

Corrigendum 1 dated 14-10-2022 to Tender Specification BHEL PSSR SCT 2047

Tender Specification BHEL PSSR SCT 2047 Civil, Architectural & Structural works for Flue Gas Desulphurization system (FGD) for all units at 5x800 MW Yadadri Thermal Power project

The following clauses are changed / modified as below: -

- A. VOLUME –II PRICE BID R1 PART C:** Bill of Quantities Revision 1 is as per attachment (Page no 5 to 72)

All other conditions of the tender specification remain unchanged.

Bidders are requested to consider this corrigendum as part of tender specification and quote accordingly.

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Sd-
Moses Prashanth Kumar
Manager / Subcontracts

**TENDER SPECIFICATION
BHEL PSSR SCT 2047**

FOR

**Civil, Architectural & Structural works for Flue
Gas Desulphurization system (FGD) for all units
(i.e. Unit#1,2,3,4&5) at 5x800 MW Yadadri
Thermal Power project, Veerlapalem village,
Dameracherla Mandal, Nalgonda District.,
Telangana state**

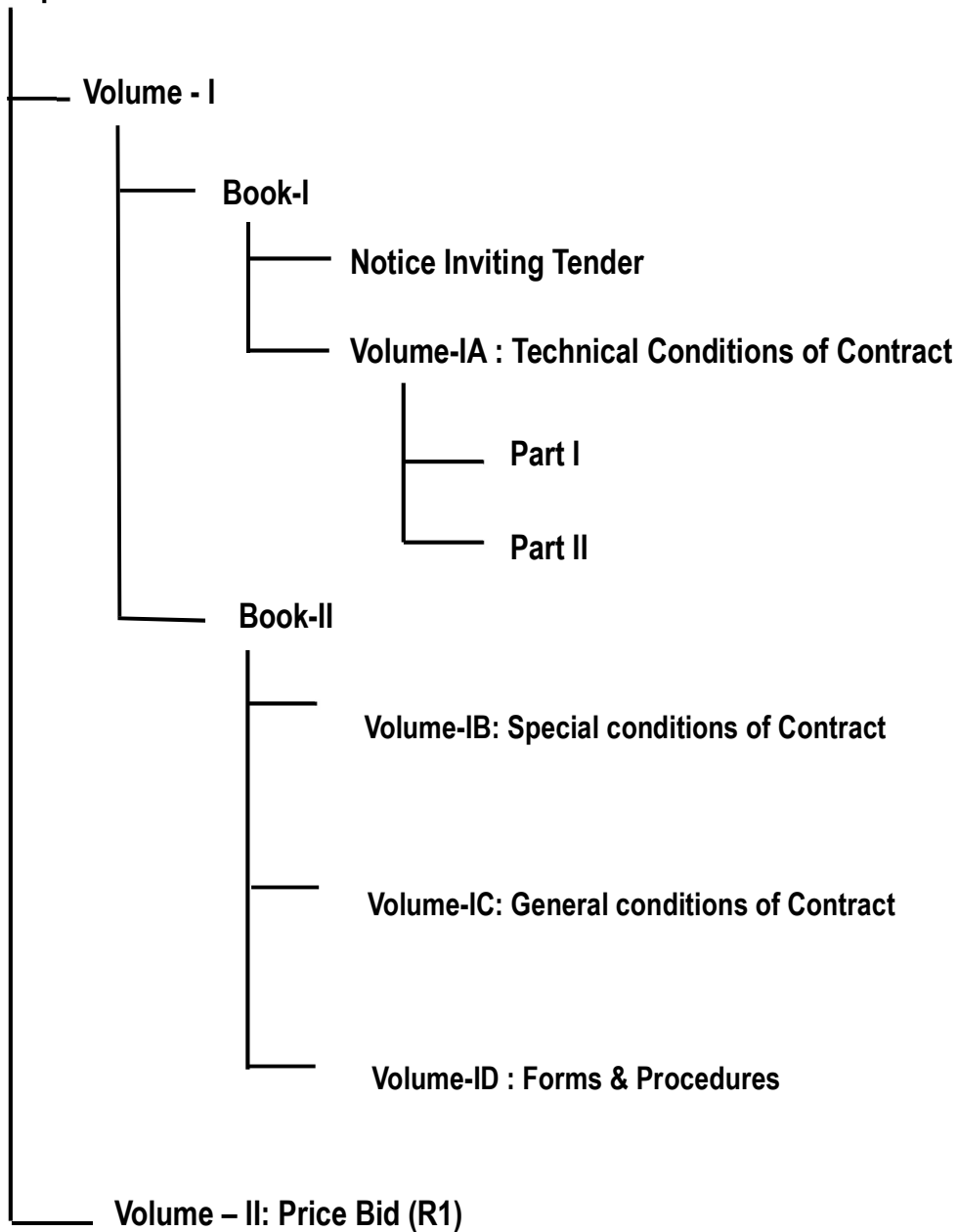
**PRICE BID (R1)
VOLUME –II**



BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector – Southern Region
690, Anna Salai, Nandanam, Chennai – 600 035

TENDER SPECIFICATION CONSISTS OF

Tender Specification



PRICE BID

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PART A

Instruction to Bidders:

1. The quantity indicated in the BOQ / Price bid (Part C) is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer.
2. Tenderers are requested to affix their company seal and authorized signature in all pages.
3. Bidders shall quote 'Total Amount' in the format enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender and upload the same under 'Packet details - > Tender covers -> Finance '(Cover Type Description – Price Bid)' and same shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope of work defined in specification and in accordance with terms & conditions of the tender. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/ formats will not be entertained.
4. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part -C of the Price Bid.
5. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part-C.
6. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
7. Based on the quantities of individual item and the amount arrived in SI No: 6 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
8. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.7 above.

