

Category-A

BOQ for Chimneys

Detailed description	UOM	Final Quantity
<p>Double scaffolding system (cup lock type) Providing and fixing double scaffolding system (cup lock type) on the exterior side, any height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube chollies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge .The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding as directed by the engineer in charge. Note:- The scaffolding system shall remain till the completion of all structural repair work in all respect & Same scaffolding to be used for external painting works .</p>	SQM	9900
<p>Chipping off existing loose, damaged Concrete from RCC members beyond main r/f., carefully with chisel and hammer Providing and applying 'Rusticide SS' Rust passivator or equivalent as specified in the Brand Names to existing r/f. bars Including wire brushing of reinforcement , cleaning washing of concrete etc complete as directed.Providing and applying two coats of rust preventor slurry made out of "Polyalk Fixoprime" or equivalent as specified in the Brand Names and cement in proportion 1:1.5 to existing r/f.bars as directed complete. Providing and applying bonding coat of slurry made out of "Polyalk EP" or equivalent as specified in the Brand Names and cement in proportion 1:1 to concrete and r/f substrates complete as directedProviding and applying "Polyalk EP" or equivalent as specified in the Brand Names.Polymer modified cement mortar in Required proportions(1:5:15) to RCC members. Including Hand packing, curing and making the surface rough for plastering. (Rates to include treatment cost for average thickness upto 25mm)</p>	SQM	6000
<p>Drilling holes of required size upto 16 mm Diameter and up to 50mm depth in concrete and cleaning the same as directed.</p>	No.s	20000
<p>Providing and fixing 12 mm diameter aluminum /PVC injection nipples and securing the same as directed & Providing and injecting cementitious grout using CEBEX-112 additive of 'Fosroc' at the rate of 225 grams per bag of cement and using suitable mechanical gun/pump including mixing etc complete.</p>	No.s	20000
<p>Providing, cutting, bending and fixing Additional Reinforcement in position steel reinforcement of specified/required sizes and shapes in the form of main rebars, stirrups & rings, distribution rebars etc., and tying them to shear connectors using GI binding wire. The additional rebars should be coated with TWO coats of Anti Corrosive protective coating & dry sand to be sprinkled on second coat including tying with Annealed Binding wires, providing cover blocks of appropriate sizes etc.</p>	MT	1.5
<p>For spalled concrete Thoroughly remove the spalled concrete and loose material,Abrade/ clean the rusted steel mechanically.Spray EPCO KP -100 of 'Krishna Conchem products specifications.</p>	SQM	4000
<p>Structural steel work Providing, detailing, composite fabricating members like N-girders, girders, bracings, supports,runners, and similar structural steel members fabricated using M.S. hollow tubular steel sections (circular & rectangular pipes), of TATA Structura Make or equivalent conforming to IS 1239 part 1 and 2 and of grade Fe 250 as per specifications and approved fabrication drawings (which are to be prepared by Contractor and got approved from Engineer), including transportation of the same to site, erection of structural steel members for all heights & at all levels, provision of necessary erection bolts, fixing bolts, nuts, washers, cleats, stiffeners, gussets, base plate, and all necessary operations like preheating as per specifications, straightening, bending, cutting, drilling, grinding, machining if specified, welding, grinding, removing the welding burr and preparing surface for painting with wire brush cleaning as directed by Engineer In Charge.</p>	MT	26
<p>External painting Providing and applying elastic, polymeric membrane forming system with anti carbonation and breathing properties of approved make of water based acrylic polymers with selected mineral fillers having properties of ultra violet resistant, carbonation resistant breathable, water proofing coating and applying one coat of primer and two top coats of approved shade and colour including cleaning and preparing the surface as required including labour etc. complete as directed.</p>	SQM	7000
<p>Providing protective coating on top 50 mtr of chimney, in signal red and white bands (2 bands) with contractor's supply of Epoxy-phenolic IPNet paints including priming coat, intermediate coat and polyurethane top coat with paints from approved firms after surface preparation i.e. cleaning the surface free of loose particles/deposits and with contractor's labour, materials, equipments, staging etc. complete and as directed by the Engineer incharge (The rate shall include testing of paints as directed by the Engineer incharge). the polyurethane based coating (FOSROC) make Nitocoat BCS 300 or equivalent.</p>	SQM	3000

