..... (The actual rate should be : \$475,470.90 for Item 43140A)	47,547.09	398.77	481.63	2,310.94	43140
43141	1250 - 1500 litres/ min..... (The actual rate should be : \$543,684.80 for Item 43141A)	54,368.48	415.50	496.39	2,453.99	43141
43142	1500 - 1750 litres/ min..... (The actual rate should be : \$605,193.30 for Item 43142A)	60,519.33	432.16	515.06	2,598.52	43142
43143	1750 - 2000 litres/ min..... (The actual rate should be : \$672,509.50 for Item 43143A)	67,250.95	448.54	531.85	2,744.18	43143
	Vacuum discharge system : -					
	<i>Each</i>					
43144	Vacuum discharge system with exhaust pipe and silencer assembly for each pump, design to meet noise criteria better than 76 NC.....	10,383.29	152.26	169.21	663.25	43144
	Sanitary trap : -					
	<i>Each</i>					
43145	Sanitary trap assembly with transparent bowl fitted with sight level tube for each pump.....	5,732.42	49.35	57.56	201.82	43145

Item					Item	
	<b>MEDICAL VACUUM SYSTEM (CONT'D)</b>					
	Horizontal vacuum reservoir to BS EN 286-1:1998 + A2:2005 c/w vacuum gauge with petcock, drainage trap, inlet isolating and non-return valve, water capacity : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
43146	Up to 1500 litres.....	69,903.67	654.25	739.15	3,304.30	43146
43147	1500 - 2000 litres.....	90,404.51	739.15	818.61	3,540.78	43147
43148	2000 - 2500 litres..... (The actual rate should be : \$110,245.40 for Item 43148A)	11,024.54	818.61	977.48	3,860.74	43148
43149	2500 - 3000 litres..... (The actual rate should be : \$129,791.00 for Item 43149A)	12,979.10	903.36	1,064.44	4,125.27	43149
43150	3000 - 3500 litres..... (The actual rate should be : \$147,254.00 for Item 43150A)	14,725.40	977.48	1,140.39	4,409.85	43150
43151	3500 - 4000 litres..... (The actual rate should be : \$164,487.30 for Item 43151A)	16,448.73	1,064.44	1,227.44	4,675.99	43151
43152	4000 - 4500 litres..... (The actual rate should be : \$183,261.20 for Item 43152A)	18,326.12	1,140.39	1,303.70	4,943.06	43152
43153	4500 - 5000 litres..... (The actual rate should be : \$200,476.10 for Item 43153A)	20,047.61	1,227.44	1,395.31	5,208.90	43153
43154	5000 - 5500 litres..... (The actual rate should be : \$217,983.50 for Item 43154A)	21,798.35	1,303.70	1,467.56	5,475.22	43154
43155	5500 - 6000 litres..... (The actual rate should be : \$236,829.00 for Item 43155A)	23,682.90	1,395.31	1,560.38	5,744.97	43155
	Duplex medical vacuum set c/w the following : -					
	<i>Each</i>					
43156	Vacuum drain tanks; including all associated accessories.....	5,527.99	197.38	212.55	912.26	43156
43157	Pipeline vacuum gauges including isolating valves.....	1,587.47	60.73	72.58	128.44	43157
43158	Vacuum pressure switches including isolating valves.....	1,843.78	60.73	72.58	128.44	43158
43159	Medical vacuum plant control panel; c/w all associated accessories and power cables and conduits connections to adjacent isolating switch.....	54,191.05	417.22	550.63	4,136.99	43159



Item					Item	
<b>MEDICAL AIR SYSTEM</b>						
Triplex medical compressed air plant c/w the following :-						
<i>Each</i>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
43160	Air intake filters (3 sets).....	21,359.88	154.60	167.47	391.93	43160
43161	Air intake silencers (3 sets).....	18,380.57	154.60	167.47	411.44	43161
43162	Air compressors; up to 250 litres/ min. (3 sets).....	99,403.69	825.48	1,084.66	3,920.92	43162
43163	Ditto; 250 - 500 litres/ min. (3 sets)..... (The actual rate should be : \$128,416.40 for Item 43163A)	12,841.64	916.68	1,136.66	4,292.51	43163
43164	Ditto; 500 - 750 litres/ min. (3 sets)..... (The actual rate should be : \$164,040.30 for Item 43164A)	16,404.03	958.72	1,179.55	4,644.90	43164
43165	Ditto; 750 - 1000 litres/ min. (3 sets)..... (The actual rate should be : \$195,593.80 for Item 43165A)	19,559.38	1,000.58	1,231.12	4,961.97	43165
43166	Ditto; 1000 - 1250 litres/ min. (3 sets)..... (The actual rate should be : \$231,170.80 for Item 43166A)	23,117.08	1,039.03	1,278.24	5,333.95	43166
43167	Ditto; 1250 - 1500 litres/ min. (3 sets)..... (The actual rate should be : \$271,952.40 for Item 43167A)	27,195.24	1,080.78	1,320.11	5,625.97	43167
43168	Air-cooled after coolers (3 sets).....	42,413.60	825.48	1,084.66	4,044.01	43168
43169	Air receiver; c/w all associated accessories; up to 250 litres/ min. (2 sets).....	73,172.43	544.69	675.71	2,367.17	43169
43170	Ditto; 250 - 500 litres/ min. (2 sets).....	94,088.28	574.62	710.62	2,677.47	43170
43171	Ditto; 500 - 750 litres/ min. (2 sets)..... (The actual rate should be : \$113,568.90 for Item 43171A)	11,356.89	601.51	742.48	2,922.23	43171
43172	Ditto; 750 - 1000 litres/ min. (2 sets)..... (The actual rate should be : \$134,211.40 for Item 43172A)	13,421.14	627.70	772.47	3,166.71	43172
43173	Ditto; 1000 - 1250 litres/ min. (2 sets)..... (The actual rate should be : \$158,064.20 for Item 43173A)	15,806.42	651.49	801.11	3,512.28	43173
43174	Ditto; 1250 - 1500 litres/ min. (2 sets)..... (The actual rate should be : \$183,425.90 for Item 43174A)	18,342.59	679.51	828.57	3,857.90	43174
43175	Water separators (2 sets).....	10,828.38	106.23	113.32	234.52	43175
43176	Oil filter (2 sets).....	17,872.07	106.23	113.32	234.52	43176
43177	Twin column desiccant air dryers; heatless reactivated including all associated accessories (2 Sets)..... (The actual rate should be : \$226,554.40 for Item 43177A)	22,655.44	544.69	675.71	2,517.33	43177

Item					Item	
<b>MEDICAL AIR SYSTEM (CONT'D)</b>						
Triplex medical compressed air plant c/w the following : - (Cont'd)						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
43178	Dust filter (2 sets).....	21,846.69	106.23	113.32	227.67	43178
43179	Header c/w dew point alarm probe.....	26,392.55	250.02	290.99	925.41	43179
43180	Duplex regulating stations.....	9,046.48	266.05	288.57	806.48	43180
43181	Active carbon filter (2 sets).....	18,196.75	106.23	113.32	234.52	43181
43182	Bacteria filter c/w sterilizable glass trap and stop valves (2 sets).....	50,923.26	134.78	147.52	271.97	43182
43183	Pressure switch.....	434.83	41.49	42.24	72.41	43183
43184	Emergency compressed air manifold; including all associated accessories.....	21,306.55	204.04	252.29	2,222.53	43184
43185	Medical compressed air plant control panel; c/w all associated accessories, and power cables and conduits connections to adjacent isolating switch (isolating switch measured separately).....	75,837.23	413.71	545.84	3,970.10	43185
<b>SURGICAL AIR SYSTEM</b>						
Duplex surgical compressed air plant c/w the following : -						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
43186	Air intake filters (2 sets).....	14,196.09	106.23	113.32	234.52	43186
43187	Air intake silencers (2 sets).....	12,367.26	106.23	113.32	274.65	43187
43188	Air compressors; up to 250 litres/ min. (2 sets).....	66,632.48	544.69	675.71	2,571.89	43188
43189	Ditto; 250 - 500 litres/ min. (2 sets).....	86,138.33	574.62	710.62	2,812.09	43189
43190	Ditto; 500 - 750 litres/ min. (2 sets)..... (The actual rate should be : \$108,581.80 for Item 43190A)	10,858.18	601.51	742.48	3,029.78	43190
43191	Ditto; 750 - 1000 litres/ min. (2 sets)..... (The actual rate should be : \$130,378.50 for Item 43191A)	13,037.85	627.70	772.47	3,166.71	43191
43192	Ditto; 1000 - 1250 litres/ min. (2 sets)..... (The actual rate should be : \$153,822.40 for Item 43192A)	15,382.24	651.49	801.11	3,464.34	43192
43193	Ditto; 1250 - 1500 litres/ min. (2 sets)..... (The actual rate should be : \$184,093.10 for Item 43193A)	18,409.31	679.51	828.57	3,681.77	43193

Item					Item	
<b>SURGICAL AIR SYSTEM (CONT'D)</b>						
Duplex surgical compressed air plant c/w the following : - (Cont'd)						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
43194	Air-cooled after coolers.....	14,070.70	277.42	344.37	1,276.10	43194
43195	Air receiver; c/w all associated accessories; up to 250 litres/ min. (2 sets).....	73,172.43	544.69	675.71	2,367.17	43195
43196	Ditto; 250 - 500 litres/ min. (2 sets).....	94,088.28	574.62	710.62	2,676.63	43196
43197	Ditto; 500 - 750 litres/ min. (2 sets)..... (The actual rate should be : \$113,568.90 for Item 43197A)	11,356.89	601.51	742.48	2,922.23	43197
43198	Ditto; 750 - 1000 litres/ min. (2 sets)..... (The actual rate should be : \$134,211.40 for Item 43198A)	13,421.14	627.70	772.47	3,166.71	43198
43199	Ditto; 1000 - 1250 litres/ min. (2 sets)..... (The actual rate should be : \$158,064.20 for Item 43199A)	15,806.42	651.49	801.11	3,512.28	43199
43200	Ditto; 1250 - 1500 litres/ min. (2 sets)..... (The actual rate should be : \$183,425.90 for Item 43200A)	18,342.59	679.51	828.57	3,857.90	43200
43201	Water separators.....	6,537.21	51.13	56.30	130.44	43201
43202	Oil filter.....	10,433.14	51.13	56.30	130.44	43202
43203	Twin column desiccant air dryers; heatless reactivated including all associated accessories (2 Sets) ..... (The actual rate should be : \$203,370.60 for Item 43203A)	20,337.06	544.69	675.71	2,516.48	43203
43204	Dust filter.....	11,022.99	51.13	56.30	130.44	43204
43205	Header c/w dew point alarm probe.....	26,265.07	250.02	290.99	925.41	43205
43206	Duplex regulating stations.....	9,726.00	232.92	257.14	806.48	43206
43207	Active carbon filter.....	11,387.67	51.13	56.30	130.44	43207
43208	Bacteria filter c/w sterilizable glass trap and stop valves.....	25,199.43	66.85	71.13	136.49	43208
43209	Pressure switch.....	462.53	36.15	40.62	72.41	43209
43210	Emergency surgical air manifold; including all associated accessories.....	21,204.74	204.04	252.29	2,222.53	43210
43211	Surgical air plant control panel; c/w all associated accessories, and power cables and conduits connections to adjacent isolating switch (isolating switch measured separately) .....	72,721.07	418.37	546.53	3,898.26	43211

Item					Item	
	<b>ACTIVE ANAESTHETIC GAS SCAVENGING SYSTEM</b>					
	Solid drawn seamless, phosphorous de-oxidized, non-arsenical half- hard copper pipes and fitting to BS EN 1976 and BS EN 1978 in straight random lengths, best quality to BS EN 1057, in addition to the requirements of HTM 2022 : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per linear metre</i>	A \$	B \$	C \$	D \$	
43212	28 mm diameter (SP).....	427.47	14.14	15.21	244.71	43212
43213	32 mm diameter (SP).....	484.57	15.21	16.40	262.28	43213
	Supply and installation of the following Active Anaesthetic Gas Scavenging System, c/w all associated accessories to form on operable systems to BS EN ISO 7396-2, BS EN ISO 9170-2, BS EN 60601-2-13, BS EN ISO 8835-2, 4 and 5 : -					
	Approved Active Anaesthetic Gas Scavenging System complete with the following : -					
	<i>Each</i>					
43214	AGSS terminal outlets .....	2,863.47	42.10	44.02	298.28	43214
43215	Duplex exhaustor units (power device) (1350 litres/ min.).....	93,029.22	679.51	828.57	3,410.31	43215
43216	Plant isolator and control panel.....	30,359.79	413.79	546.04	3,766.14	43216
43217	Remote on-off flow failure starter unit.....	15,325.92	217.66	225.43	924.90	43217
43218	Flow failure switching unit.....	10,291.36	158.84	167.23	746.48	43218
43219	Excess vacuum relief regulating valve assembly .....	7,551.86	99.96	106.65	376.63	43219
43220	Receiver with air break device and connecting hoses.....	23,593.58	575.04	643.73	1,243.97	43220

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>TESTS ON EXISTING MEDICAL GASES SYSTEM</b>						
(Note : The following Items 43221 to 43249 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing)						
Test on existing Active Anaesthetic Gas Scavenging System :-						
	<i>Each</i>					
43221	Power device and warning system test.....	2,379.26	-	-	-	43221
43222	Receiving system test.....	2,379.26	-	-	-	43222
43223	Performance test.....	4,677.07	-	-	-	43223
On-site functional test of existing terminal units and nist connector :-						
	<i>Each</i>					
43224	Oxygen gas terminal unit.....	4,254.18	-	-	-	43224
43225	Medical air terminal unit.....	4,254.18	-	-	-	43225
43226	Nitrous oxide terminal unit.....	4,254.18	-	-	-	43226
43227	Surgical air terminal unit.....	4,254.18	-	-	-	43227
On-site identification tests on existing piped medical gas samples :-						
	<i>Each</i>					
43228	Oxygen gas sample.....	4,538.89	-	-	-	43228
43229	Medical air gas sample.....	4,538.89	-	-	-	43229
43230	Nitrous oxide gas sample.....	4,538.89	-	-	-	43230
43231	Surgical air gas sample.....	4,538.89	-	-	-	43231

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A \$	B \$	C \$	D \$	
<b>TESTS ON EXISTING MEDICAL GASES SYSTEM (CONT'D)</b>						
	On-site purity/ quality tests on existing piped medical gas samples :-					
	<i>Each</i>					
43232	Oxygen gas sample : Dragger tube tests on contents of O <sub>2</sub> , H <sub>2</sub> O (moisture), CO, CO <sub>2</sub> , oil.....	4,851.79	-	-	-	43232
43233	Medical air gas sample : Dragger tube tests on contents of O <sub>2</sub> , H <sub>2</sub> O (moisture), CO, CO <sub>2</sub> , oil.....	4,851.79	-	-	-	43233
43234	Nitrous oxide gas sample : Dragger tube tests on contents of O <sub>2</sub> , H <sub>2</sub> O (moisture), CO, CO <sub>2</sub> , oil, N <sub>2</sub> O.....	4,851.79	-	-	-	43234
43235	Surgical air gas sample : Dragger tube tests on contents of O <sub>2</sub> , H <sub>2</sub> O (moisture), CO, CO <sub>2</sub> , oil.....	4,851.79	-	-	-	43235
	On-site particulate tests on existing piped medical gas samples :-					
	<i>Each</i>					
43236	Oxygen gas sample.....	4,813.95	-	-	-	43236
43237	Medical air gas sample.....	4,813.95	-	-	-	43237
43238	Nitrous oxide gas sample.....	4,813.95	-	-	-	43238
43239	Surgical air gas sample.....	4,813.95	-	-	-	43239
	On-site cross connection tests on existing piped medical gas pipeline systems :-					
	<i>Per lot</i>					
43240	Oxygen gas system.....	4,354.86	-	-	-	43240
43241	Medical air system.....	4,354.86	-	-	-	43241
43242	Nitrous oxide system.....	4,354.86	-	-	-	43242
43243	Surgical air system.....	4,354.86	-	-	-	43243
43244	Vacuum system.....	4,354.86	-	-	-	43244

Item					Item
	<b>TESTS ON EXISTING MEDICAL GASES SYSTEM (CONT'D)</b>				
	On-site performance tests on existing piped medical gas pipeline systems : -				
	<i>Per lot</i>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
43245	Oxygen gas system.....	4,986.37	-	-	-
43246	Medical air system.....	4,986.37	-	-	-
43247	Nitrous oxide system.....	4,986.37	-	-	-
43248	Surgical air system.....	4,986.37	-	-	-
43249	Vacuum system.....	4,986.37	-	-	-
	<b>MISCELLANEOUS</b>				
	Provision of medical gas regulators, medical cylinders and other accessories in anticipation of Medical Gas Interruption				
	Rental charges for gas regulators, cylinders and other accessories for : -				
	<i>Per month</i>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
43250	Oxygen.....	3,067.73	-	-	-
43251	Nitrous oxide.....	3,067.73	-	-	-
43252	Medical air.....	3,067.73	-	-	-
43253	Surgical air.....	3,067.73	-	-	-

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>MISCELLANEOUS (CONT'D)</b>		A	B	C	D	
Charges for gas filling for R-size cylinder supply in :-		\$	\$	\$	\$	
	<i>Each</i>					
43254	Oxygen.....	1,254.78	-	-	-	43254
43255	Nitrous oxide.....	10,367.02	-	-	-	43255
43256	Medical compressed air.....	995.12	-	-	-	43256
43257	Surgical air.....	10,367.02	-	-	-	43257
	Sundries :-					
	<i>Each</i>					
43258	Portable suction unit and accessories for backing up type piped medical vacuum.....	45,602.65	-	-	-	43258
43259	Baseplate for mounting terminal unit on bedhead trunking.....	223.32	26.71	31.71	47.43	43259



**Section 44**

**CATERING EQUIPMENT**

## SECTION 44

### CATERING EQUIPMENT

#### SPECIAL CONDITIONS

**Measurement  
of power supply**

**SC44.01**

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting Systems and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.