Part C : Bill of Quantities**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
Yadadri TPS****at 5 X 800 MW Yadadri TPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
100.0	EARTH WORK: Earth work in excavation, backfilling and disposal including all labour, equipments etc complete as per specification, drawing and as directed by engineer- in-charge for the following.	--		
101.0	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1Km, spreading/levelling of disposed materials etc all complete for following depths below ground level.	--		
a	Depth from ground level but not exceeding 2 m	CUM	12,345	.0026355
b	Depth exceeding 2 m but not exceeding 4 m	CUM	6,644	.0017754
c	Depth exceeding 4 m but not exceeding 6 m	CUM	114	.0000381
102.0	Extra over ST No. 101 for dewatering of ground water by well point method as per IS 9759.	CUM	13,571	.0068983
103.0	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.	--		
a	Depth from ground level but not exceeding 2 m	CUM	28,543	.00713
b	Depth exceeding 2 m but not exceeding 4 m	CUM	10,481.5	.0031358

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
Yadadri TPS**

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
c	Depth exceeding 4 m but not exceeding 6 m	CUM	50	.000018
104.0	Earth work in excavation below ground level in hard rock requiring blasting (but excluding controlled blasting) including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1 Km, spreading / levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	--		
a	Depth from ground level but not exceeding 2 m	CUM	23,426.5	.0106491
b	Depth exceeding 2 m but not exceeding 4 m	CUM	8,801.5	.0048062
c	Depth exceeding 4 m but not exceeding 6 m	CUM	50	.0000327
105.0	Earth work in excavation in hard rock requiring controlled blasting including wedging, line drilling, pre shearing etc as required, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, necessary licenses/statutory clearances for blasting, supply, storage & handling of blasting materials, stacking/disposal of surplus excavated material within a lead upto 1Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.	--		
a	Depth from ground level but not exceeding 2 m	CUM	125	.0000563
b	Depth exceeding 2 m but not exceeding 4 m	CUM	125	.0000674
c	Depth exceeding 4 m but not exceeding 6 m	CUM	95	.0000615
d	Depth exceeding 6 m but not exceeding 8 m	CUM	50	.0000388

