

**IMPORTANT NOTE**

- A The quantities comprised in the Breakdown of Lump Sum are associated to all works which shall be executed on Lump Sum Price.

**DEFINITIONS**

The following notations and abbreviations are used in the Breakdown of Lump Sum:

m	= Linear meter
m <sup>2</sup>	= Square meter
m <sup>3</sup>	= Cubic meter
No	= Number
Kg	= Kilogram
T	= Ton
Item	= Composite measurement
LS	= Lump Sum
US\$	= United States Dollars

**GENERAL NOTES****Method of Measurement Used**

- B Quantities contained in the Breakdown of Lump Sum have been prepared in accordance with the Principles of Measurement. The Contractor is deemed to have interpreted and checked the intent of this document and understood all the nuances to enable each and every item included in the Breakdown of Lump Sum to be fully and correctly priced, since no claim will be entertained in the event of misinterpretation.

**Measurements Generally**

- C All quantities mentioned in the Breakdown of Lump Sum are indicative and does not necessary give you the exact quantity shown in the drawings. The BOQ give you a reasonable indications of the works shown on the Drawings.

**GENERAL NOTES (CONT'D)****Measurements Generally (Cont'd)**

- A Quantities included in the Breakdown of Lump Sum shall not be re-measured after execution. The Contract is a lump sum contract. The Contractor shall during tender phase, verify and check the quantities for any discrepancies or mistakes. In case of discrepancies, the Contractor shall during the tender phase raise this issue to the employer by sending to him a table showing the location of discrepancies for Employer's verification. The Employer will assess and answer the contractor's query with the amended quantities if there is any.

- B Unless otherwise stated, all works have been measured net. No allowance has been made for waste, working space, bulking, shrinkage, laps and the like.
- C Generally, in setting down dimensions in the Breakdown of Lump Sum, the sequence is length, height, width. All measurements have been taken up or down to the nearest meter (or other units), and where exactly less than half meter (or other units) measurements result, these have been taken up.
- D The works measured by area have been measured net as shown on drawings, with no deduction made for voids of less than 0.25m<sup>2</sup>.
- E All works measured by volume have been measured net with no deduction made for voids not exceeding 0.05m<sup>3</sup>.
- F Tolerances as stated in the Specifications have not been taken into consideration.
- G When the expression "Ditto" appears under an item in the Breakdown of Lump Sum, it shall be deemed to mean that the said item shall include the whole relevant description of the preceding item together with any description written before the said expression.
- J All works shall be understood to be as specified and as shown and detailed on drawings.

Description Generally

- B The descriptions included in the Breakdown of Lump Sum is intended to describe the works for each item but not necessarily the hole description will be mentioned. The Contractor should examine all contract documents including the Specifications and the Drawings for complete description and information for any item mentioned in the BOQ or not. Thus no claim or variation will be considered on account of his failure to acquaint himself with such information.

**GENERAL NOTES (CONT'D)**

Pricing Generally

- C The Contractor shall satisfy himself as to the meaning of every item in the Breakdown of Lump Sum and the rates and prices inserted by him will be deemed to cover all his obligations under the Contract (Specifications, Drawings, Conditions of Contract, any Addenda, and other contract documents) and all matters and things necessary for the proper construction, completion and maintenance of the works including (but not by way of limitation), for all temporary work required (including any that may be required by Sub-Contractors, whether nominated or otherwise).
- D The Contractor's price shall include for all materials and labour, storage and handling transportation, samples, testing coordination and for the provision and use of all plant, whether mechanical or non-mechanical, required for carrying out of the works, in their proper sequence, for shifting, altering and adapting such temporary work and plant as may be required the progress of the works, and for removing plant and temporary works at completion and making good any surfaces disturbed.

- E The Contractor shall price all items excluding VAT.
- F The Contractor's price shall embrace the costs of preparing a tender; for the final account; for overheads and profit; for customs and import duties; for temporary services and for all other statutory tax and establishment charges and costs of whatever nature.
- G The Contractor shall submit with his offer a detailed breakdown of all his unit rates, split into material, labour, equipment, overheads and profit.