For the avoidance of doubt, all items for kitchen furniture in this Section shall only apply to the works executed by the Approved Suppliers of materials and Specialist Contractors for Public Works : Catering Equipment Installation.

**Measurement  
of water supply,  
waste disposal  
and gas supply**

**SC44.02**

All works of water supply, waste disposal and gas supply up to the respective termination points for the equipment shall be measured separately and paid for at the appropriate rates under applicable Work Sections of this Schedule.

**Measurement  
of temporary  
supply**

**SC44.03**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

**SPECIAL CONDITIONS****Rates generally****SC44.04**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.
- (g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.
- (h) All brackets and methods of supports.
- (i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

**SPECIAL CONDITIONS**

**Rates generally  
(Cont'd)**

**SC44.04  
(Cont'd)**

- (n) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (p) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (q) Provision of manufacturer's guarantee.

**Rates for kitchen  
equipment**

**SC44.05**

The rates for kitchen equipment shall further include for : -

- (a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.
- (b) Provision of all associated components.
- (c) All necessary operational and control accessories forming part of the equipment.
- (d) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing, water supply, gas supply and waste disposal including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.
- (e) Motor starters (if motors in the equipment require motor starters).
- (f) Earth/equipotential bonding.

**SPECIAL CONDITIONS****Rates for kitchen furniture****SC44.06**

The rates for kitchen furniture shall further include for : -

- (a) All framing and components to ensure the rigidity and stability of the finished work.
- (b) All accessories necessary for the work.
- (c) Forming holes for pipes, water taps, building services installations, sink and the like if required.
- (d) All necessary ironmongery including door hinges, pull handles and the like.

**Rates for "Take down and clear away" or "Take down and set aside for re-use"****SC44.07**

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing kitchen equipment shall further include for : -

- (a) Taking down all associated plumbing works and building services works.
- (b) Plugging off remaining ends with plugs or caps as required.
- (c) Preparing remaining ends of plumbing works and building services works to receive connections with new work if required.
- (d) Making good all works disturbed.

**Particular Specification****SC44.08**

The Particular Specification for catering equipment can be found in the Contract.

Item					Item	
<b>CATERING EQUIPMENT</b>						
Kitchen equipment						
Chinese cooking range suitable for 300 to 600 mm Chinese wok c/w burners, air blowers, gas cock, operational and safety controls, splash plate, water faucet, water pot, flame failure device, automatic gas controller with solenoid valves, refractory brick lined combustion chamber, removable stainless steel plate for spice pots, flue pipes, tail pots and all necessary accessories :-						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
44001	Single stove.....	20,497.97	232.83	312.58	1,709.47	44001
44002	Double stove.....	33,656.20	260.84	434.38	2,803.49	44002
Induction type Chinese cooking range suitable for 300 to 600 mm Chinese wok c/w induction device, operational and safety control, splash plate, water faucet, water pot, removable stainless steel plate for spice pots, tail pots and all necessary accessories :-						
<i>Each</i>						
44003	Single stove.....	50,413.93	190.10	255.22	1,395.79	44003
44004	Double stove.....	97,638.99	212.97	354.67	2,289.07	44004
Chinese cooking steamer c/w burners, air blowers, gas cock, 3 steam trays per steamer unit, rice pans, operational and safety controls, water faucet, flame failure device, automatic gas controller with solenoid valves, flue pipe, dim sum plates, dim sum tray stand, steamer funnel and all necessary accessories :-						
<i>Each</i>						
44005	Single unit.....	21,819.42	224.20	309.34	1,829.12	44005
44006	Double unit.....	35,443.00	268.39	353.54	1,934.73	44006

Item					Item	
	<b>CATERING EQUIPMENT (CONT'D)</b>					
	Kitchen equipment (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Gas fire range c/w oven fitted with cooking shelves, hangers and base plate, rings, griddle top, burners, flame failure device, control taps, splash back, thermostat, thermal insulation, adjustable legs and all necessary accessories :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
44007	Heavy duty type.....	32,152.76	196.17	232.83	764.20	44007
	Gas burners c/w griddle top, burners, flame failure device and all necessary accessories :-					
	<i>Each</i>					
44008	Single burner town gas hot plate.....	10,862.27	20.48	30.18	81.92	44008
44009	Double burner town gas hot plate.....	14,483.03	25.86	35.56	93.78	44009
	Gas stock pot stoves c/w burners, gas cock, flame failure device, automatic gas controller with solenoid valves, gratings, drip tray, oil pan and all necessary accessories :-					
	<i>Each</i>					
44010	Single burner.....	6,082.59	104.55	126.11	410.66	44010
44011	Double burner.....	8,720.97	123.96	155.22	551.87	44011
	Induction type stock pot stoves c/w induction device, gratings, drip tray, oil pan and all necessary accessories :-					
	<i>Each</i>					
44012	Single stove.....	23,422.53	85.37	102.97	335.31	44012
44013	Double stove.....	67,261.75	101.21	126.74	450.59	44013

Item					Item	
<b>CATERING EQUIPMENT (CONT'D)</b>						
Kitchen equipment (Cont'd)						
Town gas rice cooker c/w extra rice cooker bowl and cover, rubber hose connection and automatic flame keeping :-						
Capacity :-						
<b>Each</b>						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
44014	2 - 5 litres.....	2,778.71	20.48	31.26	85.15	44014
44015	5 - 9 litres.....	3,115.53	31.26	36.64	114.25	44015
Upright refrigerator with doors, control panel, compressors cabinet, condensing unit, door hardware and latches, thermal insulation, thermometer, internal lighting and all necessary accessories :-						
<b>Each</b>						
44016	Up to 550 litres.....	14,490.40	80.97	103.85	161.94	44016
44017	550 - 1200 litres.....	19,720.49	132.01	152.24	176.89	44017
Upright freezer with doors, control panel, compressors cabinet, condensing unit, door hardware and latches, thermal insulation, thermometer, internal lighting and all necessary accessories :-						
<b>Each</b>						
44018	Up to 550 litres.....	16,048.17	81.85	103.85	162.82	44018
44019	550 - 1200 litres.....	21,447.73	129.36	152.24	176.01	44019
Upright refrigerator/ freezer with doors, control panel, compressors cabinet, condensing unit, door hardware and latches, thermal insulation, thermometer, internal lighting and all necessary accessories :-						
<b>Each</b>						
44020	Up to 550 litres.....	19,759.80	80.09	101.21	161.94	44020
44021	550 - 1200 litres.....	20,208.88	130.25	148.72	176.01	44021



Item					Item	
<b>CATERING EQUIPMENT (CONT'D)</b>						
Kitchen equipment (Cont'd)						
Dish washer c/w door, adjustable legs, built-in rinse booster, automatic fill, safety cut-out switch, liquid detergent dispenser, rinse line injector, booster pumps, signal lamps, instrument panel, drain pump, dish racks, cup racks and associated side tables : -						
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
44022	Dish washer, capacity up to 28 litres.....	26,103.13	166.32	197.14	565.01	44022
Sterilizing sink for milk bottles free standing, with sink cover and internal basket complete with all accessories : -						
	<i>Each</i>					
44023	Sterilizing sink, up to 8 litres heating capacity.....	6,530.00	50.18	54.56	103.85	44023
Electric water boiler, continuous supply type c/w internal water tank, heater, thermostat, water level indicator, ball valve, access to maintenance door, indicating light, switch and faucet : -						
	<i>Each</i>					
44024	Up to 32 litres, 3 kW.....	5,507.49	124.10	145.22	377.55	44024
44025	32 - 65 litres, 9 kW.....	8,915.49	157.54	178.66	408.35	44025
Electric insect killer; wall mounted type : -						
	<i>Each</i>					
44026	100W.....	2,062.99	39.60	44.89	109.12	44026
44027	200W.....	2,315.60	44.89	50.18	153.13	44027
Fan-assisted balance flue, instantaneous gas water heater c/w temperature selector and flames failure device; with capacity of : -						
	<i>Each</i>					
44028	8.8 litres/ min. at 25°C temperature rise.....	21,640.33	128.26	148.76	516.30	44028
44029	32 litres/ min. at 25°C temperature rise.....	43,280.68	165.99	194.02	668.26	44029
44030	32 litres/ min. at 25°C temperature rise (Condensing Type).....	90,182.11	191.86	224.20	771.75	44030

Item					Item	
<b>CATERING EQUIPMENT (CONT'D)</b>						
Kitchen equipment (Cont'd)						
Open flue, instantaneous gas water heater c/w temperature selector and flames failure devices; with capacity of : -						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
44031	10 litres/ min. at 25°C temperature rise.....	21,640.33	128.26	149.81	474.26	44031
44032	16 litres/ min. at 25°C temperature rise.....	43,280.68	128.26	149.81	508.75	44032
44033	32 litres/ min. at 25°C temperature rise.....	64,921.01	165.99	194.02	569.10	44033
44034	32 litres/ min. at 25°C temperature rise (Condensing Type).....	90,182.11	191.86	224.20	654.25	44034
Steam cabinet c/w burner, gas cock, steaming cabinet with removable wire shelves, flame failure device, automatic gas controller with solenoid valves, flue pipe, valves, lighting touch, inspection door, drain trough, flue pipe, sight glass and all necessary accessories : -						
<i>Each</i>						
44035	Gas steaming, three decks oven, approximate size 1200 mm x 1000 mm x 1500 mm high.....	41,849.21	201.56	232.83	868.74	44035
44036	Single door type steam cabinet, approximate size 850 mm (H) x 1100 mm (W) x 1870 mm (D).....	26,636.42	185.40	212.33	799.76	44036
44037	3-door type steam cabinet, approximate size 1900 mm (H) x 950 mm (W) x 1100 mm (D).....	34,635.76	201.56	232.83	868.74	44037
Electrical steam cabinet c/w heater, steaming cabinet with removable wire shelves, valves, lighting touch, inspection door, drain trough, sight glass and all necessary accessories : -						
<i>Each</i>						
44038	Electrical steaming, three decks oven, approximate size 1200 mm x 1000mm x 1500 mm high.....	35,112.92	164.58	190.10	709.33	44038
44039	Single door type steam cabinet, approximate size 850 mm (H) x 1100 mm (W) x 1870 mm (D).....	24,897.27	151.37	173.36	653.01	44039
44040	3-door type steam cabinet, approximate size 1900 mm (H) x 950 mm (W) x 1100 mm (D).....	29,060.60	164.58	190.10	709.33	44040

Item					Item	
	<b>CATERING EQUIPMENT (CONT'D)</b>					
	Kitchen equipment (Cont'd)					
	Gas kettle c/w burner : -					
	<i>Each</i>					
44041	Gas single steaming kettle range, 60 kW burner rating, approximate size 1000 x 1200 x 800 mm (H), c/w burner, gas cock, 3 trays with pans and covers, water faucet, flame failure devices, automatic gas controller with solenoid valves, flue pipe and all necessary accessories.....	26,608.36	178.93	204.79	770.66	44041
44042	Gas titling kettle, 150 litres, c/w burner, gas cock, operational controls, safety features, control panel, flame failure device and all necessary accessories ..... (The actual rate should be : \$182,595.60 for Item 44042A)	18,259.56	216.65	224.20	937.74	44042
	Bain Marie with hot cabinet c/w drainage tap to well, thermostat, push handle, rubber corner bumpers, castors, protective panel with temperature control, switch and power light, flexible coiled cable and all necessary accessories : -					
	<i>Each</i>					
44043	Approximate size 1200 x 650 x 900 mm high, 1.6 kW.....	11,662.20	188.62	215.56	736.18	44043
	Gas salamander broiler; range mounted, c/w broiling grid with grates, grid lock, valve controls and automatic lighting : -					
	<i>Each</i>					
44044	12 kW, 1200 x 500 x 950 mm approximate.....	18,230.09	146.59	171.37	638.09	44044

Item					Item	
	<b>CATERING EQUIPMENT (CONT'D)</b>					
	Kitchen equipment (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Electric beverage bottle cooler; c/w cabinet, lids with hardware and locking device, thermal insulation, refrigeration system, evaporator coils, condenser, controls and all necessary accessories :-					
	<b>Each</b>	A \$	B \$	C \$	D \$	
44045	120 bottles of 200 ml size in vertical storage .....	16,335.51	88.90	104.73	187.45	44045
	Electric sterilizer c/w heating element fitted with safety device, water container with covered handle, dipping trays, grab-handle with hooks and stands :-					
	<b>Each</b>					
44046	2 kW approximate; up to 22.5 litres.....	7,499.18	62.48	73.05	210.34	44046
	Sundries :-					
	<b>Each</b>					
44047	Cooker and oven with grille top.....	26,061.04	122.88	137.95	410.66	44047
44048	Deep fat fryer, 20 kW.....	21,850.85	121.45	139.93	403.06	44048
44049	Deep fat fryer c/w cooker.....	96,244.78	124.10	141.70	413.63	44049
44050	Grill, 7.5 kW/ hr.....	26,608.36	150.48	169.85	622.21	44050
44051	Pastry oven, 10 kW.....	22,566.58	160.17	176.01	792.07	44051
44052	Commercial mincer, 430 x 210 x 380 mm high approximate.....	7,055.43	56.29	61.74	168.06	44052
44053	Flour mixer, 20 litres.....	9,813.94	111.79	130.53	339.24	44053
44054	Flour bin trolley.....	3,932.04	22.67	28.14	59.41	44054
44055	Potato peeler, 300 kg/ hr.....	17,093.34	93.80	115.69	232.92	44055
44056	Slicer, 615 x 480 x 450 mm high approximate.....	10,404.20	63.32	69.56	176.66	44056
44057	Automatic coffee machine c/w 2 litres removable water tank.....	5,725.85	4.30	5.39	16.17	44057
44058	Ice maker, 800 x 600 x 530 mm high approximate, 1.1 kW.....	32,628.92	83.61	103.85	271.06	44058
44059	Micro-wave oven, 1000W.....	1,945.10	3.91	6.25	17.20	44059
44060	Tea boiler, 45 litres.....	5,136.42	106.49	124.10	277.22	44060