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
106.0	Earth work in excavation in hard rock requiring chiselling including wedging, line drilling, pre shearing etc as required for grading, setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, stacking/disposal of surplus excavated material within a lead upto 1Km, spreading / levelling of disposed materials etc all complete for following depths below ground level.	--		
a	Depth from ground level but not exceeding 2 m	CUM	1,030	.0026941
b	Depth exceeding 2 m but not exceeding 4 m	CUM	1,030	.0032341
c	Depth exceeding 4 m but not exceeding 6 m	CUM	1,015	.0038238
A107	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc. to proper grade and level in layers not exceeding 250mm loose thickness using/ with selected materials from stacked earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, breaking of oversized rocks, sorting & segregation of rock pieces of size less than 150mm through mechanical means, watering, ramming/compaction by manual/mechanical means, dressing etc. all complete for the following.	--		
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	47,205	.0096665
108.0	Earthwork in Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250mm thickness using/with selected earth directly from excavation within a lead upto 1Km and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following:	--		
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	3,810	.0001439
109.0	Extra over ST No. 101 and 103 to 108 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	--		

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	39,902.5	.0006954
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	39,902.5	.0006954
110.0	Earth work in backfilling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness so as to achieve required compaction with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty/ seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/ compaction by manual/ mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following:	--		
a	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	9,023	.0071549
A111	Supplying and filling sand upto any depth under floors, around foundations, plinths, surrounding pipe and in pipe beds etc.in layers not exceeding 300 mm thickness and compacted so as to achieve at least 75% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/ compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	100	.0003714
B111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 200 mm thickness and compacted so as to achieve at least 85% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.Sand for filling shall be clean and well graded conforming to IS 383 with grading not inferior than Zone III.	CUM	1,404	.0057624

Part C : Bill of Quantities

Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW Yadadri TPS

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
200.0	CONCRETE WORK: Providing and placing concrete work including cost of labour, materials (unless otherwise specified in BOQ/ contract specification) and equipment for handling, transportation, batching, mixing, placing, vibrating and curing (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following: (Cement shall be supplied by BHEL free of cost)	--		
201.0	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as mass filling course, lean concrete, levelling course, mud mat under and around foundations/ floors, at any depth below finished floor level etc.	CUM	180	.0010428
A203	Concrete of grade M15 (1 part cement, 2 part sand, 4 parts of 20 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	4,415	.0255773
204.0	Concrete of grade M20 (1 part cement, 1.5 part sand, 3 parts of 20 mm graded aggregate by volume) under floors, paving, plinth protection, pipe encasing etc complete.	CUM	195	.0011297
205.0	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/ substructure, grade slab, paving, drains, under floors etc at all level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--		
a	M 25 Grade	CUM	15,362	.0976529
b	M 30 Grade	CUM	80	.0005114
c	M 35 Grade	CUM	25	.0001607
Ad	M 20 Grade	CUM	100	.0006323

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Yadadri TPS**

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A205	Providing and laying Design Mix cement concrete (M20) conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in grade slab and paving using Vacuum Dewatered Flooring (VDF) method etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing.	CUM	5,623	.0383084
206.0	Providing and laying Design Mix cement concrete of grade conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at all level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--		
a	M 25 Grade	CUM	4,572	.028771
b	M 30 Grade	CUM	50	.0003165
207.0	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system but including TG foundation columns with addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing.	--		
a	M 30 Grade	CUM	20	.0001347

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A207	Providing and laying Design Mix cement concrete confirming to IS:456 & IS 10262-2009 for reinforced concrete works of grade mentioned below in machine foundations for TG, Gas Turbine, ID/FD/PA fans, BFP, Coal mills, Booster fans, Ball mills, etc. with minimum cement content of 400 kg/m ³ at all elevations below/above finished floor level except TG deck and top decks supported over vibration isolation system but including TG foundation columns with addition of suitable plasticizer conforming to IS 9103(latest) to achieve a slump more than 125mm in concrete as per manufacturer's recommendation with 20 mm nominal size graded aggregate in concrete all complete as per specification & drawing	--		
a	M 30 Grade	CUM	1,277	.0085794
A209	Extra over ST. No. 205 to 208 for controlling of temperature of fresh concrete to less than 25 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	CUM	20	.0000271
210.0	Extra over ST Nos. 205 to 207 for conducting UPV test for concrete at all levels including all equipments, making necessary arrangements, staging, submission of report etc. all complete as directed by engineer in charge and as per specification.	CUM	20	.0000119
211.0	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)	--		
a	M20	CUM	167	.0009675
212.0	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.	--		
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)	CUM	349	.0020219