BOQ for Main Turbine

Detailed description	UOM	Final Quantity
Structural steel works Providing, detailing, fabricating and fixing at desired location using hot rolled sections and MS Plates of grade Fe 250 as per specifications and approved fabrication drawings (which are to be prepared by Contractor and got approved from Engineer), transporting to site and erecting structural steel members for all heights & at all levels including provision of necessary erection bolts, fixing bolts, nuts, washers, cleats, stiffeners, gussets, base plate, and all necessary fixtures and operations like preheating as per specifications, straightening, bending, cutting, drilling, grinding, machining if specified, welding, grinding and removing the welding burr and preparing surface for painting with wire brush cleaning and applying two coats of epoxy redoxide zinc phosphate primer of 30 microns each and two coats of Epoxy Corrosion Resistant Enamel paint of 30 microns after fabrication including touching up with spray painting after erection etc complete as directed by Engineer In Charge. (The qty. for this item shall be measured for gusset plates, base plates, bolts in M.T.)	MT	5
Removing & Re-fixing of wind driven roof aluminium turbo ventilators fans with fixing base plate suitable to existing deck sheet roof profile	NOS	42
Waterproofing Removing and <u>demolishing the existing Terrace waterproofing upto slab level (of any thickness)</u> , , stacking the excavated debris on the ground floor, in the compound of the building carting away the same outside the building premises.	SQM	1300
Cleaning the top slab with blower, water jet & Providing and applying 2 coats of approved Rubberized/polymer waterproofing treatment POLY ALK WP	SQM	1300
Providing and laying brickbat pieces over the cement mortar bedding 1:3 adding waterproofing Compound and filling the joints with mortar adding approved waterproofing compound in proportion of 1kg to 1bag of cement.	SQM	1300
Providing and laying 30mm thk I.P.S. floor over the Brick bats laid in required slope using approved waterproofing compound.	SQM	1300
China mosaic toppings	SQM	1300
Removing Existing Mangalore tiles / AC / GI / Galvalume Sheets/polycarbonate plain and corrugated sheets from roof / cladding / partitions etc., excluding supporting structure but including scaffolding, handling, transporting, sorting and stacking at site lead up to 150m and or disposing etc complete as directed.	SQM	4600
Providing and fixing single skin trapezoidal profiled sheeting 930 - 1020mm cover width 28-32 mm crests depth at 186-250 c/c (above 195 mm c/c crest distance there will be minimum 2 ribs at the centre for stiffening). The feed material shall be manufactured from AZ 150 (min. 150 gms/sq.mt total on both sides) Zinalume / Galvalume sheets of minimum yield strength of 550 MPa, 0.45 mm BMT, (0.5 mm TCT excluding paint coating thickness), metallic hot dip coated with Al- Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS 1397 / IS15961 & painted with Super Durable Polyester Colorbond steel XRW or equivalent quality paint system of approved color, suitable for exterior application conforming to AS/NZS 2728:2007 type-4 / IS15965:class3 of approved make. The sheet shall have a total coating thickness of 35 microns, super durable polyester paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system shall have stable inorganic pigments for color durability. The product will be fastened using no.12-14x55 mm (or as per design requirement), mechanically coated with 25 micron Zn-Sn alloy or hot dipped zinc coated with min 40 micron hex self-drilling fasteners with EPDM washer of approved make confirms to AS3566:2002 class 3.		
Colour Coated Galvalume/zinalume sheets for cladding	SQM	4600
Providing and fixing box type precoated gutter of width 350 mm and depth 250 mm clear inside, made of 22 gauge G.I. sheets with socket type opening on top to receive ferrules from longitudinal truss gutters and ferrules at end, with all the fixtures and fastenings, gutters to be supported on M.S. flat hangers 750 MM C/C which are fixed on top as directed and laid to proper slope, as specified including making necessary connections with rain water pipes etc complete and as directed. (Rate includes cost of hangers, the fixing charges, 3 coats of synthetic enamel paint, and welding if required).	RM	260