Item					Item	
<b>CATERING EQUIPMENT (CONT'D)</b>						
Kitchen equipment (Cont'd)						
Sundries : - (Cont'd)						
<i>Each</i>						
	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only		
	A \$	B \$	C \$	D \$		
44061	Mobile rice warmer, 650 x 650 x 850 mm high approximate.....	6,149.66	25.01	31.26	66.45	44061
44062	Mobile soup warmer, 650 x 650 x 850 mm high approximate.....	6,149.66	25.01	31.26	66.45	44062
44063	Mobile table, 1400 x 760 x 860 mm high approximate with two undershelves.....	4,845.58	22.67	28.14	59.41	44063
44064	Service counter c/w under-counter boiler, 1850 x 850 x 700 mm high approximate.....	13,893.60	131.13	150.48	459.40	44064
44065	Rubbish bin with lid, 30 to 40 litres.....	618.91	11.72	13.28	22.67	44065
44066	Wooden top table 1900 x 750 x 850 mm high.....	6,146.86	88.33	108.65	287.66	44066
Kitchen furniture						
Stainless steel worktop tables, 850 mm high : -						
<i>Each</i>						
44067	1500 x 750 mm.....	3,349.05	68.78	85.20	250.92	44067
44068	2000 x 750 mm.....	3,704.96	91.45	113.34	318.14	44068
44069	1500 x 900 mm.....	3,685.32	71.13	94.59	264.21	44069
Stainless steel worktop with undershelf : -						
<i>Per linear metre</i>						
44070	600 mm (W) x 850 mm (H) with 1-tier undershelf.....	3,410.67	56.29	78.94	220.44	44070
44071	600 mm (W) x 850 mm (H) with 2-tier undershelf.....	4,010.76	68.78	92.23	252.48	44071
44072	750 mm (W) x 850 mm (H) with 1-tier undershelf.....	3,593.40	56.29	78.94	214.96	44072
44073	750 mm (W) x 850 mm (H) with 2-tier undershelf.....	4,267.16	66.45	88.33	263.43	44073
Stainless steel worktop with sink, 850 mm high : -						
<i>Each</i>						
44074	1800 x 750 mm with single sink 500 x 500 x 400 mm deep .....	7,704.64	118.81	125.86	475.25	44074
44075	1800 x 750 mm with double sinks each 500 x 500 x 400 mm deep .....	10,230.75	130.53	138.35	514.34	44075

Item					Item	
	<b>CATERING EQUIPMENT (CONT'D)</b>					
	Kitchen furniture (Cont'd)					
	Stainless steel chopping tables with undershelf : -					
	<i>Per linear metre</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
44076	600 mm (W) x 850 mm (H) with 1-tier undershelf.....	3,872.54	61.74	85.20	224.33	44076
44077	600 mm (W) x 850 mm (H) with 2-tier undershelf.....	5,005.91	74.26	96.93	255.61	44077
44078	750 mm (W) x 850 mm (H) with 1-tier undershelf.....	4,090.61	61.74	85.20	231.37	44078
44079	750 mm (W) x 850 mm (H) with 2-tier undershelf.....	5,297.67	78.94	96.93	264.21	44079
	Open shelves : -					
	<i>Per linear metre</i>					
44080	Open shelves, 3-tiers, 500 mm (D) x 1800 mm (H).....	4,539.85	58.62	82.08	177.43	44080
	Stainless steel worktop cabinet, 600 mm (D) x 850 mm (H) : -					
	<i>Per linear metre</i>					
44081	Worktop cabinet with 1-tier intermediate adjustable shelf, hinged doors.....	6,134.51	92.23	114.11	294.69	44081
44082	Worktop cabinet with 1-tier intermediate adjustable shelf, hinged doors and 1-layer drawers .....	7,539.74	100.84	124.28	300.94	44082
44083	Worktop cabinet with stack of 3 drawers.....	8,545.97	107.10	128.97	322.05	44083
	Stainless steel choptop cabinet, 600 mm (D) x 850 mm (H) : -					
	<i>Per linear metre</i>					
44084	Choptop cabinet with 1-tier intermediate adjustable shelf, hinged doors.....	6,396.80	89.89	107.87	287.66	44084
44085	Choptop cabinet with 1-tier intermediate adjustable shelf, hinged doors and 1-layer drawers .....	7,519.12	96.93	113.34	306.41	44085

Item					Item	
<b>CATERING EQUIPMENT (CONT'D)</b>						
	Kitchen furniture (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Stainless steel sink cabinet c/w hinged doors, sinks and grease traps :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
44086	Single sink cabinet, 600 mm (D) x 850 mm (H) x 1300 mm (L) approximate.....	5,831.11	103.48	129.34	420.36	44086
44087	Twin sink cabinet, 600 mm (D) x 850 mm (H) x 2000 mm (L) approximate.....	7,809.90	160.60	200.48	578.81	44087
	Stainless steel grease trap :-					
	<i>Each</i>					
44088	Stainless steel grade 316 grease trap 300 x 300 x 500 mm (L), with moveable baffles to facilitate cleaning .....	1,178.85	10.77	11.85	43.12	44088
	Hanging cabinet :-					
	<i>Per linear metre</i>					
44089	Hanging cabinet with 1-tier intermediate adjustable shelf, 400 mm (D) x 700 mm (H) with hinged doors .....	4,951.17	94.59	117.26	249.35	44089
	Cooking bench with 1-tier undershelf, 600 mm (D) x 600 mm (H) :-					
	<i>Per linear metre</i>					
44090	Cooking bench with splash back 400 mm high.....	2,131.20	58.62	82.08	196.20	44090
44091	Cooking bench with splash back 660 mm high.....	2,195.73	63.32	86.78	204.03	44091
	Stainless steel wall-mounted rack shelves :-					
	<i>Each</i>					
44092	2000 x 350 x 1200 mm high.....	2,319.82	93.03	114.91	340.81	44092
44093	Ordinary sink.....	2,909.24	85.98	106.31	289.22	44093
44094	Hand basin.....	2,067.20	85.98	106.31	211.06	44094
	<i>Per linear metre</i>					
44095	Enclosed base 800 x 600 mm high.....	3,157.64	85.98	106.31	232.92	44095

## **Section 45**

### **SWIMMING POOL WATER TREATMENT INSTALLATION**



## SECTION 45

### SWIMMING POOL WATER TREATMENT INSTALLATION

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC45.01</b>	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution System and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
<b>Measurement of water supply</b>	<b>SC45.02</b>	All works of water supply up to the respective termination points for the equipment shall be measured separately and paid for at the appropriate rates under the applicable Work Sections of this Schedule.
<b>Measurement of excavations, ducts, chases, holes and other subsidiary work</b>	<b>SC45.03</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct and Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.
<b>Measurement of pipework</b>	<b>SC45.04</b>	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
<b>Measurement of insulation to pipework</b>	<b>SC45.05</b>	Insulation to pipework shall be measured in linear metres for the diameter of the pipes to be insulated.
<b>Measurement of heat resistant cables and low smoke zero halogen cables</b>	<b>SC45.06</b>	<p>Cables for the equipment, control/indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing.</p> <p>Heat resistant cables and low smoke zero halogen cables shall be measured the net length as fixed in linear metres.</p>

### SPECIAL CONDITIONS

**Measurement  
of temporary  
supply**

**SC45.07**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

**Rates generally**

**SC45.08**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.
- (g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

**SPECIAL CONDITIONS**

**Rates generally  
(Cont'd)**

**SC45.08  
(Cont'd)**

- (k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (m) Submitting all relevant documentation to Fire Services Department and Environmental Protection Department for obtaining necessary approval.
- (n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (o) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (p) Provision of manufacturer's guarantee.
- (q) Attending fault and complaint during the Maintenance Period.
- (r) Meeting statutory requirements for disposal of waste materials.

**Rates for  
pipework**

**SC45.09**

The rates for pipework shall further include for :-

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.
- (g) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.
- (h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

**SPECIAL CONDITIONS**

<b>Rates for pipework (Cont'd)</b>	<b>SC45.09 (Cont'd)</b>	<ul style="list-style-type: none"> <li>(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.</li> <li>(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.</li> </ul>
<b>Rates for in-line pipework equipment</b>	<b>SC45.10</b>	<p>The rates for in-line pipework equipment (e.g. valves, flow meters, gauges, strainers and the like) shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) Cutting and jointing to pipes and fittings.</li> <li>(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.</li> </ul>
<b>Rates for equipment</b>	<b>SC45.11</b>	<p>The rates for equipment shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.</li> <li>(b) Supporting frames.</li> <li>(c) Connections including flexible joints between pipework and equipment.</li> <li>(d) Flexible connections and anti-vibration connections between pipework and equipment.</li> <li>(e) All necessary operational and control accessories (e.g. valves, gauges, flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.</li> <li>(f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.</li> <li>(g) Anti-vibration mountings for plant, machinery and the like.</li> <li>(h) Anti-vibration materials and sound insulating materials in plant and machinery bases.</li> <li>(i) Motor starters (if motors in the equipment require motor starters).</li> <li>(j) Earth/ equipotential bonding as specified.</li> </ul>

**SPECIAL CONDITIONS**

**Rates for heat resistant cables and low smoke zero halogen cables**

**SC45.12**

The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -

- (a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.
- (b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.
- (c) Making cable-joints.
- (d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.
- (e) All necessary fixings complete with accessories and fittings as required.
- (f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC45.13**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with swimming pool water treatment installation shall further include for : -

- (a) All in-line fittings including brackets, supports, hangers and the like.
- (b) Cutting into existing pipework and the like in position.
- (c) Plugging off remaining ends with plugs or caps as required.
- (d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.
- (e) In the case of equipment and the like, taking down all associated pipework and/or building services works.
- (f) Making good all works disturbed.

**Particular Specification**

**SC45.14**

The Particular Specification for swimming pool water treatment installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVES, PIPE WORKS AND ACCESSORIES</b>						
Gate valves for sea water application 316 stainless steel :-						
<i>Each</i>		A \$	B \$	C \$	D \$	
45001	25 mm .....	330.08	21.58	26.52	36.63	45001
45002	32 mm .....	424.39	22.11	27.19	41.00	45002
45003	40 mm.....	545.64	22.63	27.61	43.12	45003
45004	50 mm.....	740.99	23.57	28.52	46.35	45004
45005	65 mm.....	4,580.68	24.05	29.43	48.50	45005
45006	80 mm.....	6,197.39	26.36	31.31	52.81	45006
45007	100 mm.....	8,891.91	27.73	32.74	54.97	45007
45008	150 mm.....	15,897.65	35.31	40.42	67.90	45008
45009	200 mm.....	25,934.73	42.28	47.46	77.61	45009
Gate valves for sea water application PVC :-						
<i>Each</i>						
45010	25 mm .....	767.94	21.58	26.52	36.63	45010
45011	32 mm .....	881.11	22.11	27.19	41.00	45011
45012	40 mm.....	1,010.44	22.63	27.61	43.12	45012
45013	50 mm.....	1,077.81	23.57	28.52	46.35	45013
45014	65 mm.....	1,414.62	24.05	29.43	48.50	45014
45015	80 mm.....	1,616.71	26.36	31.31	52.81	45015
45016	100 mm.....	2,357.70	27.73	32.74	54.97	45016
45017	150 mm.....	4,378.59	35.31	40.42	67.90	45017
45018	200 mm.....	6,062.66	42.28	47.46	77.61	45018

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)</b>		A	B	C	D	
		\$	\$	\$	\$	
Globe valves for sea water application 316 stainless steel :-						
	<i>Each</i>					
45019	25 mm .....	309.87	21.58	26.52	36.63	45019
45020	32 mm .....	424.39	22.11	27.19	41.00	45020
45021	40 mm.....	525.43	22.63	27.61	43.12	45021
45022	50 mm.....	653.42	23.57	28.52	46.35	45022
45023	65 mm.....	4,378.59	24.05	29.43	48.50	45023
45024	80 mm.....	5,927.94	26.36	31.31	52.81	45024
45025	100 mm.....	9,228.72	27.73	32.74	54.97	45025
45026	150 mm.....	18,524.80	35.31	40.42	67.90	45026
45027	200 mm.....	29,639.69	42.28	47.46	77.61	45027
Motorized valves for sea water application 316 stainless steel :-						
	<i>Each</i>					
45028	40 mm.....	3,368.15	31.83	38.79	61.44	45028
45029	65 mm.....	6,736.29	33.92	41.44	66.83	45029
45030	80 mm.....	7,073.11	37.11	44.00	72.22	45030
45031	100 mm.....	7,409.92	38.89	45.96	75.45	45031
45032	150 mm.....	8,757.18	46.36	54.70	90.53	45032
45033	200 mm.....	12,125.33	48.94	56.26	94.84	45033

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
<b>VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)</b>						
	Butterfly valves : ductile iron body ; 316 stainless steel disc & shaft : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
45034	25 mm.....	493.99	19.93	24.50	34.50	45034
45035	32 mm.....	525.43	20.38	25.09	37.71	45035
45036	40 mm.....	561.36	20.88	25.50	39.92	45036
45037	50 mm.....	606.27	21.77	26.35	43.12	45037
45038	65 mm.....	673.63	22.22	27.21	44.21	45038
45039	80 mm.....	808.36	24.35	28.95	48.50	45039
45040	100 mm.....	1,145.17	25.60	30.20	50.69	45040
45041	150 mm.....	1,684.07	32.58	37.31	61.44	45041
45042	200 mm.....	3,502.87	40.39	45.44	64.68	45042
	Check valves for sea water application 316 stainless steel : -					
	<i>Each</i>					
45043	25 mm.....	282.92	21.58	26.52	36.63	45043
45044	32 mm.....	410.91	22.11	27.21	41.00	45044
45045	40 mm.....	538.90	22.63	27.61	43.12	45045
45046	50 mm.....	707.31	23.57	28.52	46.35	45046
45047	65 mm.....	2,155.61	24.05	29.43	48.50	45047
45048	80 mm.....	2,425.07	26.36	31.31	52.81	45048
45049	100 mm.....	3,098.69	27.73	32.74	54.97	45049
45050	150 mm.....	5,321.67	35.31	40.42	67.90	45050
45051	200 mm.....	10,104.44	42.28	47.46	77.61	45051



Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)</b>	A	B	C	D	
	UPVC pipes and fittings : BS EN 1452 ; solvent or flanged joints, and c/w all accessories Pipework and fittings : -	\$	\$	\$	\$	
	<i>Per linear metre</i>					
45052	25 mm diameter.....	78.43	22.97	26.49	49.59	45052
45053	32 mm diameter.....	101.04	26.94	29.37	52.81	45053
45054	40 mm diameter.....	168.41	29.29	31.81	57.12	45054
45055	50 mm diameter.....	255.98	33.03	38.29	64.68	45055
45056	65 mm diameter.....	282.92	38.91	40.11	80.83	45056
45057	80 mm diameter.....	370.50	41.17	44.73	87.57	45057
45058	100 mm diameter.....	404.18	44.78	52.87	101.04	45058
45059	150 mm diameter.....	505.22	62.73	67.68	134.73	45059
45060	200 mm diameter.....	606.27	72.64	78.45	202.09	45060
45061	250 mm diameter.....	1,347.26	85.92	91.85	336.81	45061
45062	300 mm diameter.....	2,559.79	95.06	99.63	437.86	45062
	Bucket-type strainer c/w all accessories : -					
	<i>Each</i>					
45063	40 mm, bronze.....	1,370.82	20.54	24.90	39.89	45063
45064	50 mm, bronze.....	1,684.07	20.93	25.32	40.98	45064
45065	65 mm, cast iron.....	2,155.61	21.88	26.21	43.12	45065
45066	80 mm, cast iron.....	2,896.61	23.40	27.77	46.35	45066
45067	100 mm, cast iron.....	4,311.23	24.60	29.06	48.50	45067
45068	150 mm, cast iron.....	9,296.08	31.31	35.86	59.28	45068
45069	200 mm, cast iron.....	13,472.59	39.72	43.92	70.06	45069

Item						
	<b>VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Sundries :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Each</i>	A \$	B \$	C \$	D \$	
45070	Pressure gauge with cock, c/w all accessories.....	269.45	4.29	6.47	11.85	45070
45071	Direct reading water flow meters c/w all accessories.....	7,911.65	36.63	39.92	74.37	45071
	<b>PUMPS</b>					
	Centrifugal end suction type pumps					
	Pumps sets ; bronze/ cast iron casings and bronze impellers ; direct driven by motors ; water seal connection ; vents ; drain ; priming plug ; associated pipeworks and anti-vibration mountings ; adjacent emergency stops ; all necessary components and accessories :-					
	<i>Per set</i>					
45072	Up to 5 kW.....	11,114.88	101.32	135.81	576.66	45072
45073	5 - 10 kW.....	13,472.59	108.87	143.35	848.27	45073
45074	10 - 15 kW.....	16,840.73	115.33	150.90	939.89	45074
45075	15 - 20 kW.....	18,861.62	121.83	156.29	1,095.10	45075
45076	20 - 30 kW.....	22,903.39	128.26	163.85	1,200.73	45076
45077	30 - 50 kW.....	28,292.43	135.81	171.36	1,308.52	45077