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**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
Yadadri TPS**

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
213.0	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajjas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent pre-cast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.	--		
b	M 30	CUM	25	.0002538
214.0	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades. Watertightness is to be ensured including structural grouting if required.	--		
b	M 30	CUM	363	.0030092
215.0	Dismantling concrete work for all types of structures at all levels including stacking of serviceable material to a lead of 500 m and disposal of unserviceable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specification and instructions of engineer in charge.	--		
a	Plain cement concrete of all grades	CUM	10	.0000187
b	Reinforced cement concrete of all grades	CUM	10	.0000264

Part C : Bill of Quantities**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
Yadadri TPS****at 5 X 800 MW Yadadri TPS**

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A215	Rebate over ST No. 215b for taking into account the deemed cost of all serviceable material including reinforcement steel which bidder will be getting out of it by taking them outside plant for bidder's purpose instead of stacking to a lead of 500m inside plant.	--		
b	Reinforced cement concrete of all grades	CUM	10	-.0000014
216.0	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	204	.0000193
217.0	Extra over and above ST No 216 for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	52	.0000004
218.0	Cutting Reinforced concrete with mechanised tools like Core drilling machine etc. for cutting pockets, holes, cores in slab, beam, column or foundation as per direction of engineer in charge.	CUDM	102	.0000332
219.0	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	100	.0000192
220.0	Providing & laying Plum cement concrete 1:3:6 with 75% graded metal of maximum size 40 mm and 25% plums of maximum size 150 mm.	CUM	100	.000575

Part C : Bill of Quantities**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
221.0	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in sloped surface of canal lining or channel cast in alternate panels with provision of expansion gap/construction joints at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete, compaction with special equipments, etc all complete as per specification & drawing for the following.	--		
222.0	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	500	.0000385
223.0	Cutting of existing concrete/ RCC slab (total thickness upto 250mm including floor finish & deck sheet if any) inside control room/ pump house or anywhere inside boundary using power tools of (DD2E of HILTI/ BOSCH make or equivalent) with low noise and dust including cutting reinforcements, removing the rubbish within a lead of 1 km, including making good the broken edges/ surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/ supporting at all level, all complete and as directed by Engineer (measurements shall be taken as per cutting surface area).	SQM	30	.0001111
300.0	FORMWORK: Providing, fixing and removing formwork at all elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering etc. complete as per drawing, specifications and as per direction of engineer in charge for the following:	--		
301.0	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.including chamfering of edges as per drawing, specification and instruction of engineer in charge..	SQM	24,157	.0218571

Part C : Bill of Quantities

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
302.0	Fairface form work with good quality water proof ply wood of minimum 12mm thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, etc. including chamfering of edges as per drawing.for all heights as per specification, drawing and instruction of engineer in charge.	SQM	29,071	.0313696
304.0	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.	--		
a	Upto 150 mm depth	EACH	40	.0000145
b	Pockets of depths more than 150mm and upto 300 mm depth	EACH	40	.0000245
c	Pockets of depths more than 300mm and upto 600 mm depth	EACH	284	.0003139
d	Pockets of depths more than 600mm and upto 1000 mm depth	EACH	236	.000411
305.0	Extra over item no. 301 and 302 for curved form work for foundations, footings, beams, walls, trenches, domes, arches etc as per specification.	--		
a	Extra for Curve Shuttering for Item No. 301	SQM	427	.0000775
b	Extra for Curve Shuttering for Item No. 302	SQM	85	.0000183
400.0	REINFORCEMENT WORK: Reinforcement work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge. (Reinforcemnt	--		
401.0	Providing, straightening, cutting, bending, placing in position at all level, binding of mild steel reinforcements conforming to grade 1 of IS:432 part 1 in concrete including cost of reinforcement steel, binding wire, labour, scaffolding, transportation to & from stores etc. all complete as per specifications & drawings.	MT	7	.0007746