Detailed description	UOM	Final Quantity
<p><u>Double scaffolding system (cup lock type)</u> Providing and fixing double scaffolding system (cup lock type) on the exterior side, any height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube chollies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge .The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding as directed by the engineer in charge. Note:- The scaffolding system shall remain till the completetion of all structural repair work in all respect & Same scaffolding to be used for external painting works .</p>	SQM	15000
<p><u>STRUCTURAL REPAIR WORKS (EXT & INTERNAL)</u></p>		
<p>Chipping off existing loose, damaged Concrete from RCC members of all affected RCC Columns, Beams, Slabs of External RCC Columns, Beams, chajjas etc. and inside of premises beyond main r/f. (if required in the opinion of the Consultant), carefully with chisel and hammer Providing and applying 'Rusticide SS' Rust passivator or equivalent as specified in the Brand Names to existing r/f. bars Including wire brushing of reinforcement , cleaning washing of concrete etc complete as directed.Providing and applying two coats of rust preventor slurry made out of "Polyalk Fixoprime" or equivalent as specified in the Brand Names and cement in proportion 1:1.5 to existing r/f.bars as directed complete. Providing and applying bonding coat of slurry made out of "Polyalk EP" or equivalent as specified in the Brand Names and cement in proportion 1:1 to concrete and r/f substrates complete as directedProviding and applying "Polyalk EP" or equivalent as specified in the Brand Names.Polymer modified cement mortar in Required proportions(1:5:15) to RCC members. Including Hand packing, curing and making the surface rough for plastering. (Rates to include treatment cost for average thickness upto 25mm)</p>	SQM	660
<p>DO--- DO---- SAME AS ABOVE BUT WITH USING READY MIX POLYMER MODIFIED CEMENT MORTAR OF ULTRATECH/FOSROC OR EQUIVALENT BRAND as suggested by the Consultants</p>		
<p>Drilling holes of required size upto 16 mm Diameter and up to 50mm depth in concrete and cleaning the same as directed.</p>	NOS	1560
<p>Providing and fixing 12 mm diameter aluminum /PVC injection nipples and securing the same as directed & Providing and injecting cementitious grout using CEBEX-112 additive of 'Fosroc' at the rate of 225 grams per bag of cement and using suitable mechanical gun/pump including mixing etc complete.</p>	NOS	1560
<p>Providing, cutting, bending and fixing Additional Reinforcement in position steel reinforcement of specified/required sizes and shapes in the form or main rebars, stirrups & rings, distribution rebars etc., and tying them to shear connectors using GI binding wire. The additional rebars should be coated with TWO coats of Anti Corrosive protective coating & dry sand to be sprinkled on second coat including tying with Annealed Binding wires, providing cover blocks of appropriate sizes etc complete as specified and instructed by the Consultants.</p>	KG	1675
<p>Providing & fixing epoxy dipped shear keys of 10mm dia and 4" to 6" length in columns before jacketing, Micro concreting as per Consultants Instructions and directions.</p>	NOS	60
<p>Providing and laying Super fluid Microconcrete -Roffe crete repairs (or equivalent as specified in the List of Brand names) in beam bottoms, columns, slabs etc. including mixing with 5mm to 10mm size aggregates, waterproof ply wood/ steel plate shuttering, pouring, temping, Consolidating, curing etc complete as per Manufacturer's specification and Consultants Instructions.The item shall be paid on actual consumption of Micro concrete.Rate of this item shall include chipping of concrete, surface preparation, rust removal and prevention treatment as per specs and in accordance with consultants suggestions and directions</p>	KG	2000
<p>HORIZONTAL EXPANSION JOINT FILLING:Carefully demolishing existing Coping/ Stone etc , Brick walls above Horizontal Expansion joints at terrace floor & recasting the RCC Pardis in M200 (1:1.5:3) etc all complete as per consultants design and drg including Providing and applying 2 component Polysulphide sealant of BASF or equivalent etc complete as instructed and directed.</p>	RM	25
<p><u>STRUCTURAL STEEL WORK</u></p>		