Item					Item	
	<b>SAND FILTER TANKS</b>					
	Sand filters : mild steel electrically welded shell with epoxy coating ; c/w supported nozzles, balance tanks ; nozzle plates and filtering media supports ; internal distribution and draw-off trough ; flanged inlets and outlets ; wash-in ; drain and air connections ; manholes ; necessary filtering media ; filter supporting feet ; backwash facilities and all necessary accessories : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Equipment flow rate, capacity : -					
	<b>Each</b>	A \$	B \$	C \$	D \$	
45078	Up to 30 m <sup>3</sup> hr.....	10,104.44	558.66	700.36	1,347.26	45078
45079	30 - 60 m <sup>3</sup> hr.....	26,945.17	1,396.64	1,750.87	3,368.15	45079
45080	60 - 90 m <sup>3</sup> hr.....	43,785.90	2,234.61	2,801.37	5,389.03	45080
45081	90 - 120 m <sup>3</sup> hr.....	74,099.22	2,776.22	3,718.85	6,736.29	45081
45082	120 - 150 m <sup>3</sup> hr..... (The actual rate should be : \$101,044.40 for Item 45082A)	10,104.44	4,164.30	5,578.25	10,104.44	45082
45083	150 - 180 m <sup>3</sup> hr..... (The actual rate should be : \$134,725.90 for Item 45083A)	13,472.59	7,773.41	10,412.73	18,861.62	45083
	<b>Per cubic metre per hour</b>					
45084	Extra over Item 45083 for each additional flow rate in m <sup>3</sup> hr of sand filter.....	2,233.43	18.35	24.79	75.45	45084

Item					Item	
	<b>CARBON FILTER TANKS</b>					
	Carbon filter tanks : mild steel electrically welded with epoxy coating c/w supported nozzles, nozzle plates : and filtering media supports ; internal distribution and draw-off trough ; flanged inlets and outlets ; wash-in ; drain and air connections ; manholes ; necessary filtering media ; maintenance platform; supports and all necessary accessories : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Equipment volume : -					
	<i>Each</i>	A \$	B \$	C \$	D \$	
45085	Up to 2 m <sup>3</sup> .....	40,417.76	1,490.67	1,692.23	4,569.03	45085
45086	2 - 5 m <sup>3</sup> .....	67,362.93	2,182.65	2,950.06	9,013.00	45086
45087	5 - 10 m <sup>3</sup> ..... (The actual rate should be : \$134,725.90 for Item 45087A)	13,472.59	3,462.06	4,204.71	14,621.07	45087
45088	10 - 15 m <sup>3</sup> ..... (The actual rate should be : \$235,770.20 for Item 45088A)	23,577.02	4,301.72	5,465.79	19,100.64	45088
45089	15 - 20 m <sup>3</sup> ..... (The actual rate should be : \$350,287.20 for Item 45089A)	35,028.72	5,472.26	6,648.21	21,727.37	45089
45090	20 - 25 m <sup>3</sup> ..... (The actual rate should be : \$471,540.50 for Item 45090A)	47,154.05	5,843.07	6,959.70	24,379.97	45090

Item					Item	
	<b>OZONATORS</b>					
	Ozonator : Vacuum operated type: full vacuum unit ; Duty and standby air dryers ; Ozone generator ; High tension transformers ; Cartridge filters ; Softeners ; Water trap pots ; Control panels (control panels measured separately); associated pipings; wirings and control ; maintenance platform ; supports ; compact construction cabinet; lockable doors and all necessary accessories : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Capacity : -					
	<i>Per set</i>	A \$	B \$	C \$	D \$	
45091	Up to 50 g/ hr..... (The actual rate should be : \$168,407.30 for Item 45091A)	16,840.73	2,039.30	2,701.09	7,745.45	45091
45092	50 - 100 g/ hr..... (The actual rate should be : \$255,979.10 for Item 45092A)	25,597.91	2,756.07	3,181.81	10,513.39	45092
45093	100 - 150 g/ hr..... (The actual rate should be : \$269,451.70 for Item 45093A)	26,945.17	2,968.40	3,677.66	11,282.97	45093
45094	150 - 200 g/ hr..... (The actual rate should be : \$323,342.00 for Item 45094A)	32,334.20	3,224.94	4,075.36	13,302.86	45094
45095	200 - 250 g/ hr..... (The actual rate should be : \$353,655.40 for Item 45095A)	35,365.54	3,915.83	4,778.13	15,801.33	45095
45096	250 - 300 g/ hr..... (The actual rate should be : \$458,067.90 for Item 45096A)	45,806.79	4,490.34	5,349.38	16,754.14	45096

Item					Item	
	<b>OZONATED WATER REACTION TANKS</b>					
	Ozonated water reaction tank : mild steel electrically welded shell with epoxy coating ; c/w automatic air vents ; drains ; valves ; flow meters ; maintenance platform ; supports ; accessories and connections : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Equipment volume :-					
	<i>Per cubic metre</i>	A \$	B \$	C \$	D \$	
45097	Up to 2 m <sup>3</sup> .....	33,681.46	1,284.80	1,846.36	5,354.76	45097
45098	2 - 5 m <sup>3</sup> .....	57,258.49	2,214.98	2,848.77	9,025.96	45098
45099	5 - 10 m <sup>3</sup> ..... (The actual rate should be : \$114,517.00 for Item 45099A)	11,451.70	3,331.66	4,118.47	13,598.22	45099
45100	10 - 15 m <sup>3</sup> ..... (The actual rate should be : \$202,088.80 for Item 45100A)	20,208.88	4,280.16	5,332.11	18,068.07	45100
45101	15 - 20 m <sup>3</sup> ..... (The actual rate should be : \$326,710.20 for Item 45101A)	32,671.02	5,402.20	6,499.45	22,128.33	45101
45102	20 - 25 m <sup>3</sup> ..... (The actual rate should be : \$437,859.00 for Item 45102A)	43,785.90	5,857.05	7,025.44	24,249.57	45102

Item					Item	
	<b>COMPRESSED AIR SUPPLY FOR BACKWASH SYSTEM</b>					
	Compressed air supply for backwash system : air compressors ; ancillary control accessories ; acoustic enclosure ; pipeworks and fittings ; all type of valves ; switches ; pressure gauges ; connections ; controls and interlocks ; control panel (control panel measured separately) ; supports ; all necessary accessories : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Displacement rate : -					
	<i>Per system</i>	A \$	B \$	C \$	D \$	
45103	Up to 50 m <sup>3</sup> hr.....	33,681.46	449.47	535.69	1,800.02	45103
45104	50 - 100 m <sup>3</sup> hr.....	37,049.61	534.61	642.40	2,224.68	45104
45105	100 - 150 m <sup>3</sup> hr.....	50,522.19	577.73	694.16	2,503.88	45105
45106	150 - 200 m <sup>3</sup> hr.....	53,890.34	643.47	771.75	2,635.40	45106
45107	200 - 250 m <sup>3</sup> hr.....	54,563.97	655.35	795.48	2,761.46	45107
45108	250 - 300 m <sup>3</sup> hr.....	60,626.63	677.97	820.26	2,846.58	45108
45109	300 - 350 m <sup>3</sup> hr.....	61,973.89	750.17	907.55	3,055.71	45109
45110	350 - 400 m <sup>3</sup> hr.....	63,994.78	778.21	942.04	3,168.91	45110

## **Section 46**

### **CRANE AND HOIST INSTALLATION**



## SECTION 46

### CRANE AND HOIST INSTALLATION

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC46.01</b>	<p>All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.</p>
<b>Measurement of temporary supply</b>	<b>SC46.02</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>
<b>Rates generally</b>	<b>SC46.03</b>	<p>The rates for all items shall generally include for : -</p> <ul style="list-style-type: none"> <li>(a) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.</li> <li>(b) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.</li> <li>(c) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.</li> <li>(d) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.</li> <li>(e) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.</li> </ul>

### SPECIAL CONDITIONS

<b>Rates generally (Cont'd)</b>	<b>SC46.03 (Cont'd)</b>	<ul style="list-style-type: none"> <li>(f) Submitting all relevant documentation to Electrical and Mechanical Services Department and Labour Department for obtaining necessary approval.</li> <li>(g) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.</li> <li>(h) Provision of manufacturer's guarantee.</li> <li>(i) Attending fault and complaint during the Maintenance Period.</li> </ul>
<b>Rates for equipment</b>	<b>SC46.04</b>	<p>The rates for equipment shall further include for : -</p> <ul style="list-style-type: none"> <li>(a) All necessary assembly, erection, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, instrumentation and the like.</li> <li>(b) Supporting frames.</li> <li>(c) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.</li> <li>(d) All necessary operational and control accessories (e.g. gearboxes, brakes, safety facilities, indicating lamps, pendant control units and the like) forming part of the equipment, connection and termination.</li> <li>(e) Testing and examination of the equipment and associated lifting facilities by an approved independent surveyor.</li> <li>(f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.</li> <li>(g) Anti-vibration materials and sound insulating materials in plant and machinery bases.</li> <li>(h) Motor starters (if motors in the equipment require motor starters).</li> <li>(i) Earth/ equipotential bonding as specified.</li> <li>(j) All necessary statutory submission to all relevant Authorities including employing competent examiners for testing and inspection of the equipment to satisfy the requirements of Labour Department.</li> <li>(k) Structural design and associated drawings for approval prior to manufacturing. The design shall be attested by a professional structural engineer licensed to practices in Hong Kong.</li> </ul>
<b>Particular Specification</b>	<b>SC46.05</b>	The Particular Specification for crane and hoist can be found in the Contract.

Item					Item	
	<b>CRANE AND HOIST INSTALLATION</b>					
	Jib crane					
	Free standing, electrically rotated high grade steel jib crane, minimum rotating speed of 0.5 rpm, up to 4m in height, 270 deg maximum slewing ark, and pre-lubricated, c/w round base plate reinforced with six knee braces, and c/w motor, gearbox, 2 limit switches, electric connection with crane; c/w electric motorized trolley, minimum moving speed of 5 m/ min, motor, gearbox, 2 limit switches, electric connection with trolley; c/w electrically operated hoist, minimum lifting speed of 2 m/ min, motor, gearbox, 2 limit switches, electric connection with hoist; and in span radius : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per crane</i>	A \$	B \$	C \$	D \$	
46001	Up to 3 m x 1 ton..... (The actual rate should be : \$180,382.70 for Item 46001A)	18,038.27	8,435.99	8,694.30	30,717.30	46001
46002	Ditto x 1 - 2 ton..... (The actual rate should be : \$189,901.60 for Item 46002A)	18,990.16	8,649.49	8,919.59	31,279.94	46002
46003	Ditto x 3 - 5 ton..... (The actual rate should be : \$218,458.20 for Item 46003A)	21,845.82	9,229.82	9,531.76	32,770.86	46003
46004	4 m x 1 ton..... (The actual rate should be : \$197,992.60 for Item 46004A)	19,799.26	9,442.13	9,707.52	34,593.22	46004
46005	4 m x 1 - 2 ton..... (The actual rate should be : \$197,992.60 for Item 46005A)	19,799.26	9,442.13	9,707.52	34,593.22	46005
46006	4 m x 3 - 5 ton..... (The actual rate should be : \$255,105.90 for Item 46006A)	25,510.59	10,641.70	10,964.90	37,707.19	46006
	Free standing, manually rotated high grade steel jib crane, up to 4m in height, 270 deg maximum slewing ark, and pre-lubricated, c/w round base plate reinforced with six knee braces; c/w electric motorized trolley, minimum moving speed of 5m/ min, motor, gearbox, 2 limit switches, electric connection with trolley; c/w electrically operated hoist, minimum lifting speed of 2m/ min, motor, gearbox, 2 limit switches, electric connection with hoist; and in span radius : -					
	<i>Per crane</i>					
46007	Up to 3 m x 1 ton..... (The actual rate should be : \$153,253.90 for Item 46007A)	15,325.39	7,202.19	7,422.78	26,261.03	46007
46008	Ditto x 1 - 2 ton..... (The actual rate should be : \$153,253.90 for Item 46008A)	15,325.39	7,202.19	7,422.78	26,261.03	46008
46009	Ditto x 3 - 5 ton..... (The actual rate should be : \$189,901.60 for Item 46009A)	18,990.16	8,649.49	8,929.05	31,272.84	46009

Item					Item	
<b>CRANE AND HOIST INSTALLATION (CONT'D)</b>						
	Wall-mounted, manually rotated high grade steel jib crane, up to 6m in height, 180 deg maximum slewing ark, c/w steel top and bottom brackets, two bronze bushings, bronze thrust washers, and pre-lubricated; c/w electric motorized trolley, minimum moving speed of 5 m/ min, motor, gearbox, 2 limit switches, electric connection with trolley; c/w electrically operated hoist, minimum lifting speed of 2 m/ min, motor, gearbox, 2 limit switches, electric connection with hoist; and in span radius :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
46010	Up to 3 m x 1 ton..... (The actual rate should be : \$168,008.20 for Item 46010A)	16,800.82	9,117.75	9,344.24	34,751.28	46010
46011	Ditto x 2 ton..... (The actual rate should be : \$172,767.60 for Item 46011A)	17,276.76	9,264.02	9,496.39	35,174.74	46011
46012	4 m x 1 ton..... (The actual rate should be : \$187,045.90 for Item 46012A)	18,704.59	9,682.76	9,931.63	36,368.42	46012
46013	Ditto x 2 ton..... (The actual rate should be : \$196,564.80 for Item 46013A)	19,656.48	9,945.80	10,206.47	37,105.63	46013
	Fixed chain hoist					
	Electrically operated hoist with electric motorized trolley, minimum lifting speed of 2 m/ min, up to 6m in height; c/w motor, gearbox, 2 limit switches, electric connection with hoist, and in lifting capacity :-					
	<b>Per hoist</b>					
46014	Up to 1 ton .....	38,979.80	2,348.44	2,410.97	8,479.63	46014
46015	1 - 2 ton .....	38,979.80	2,348.44	2,410.97	8,479.63	46015
46016	2 - 3 ton .....	47,641.97	2,880.41	2,953.54	10,366.88	46016
46017	3 - 4 ton .....	47,641.97	2,880.41	2,953.54	10,366.88	46017
46018	4 - 5 ton .....	56,304.16	3,389.97	3,466.64	12,232.90	46018
	Manually operated hoist with manual trolley, up to 6 m in height; c/w gearbox, and in lifting capacity :-					
	<b>Per hoist</b>					
46019	Up to 1 ton .....	4,864.79	222.93	230.02	745.46	46019
46020	1 - 2 ton .....	6,264.74	267.75	276.02	896.45	46020
46021	2 - 3 ton .....	8,171.46	356.23	368.01	1,205.48	46021
46022	3 - 4 ton .....	10,797.70	448.23	463.56	1,508.62	46022

Item

Item

**CRANE AND HOIST INSTALLATION (CONT'D)**

Fixed winch

Electrically operated wire winch, minimum lifting speed of 10 m/ min, up to 6m in height, in lifting capacity : -

*Per winch*

Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
A \$	B \$	C \$	D \$
10,532.30	2,348.44	2,412.15	8,472.56
17,909.43	2,348.44	2,412.15	8,472.56
25,048.59	2,348.44	2,412.15	8,472.56

46023	Up to 300 kg .....	10,532.30	2,348.44	2,412.15	8,472.56	46023
46024	300 - 500 kg .....	17,909.43	2,348.44	2,412.15	8,472.56	46024
46025	500 kg - 1 ton .....	25,048.59	2,348.44	2,412.15	8,472.56	46025

**Section 47**

**FUEL SUPPLY SYSTEM**

## SECTION 47

### FUEL SUPPLY SYSTEM

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC47.01</b>	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
<b>Measurement of fuel supply</b>	<b>SC47.02</b>	All works of fuel supply up to the respective termination points for the equipment shall be measured separately and paid for at the appropriate rates under the applicable Work Sections of this Schedule.
<b>Measurement of excavations, ducts, chases, holes and other subsidiary work</b>	<b>SC47.03</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct and Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.
<b>Measurement of pipework</b>	<b>SC47.04</b>	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
<b>Measurement of heat resistant cables and low smoke zero halogen cables</b>	<b>SC47.05</b>	<p>Cables for the equipment, control/indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing.</p> <p>Heat resistant cables and low smoke zero halogen cables shall be measured the net length as fixed in linear metres.</p>
<b>Measurement of temporary supply</b>	<b>SC47.06</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p>

**SPECIAL CONDITIONS**

<b>Measurement of temporary supply (Cont'd)</b>	<b>SC47.06 (Cont'd)</b>	No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.
<b>Rates generally</b>	<b>SC47.07</b>	<p>The rates for all items shall generally include for : -</p> <ul style="list-style-type: none"> <li>(a) Colour band and colour identification work.</li> <li>(b) Lettering and engraving for identification, signs, labels in both English and Chinese.</li> <li>(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.</li> <li>(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.</li> <li>(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.</li> <li>(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.</li> <li>(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.</li> <li>(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.</li> <li>(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.</li> <li>(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.</li> <li>(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.</li> <li>(l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.</li> </ul>



**SPECIAL CONDITIONS**

**Rates generally  
(Cont'd)**

**SC47.07  
(Cont'd)**

- (m) Submitting all relevant documentation to Electrical and Mechanical Services Department and Fire Services Department for obtaining necessary approval.
- (n) Obtaining necessary approval from Environment Protection Department including submission of all relevant documentation.
- (o) Approved type test certificate issued by Fire Services Department for all equipment.
- (p) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (q) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (r) Provision of manufacturer's guarantee.
- (s) Attending fault and complaint during the Maintenance Period.
- (t) Meeting statutory requirements for disposal of waste materials.
- (u) All necessary statutory submissions to all relevant Authorities in respect of the complete fuel supply system.