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
S402	Supply including delivery at site, steel reinforcements of TMT steel of grade Fe-500, Fe-500D or 500EQR as applicable conforming to IS:1786 complete all as per specifications, drawings and as directed by Engineer, from the CUsomer approved agencies. Note - This item shall be operated if required, at the discretion of BHEL.	MT	100	.0092222
403.0	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.(BHEL to supply steel free of cost)	MT	2,880	.0661321
A406	Providing and fixing parallel threaded reinforcement couplers for mechanical splices of rebars (TMT/ CRS TMT) for concrete reinforcement including supply of couplers as per IS: 16172 made out of EN8D grade high strength alloy material , threading on rebars to be coupled with coupler, enlargement at connection by forging, Â protecting the prepared reinforcement bars, fitting & fixing of couplers under specialized supervision, quality tests & checks (for couplers and coupled joints) etc. all complete as per direction of Engineer in charge. The couplers shall match to the properties of rebars of grade equal to Fe 550 D of IS 1786. The cost shall include for all works and tests including mobilisation, demobilisation, loading/unloading of required plant/ machinery at site for threading & forging works, tools & tackles, labour & supervision, consumables and all incidental expenses for satisfactory execution of the work . (No deduction for labour and binding wire saved for not providing lap length shall be made).	--		
a	Coupler of class âHâ for 16 mm diameter reinforcement bar.	EACH	50	.0000065
b	Coupler of class âHâ for 20 mm diameter reinforcement bar.	EACH	50	.0000065
c	Coupler of class âHâ for 25 mm diameter reinforcement bar.	EACH	50	.0000091

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
d	Coupler of class ϕ for 28 mm diameter reinforcement bar.	EACH	50	.000011
e	Coupler of class ϕ for 32 mm diameter reinforcement bar.	EACH	50	.0000127
A407	Welding of lap joints of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 (Latest) including cost of welding electrodes, labour, tools and plants etc. complete as permitted and directed by Engineer. Measurement shall be done for the number of joints welded comprising of weld deposition of 2.5d length each on both side of lap joint (i.e total 5d length of weld deposition). Here, ϕ is the diameter of reinforcement bar.	--		
a	For d=16 mm	Each	100	.0000028
b	For d=20 mm	Each	100	.0000033
c	For d=25 mm	Each	100	.0000042
d	For d=28 mm	Each	50	.0000023
e	For d=32 mm	Each	50	.0000029
500.0	Roof Treatment works: Roof treatment works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, curing, sampling, testing etc at all level as per specification, drawings and as directed by engineer - in - charge.	--		
501.0	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 25 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	1,200	.0002754
502.0	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	7,327	.0012237

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
504.0	Providing and laying rigid insulation (expanded polystyrene blocks) as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:4 (1 cement: 4 coarse sand) and providing of expansion joint at intervals and filling with sealant in both directions as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.026 Kcal m/m deg C. The block shall be strong enough to withstand without deformation the workload and standard loads expected on the roof. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete for following.	--		
b	50 mm thickness of rigid insulation (expanded polystyrene blocks)	SQM	7,427	.0031712
A506	Providing and applying PU based water proofing treatment with elastomeric, seamless waterproof membrane applied in 2 coats to a DFT of 1.2 mm thick having a elongation capacity of over 600% and average tensile strength of 1 MPa, tear resistance as per GBT 19250-2003 >20N/m. The material shall comply with ASTM C 836 National Std. of Canada 37.58 M86 by CGSB. Item includes surface preparation, polymerised mortar base preparation etc. all complete as per specifications and directions of engineer in charge.	SQM	725	.0008918
B506	Providing and applying a separation layer of non-woven polypropylene geo-textile membrane of 120 gsm for water proofing as per technical specification.	SQM	4,305	.0002939
C506	Providing and applying 4 mm thick APP modified Bituminous Polyester membrane for waterproofing manufactured from a rich mixture of bitumen and selected polymers blended together to obtain excellent heat resistant flexibility, UV resistance etc. Modified bitumen then coated onto a dimensionally stable carrier to obtain excellent tensile strength, tear and puncture resistance etc complete as per technical specification.	SQM	4,305	.0042327
509.0	Providing and laying wearing course consisting of 25mm thick plain cement concrete of grade M20 (1:1.5:3) with graded aggregate of 12.5mm size cast in panels of maximum size 1.5mx1.5m and reinforced with 0.56 mm dia. galvanised chicken wire mesh and sealing of joints (in grooves of 6mm X 6mm) using silicon /elastomeric compound etc all complete.	SQM	4,963	.0033156