Providing, detailing, fabricating and fixing at desired location using hot rolled sections and MS Plates of grade Fe 250 as per specifications and approved fabrication drawings (which are to be prepared by Contractor and got approved from Engineer), transporting to site and erecting structural steel members for all heights & at all levels including provision of necessary erection bolts, fixing bolts, nuts, washers, cleats, stiffeners, gussets, base plate, and all necessary fixtures and operations like preheating as per specifications, straightening, bending, cutting, drilling, grinding, machining if specified, welding, grinding and removing the welding burr and preparing surface for painting with wire brush cleaning and applying two coats of epoxy redoxide zinc phosphate primer of 30 microns each and two coats of Epoxy Corrosion Resistant Enamel paint of 30 microns after fabrication including touching up with spray painting after erection etc complete as directed by Engineer In Charge. (The qty. for this item shall be measured for gusset plates, base plates, bolts in M.T.)	MT	5
<u>WATER PROOFING & SHEET ROOFING WORKS</u>		
Removing and demolishing the existing Terrace waterproofing upto slab level (of any thickness), , stacking the excavated debris on the ground floor, in the compound of the building carting away the same outside the building premises.	SQM	2600
Providing and laying in situ five course water proofing treatment with APP (Atactic Polypropylene) modified Polymeric memberane over roof consisting of first coat of bitumen primer @ 0.40Kg per sqm, 2nd & 4th courses of bonding material @ 1.20 kg/sqm, which shall consist of blown type bitumen of grade 85/25 conforming to IS : 702, 3rd layer of roofing membrane APP modified Polymeric membrane 2.0 mm thick of 3.00 Kg/sqm weight consisting of five layers prefabricated with centre core as 100 micron HMHDPE film sandwiched on both sides with polymeric mix and the polymeric mix is protected on both side with 20 micron HMHDPE film. 5th, the top most layer shall be finished with brick tiles of class designation 10 grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% integral water proofing compound by weight of cement over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat (item of laying brick bats shall be paid for separately).	SQM	2600
Providing and laying brickbat pieces over the cement mortar bedding 1:3 adding waterproofing Compound and filling the joints with mortar adding approved waterproofing compound in proportion of 1kg to 1bag of cement.	SQM	2600
Providing and laying 30mm thk I.P.S. floor over the Brick bats laid in required slope using approved waterproofing compound.	SQM	2600
Removing Existing Mangalore tiles / AC / GI / Galvalume Sheets/polycarbonate plain and corrugated sheets from roof / cladding / partitions etc., excluding supporting structure but including scaffolding, handling, transporting, sorting and stacking at site lead up to 150m and or disposing etc complete as directed.	SQM	6000
Providing and fixing single skin trapezoidal profiled sheeting 930 - 1020mm cover width 28-32 mm crests depth at 186-250 c/c (above 195 mm c/c crest distance there will be minimum 2 ribs at the centre for stiffening). The feed material shall be manufactured from AZ 150 (min. 150 gms/sq.mt total on both sides) Zinalume / Galvalume sheets of minimum yield strength of 550 MPa, 0.45 mm BMT, (0.5 mm TCT excluding paint coating thickness), metallic hot dip coated with Al- Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS 1397 / IS15961 & painted with Super Durable Polyester Colorbond steel XRW or equivalent quality paint system of apporved color, suitable for exterior application conforming to AS/NZS 2728:2007 type-4 / IS15965:class3 of approved make. The sheet shall have a total coating thickness of 35 microns, super durable polyester paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system shall have stable inorganic pigments for color durability. The product will be fastened using no.12-14x55 mm (or as per design requirement), mechanically coated with 25 micron Zn-Sn alloy or hot dipped zinc coated with min 40 micron hex self-drilling fasteners with EPDM washer of approved make confirms to AS3566:2002 class 3.		
Colour Coated Galvalume/zinalume sheets for cladding	SQM	6000
Providing and fixing box type precoated gutter of width 350 mm and depth 250 mm clear inside, made of 22 gauge G.I.sheets with socket type opening on top to receive ferrules from longitudinal truss gutters and ferrules at end, with all the fixtures and fastenings, gutters to be supported on M.S. flat hangers 750 MM C/C which are fixed on top as directed and laid to proper slope, as specified including making necessary connections with rain water pipes etc complete and as directed. (Rate includes cost of hangers, the fixing charges, 3 coats of synthetic enamel paint, and welding if required).	RM	130
<u>PAINTING</u>		
<u>INTERNAL PAINTING</u>		
Preparing surface for painting with wire brush cleaning and applying two coats of epoxy red oxide zinc phosphate primer of 30 microns each and two coats of Epoxy Corrosion Resistant Enamel paint of 30 microns after fabrication including touching up with spray painting after erection etc complete	LITER	4000