### **GENERAL NOTES (CONT'D)**

#### Pricing Generally (Cont'd)

- A The Contractor should price all items that he found necessary in the BOQ. If any item was found unpriced by the Contractor, it shall be deemed to be included in the Lump Sum amount by considering that the cost of the unpriced items are included or spread in other priced items and the Contractor shall execute this item without any extra cost or claim.
- B The Contractor shall complete the Collections at the end of each Section and carry the totals to the Summaries. The total of the General Summary (EXCLUDING VAT) shall be carried out to the Form of Tender.

#### Dayworks

C The Engineer may, if he found necessary, issue a site instruction that any varied work shall be executed on a daywork basis. The Contractor shall then be paid for such varied work as per the terms of the filled daywork schedule, which can be found at the end of the BOQ.

- D The below should be included in the rates of any item mentioned in the BOQ:
1. Materials, equipment, labour, attendance, handling, storage, protection and making good.
  2. Taxes and other statutory charges.
  3. Transport, hoisting, lifting up or lowering down to work location and the like.
  4. Work in any classification, in any location, width or area and at any height.
  5. Scaffolding and tools.
  6. Assembling and jointing together.
  7. Fixing in place and adjustment including supports and all necessary fixing accessories.
  8. Forming to shape including all kinds of joints, cutting, grooves and the like.
  9. Coordination of different trades.
  10. Cleaning down and preparing surfaces to receive work.
  11. Working spaces.
  12. Bulking, shrinkage and the like.
  13. Multiple handling.
  14. Samples.
  15. Waste.
  16. Warranties.

## **DIVISION 2 - SITE CONSTRUCTION**

- 2.1 Rate for excavation and shoring (if any):  
1. Trimming, leveling, loaders, excavator, all equipment related to excavation & transporting the good.
- 2.2 Rates for earthwork shall include for:-  
1. Trimming, levelling, ramming bottom of excavation and pumping water out of excavation  
2. Loading, transporting and carting away unwanted materials  
3. Importing to site all required materials  
4. Finishing and grading to any falls, cross-falls, or slopes that may be required

## **DIVISION 3 - CONCRETE**

- 3.1 Steel reinforcement quantities have been measured net, no allowance has been made for rolling margins, supports, spacers, tying wires and laps unless otherwise shown on the drawings.
- 3.2 Reinforcement weight/m as published in the BS 4449 and shown in the drawings.
- 3.3 Concrete has been measured net, no deduction has been made for:-  
1. Volume of concrete displaced by embedded steel.  
2. Voids not exceeding 0.25m<sup>2</sup> in concrete measured superficially.  
3. Voids not exceeding 0.05m<sup>3</sup> in concrete measured cube.
- 3.4 Concrete has been measured as follows:-  
1. Drops beams and downstands have been measured from bottom of slabs.  
2. Upstands have been measured from the top of slabs.  
3. Columns and walls from top of slab to bottom of soffits or drop beams.  
4. Concealed beams within slabs have not been measured separately and measured with the slabs.  
5. Concealed beams surrounding kind of slabs have been measured with the said kind of slabs.  
6. Concealed columns within walls have been measured with the walls.  
7. Basements periphery walls have been measured net as per design drawings. No additions have been made for variance in thickness due to irregularities of the shoring system surface.

## **DIVISION 3 – CONCRETE (CONT'D)**

- 3.7 Rates for concrete shall include for:-  
1. Vibrating and packing around reinforcement and between formwork.  
2. Formwork including release agent.  
3. Formwork striking.  
4. Smooth and fairface finish to walls, columns, ceilings and beams.  
5. Smooth finish to floors.  
6. Forming openings and arches in any shape or cross section as shown on drawings.