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A510	Providing and laying chequered precast concrete tiles of 22 mm thickness and size 600x600mm conforming to IS 13801 with 15 mm thick 1:4 cement mortar over the top most layer of roofing treatment with fine joints including sealing of joints (silicon/elastomeric sealant) etc all complete. (Water proofing paid elsewhere)	SQM	1,311.25	.000796
B510	Providing and laying chequered precast concrete tiles of 22 mm thickness and size 300x300mm conforming to IS 13801 with 15 mm thick 1:4 cement mortar over the top most layer of roofing treatment with fine joints including sealing of joints (silicon/elastomeric sealant) etc all complete. (Water proofing paid elsewhere)	SQM	1,151.25	.0006989
C510	Providing and laying pressed precast concrete tiles of 20 mm thickness and size 300x300/600x600 mm conforming to IS 13801 with 15 mm thick 1:4 cement mortar over the top most layer of roofing treatment with fine joints including sealing of joints (silicon/elastomeric sealant) etc all complete. (Water proofing paid elsewhere)	SQM	1,151.25	.0006354
511.0	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	19,500	.0039365
513.0	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	285	.0000406
517.0	Providing and laying foam concrete blocks in the toilets/sunken slab etc. complete as directed by engineer in charge.	CUM	20	.0000694
600.0	JOINTS AND FILLERS: Joints & fillers including all labour, material, equipment, transportation, handling etc at all level as per specification, drawings and as directed by engineer - in - charge.	--		
601.0	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumen etc. all complete.	--		
a	12 mm wide joints.	SQM	130	.0000952

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
b	20 mm wide joints.	SQM	130	.0001461
c	25 mm wide joints	SQM	493	.0006745
d	50 mm wide joints	SQM	100	.0002594
602.0	Supplying and installation of Dura board HD100 or its equivalent as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.	--		
a	12 mm wide joints.	SQM	70	.0000622
b	20 mm wide joints.	SQM	70	.000097
c	25 mm wide joints	SQM	55	.0000933
d	50 mm wide joints	SQM	70	.0002274
603.0	Providing and applying polysulphide based sealant conforming to IS:12118 in joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:	--		
a	25mmX25mm	RM	70	.0000651
b	50mmX25mm	RM	70	.0001235
604.0	Supplying and filling in position hot applied bitumen sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.	--		
a	10mm X 40mm	RM	130	.0000089
b	12mm X 25mm	RM	745	.0000465
c	20mmX25mm	RM	130	.0000098

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
605.0	Supplying and installation of commercial quality of expanded polystyrene products from reliable manufacturers as approved by the Engineer, as filler material in joints including nailing, installation as per manufacturer's recommendation etc. all complete.	--		
a	12 mm wide joints.	SQM	64	.0000036
b	20 mm wide joints.	SQM	64	.0000059
c	25 mm wide joints	SQM	64	.0000072
d	50 mm wide joints	SQM	64	.0000142
Ae	100 mm wide joints with polystyrene board of type-1 conforming to IS: 4671 with density 20 Kg/cum	SQM	14	.0000102
606.0	Providing and installing PVC joint sealing strips of minimum 3mm thickness and minimum width 100 mm at the construction, expansion and isolation joints from reputed manufacturers as a continuous diaphragm to contain the filler material and/ or to exclude passage of water or any other material into or out of the structure, without any longitudinal joint; and shall be procured and installed in largest practicable lengths having a minimum number of transverse joints with jointing procedure as per the manufacturer's recommendations including the material and tools required for jointing, testing, protection, etc all complete. The joints in rubber seals shall be vulcanized as needed.	RM	32	.000005
608.0	Supplying and filling in position hot applied bitumin sealing compound (Grade B) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.	--		
a	10mm X 40mm	RM	40	.0000038
b	12mm X 25mm	RM	40	.0000033
c	20mmX25mm	RM	40	.0000044