Category-B

BOQ for Intake Channel and Forebay

Detailed description	UOM	Quantity
<p>Double scaffolding system (cup lock type) Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube chollies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge .The elevational area of the scaffolding shall be measured for payment purpose .The payment will be made once irrespective of duration of scaffolding as directed by the engineer in charge. Note:- The scaffolding system shall remain till the completion of all structural repair work in all respect & Same scaffolding to be used for external painting works .</p>	SQM	3300
<p>RELIEVING STRUCTURAL MEMBERS Relieving Structural members such as column, beam and slabs of their superimposed loads partially or fully by provision of adjustable steel props, frames etc. including providing necessary timber runners, bracing, jacking up arrangement all Complete to the satisfaction of Engineer in charge (Removing and redoing of brickwork, if required, shall be paid separately)</p>	NOS	50
<p>Chipping off existing loose, damaged Concrete from RCC members of all affected RCC Columns, Beams, Slabs of External RCC Columns, Beams, chajjas etc. and inside of premises at all floors including staircase and common passages beyond main r/f., carefully with chisel and hammer Providing and applying 'Rusticide SS' Rust passivator or equivalent as specified in the Brand Names to existing r/f. bars Including wire brushing of reinforcement , cleaning washing of concrete etc complete as directed.Providing and applying two coats of rust preventor slurry made out of "Polyalk Fixoprime" or equivalent as specified in the Brand Names and cement in proportion 1:1.5 to existing r/f.bars as directed complete. Providing and applying bonding coat of slurry made out of "Polyalk EP" or equivalent as specified in the Brand Names and cement in proportion 1:1 to concrete and r/f substrates complete as directedProviding and applying "Polyalk EP" or equivalent as specified in the Brand Names.Polymer modified cement mortar in Required proportions(1:5:15) to RCC members. Including Hand packing, curing and making the surface rough for plastering. (Rates to include treatment cost for average thickness upto 25mm)</p>	SQM	1550
<p>Drilling holes of required size upto 16 mm Diameter and up to 50mm depth in concrete and cleaning the same as directed.</p>	NOS	1000
<p>Providing and fixing 12 mm diameter aluminum /PVC injection nipples and securing the same as directed & Providing and injecting cementitious grout using CEBEX-112 additive of 'Fosroc' at the rate of 225 grams per bag of cement and using suitable mechanical gun/pump including mixing etc complete.</p>	NOS	1000
<p>Providing, cutting, bending and fixing Additional Reinforcement in position steel reinforcement of specified/required sizes and shapes in the form or main rebars, stirrups & rings, distribution rebars etc., and tying them to shear connectors using GI binding wire. The additional rebars should be coated with TWO coats of Anti Corrosive protective coating & dry sand to be sprinkled on second coat including tying with Annealed Binding wires, providing cover blocks of appropriate sizes etc.</p>	KG	4500
<p>Providing & fixing epoxy dipped shear keys of 10mm dia and 4" to 6" length in columns before jacketing, Micro concreting.</p>	NOS	1000
<p>Providing and laying Super fluid Microconcrete -Roffe crete repairs (or equivalent as specified in the List of Brand names) in beam bottoms, columns, slabs etc. including mixing with 5mm to 10mm size aggregates, waterproof ply wood/ steel plate shuttering, pouring, temping, Consolidating, curing etc complete as per Manufacturer's specification. The item shall be paid on actual consumption of Micro concrete.Rate of this item shall include chipping of concrete, surface preparation, rust removal and prevention treatment as per specs.</p>	KG	65000
<p>Providing & applying effective polymer Bonding coat (hack Aid plast or equivalent) between old and new concrete after cleaning, drying & applying as per manufacturer's specifications.</p>	SQM	3300
<p>Providing and laying in position plain cement concrete of specified grade cement with trap/granite/quartzite/gneiss metal mixing in concrete mixer including bailing out water, compacting, finishing surface, curing and including the cost of centering and shuttering at all level :Nominal Mix of 1:1.5:3 (1 cement OPC: 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)</p>	CUM	20
<p>STRUCTURAL STEEL WORK</p>		
<p>Providing, detailing, fabricating and fixing at desired location using hot rolled sections and MS Plates of grade Fe 250 as per specifications and approved fabrication drawings (which are to be prepared by Contractor and got approved from Engineer), transporting to site and erecting structural steel members for all heights & at all levels including provision of necessary erection bolts, fixing bolts, nuts, washers, cleats, stiffeners, gussets, base plate, and all necessary fixtures and operations like preheating as per specifications, straightening, bending, cutting, drilling, grinding, machining if specified, welding, grinding and removing the welding burr and preparing surface for painting with wire brush cleaning and applying two coats of epoxy red oxide zinc phosphate primer of 30 microns each and two coats of Epoxy Corrosion Resistant Enamel paint of 30 microns after fabrication including touching up with spray painting after erection etc complete as directed by Engineer In Charge. (The qty. for this item shall be measured for gusset plates, base plates, bolts in M.T.)</p>	MT	1.5