**Rates for  
pipework**

**SC47.08**

The rates for pipework shall further include for : -

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.
- (g) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.
- (h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

**SPECIAL CONDITIONS**

**Rates for  
pipework  
(Cont'd)**

**SC47.08  
(Cont'd)**

- (i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.
- (j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.

**Rates for  
in-line  
pipework  
equipment**

**SC47.09**

The rates for in-line pipework equipment (e.g. valves, flow meters, gauges, strainers and the like) shall further include for : -

- (a) Cutting and jointing to pipes and fittings.
- (b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

**Rates for  
equipment**

**SC47.10**

The rates for equipment shall further include for : -

- (a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.
- (b) Daily services fuel tank complete with socket connections for filling, overflow, outlet, drain, return and vent including all necessary fittings, union couplings, strainers, valves and the like, content gauge units, oil drip trays and all necessary accessories.
- (c) Supporting frames.
- (d) Connections including flexible joints between pipework and equipment.
- (e) Flexible connections and anti-vibration connections between pipework and equipment.
- (f) All necessary operational and control accessories (e.g. valves, gauges, flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.
- (g) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing, water supply and/or fuel supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.
- (h) Anti-vibration mountings for plant, machinery and the like.
- (i) Anti-vibration materials and sound insulating materials in plant and machinery bases.
- (j) Pump starters.
- (k) Earth/equipotential bonding as specified.

**SPECIAL CONDITIONS**

**Rates for heat resistant cables and low smoke zero halogen cables**

**SC47.11**

The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -

- (a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.
- (b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.
- (c) Making cable-joints.
- (d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.
- (e) All necessary fixings complete with accessories and fittings as required.
- (f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

**Rates for fuel supply system**

**SC47.12**

The rates of fuel supply system to plant and appliances shall consist of fuel storage facilities, fuel transfer facilities, associated pipework, electrical power, controls and accessories. The rates shall further include the bulk fuel storage tanks, fuel transfer pumps, fuel dispensers and vapour recovery system, if required.

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC47.13**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with fuel supply system shall further include for : -

- (a) All in-line fittings including brackets, supports, hangers and the like.
- (b) Cutting into existing pipework and the like in position.
- (c) Plugging off remaining ends with plugs or caps as required.
- (d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.
- (e) In the case of equipment and the like, taking down all associated pipework and/or building services works.
- (f) Making good all works disturbed.

**Particular Specification**

**SC47.14**

The Particular Specification for fuel supply system can be found in the Contract.

Item					Item	
<b>FUEL SUPPLY SYSTEM EQUIPMENT</b>						
	Daily services fuel tank in mild steel welded construction c/w stiffeners and support frames, with tapped socket connections on tank (c/w all necessary fittings and union couplings or plugged with brass screw cap if not in size) for filling pipe, overflow pipe, delivery pipe (with a quick closing valve), drain pipe (with a 20 mm gate valve), return pipe, vent pipe, and with a content gauge unit, oil drip tray, all accessories and for fuel capacity : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	<i>Per tank</i>	A \$	B \$	C \$	D \$	
47001	Up to 250 litres.....	36,078.50	1,833.43	2,108.28	3,035.24	47001
47002	250 - 450 litres.....	37,882.43	1,833.43	2,108.28	3,035.24	47002
47003	450 - 500 litres.....	37,882.43	1,833.43	2,108.28	3,035.24	47003
47004	500 - 1000 litres.....	39,686.35	1,833.43	2,108.28	3,035.24	47004
47005	1000 - 2000 litres.....	45,098.13	1,833.43	2,108.28	3,035.24	47005
	Level switch capable of controlling on/ off operation of remote system to IEC 60079-0 Group II A, Temperature Class T1, suitable for Zone 1 hazardous area and installed inside fuel tank c/w a level sensor and a switch unit, controller, casing and all necessary electrical components and control wirings to BASEEFA certification : -					
	<i>Per switch</i>					
47006	Level switch .....	45,098.13	1,270.80	1,512.23	2,140.61	47006
	Fuel transfer pump, rotary and positive displacement type in high quality cast iron construction c/w high tensile steel shafts, flame proof coupling motors, valves, strainers, switches, composite pump control cubicles (measured separately), alarm, wiring works, overload protection and all necessary accessories : -					
	<i>Per set</i>					
47007	0.75 - 1 kW.....	45,098.13	1,545.65	1,733.18	2,557.75	47007
47008	1 - 2 kW.....	54,117.75	1,545.65	1,733.18	2,557.75	47008
47009	2 - 4 kW.....	63,137.38	1,545.65	1,733.18	2,557.75	47009
47010	4 - 6 kW.....	72,157.00	1,545.65	1,733.18	2,557.75	47010
47011	6 - 10 kW.....	81,176.63	1,545.65	1,733.18	2,557.75	47011
47012	Hand pump, semi-rotary double acting type c/w 25 mm diameter inlet and outlet pipes and 25 mm diameter flexible oil resistant pipe.....	1,352.94	220.97	255.46	371.85	47012

Item					Item
<b>FUEL SUPPLY SYSTEM EQUIPMENT (CONT'D)</b>					
Pipeworks					
Carbon steel pipes and fittings in heavy quality to ISO 65 c/w all necessary accessories :-					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
<b>Per linear metre</b>					
47013 20 mm diameter.....	552.20	8.14	8.78	98.10	47013
47014 25 mm diameter.....	644.24	8.93	9.64	106.71	47014
47015 32 mm diameter.....	736.27	9.64	10.84	115.33	47015
47016 40 mm diameter.....	828.30	10.51	11.51	129.34	47016
47017 50 mm diameter.....	920.34	11.18	12.05	151.98	47017
Bronze gate valve, full way type c/w all necessary accessories :-					
<b>Per valve</b>					
47018 20 mm diameter.....	177.15	27.97	33.82	141.20	47018
47019 25 mm diameter.....	272.07	28.63	34.48	188.62	47019
47020 32 mm diameter.....	341.13	29.29	35.04	236.05	47020
47021 40 mm diameter.....	430.02	29.96	35.70	264.07	47021
47022 50 mm diameter.....	529.61	31.17	37.02	282.40	47022
Bronze globe valve, full way type c/w all necessary accessories :-					
<b>Per valve</b>					
47023 20 mm diameter.....	177.15	27.97	33.82	141.20	47023
47024 25 mm diameter.....	272.07	28.63	34.48	188.62	47024
47025 32 mm diameter.....	341.13	29.29	35.04	236.05	47025
47026 40 mm diameter.....	430.02	29.96	35.70	264.07	47026
47027 50 mm diameter.....	529.61	31.17	37.02	282.40	47027

Item					Item	
	<b>FUEL SUPPLY SYSTEM EQUIPMENT (CONT'D)</b>					
	Pipeworks (Cont'd)					
	Bronze T-port valve, full way type c/w handles and all necessary accessories :-					
	<i>Per valve</i>					
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
47028	20 mm diameter.....	470.48	27.97	33.82	141.20	47028
47029	25 mm diameter.....	799.82	28.63	34.48	188.62	47029
47030	32 mm diameter.....	1,072.70	29.29	35.04	236.05	47030
47031	40 mm diameter.....	1,580.83	29.96	35.70	264.07	47031
47032	50 mm diameter.....	2,361.83	31.17	37.02	282.40	47032
	Bronze ball valve, full way type c/w all necessary accessories :-					
	<i>Per valve</i>					
47033	20 mm diameter.....	177.15	27.97	33.82	141.20	47033
47034	25 mm diameter.....	272.07	28.63	34.48	188.62	47034
47035	32 mm diameter.....	341.13	29.29	35.04	236.05	47035
47036	40 mm diameter.....	430.02	29.96	35.70	264.07	47036
47037	50 mm diameter.....	529.61	31.17	37.02	282.40	47037
	Bronze non-return drain valve, full way type c/w all necessary accessories :-					
	<i>Per valve</i>					
47038	20 mm diameter.....	238.53	27.97	33.82	141.20	47038
47039	25 mm diameter.....	329.83	28.63	34.48	188.62	47039
47040	32 mm diameter.....	432.85	29.29	35.04	236.05	47040
47041	40 mm diameter.....	512.83	29.96	35.70	264.07	47041
47042	50 mm diameter.....	644.57	31.17	37.02	282.40	47042

Item					Item	
	<b>FUEL SUPPLY SYSTEM EQUIPMENT (CONT'D)</b>					
	Pipeworks (Cont'd)					
	Bronze strainer, double type c/w all necessary accessories :-					
	<i>Per strainer</i>					
		A	B	C	D	
		\$	\$	\$	\$	
47043	20 mm diameter.....	231.85	27.97	33.82	141.20	47043
47044	25 mm diameter.....	316.35	28.63	34.48	188.62	47044
47045	32 mm diameter.....	424.01	29.29	35.04	236.05	47045
47046	40 mm diameter.....	504.55	29.96	35.70	264.07	47046
47047	50 mm diameter.....	689.54	31.17	37.02	282.40	47047
	Control :-					
	<i>Per set</i>					
47048	Fuel supply control system c/w flameproof fuel transfer pump control panel and flameproof level monitoring control panel with certificate issued by BASEEFA, with IPMCSP and IP 65 enclosure to IEC 60529, protection type EEx d flameproof..... (The actual rate should be : \$126,274.80 for Item 47048A)	12,627.48	536.78	615.46	1,168.40	47048
47049	Flameproof control panel for high level visible and audible alarm.....	27,058.89	536.78	615.46	1,168.40	47049
47050	Remote on/ off control panel for fuel transfer pump c/w all necessary accessories.....	18,039.25	536.78	615.46	1,168.40	47050

**Section 48**

**CHIMNEY**



## SECTION 48

### CHIMNEY

#### SPECIAL CONDITIONS

<b>Measurement of flue pipe/ aluminium cladding</b>	<b>SC48.01</b>	Flue pipe/ aluminium cladding shall be measured in linear metres.
<b>Measurement of insulation to flue pipe</b>	<b>SC48.02</b>	Insulation to flue pipe/ aluminium cladding shall be measured the diameter of the pipe in linear metres.
<b>Measurement of temporary supply</b>	<b>SC48.03</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>
<b>Rates generally</b>	<b>SC48.04</b>	<p>The rate for all items shall generally include for : -</p> <ul style="list-style-type: none"> <li>(a) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.</li> <li>(b) All mild steel supports in outdoor environment.</li> <li>(c) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.</li> </ul>

**SPECIAL CONDITIONS**

**Rates generally  
(Cont'd)**

**SC48.04  
(Cont'd)**

- (d) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components, expansion bellows, compensators and the like.
- (e) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (f) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (g) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (h) Attending fault and complaint during the Maintenance Period.
- (i) Meeting statutory requirements for disposal of waste materials.

**Rates for  
equipment**

**SC48.05**

The rates for equipment shall further include for : -

- (a) Submission of wind load and structural design calculations.
- (b) Submission of calculations, shop drawings and other relevant information to Environmental Protection Department for approval in accordance with the Air Pollution Control Regulations.
- (c) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (d) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (e) All necessary statutory submission to all relevant Authorities including employing competent examiners for testing and inspection of the equipment to satisfy the requirements of Labour Department.
- (f) Structural design and associated drawings for approval prior to manufacturing. The design shall be attested by a professional structural engineer licensed to practices in Hong Kong.
- (g) Welds examined by means of non-destructive tests (NDT).
- (h) Meeting the design life of the chimney stack and supporting structures for at least 20 years.
- (i) Lightning protection facilities.
- (j) All welding carried out only by experienced welders with recognised certificates of proficiency.
- (k) Checking of verticality by optical tooling method using the alignment telescope or jig alignment telescope, jig transit and precise level.

**SPECIAL CONDITIONS****Particular  
Specification****SC48.06**

The Particular Specification for chimney installation can be found in the Contract.

Item					Item	
	<b>CHIMNEY EQUIPMENT</b>					
	Mild steel vertical flue pipe c/w mounting brackets; c/w 25 mm thick mineral wool insulation and 1.6 mm thick aluminium cladding to maintain flue gas at 150°C minimum; c/w protector against lightning to BS EN 62305; painted with two layers of dry films each of 2 mm thick pure silicon resin and heat resistant aluminium coating on the interior and exterior surfaces of chimney to EN 1993-3-2:2006 :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Up to 3m in height, and chimney size at :-					
	<i>Per chimney</i>	A \$	B \$	C \$	D \$	
48001	50 mm diameter.....	649.57	240.58	-	-	48001
48002	80 mm diameter.....	842.04	320.78	-	-	48002
48003	100 mm diameter.....	922.23	320.78	-	-	48003
48004	125 mm diameter.....	1,042.52	320.78	-	-	48004
48005	150 mm diameter.....	1,283.10	320.78	-	-	48005
48006	200 mm diameter.....	2,004.85	400.97	-	-	48006
48007	250 mm diameter.....	2,245.43	400.97	-	-	48007
48008	300 mm diameter.....	2,486.01	641.55	-	-	48008
48009	350 mm diameter.....	3,207.76	641.55	-	-	48009
48010	400 mm diameter.....	4,811.64	842.04	-	-	48010
48011	450 mm diameter.....	5,212.61	842.04	-	-	48011
	Add height of above items (with 25 mm thick mineral wool insulation) for each additional linear metre or part thereof :-					
	<i>Per linear metre</i>					
48012	50 mm diameter.....	216.52	80.19	-	-	48012
48013	80 mm diameter.....	280.68	106.93	-	-	48013
48014	100 mm diameter.....	307.94	106.93	-	-	48014
48015	125 mm diameter.....	347.51	106.93	-	-	48015
48016	150 mm diameter.....	427.70	106.93	-	-	48016