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
609.0	Providing and sealing of joints with premium grade silicon sealant (Silpruf of GE silicons or approved equivalent) including cleaning of joints, raking out groove, joint filler tapes, application of primer, curing, scaffolding etc. all complete as per manufacturer's recommendation for following size groove:	--		
a	25mmX25mm	RM	20	.0000168
b	50mmX25mm	RM	20	.0000318
610.0	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)	--		
b	230 mm wide and 8 mm thick	RM	10	.0000073
c	150 mm wide and 6 mm thick	RM	10	.0000037
d	230 mm wide and 6 mm thick	RM	198	.000109
612.0	Providing and applying approved fire retardant sealant in joints/openings including cleaning of joints/openings, raking out groove, application of primer, scaffolding etc. all complete.	--		
a	25mmX25mm	RM	100	.0000578
b	50mmX25mm	RM	100	.0001063
613.0	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	70	.0000125
614.0	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	70	.0000362
615.0	Providing and fixing 300 mm wide Stainless steel strips over expansion joints with minimum lap of 50mm length including stainless steel screws, rawl plugs etc. all complete.	Kg	50	.0000271

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
700.0	MS EMBEDMENTS: Embedments including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--		
701.0	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	16.5	.0021153
702.0	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffener plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	10	.001395
703.0	Same as above items 701 & 702 with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.	--		
a	Mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc.	MT	7	.0002647
b	Mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffener plates, protective tape, pipe sleeves, templates etc.	MT	1	.0000343
704.0	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.	--		
a	MS pipes of all diameters	Kg	110	.0000118
b	PVC pipes / conduits of all diameters	Kg	60	.0000327
c	UPVC pipes / conduits of all diameters	Kg	60	.0000342

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
Ad	Providing and fixing carbon steel galvanized (minimum coating 5 micron) anchor fastener (Hilti HRD) (yield strength 480 N/mm ²) or equivalent of safe tensile capacity as specified below for brick work with two part expansion polyamide A6 grade sleeve.	--		
i	8 mm dia x 140	EACH	50	.0000088
ii	10 mm dia x 140	EACH	50	.0000086
iii	14 mm dia x 140	EACH	50	.0000168
Ae	Mechanical expansion fasteners, cold formed stud type having 3 way expansion sleeve of SS 316 grade approved for use in cracked concrete and seismic design with ETA C1/C2 approval or equivalent of safe tensile capacity as specified below for concrete work.	--		
i	HST3 M8 x 115	EACH	50	.000047
ii	HST3 M10 x 110	EACH	40	.0000371
iii	HST3 M12 x 115	EACH	50	.0000727
iv	HST3 M16 x 135	EACH	48	.0001096
v	HST3 M20 x 170	EACH	50	.0002642
vi	HST3 M24 x 200	EACH	50	.0003285
f	Chemical Expansion fasteners (galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with anchoring rod, nuts, washers, chemicals all complete, etc:	--		
i	HAS-U5.8 M8 x 100	EACH	20	.0000091
ii	HAS-U5.8 M10 x 130	EACH	20	.0000112