7. Forming grooves, throats, holes chases, rebates, chamfers, splayed angles, moldings and the like.
8. Curing and sprinkling.
9. Work of any cross-sectional area and at any height.
10. Grading, tamping, troweling and floating.
11. Provision for all necessary sleeves, openings, embedded conduits or boxes as required before proceeding with casting concrete.
12. Forming mortises and grouting in.
13. Construction and control joints.
14. Narrow widths.
15. To treat any crack or segregation
16. Helicopter finish to receive epoxy.

3.8 Rates for post-tensioned concrete (in addition to the above) shall include for:-

1. Design by specialist and submittal of calculations to the Engineer for
2. Post tensioning.
3. Post tensioning ducts.
4. Steel reinforcement.
5. Anchors and plates for post-tensioning.
6. Duct reservations for tendons, plates and anchors.

3.8 Rates for post-tensioned concrete (in addition to the above) shall include for:-

1. Design by specialist and submittal of calculations to the Engineer for approval.
2. Post tensioning.
3. Post tensioning ducts.
4. Steel reinforcement.
5. Anchors and plates for post-tensioning.
6. Duct reservations for tendons, plates and anchors.

**DIVISION 3 – CONCRETE (CONT'D)**

3.11 Rates for Architectural Concrete shall include for:-

1. Reinforcement.
2. Formwork and metal ties and formwork striking.
3. Vibrating and packing around reinforcement and between formwork.
4. Curing and sprinkling.
5. Work of any cross-sectional area and at any height.
6. Grading, tamping, trowelling and floating.
7. Forming grooves, throats, holes chases, rebates, chamfers, splayed angles, mouldings and the like.
8. Forming mortises and grouting in.
9. Forming openings in any shape or cross section.
10. Narrow widths.

3.12 Rates for screed shall include for:-

1. Cleaning down and preparing surfaces.
2. Work in any area, location, height or width.
3. Hoisting, bedding, tamping, trowelling and floating.
4. Provision for all necessary sleeves, openings, etc...
5. Laying in bays, levelled, to slopes, falls or cross-falls including joints.
6. Laying to required thickness including reinforcement and formwork where required.

3.13 Expansion joint filler has been measured as the net concrete to concrete surface area or cross surface area.

3.14 Rates for expansion joint filler shall include but not limited to:

1. Placing filler in position.
2. Sealant, backing rod and bond tape.
3. Fire rating requirements.

#### **DIVISION 4 - MASONRY**

4.1 Blockwork has been measured gross. No deduction has been made for area of concrete lintels, jambs, stiffener beams and stiffener columns, although these have been measured separately. 200mm bearing length has been considered at each end of lintels.

4.2 Rates for blockwork shall include for:-

1. Rough and fair cutting.
2. Use of solid blocks where cutting is required.
3. Cutting or leaving holes, chases, grooves, mortices and sinkings including all making good.
4. Bedding and pointing plates and frames, and building in door and window frames and the like.
5. Cutting and pinning or building in ends of lintels, steps, timbers, rails, brackets, steel sections and the like including all making good.
6. Raking out joints or hacking surfaces.
7. Metal lathing and bonding including mesh strips at corners.
8. Seismic joints between blockwalls and ceilings to prevent cracks using adequate materials, accessories and paint.
9. Joint reinforcement and anchors.
10. Blocking cavity ends.

#### **DIVISION 4 - MASONRY**

4.1 Blockwork has been measured gross. No deduction has been made for area of concrete lintels, jambs, stiffener beams and stiffener columns, although these have been measured separately. 200mm bearing length has been considered at each end of lintels.

4.2 Rates for blockwork shall include for:-

1. Rough and fair cutting.
2. Use of solid blocks where cutting is required.
3. Cutting or leaving holes, chases, grooves, mortices and sinkings including all making good.

4. Bedding and pointing plates and frames, and building in door and window frames and the like.
5. Cutting and pinning or building in ends of lintels, steps, timbers, rails, brackets, steel sections and the like including all making good.
6. Raking out joints or hacking surfaces.
7. Metal lathing and bonding including mesh strips at corners.
8. Seismic joints between blockwalls and ceilings to prevent cracks using adequate materials, accessories and paint.
9. Joint reinforcement and anchors.
10. Blocking cavity ends.