Item	Item								
<b>CHIMNEY EQUIPMENT (CONT'D)</b>									
Add height of above items (with 25 mm thick mineral wool insulation) for each additional linear metre or part thereof : - (Cont'd)									
	<table border="1"> <thead> <tr> <th style="text-align: center;">Supply and fix</th> <th style="text-align: center;">Take down and clear away</th> <th style="text-align: center;">Take down and set aside for re-use</th> <th style="text-align: center;">Fix only</th> </tr> <tr> <th style="text-align: center;">A \$</th> <th style="text-align: center;">B \$</th> <th style="text-align: center;">C \$</th> <th style="text-align: center;">D \$</th> </tr> </thead> </table>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	A \$	B \$	C \$	D \$
Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only						
A \$	B \$	C \$	D \$						
<i>Per linear metre</i>									
48017	200 mm diameter..... 668.28 133.92 - - 48017								
48018	250 mm diameter..... 748.48 133.92 - - 48018								
48019	300 mm diameter..... 828.67 213.85 - - 48019								
48020	350 mm diameter..... 1,069.25 213.85 - - 48020								
48021	400 mm diameter..... 1,603.88 280.68 - - 48021								
48022	450 mm diameter..... 1,700.11 280.68 - - 48022								
Mild steel vertical flue pipe c/w mounting brackets; c/w 50 mm thick mineral wool insulation and 1.6 mm thick aluminium cladding to maintain flue gas at 150°C minimum; c/w protector against lightning to BS EN 62305; painted with two layers of dry films each of 2 mm thick pure silicon resin and heat resistant aluminium coating on the interior and exterior surfaces of chimney to EN 1993-3-2:2006 : -									
Up to 3m in height, and chimney size at : -									
<i>Per chimney</i>									
48023	50 mm diameter..... 681.65 240.58 - - 48023								
48024	80 mm diameter..... 962.33 320.78 - - 48024								
48025	100 mm diameter..... 1,034.50 320.78 - - 48025								
48026	125 mm diameter..... 1,130.73 320.78 - - 48026								
48027	150 mm diameter..... 1,355.28 320.78 - - 48027								
48028	200 mm diameter..... 2,165.24 400.97 - - 48028								
48029	250 mm diameter..... 2,486.01 400.97 - - 48029								
48030	300 mm diameter..... 2,646.40 641.55 - - 48030								
48031	350 mm diameter..... 3,448.34 641.55 - - 48031								
48032	400 mm diameter..... 5,052.22 842.04 - - 48032								
48033	450 mm diameter..... 5,533.38 842.04 - - 48033								

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	<b>CHIMNEY EQUIPMENT (CONT'D)</b>	A	B	C	D	
	Add height of above items (with 50 mm thick mineral wool insulation) for each additional linear metre or part thereof : -	\$	\$	\$	\$	
	<i>Per linear metre</i>					
48034	50 mm diameter.....	228.55	80.19	-	-	48034
48035	80 mm diameter.....	320.78	106.93	-	-	48035
48036	100 mm diameter.....	344.83	106.93	-	-	48036
48037	125 mm diameter.....	376.91	106.93	-	-	48037
48038	150 mm diameter.....	451.76	106.93	-	-	48038
48039	200 mm diameter.....	721.75	133.92	-	-	48039
48040	250 mm diameter.....	828.67	133.92	-	-	48040
48041	300 mm diameter.....	882.13	213.85	-	-	48041
48042	350 mm diameter.....	1,149.45	213.85	-	-	48042
48043	400 mm diameter.....	1,684.07	280.68	-	-	48043
48044	450 mm diameter.....	1,844.46	280.68	-	-	48044
	Aluminium cladding 1.6 mm thick for chimney insulation c/w 50 mm insulation for chimney internal diameter at : -					
	<i>Per linear metre</i>					
48045	100 mm diameter.....	123.52	8.69	9.30	23.03	48045
48046	125 mm diameter.....	137.98	12.28	13.45	26.18	48046
48047	150 mm diameter.....	156.21	14.89	16.17	29.32	48047
48048	200 mm diameter.....	180.80	16.78	17.85	33.51	48048
48049	250 mm diameter.....	220.09	20.57	22.27	41.88	48049
48050	300 mm diameter.....	264.97	25.05	27.51	51.30	48050
48051	350 mm diameter.....	293.25	27.90	30.62	57.59	48051
48052	400 mm diameter.....	321.53	30.18	33.16	62.82	48052
48053	450 mm diameter.....	356.32	34.27	37.35	70.15	48053

Item

Item

**CHIMNEY EQUIPMENT (CONT'D)**

Stainless steel flue pipes and fitting c/w stainless steel of Grade 316 inner wall of minimum 0.6 mm thick and stainless steel of grade 304 outer wall of minimum 0.5 mm thick; c/w 30 mm thick mineral wool insulation between the walls; S.S. tubes and the insulation shall be factory fabricated in sections to ensure structured integrity and strength; c/w water/ gas tight flue section joints and drain points : -

Up to 3m in height, and chimney size at : -

*Per chimney*

Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
A \$	B \$	C \$	D \$
1,122.72	240.58	-	-
1,202.91	320.78	-	-
1,316.87	320.78	-	-
1,591.22	320.78	-	-
2,030.17	320.78	-	-
2,798.35	400.97	-	-
3,127.56	400.97	-	-
4,170.09	641.55	-	-
5,816.17	641.55	-	-
6,310.00	842.04	-	-
7,242.78	842.04	-	-

48054	80 mm diameter.....	1,122.72	240.58	-	-	48054
48055	100 mm diameter.....	1,202.91	320.78	-	-	48055
48056	125 mm diameter.....	1,316.87	320.78	-	-	48056
48057	150 mm diameter.....	1,591.22	320.78	-	-	48057
48058	200 mm diameter.....	2,030.17	320.78	-	-	48058
48059	250 mm diameter.....	2,798.35	400.97	-	-	48059
48060	300 mm diameter.....	3,127.56	400.97	-	-	48060
48061	350 mm diameter.....	4,170.09	641.55	-	-	48061
48062	400 mm diameter.....	5,816.17	641.55	-	-	48062
48063	500 mm diameter.....	6,310.00	842.04	-	-	48063
48064	600 mm diameter.....	7,242.78	842.04	-	-	48064

Item					Item
	<b>CHIMNEY EQUIPMENT (CONT'D)</b>				
	Add height of above items (with 30 mm thick mineral wool insulation) for each additional linear metre or part thereof : -				
	<i>Per linear metre</i>				
		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only
		A \$	B \$	C \$	D \$
48065	80 mm diameter.....	372.90	80.19	-	-
48066	100 mm diameter.....	400.97	106.93	-	-
48067	125 mm diameter.....	438.96	106.93	-	-
48068	150 mm diameter.....	530.41	106.93	-	-
48069	200 mm diameter.....	676.72	106.93	-	-
48070	250 mm diameter.....	932.78	133.92	-	-
48071	300 mm diameter.....	1,042.52	133.92	-	-
48072	350 mm diameter.....	1,390.03	214.12	-	-
48073	400 mm diameter.....	1,938.72	214.12	-	-
48074	500 mm diameter.....	2,103.33	280.68	-	-
48075	600 mm diameter.....	2,414.26	280.68	-	-



**Section 49**

**SEWAGE TREATMENT INSTALLATION**

## SECTION 49

### SEWAGE TREATMENT INSTALLATION

#### SPECIAL CONDITIONS

<b>Measurement of power supply</b>	<b>SC49.01</b>	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
<b>Measurement of pumps</b>	<b>SC49.02</b>	All pumps shall be measured separately and paid for at the appropriate rates under Section 38 - HVAC - Equipment or other applicable Work Sections of this Schedule.
<b>Measurement of excavations, ducts, chases, holes and other subsidiary work</b>	<b>SC49.03</b>	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct and Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.
<b>Measurement of pipework</b>	<b>SC49.04</b>	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
<b>Measurement of heat resistant cables and low smoke zero halogen cables</b>	<b>SC49.05</b>	<p>Cables for the equipment, control/indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing.</p> <p>Heat resistant cables and low smoke zero halogen cables shall be measured the net length as fixed in linear metres.</p>
<b>Measurement of temporary supply</b>	<b>SC49.06</b>	<p>Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.</p> <p>For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.</p> <p>No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.</p>

### SPECIAL CONDITIONS

**Rates generally**
**SC49.07**

The rates for all items shall generally include for : -

- (a) Colour band and colour identification work.
- (b) Lettering and engraving for identification, signs, labels in both English and Chinese.
- (c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.
- (d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.
- (e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.
- (f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.
- (g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.
- (h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.
- (i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.
- (j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.
- (k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.
- (l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.
- (m) Submitting all relevant documentation to Electrical and Mechanical Services Department and Environmental Protection Department for obtaining necessary approval.
- (n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.
- (o) Provision of schematic diagrams covered front and back with plastic sheet including fixing to wall.
- (p) Provision of manufacturer's guarantee.
- (q) Attending fault and complaint during the Maintenance Period.
- (r) Meeting statutory requirements for disposal of waste materials.

**SPECIAL CONDITIONS****Rates for pipework****SC49.08**

The rates for pipework shall further include for : -

- (a) All short lengths, cutting and waste, and joints in the running length.
- (b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).
- (c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.
- (d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.
- (e) Connections between pipework of different materials and differing grades of same material.
- (f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.
- (g) All jointing including provision of flexible connections and / or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.
- (h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.
- (i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.
- (j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.

**Rates for in-line pipework equipment****SC49.09**

The rates for in-line pipework equipment (e.g. valves, flow meters, gauges, strainers and the like) shall further include for : -

- (a) Cutting and jointing to pipes and fittings.
- (b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

**Rates for equipment****SC49.10**

The rates for equipment shall further include for : -

- (a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.
- (b) Conduction of all tests, adjustments and commissioning of the installed equipment.
- (c) Supporting frames.
- (d) Connections including flexible joints between pipework and equipment.
- (e) Flexible connections and anti-vibration connections between pipework and equipment.
- (f) All necessary operational and control accessories (e.g. valves, gauges, flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.

**SPECIAL CONDITIONS**

**Rates for equipment (Cont'd)**

**SC49.10 (Cont'd)**

- (g) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.
- (h) Anti-vibration mountings for plant, machinery and the like.
- (i) Anti-vibration materials and sound insulating materials in plant and machinery bases.
- (j) Motor starters (if motors in the equipment require motor starters).
- (k) Earth/ equipotential bonding as specified.
- (l) Acoustic enclosure.
- (m) Training to the employer's staff and maintenance parties.

**Rates for package type membrane bio-reactor system**

**SC49.11**

- The rates for package type membrane bio-reactor system shall further include for : -
- (a) The design, supply and installation of a package sewage treatment system with applying the membrane bio-reactor (MBR) technology.
  - (b) Seeded process start-up for the establishment of the sewage treatment process.
  - (c) Demonstrating that the standard of effluent complies with the requirements as specified in the discharge license. Sample analysis shall be carried out by a HOKLAS laboratory.
  - (d) Field-test kit for the sewerage treatment package including portable pH meter, TDS meter, corrosion inhibitor ppm test kit and the like recommended by the specialist.
  - (e) Collecting samples to carry out analysis of stabilization monitoring for 21 days.
  - (f) Cat ladder, working and inspection platforms.
  - (g) Submission of system design principle.
  - (h) Tanking away service for waste sludge generated from the system during the Maintenance Period.
  - (i) Odour control equipment.
  - (j) All necessary sensing devices for on-line control/ monitoring to satisfy the requirement set out for obtaining the discharge licence and all necessary chemicals and consumables during the Maintenance Period.
  - (k) Operation and maintenance service including sample tests, laboratory reports of influent and effluent water on monthly basis during the Maintenance Period.
  - (l) All submission to relevant Authorities, including all payments for obtaining of relevant certificates/ licences.
  - (m) Carrying out factory acceptance tests in the facilities of the specialist contractor prior to delivery of all equipment to site. The rate shall further include the transportation cost of the Employer's representative for witnessing the tests.

**SPECIAL CONDITIONS**

**Rates for heat resistant cables and low smoke zero halogen cables**

**SC49.12**

The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -

- (a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.
- (b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.
- (c) Making cable-joints.
- (d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.
- (e) All necessary fixings complete with accessories and fittings as required.
- (f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

**Rates for "Take down and clear away" or "Take down and set aside for re-use"**

**SC49.13**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with sewage treatment installation shall further include for : -

- (a) All in-line fittings including brackets, supports, hangers and the like.
- (b) Cutting into existing pipework and the like in position.
- (c) Plugging off remaining ends with plugs or caps as required.
- (d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.
- (e) In the case of equipment and the like, taking down all associated pipework and/ or building services works.
- (f) Making good all works disturbed.

**Particular Specification**

**SC49.14**

The Particular Specification for sewage treatment installation can be found in the Contract.

Item					Item	
	<b>VALVES, PIPE WORKS AND ACCESSORIES</b>					
	Ultra violet sterilizer, close type c/w stainless steel 304 cabinet, chamber assembly, metallic wetted components, hour meter, all necessary controls/ monitoring systems and ultraviolet lamps rated at 7500 hours.	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Ultra-violet dosage >60,000 uW second, flow rate :-					
	<i>Each</i>	A \$	B \$	C \$	D \$	
49001	Up to 3.6 m <sup>3</sup> / hr.....	8,878.76	94.65	126.40	5,577.81	49001
49002	3.6 - 7.2 m <sup>3</sup> / hr.....	17,757.49	94.65	126.40	5,577.81	49002
49003	7.2 - 10.8 m <sup>3</sup> / hr.....	26,636.25	94.65	126.40	5,577.81	49003
	Air Blower :-					
	Max. 10m discharge head, airflow rate :-					
	<i>Each</i>					
49004	Up to 20 m <sup>3</sup> / hr.....	53,272.49	96.01	101.98	11,155.63	49004
49005	20 - 40 m <sup>3</sup> / hr.....	71,030.00	96.01	101.98	11,155.63	49005
49006	40 - 60 m <sup>3</sup> / hr.....	88,787.51	108.87	115.00	16,733.42	49006
	Package type membrane module for membrane bio-reactor sewage treatment system :-					
	<i>Per square metre</i>					
49007	Membrane module.....	7,205.46	41.24	56.91	4,462.02	49007

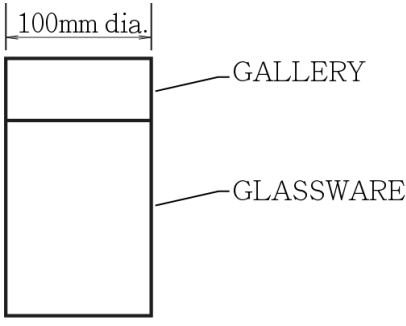
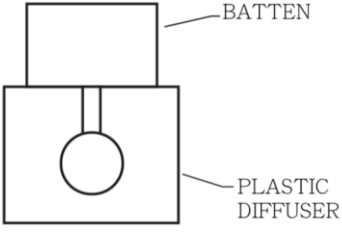

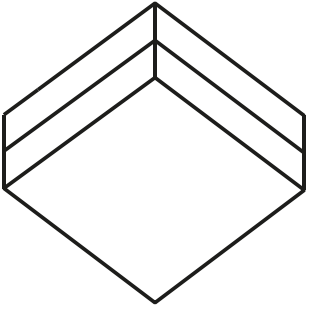
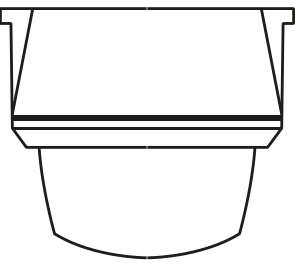
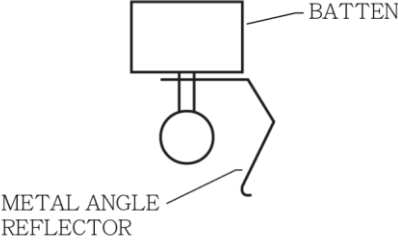
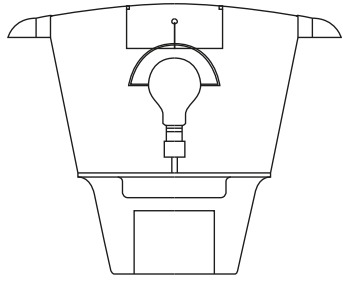
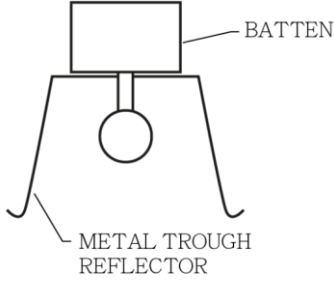
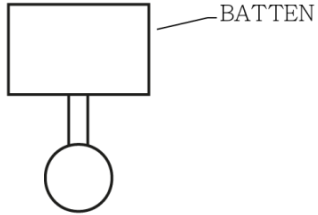
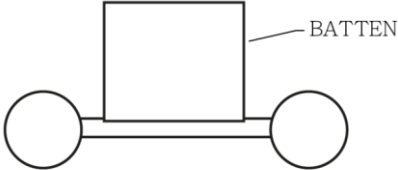
Item					Item	
	<b>VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)</b>	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A \$	B \$	C \$	D \$	
	Motorized control valve : -					
	<b>Each</b>					
49008	Motorized wafer type control valve c/w protective coating, stainless steel disc and shaft EPDM seat, electric actuator.....	6,738.21	47.26	55.34	87.72	49008
	Cast iron gate valve c/w full bore clearway pattern to EN 1171:2002, solid wedge gates with minimum normal pressure rating of PN10; c/w stainless steel stem of Grade 316 : -					
	<b>Each</b>					
49009	50 mm diameter.....	1,004.97	28.22	34.55	53.38	49009
49010	65 mm diameter.....	1,148.36	29.73	36.13	55.90	49010
49011	80 mm diameter.....	1,354.73	31.34	38.14	59.75	49011
49012	100 mm diameter.....	1,847.45	36.07	43.14	66.10	49012
49013	150 mm diameter.....	3,324.16	47.77	56.27	86.41	49013
	Cast iron non-return valve to EN 12334:2001, in single door swing check pattern, c/w cast iron housing and gunmetal seat; c/w stainless steel stem of Grade 316 : -					
	<b>Each</b>					
49014	50 mm diameter.....	1,038.89	28.22	34.55	53.38	49014
49015	65 mm diameter.....	1,271.15	29.73	36.13	55.90	49015
49016	80 mm diameter.....	1,433.14	31.34	38.14	59.75	49016
49017	100 mm diameter.....	2,004.93	36.07	43.14	66.10	49017
49018	150 mm diameter.....	3,612.18	47.77	56.27	86.41	49018