Providing, detailing, composite fabricating members like N-girders, girders, bracings, supports,runners, and similar structural steel members fabricated using M.S. hollow tubular steel sections (circular & rectangular pipes), of TATA Structura Make or equivalent conforming to IS 1239 part 1 and 2 and of grade Fe 250 as per specifications and approved fabrication drawings (which are to be prepared by Contractor and got approved from Engineer), including transportion of the same to site, erection of structural steel members for all heights & at all levels, provision of necessary erection bolts, fixing bolts, nuts, washers, cleats, stiffeners, gussets, base plate, and all necessary operations like preheating as per specifications, straightening, bending, cutting, drilling, grinding, machining if specified, welding, grinding, removing the welding burr and preparing surface for painting with wire brush cleaning as directed by Engineer In Charge.	MT	7
Providing, detailing, and fabricating as per specifications, transporting to site and erecting MS Openable / Sliding / Ornamental Entrance Gates including track and wheel, locking arrangement, fixing bolts, nuts, washers, cleats, stiffeners, gussets decorative balusters, arrow heads etc. and all necessary operations like straightening, bending, cutting, drilling, grinding, machining if specified, welding etc. complete weighing 60 to 65 kg/Sqm, including cleaning, Grinding and removing the welding burr and preparing surface and applying one coat of red oxide zinc chromate primer and one coat of Synthetic Enamel paint after fabrication and second coat of Synthetic Enamel paint after erection, with approved colour, shade and brand etc. including touching up with primer etc. complete as directed by Engineer In Charge.	SQM	60
EXTERNAL PAINTING		
Providing and applying elastic, polymeric membrane forming system with anti carbonation and breathing properties of approved make of water based acrylic polimers with selected mineral fillers having properties of ultra violet resistant, carbonation resistant breathable, water proofing coating and applying one coat of primer and two top coats of approved shade and colour including cleaning and preparing the surface as required including labour etc. complete as directed	SQM	3300
Note : Same scaffolding erected for civil works to be used for Ext painting works.		

Detailed description	UOM	Final Quantity
<p>Double scaffolding system (cup lock type) Providing and fixing double scaffolding system (cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineer-in-charge .The elevational area of the scaffolding shall be measured for payment purpose. Note:- The scaffolding system shall remain till the completion of all structural repair work in all respect & Same scaffolding to be used for external painting works .</p>	SQM	2700
<p>RELIEVING STRUCTURAL MEMBERS Relieving Structural members such as column, beam and slabs of their superimposed loads partially or fully by provision of adjustable steel props, frames etc. including providing necessary timber runners, bracing, jacking up arrangement all Complete to the satisfaction of Engineer in charge (Removing and redoing of brickwork, if required, shall be paid separately)</p>	No.s	50
<p>Chipping off existing loose, damaged Concrete from RCC members of all affected RCC Columns, Beams, Slabs of External RCC Columns, Beams, chajjas, Staircase room areas etc. and inside of premises at all floors including staircase and common passages beyond main r/f. (if required in the opinion of the Consultant), carefully with chisel and hammer Providing and applying 'Rusticide SS' Rust passivator or equivalent as specified in the Brand Names to existing r/f. bars Including wire brushing of reinforcement , cleaning washing of concrete etc complete as directed.Providing and applying two coats of rust preventor slurry made out of "Polyalk Fixoprime" or equivalent as specified in the Brand Names and cement in proportion 1:1.5 to existing r/f.bars as directed complete. Providing and applying bonding coat of slurry made out of "Polyalk EP" or equivalent as specified in the Brand Names and cement in proportion 1:1 to concrete and r/f substrates complete as directedProviding and applying "Polyalk EP" or equivalent as specified in the Brand Names.Polymer modified cement mortar in Required proportions(1:5:15) to RCC members. Including Hand packing, curing and making the surface rough for plastering. (Rates to include treatment cost for average thickness upto 25mm)</p>	SQM	5725
<p>Drilling holes of required size upto 16 mm Diameter and up to 50mm depth in concrete and cleaning the same as directed.</p>	No.s	10837.5
<p>Providing and fixing 12 mm diameter aluminum /PVC injection nipples and securing the same as directed & Providing and injecting cementitious grout using CEBEX-112 additive of 'Fosroc' at the rate of 225 grams per bag of cement and using suitable mechanical gun/pump including mixing etc complete.</p>	No.s	10837.5
<p>Providing, cutting, bending and fixing Additional Reinforcement in position steel reinforcement of specified/required sizes and shapes in the form or main rebars, stirrups & rings, distribution rebars etc., and tying them to shear connectors using GI binding wire. The additional rebars should be coated with TWO coats of Anti Corrosive protective coating & dry sand to be sprinkled on second coat including tying with Annealed Binding wires, providing cover blocks of appropriate sizes etc complete as specified and instructed by the Consultants.</p>	MT	9.75
<p>Providing & fixing epoxy dipped shear keys of 10mm dia and 4" to 6" length in columns before jacketing, Micro concreting as per Consultants Instructions and directions.</p>	No.s	3405
<p>Providing and laying Super fluid Microconcrete -Roffe crete repairs (or equivalent as specified in the List of Brand names) in beam bottoms, columns, slabs etc. including mixing with 5mm to 10mm size aggregates, waterproof ply wood/ steel plate shuttering, pouring, temping, Consolidating, curing etc complete as per Manufacturer's specification and Consultants Instructions.The item shall be paid on actual consumption of Micro concrete .Rate of this item shall include chipping of concrete, surface preparation, rust removal and prevention treatment as per specs and in accordance with consultants suggestions and directions</p>	KG	191500