4.3 Rates for stone work shall include for:-

1. Templates and patterns
2. All joints including joggle joints, sunk joints, rebates and the like
3. All dressing
4. Square ends, square reveals, square external angles of walls and the like
5. Splayed ends, battered ends, battered external and internal angles of walls and the like
6. Mortar beds and backing and stainless steel grade 316L fixing accessories, ties, anchors, cramps and dowels, lead plugs and the like
7. Rough and fair cutting
8. Grooves, throats, rebates, margins, flutes, sinkings, perforations, chamfered angles, founded angles and the like
9. Stops and mitres
10. Grooves for turned in flashings, nibs of skirtings and the like
11. Horizontal, raking and vertical chases
12. Sloped tops of sills where shown
13. Holes for pipes, tubes, bars, conduits, ducts and the like
14. Grouting and pointing
15. Elastic joints
16. Admixtures and additives

**DIVISION 5: METALS**

5.1 Rates for metalwork shall include for:-

1. Transporting, hoisting, wedging and the like.
2. Supports, brackets and the like.
3. Assembling, welding and grinding.
4. Drilling, countersinking, bolting and riveting including all nuts and washers.
5. All cuttings, notches and making holes.
6. Bearers, anchors, plates and lugs, including fixing and building in.
7. Anchors and lugs, including fixing and building in.
8. Grounds, blockings and backings including all making good.
9. Scribing, rebates, grooves, chamfers, splayed and rounded edges, fair and returned ends mitres, holes for pipes, etc., and for all short or isolated lengths.
10. Temporarily fixing and re-fixing.
11. All ancillary items and fixing accessories.
12. Primer, painting and protective coating as specified.
13. Reservations in concrete works.

**DIVISION 6: WOOD AND PLASTIC****6.1 Rates for woodwork shall include for:-**

1. Wrought faces on all timbers, unless otherwise stated.
2. Any length or cross-section.
3. All kinds of joints and cutting.
4. Raking, curved or circular work and labour.
5. Notching, mortising, boring, sinking, forming angles and rounded edges, scribing and the like.
6. Plugging to concrete or blockwork including all making good.
7. Wood preservative to all non-exposed faces of timber.
8. Painting and coating as specified.
9. Sawn grounds, sub-frames, blockings and backings.
10. All preparation and fixing accessories.
11. Easing, adjusting and making good.
12. All cuttings, perforations, jointing and sealing.
13. Studs, anchors, shims, battens, supports and lugs including fixing and building in.
14. Assembled composite work complete.
15. Straight, curved and shaped works as per drawings.

**6.2 Rates for countertops include for:-**

1. Supports, anchors and lugs, including fixing and building in.
2. All cuttings, jointing and sealing.
3. Fixing in place and adjustment.

**DIVISION 7 - THERMAL AND MOISTURE PROTECTION****7.1 Rates for waterproofing shall include for:-**

1. Cleaning down and preparing surfaces.
2. Any width or area, vertical and horizontal.
3. Fair and rounded edges, drips and arises.
4. Cutting to line, overlapping, turning into grooves and pointing.
5. Laying to slopes, falls or cross-falls.
6. Working into outlets, channels, gullies, narrow spaces and the like.
7. Cutting, trimming, making holes and forming openings, etc., including working around pipes and openings and making good.
8. Mastic pointing.
9. All necessary fixing accessories and backing such as steel plates, angles, wood blockings, and the like.

**DIVISION 7 - THERMAL AND MOISTURE PROTECTION****7.1 Rates for waterproofing shall include for:-**

1. Cleaning down and preparing surfaces.
2. Any width or area, vertical and horizontal.
3. Fair and rounded edges, drips and arises.
4. Cutting to line, overlapping, turning into grooves and pointing.
5. Laying to slopes, falls or cross-falls.