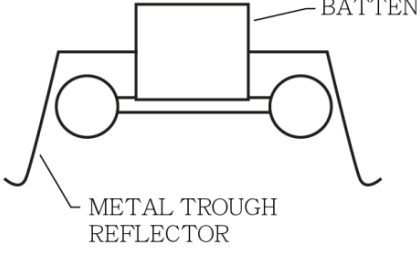
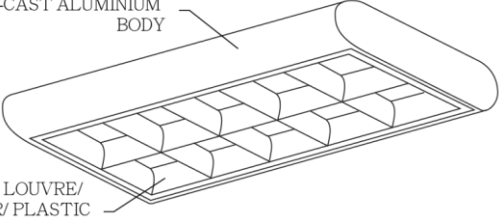
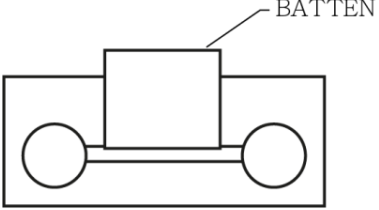
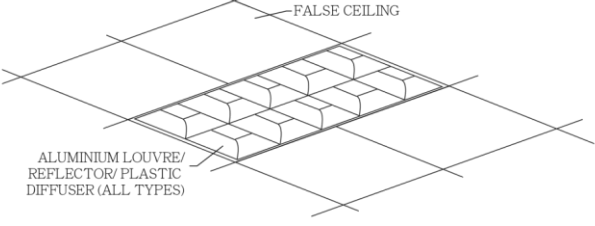
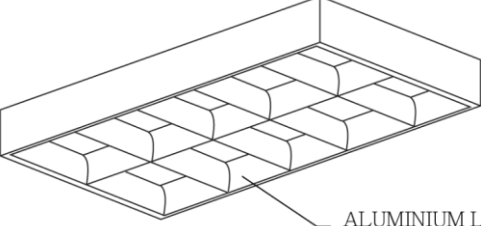
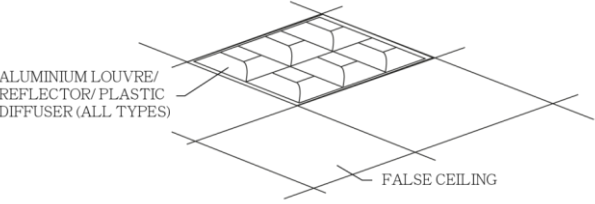
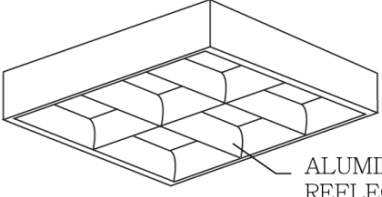
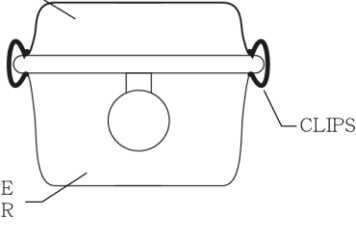
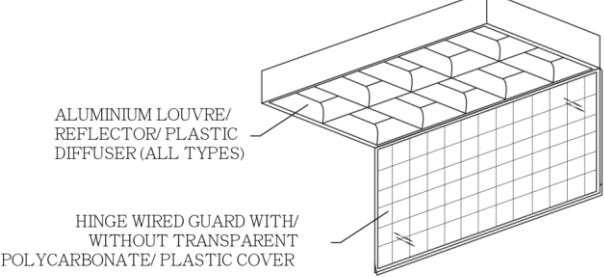
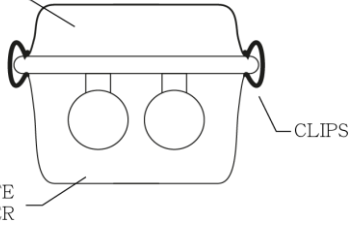


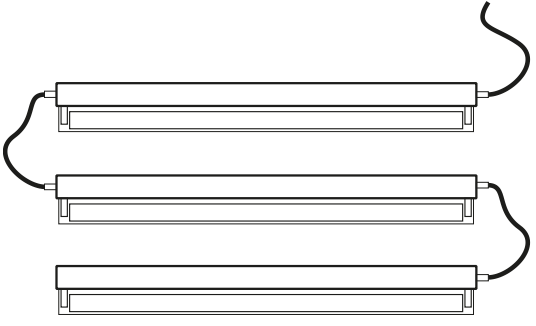
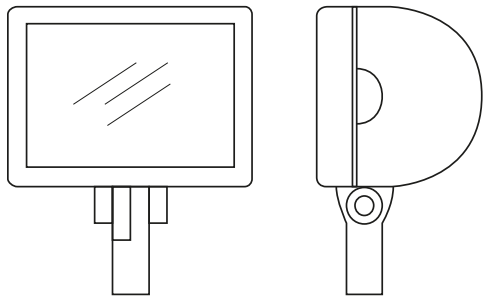
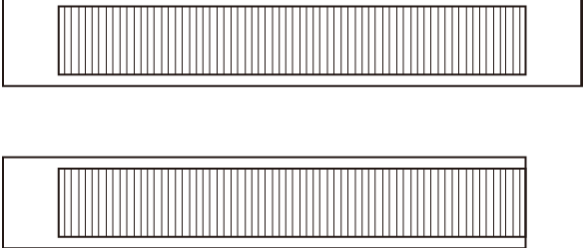
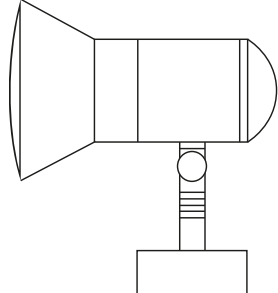
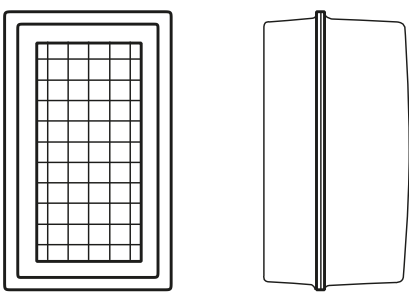
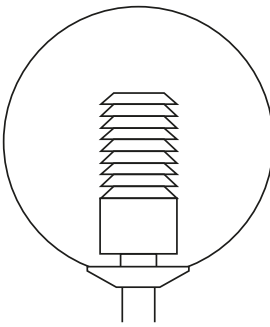
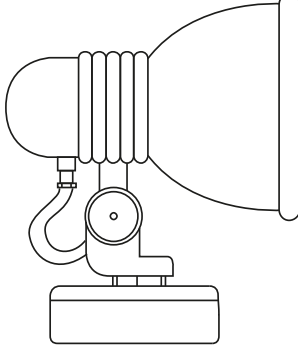
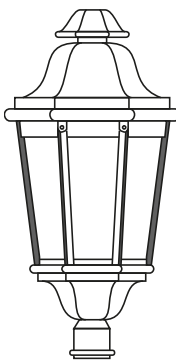
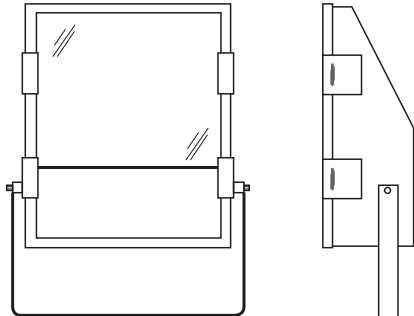
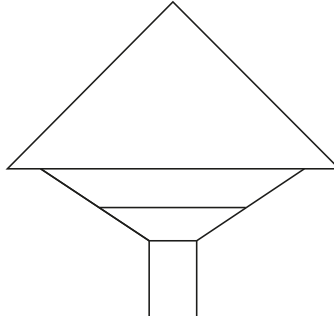
Item					Item	
	<b>VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)</b>					
	Ductile iron pipe, Class I to BS EN 598:2007+A1:2009 c/w ductile iron fittings to BS EN 598:2007+A1:2009 with all necessary accessories :-					
	<i>Per linear metre</i>					
49019	100 mm diameter.....	286.39	53.15	62.78	109.30	49019
49020	150 mm diameter.....	377.97	74.43	80.32	144.87	49020
49021	200 mm diameter.....	495.29	86.19	93.09	176.66	49021
	UPVC pipes and fittings : BS EN 1452 ; solvent or flanged joints, and c/w all accessories :-					
	<i>Per linear metre</i>					
49022	80 mm diameter.....	172.97	48.85	53.07	97.85	49022
49023	100 mm diameter.....	208.34	53.14	62.77	109.30	49023
49024	150 mm diameter.....	345.15	74.43	80.32	144.87	49024
49025	200 mm diameter.....	542.14	86.19	93.09	176.66	49025

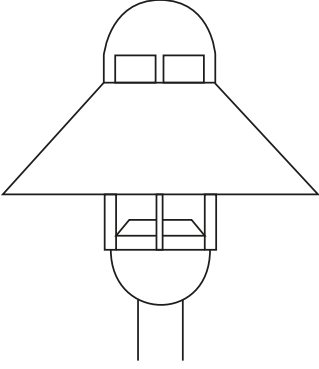
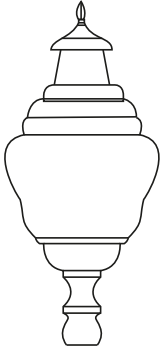
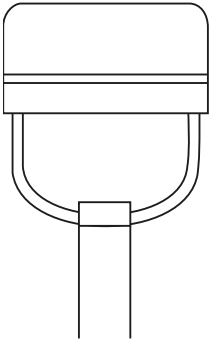
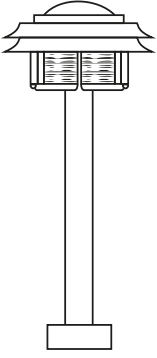
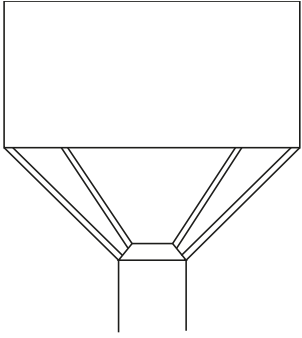
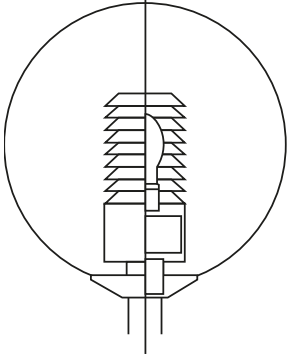
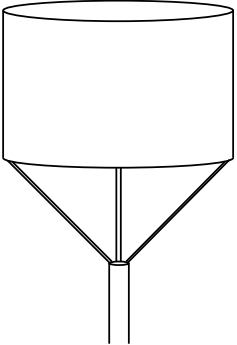
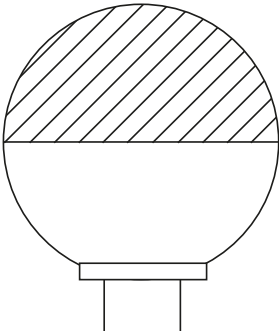
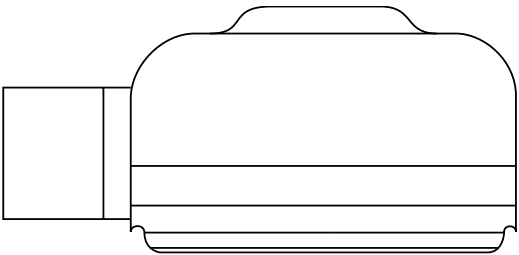
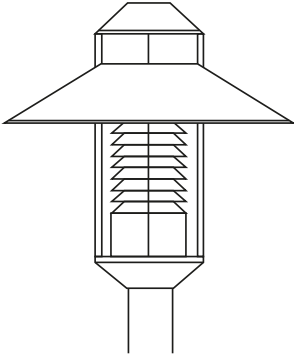
**ANNEX 'A' -**

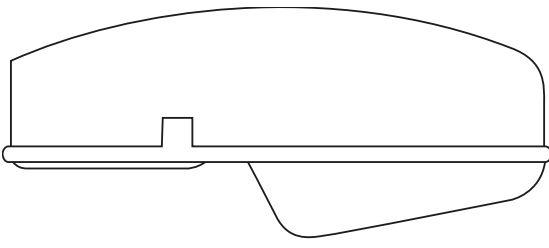
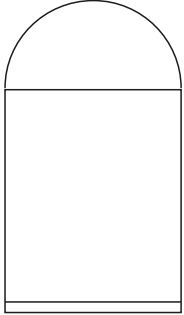
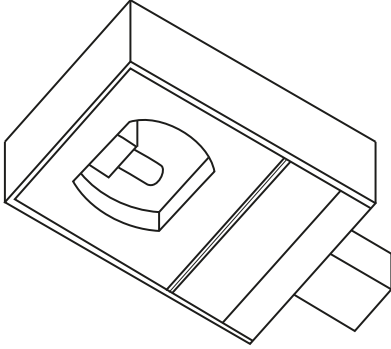
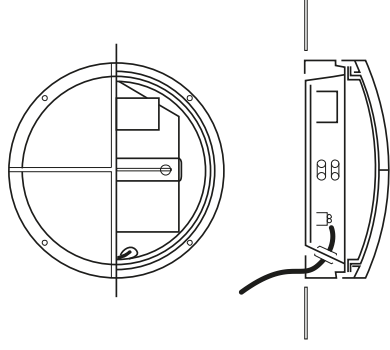
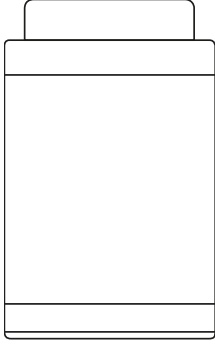
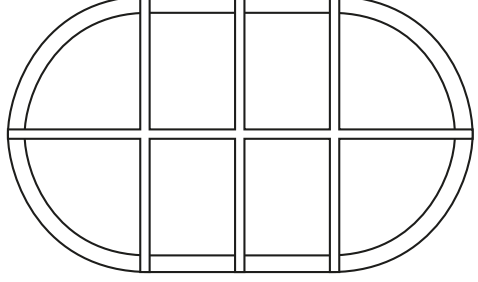
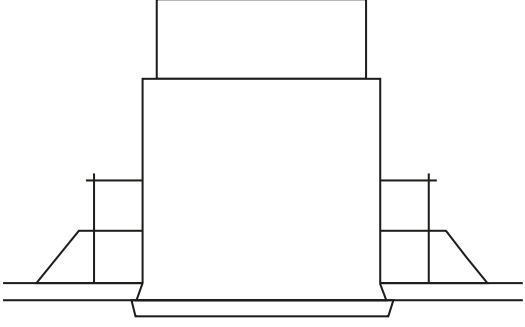
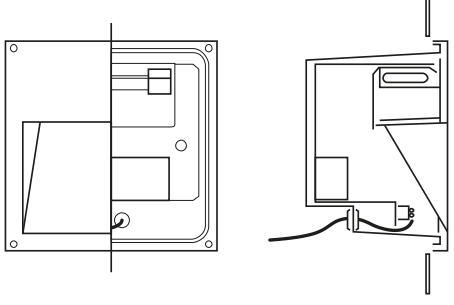
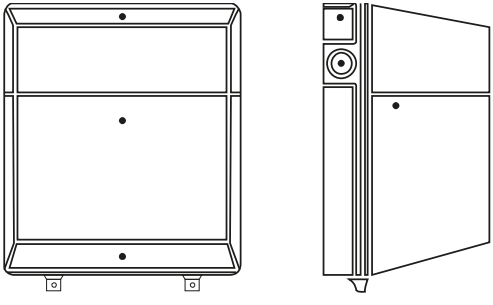
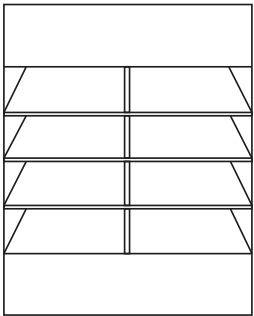
**DRAWINGS FOR BUILDING SERVICES WORKS**