Glass Fiber Wrapping System: Providing & laying applying Glass Fiber sheet wrap at structural members including. Surface Preparation: Grinding / moulding concrete substrate, cleaning it with wire brush, removing oil, laitance if present, rounding sharp edges to min 25 mm radius etc., complete. Profiling: Applying PRIMER on prepared substrate, filling holes and uneven surface with PUTTY etc., complete. Wrapping: Wrapping the Glass fibre wrap to structural element at desired orientation using tamping roller to avoid any air voids etc., Repeat the same procedure for multiple layer with interval of 8 hours. Sand Pasting: Applying saturant, rectify air voids if any, paste the river sand on it to make surface rough to take any further finishes. (Mode of Measurement: Per Sq.Mt of Fiber consume and not application of surface area.)	SQM	1137.5
For spalled concrete Thoroughly remove the spalled concrete and loose material, Abrade/ clean the rusted steel mechanically. Spray EPCO KP -100 of 'Krishna Conchem products specifications and Consultants Instructions.	SQM	3292.5
VERTICAL EXPANSION JOINT Carefully opening of the existing joint, thoroughly cleaning, Providing and applying 2 component Polysulphide sealant at expansion joints with backing rods up to 50mm thickness inclusive of all necessary cleaning of the joints, surface preparations etc all complete as per consultants instructions, directions and manufacturer's specifications.	RMT	100
Structural steel work Providing, detailing, composite fabricating members like Trusses, N-girders, girders, bracings, supports, purlins, runners, and similar structural steel members fabricated using M.S. hollow tubular steel sections (circular & rectangular pipes), of TATA Structura Make or equivalent conforming to IS 1239 part 1 and 2 and of grade Fe 250 as per specifications and approved fabrication drawings (which are to be prepared by Contractor and got approved from Engineer), including transportation of the same to site, erection of structural steel members for all heights & at all levels, provision of necessary erection bolts, fixing bolts, nuts, washers, cleats, stiffeners, gussets, base plate, and all necessary operations like preheating as per specifications, straightening, bending, cutting, drilling, grinding, machining if specified, welding, grinding, removing the welding burr and preparing surface for painting with wire brush cleaning as directed by Engineer In Charge.	MT	4.15
Providing and applying elastic, polymeric membrane forming system with anti carbonation and breathing properties of approved make of water based acrylic polymers with selected mineral fillers having properties of ultra violet resistant, carbonation resistant breathable, water proofing coating and applying one coat of primer and two top coats of approved shade and colour including cleaning and preparing the surface as required including labour etc. complete as directed	SQM	2700
Preparing surface for painting with wire brush cleaning and applying two coats of epoxy red oxide zinc phosphate primer of 30 microns each and two coats of Epoxy Corrosion Resistant Enamel paint of 30 microns after fabrication including touching up with spray painting after erection etc complete	Ltrs	55