6. Working into outlets, channels, gullies, narrow spaces and the like.
7. Cutting, trimming, making holes and forming openings, etc., including working around pipes and openings and making good.
8. Mastic pointing.
9. All necessary fixing accessories and backing such as steel plates, angles, wood blockings, and the like.

7.2 Rates for fire stopping shall include for:-

1. Studs, gaskets and battens.
2. Cutting.
3. Pointing and sealant.

7.3 Rates for flashing and sheet metal shall include for:

1. Fixing accessories.
2. Works in any area and at any height and in any shape.
3. Cutting.
4. Mastic pointing and sealant.

7.4 Rates for expansion joint assemblies shall include for:

1. All cutting, curved work, composite work and fixing accessories.
2. Irregular shapes.
3. Backing rods and sealant.
4. Fire rating requirements.

## **DIVISION 8: DOORS AND WINDOWS**

- 8.1 All sizes given are as stated on schedules of doors and windows, or as otherwise shown on drawings.
- 8.2 All doors, windows, screens, frames and curtain walls shall be factory assembled and reinforced, complete with hinges, glazing gaskets and anchors. All metal elements shall be protected from adjoining structures as specified
- 8.3 Where units have no structural member to which they may be secured the provision for rigidity of such units shall be provided
- 8.4 All external units shall be weatherproof

## **DIVISION 8: DOORS AND WINDOWS (CONT'D)**

- 8.5 All dimensions of doors, windows, screens and curtain walls must be adapted to fit the existing conditions of the Site

**DIVISION 8: DOORS AND WINDOWS (CONT'D)**

- 8.5 All dimensions of doors, windows, screens and curtain walls must be adapted to fit the existing conditions of the Site
- 8.6 Rates for doors, windows and curtain walls shall include for:-
1. Easing, adjusting and protection
  2. Anchors, support, angles, plaster stops and fixing accessories
  3. Caulking and sealant
  4. All required flashings
  5. Fixing in place
  6. Glass and glazing as specified in any pattern, size, shape and area including circular and square cutting with rounded edges.
  7. Bedding edges and labours to edges including rounding edges of all glass panes to prevent damage to gaskets
  8. Grinding and drilling holes in glass
  9. Protection from damage and replacing any damaged unit
  10. All gaskets, beads, weather strips, flashings and the like
- 8.7 Rates for door hardware shall include for:-
1. Screws and fixing accessories
  2. Temporarily fixing and re-fixing
  3. Anchors and lugs, including fixing and building in
- 8.8 Rates for glass and mirrors shall include for:-
1. Any pattern, size and area.
  2. Chamfering, grinding and drilling holes in glass.
  3. Protection from damage and replacing any damaged unit.
  4. Any size, shape and area including cutting with chamfered edges.
  5. All gaskets, beads, weather strips, fixing accessories and the like.
  6. Supports, clips and backing as indicated.

**DIVISION 9: FINISHES**

- 9.1 Suspended ceilings have been measured gross. No deduction has been made for area of access panels, HVAC outlets, lighting fixtures, etc...
- 9.2 Rates for suspended ceiling systems shall include for:-
1. Work of all classifications in any location.
  2. Any area or width, location, height and drop.
  3. All kinds of grooves, joints, cutting and waste.
  4. Fixing to concrete or wood including all making good.
  5. Suspension metal system including fixing accessories.
  6. Provisions for access panels and mechanical and electrical installations.
  7. Supports for mechanical and electrical installations in suspended ceilings.

**DIVISION 9: FINISHES (CONT'D)****9.3 Rates for in-situ finishing shall include for:-**

1. Application to and preparation of any surfaces.
2. Metal lath, plaster beads, plaster stops, corner beads and the like.
3. Wire mesh at junctions between differing materials, around openings for pipes, ducts, etc., and angle, plaster stops and stop beads.
4. Finishing surfaces to falls, cross falls and slopes including making good after all trades.
5. Working into channels, around edges, chamfered edges, sharp arrises, rounded angles, coved angles and the like.
6. Work to corners and edges as specified and as shown on drawings.
7. Grooves and moulds.
8. Metal lath, plaster beads, plaster stops, corner beads and the like.
9. Admixtures and additives.