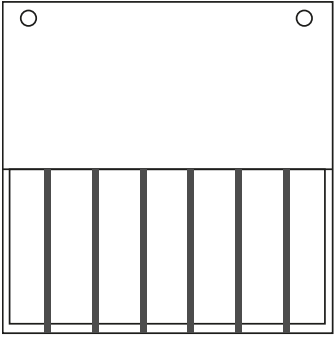

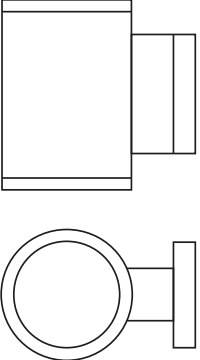
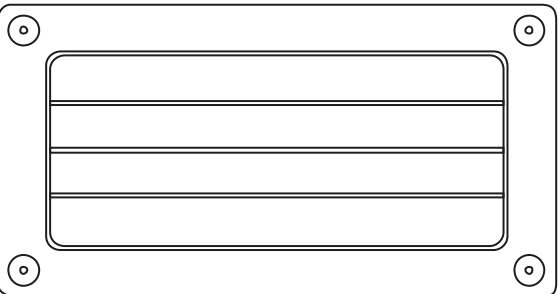
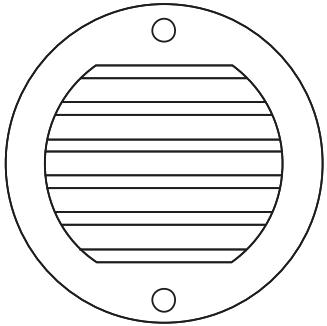
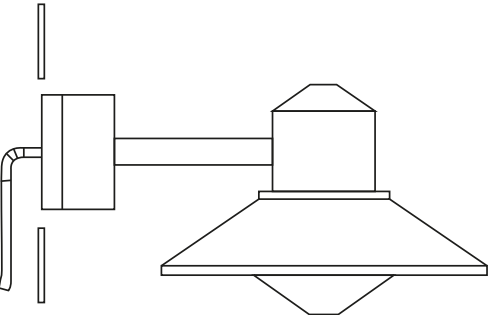
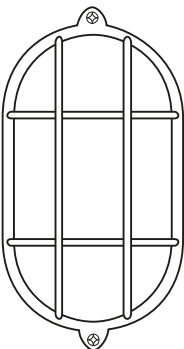
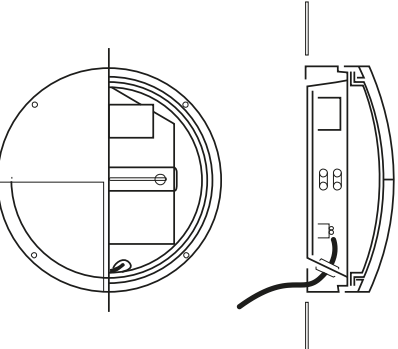
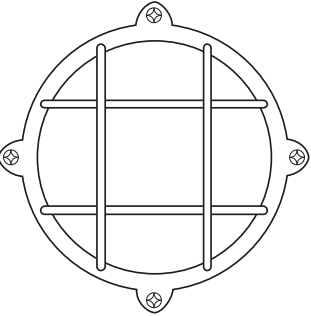
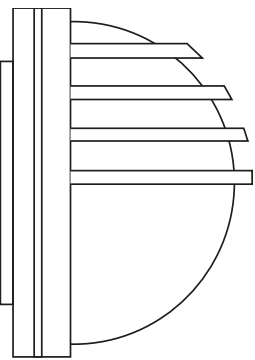
SFA No.	SHAPE	SFA No.	SHAPE
6	 <p>100mm dia.</p> <p>GALLERY</p> <p>GLASSWARE</p>	51	 <p>BATTEN</p> <p>PLASTIC DIFFUSER</p>
7	 <p>115mm dia.</p>	52	
35		56	 <p>BATTEN</p> <p>METAL ANGLE REFLECTOR</p>
46		58	 <p>BATTEN</p> <p>METAL TROUGH REFLECTOR</p>
50	 <p>BATTEN</p>	69	 <p>BATTEN</p>

SFA No.	SHAPE	SFA No.	SHAPE
72	 <p>BATTEN</p> <p>METAL TROUGH REFLECTOR</p>	113	 <p>DIE-CAST ALUMINIUM BODY</p> <p>ALUMINIUM LOUVRE/ REFLECTOR/ PLASTIC DIFFUSER (ALL TYPES)</p>
74	 <p>BATTEN</p> <p>PLASTIC DIFFUSER</p>	114	 <p>FALSE CEILING</p> <p>ALUMINIUM LOUVRE/ REFLECTOR/ PLASTIC DIFFUSER (ALL TYPES)</p>
110	 <p>ALUMINIUM LOUVRE/ REFLECTOR/ PLASTIC DIFFUSER (ALL TYPES)</p>	115	 <p>ALUMINIUM LOUVRE/ REFLECTOR/ PLASTIC DIFFUSER (ALL TYPES)</p> <p>FALSE CEILING</p>
111	 <p>ALUMINIUM LOUVRE/ REFLECTOR/ PLASTIC DIFFUSER (ALL TYPES)</p>	116	 <p>FIBRE-GLASS REINFORCED POLYESTER BASE</p> <p>POLYCARBONATE DIFFUSER</p> <p>CLIPS</p>
112	 <p>ALUMINIUM LOUVRE/ REFLECTOR/ PLASTIC DIFFUSER (ALL TYPES)</p> <p>HINGE WIRED GUARD WITH/ WITHOUT TRANSPARENT POLYCARBONATE/ PLASTIC COVER</p>	117	 <p>FIBRE-GLASS REINFORCED POLYESTER BASE</p> <p>POLYCARBONATE DIFFUSER</p> <p>CLIPS</p>

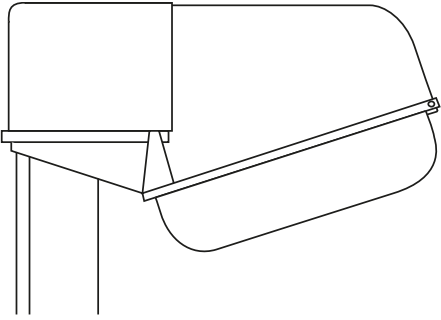
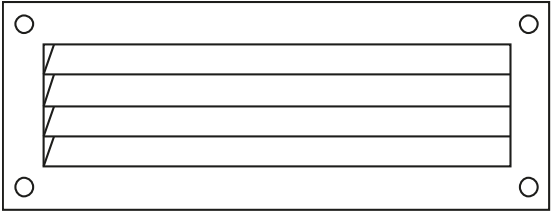
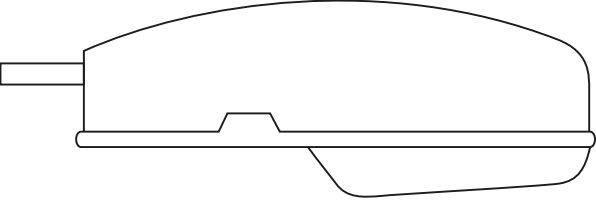
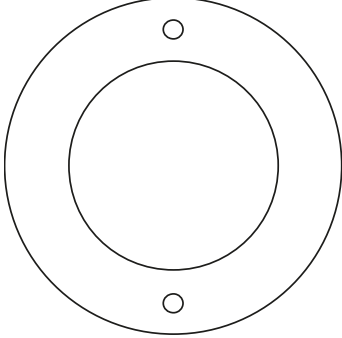
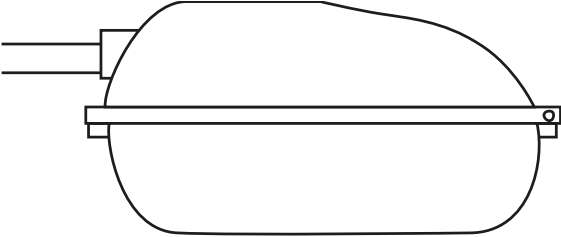
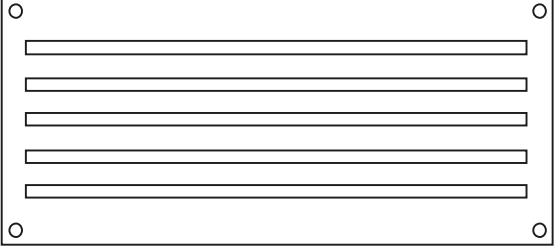
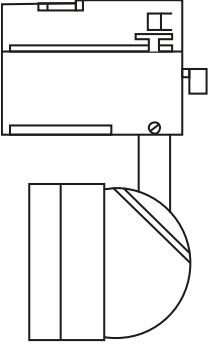
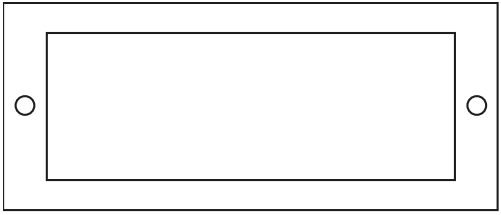
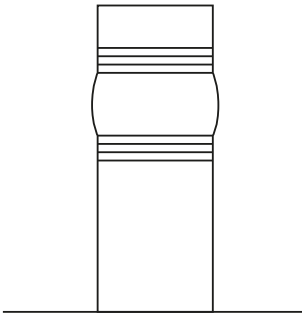
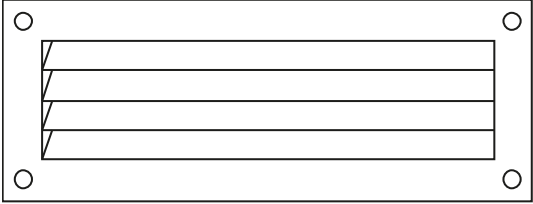
SFA No.	SHAPE	SFA No.	SHAPE
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201		207	
203		208	
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205		210	

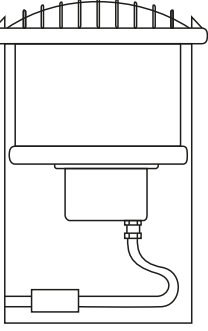
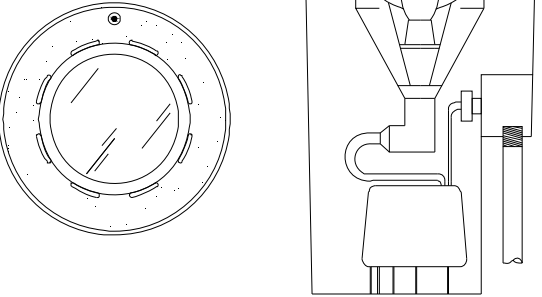
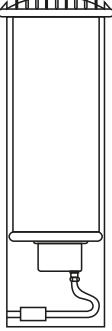
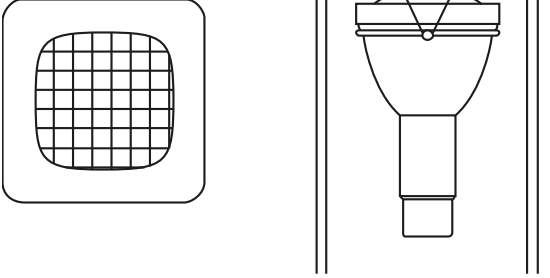
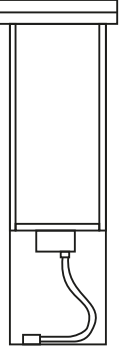
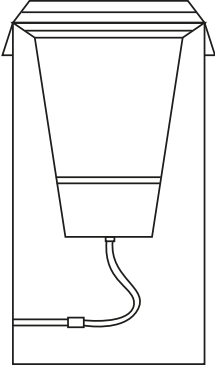
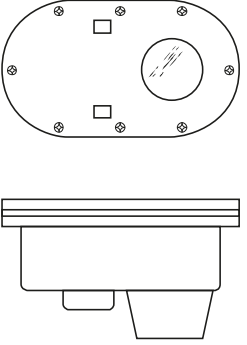
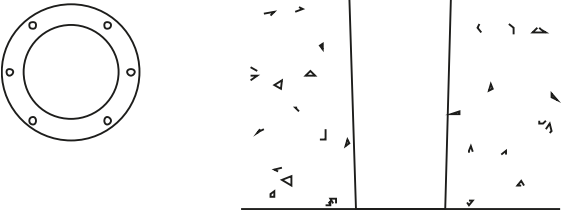
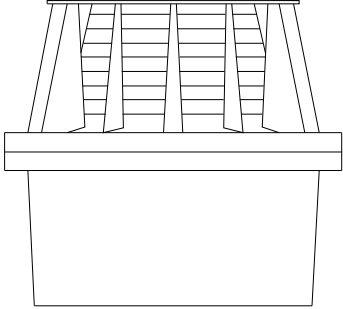

SFA No.	SHAPE	SFA No.	SHAPE
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215		220	

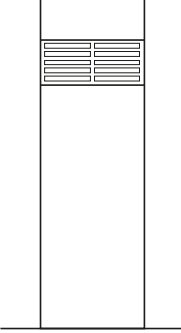
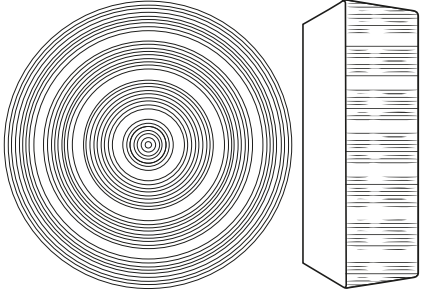
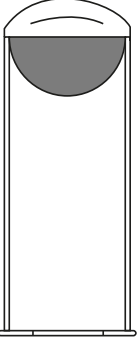
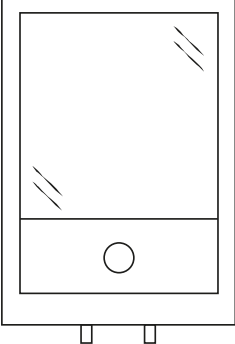
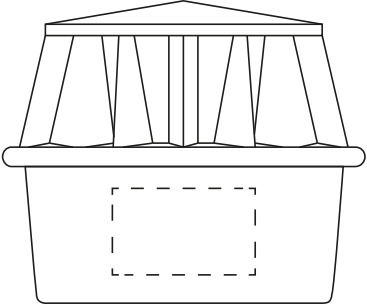

SFA No.	SHAPE	SFA No.	SHAPE
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223		228	
224		229	
225		230	

SFA No.	SHAPE	SFA No.	SHAPE
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232		237	
233		238	
234		239	
235		240	



SFA No.	SHAPE	SFA No.	SHAPE
241		246	
242		247	
243		248	
244		249	
245		250	

SFA No.	SHAPE	SFA No.	SHAPE
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252		257	
253		258	
254		259	
255		260	

SFA No.	SHAPE	SFA No.	SHAPE
261		266	
262		267	
263			
264			
265	