**9.4 Rates for tile and slab finishing shall include for:-**

1. Application to and preparation of any surfaces.
2. Sand bed, fine gravel, screed bed and lightweight concrete bed to any thickness to floor tiling as shown on drawings.
3. Spatter dash, and cement and sand mortar backing to wall tiles where wet fixed.
4. Grouting, pointing and polishing.
5. Finishing surfaces to falls, cross falls and slopes, including making good.
6. Fair, rebated, rounded, chamfered, splayed, bevelled and moulded edges, grooves, flutes and the like.
7. Square, raking and circular cutting.
8. Cutting and fitting into any opening or recessed area, and fitting around any section.
9. Work to corners and edges as specified and as shown on drawings.
10. Straight, curved, raking and shaped works as per drawings.

**9.5 Rates for wood flooring shall include for:-**

1. Preparation of surfaces to be finished.
2. Any area or width in any location.
3. All kinds of cutting and patterns.
4. Fitting accessories, adhesives and underlay.
5. Acoustical underlay.
6. Preservative treatment and coating.

**9.6 Rates for painting and coating shall include for:-**

1. Preparation of paint and preparation of surfaces to be painted.
2. Any area or width, location and height.
3. Work in multi-colors.
4. Cutting in edges and rubbing down between coats.
5. Curved and sloped work.

**9.7 Finishes to walls have been measured as follows: -**

- a. Plaster full height from floor to structural ceiling
- b. Paint or tiling from floor to structural ceiling unless specified otherwise on drawings or BOQ

**DIVISION 12: FURNISHING**

- 10.1 Rates for sun screens shall include for:-
1. Anchors and lugs, including fixing and building in.
  2. All cuttings, jointing and sealing.
  3. Fixing in place and adjustment.
  4. Electrical wiring, controls and connections.
  5. Reservations in substrates.

**DIVISION 15 – MECHANICAL****General**

- 15.1 The Contractor shall furnish all the materials; execute all the works necessary to the final accomplishment of the project according to the specifications and drawings. All secondary materials and accessories not mentioned in the Breakdown of Lump Sum and required for the proper execution of the works shall also be provided by the Contractor without any extra cost.
- 15.2 The prices also include installation and fixing cost, painting, transportation, equipment, materials, hand labour as well as all the charges incurred by the perfect execution of works, general overhead and profits.
- 15.3 Drawings of mechanical installations are primary plans necessary for the establishment of tender documents. Contractor shall prepare the Shop Drawings.
- 15.4 Due to the high humidity, protection measures must be taken, especially accessories such as hangers, bolts, nuts, washers and all fixing accessories must be of non-corrosive material similar to stainless steel.
- 15.5 The approved Sub-Contractor for mechanical work must, prior to the commencement of works, prepare a price breakdown showing the cost of equipment, hand labour, accessories, general overhead as well as the profits.

**Plumbing**

- 15.6 Rates for plumbing works shall include for:-
1. Assembling and jointing including jointing materials.
  2. Factory priming paint.
  3. Fixing, including nails, bolts, nuts, holes, screws, plugs and the like.
  4. Cutting and pinning including all making good.
  5. Plugging and screwing.
  6. Testing all installations as specified including providing equipment and personnel necessary for testing.
  7. Protection of all works.
  8. Marking positions of holes, mortises, chases, etc.
  9. ~~Cutting and forming holes, chases, etc. including pipe sleeves and making good all~~

- work.
10. Cutting and pinning ends of supports to structures.
  11. Builders works and all grouting, base, and vibration mounting to be integrated in the overall unit price of each item, it should be a responsibility of the subcontractor who will coordinate and cooperate with the general contractor.
  12. Painting as specified.
  13. Necessary trench or pit excavation, backfilling and disposal of surplus excavated materials.
  14. Protection and maintaining the works in good order.
  15. Electrical installations including wiring, conduits.
  16. Preparation of plans or diagrams, shop drawings, as-built drawings, schedules, instruction manuals, etc.
  17. Insulation as it should exist on piping and equipment for heat dissipation protection and condensation protection.
  18. Tags, nameplates, belt guards and all accessories and appurtenances described in the specifications dealing with each item or equipment.
  19. Any necessary motors, starters and necessary wiring on the equipment having electrical goods together with such items as insulation, piping, instruments, controls and all other items mentioned or implied in specifications and drawings as being supplied with the equipment and not separately measured and enumerated in the Breakdown of Lump Sum.
  20. Rates for all items of equipment and materials shall be inclusive of all certificates samples tests, supply of all information and data, supply of catalogues, charts, curves, submittals, certified drawing, and all other information, services called for in the specification, all fully connected up and in good working order.
  21. All hangers and support shall be hot dip galvanized after fabrication.
  22. Necessary continuous support guide for plastic pipes for mechanical and expansion protection.
  23. Installation of Die-electric joint where needed.

## **DIVISION 16 – ELECTRICAL**

- 16.1 The materials used on this project shall be the standard product of a well known manufacturer of such kind of product supported by published catalogues giving full technical details of all components and finished product, standard applicable and evidence that the manufacturer has been involved for at least five years in the professional up-to- date production of such equipment.
- 16.2 Equipment generally is to be supplied in complete factory assembled units ready for installation on site.
- 16.3 The Contractor shall furnish all the materials and execute all the works necessary to the final accomplishment of the work according to the specifications and drawings. All secondary materials and accessories not mentioned in the Breakdown of Lump Sum shall also be supplied without any extra charge.
- 16.4 Drawings of electrical systems submitted in this Package are primary plans necessary for the establishment of tender documents only. Contractor is to prepare the Shop Drawings.

- 16.5 Protection measures must be taken, especially accessories such as hangers, bolts, nuts, washers and all fixing accessories must be of non corrosive material similar to stainless steel.
- 16.6 The approved Sub-Contractor for electrical works must, prior to the commencement of works, prepare a price breakdown showing the cost of equipment, hand labour, accessories, general overhead as well as the profits.
- 16.7 Rates for electrical works, shall include for:-
1. Assembling and jointing including jointing materials.
  2. Factory priming paint.
  3. Fixing, including nails, bolts, nuts, holes, screws, plugs and the like.
  4. Cutting and pinning including all making good.
  5. Plugging and screwing.
  6. Testing all installations including providing equipment and personnel necessary for testing.
  7. Protection of all works.
  8. Marking positions of holes, mortises, chases, etc.
  9. Cutting and forming holes, chases, etc. including pipe sleeves and making good all work.
  10. Cutting and pinning ends of supports to structures.
  11. Concrete bases, isolation pads, grouting, etc.
  12. Painting all metallic corrosion protection.
  13. Necessary trench or pit excavation, backfilling and disposal of surplus excavated materials.
  14. Protection and maintaining the works in good order.
  15. Electrical installations and connections including wiring, conduits.
  16. Preparation of plans or diagrams, shop drawings. As - built drawings, schedules, instruction manuals, etc.
  17. Insulation as required on equipment special isolator to be used for short and ARC protection.
  18. Adequate connectors and fixing of cables and wires.
  19. All PVC conduits and boxes to be not less than medium gauge.
  20. Tags, nameplates, belt guards and all accessories and appurtenances described dealing with each item or equipment. Labeling and identification with durable engraved metallic support.
  21. Any necessary motors, starters and necessary wiring on the equipment having electrical goods.
  22. Rates for all items of equipment and materials shall be inclusive of all certificates samples tests, supply of all information and data, supply of catalogues, charts, curves, submittals, certified drawing, and all other information, services called for in the specification, all fully connected up and in good working order.