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
iii	HAS-U5.8 M12 x 160	EACH	20	.0000151
iv	HAS-U5.8 M16 x 165	EACH	20	.0000243
v	HAS-U5.8 M20 x 240	EACH	10	.0000242
vi	HAS-U5.8 M24 x 300	EACH	5	.0000175
Af	Adhesive type Chemical anchor fastener consisting of slow curing epoxy chemical adhesive and threaded rod of carbon steel (minimum grade of 5.8) including nut and washer usable in diamond core drilled holes and in wet/ water submerged holes dispensed through mechanical dispenser HIT RE 500 V3 or equivalent of safe tensile capacity as specified below for concrete work.	--		
i	HIT-V M8 x 110	EACH	20	.0000093
ii	HIT-V M10 x 115	EACH	10	.0000055
iii	HIT-V M12 x 120	EACH	10	.0000072
iv	HIT-V M16 x 150	EACH	10	.0000124
v	HIT-V M20 x 180	EACH	10	.0000191
vi	HIT-V M24 x 300	EACH	10	.0000406
Ag	Designing, supplying and fixing rebars in already cast concrete, including drilling, cleaning hole with air blow-out & wire-brush and injecting ETA certified epoxy based chemical HIT RE 500 V3 or equivalent for rebar fixing in dry, water saturated condition/submerged holes conditions for 8mm-32mm dia. with the help of dispenser into a hole diameter and depth as per manufacture specification. Chemical should be made of two components consisting of resin and hardener in the ratio 5:1 in a foil pack of 330/500ml. Reinforcement bar shall be paid separately under item no. S402, 403 as applicable.	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
i	8mm Dia	EACH	10	.0000073
ii	10mm Dia	EACH	10	.0000091
iii	12mm Dia	EACH	10	.0000102
iv	16mm Dia	EACH	10	.0000116
v	20mm Dia	EACH	10	.0000123
vi	25mm Dia	EACH	10	.0000134
706.0	Supply and installation of approved 25mm thick vibration damping resilient pads on/around foundation of vibrating equipment and at other locations all complete.	SQM	12	.00003
707.0	Providing, laying and fixing rails(52kg/rm) and guide rails in concrete for transformer, rail track including cutting of rails, joining of rails, anchoring lugs etc all complete.	MT	4	.000698
800.0	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level , drawings and as directed by engineer - in - charge.	--		
801.0	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at maximum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.	SQM	50	.0000542
802.0	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all complete. Cement shall be supplied by BHEL free of cost.	CUM	18	.0005712

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
803.0	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cement shall be supplied by BHEL free of cost. Cost of all other materials and cleaning the pocket by compressed air shall be in the scope of the contractor.)	CUM	6	.0001868
804.0	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Conbextra GP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	4	.0002957
805.0	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 or equivalent as per specification, drawing and direction of engineer-in-charge.(Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	8	.0009779
806.0	Providing Chemical (epoxy) injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved chemical, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	52	.0002054
900.0	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
901.0	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	1	.0002104
A901	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned hardwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	1	.0001578
A902	Providing and fixing teakwood frame panel door with PVC lamination on both sides shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preparation of working drawings, godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately)	SQM	12.5	.0000691
A903	Providing, fitting and fixing solid core wooden flush door shutter with PVC lamination on both sides as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, particle board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately)	SQM	23	.0000777

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A904	Providing and fixing single or double leaf steel door shutters. Door leaf should be 46 mm thick fully flush double skin door with or without vision lite. Door leaf shall be manufactured from 0.8mm (22 gauge) minimum thick galvanised steel sheet rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, aldrop, tower bolt, shop and final painting etc all complete.	SQM	162	.0014933
A905	Providing and fixing sliding door shutters (single or double) with 18 gauge M.S. sheets shutter presenting a flush surface on the outside and inside stiffened with semitubular edge and central stiffening rail which shall convey the lock including fixtures, handle on both sides, guide channels & sliding arrangement, shop and final painting etc all complete.	SQM	20	.0001911
906.0	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	Kg	20	.0000146

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A907	Providing and fixing fire proof steel doors (single or double shutter) with panic devices and vision panel shall be 46mm thk flush design comprising of two outer sheets of 1.2 mm (18 gauge) minimum thick galvanised steel sheet rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop & finish painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density), vision lite etc. complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	26	.0003311
908.0	Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)	--		
a	Openable type	SQM	190	.0011176
b	fixed type	SQM	190	.0008631
A908	Providing and fixing M.S. grills in windows/ventilator as per approved design for security purpose made of M.S. Flats / M.S. square bar of approved design shall be provided to suit security requirements.	Kg	50	.0000115
B908	Providing and fixing anodised aluminium Grills in windows/ ventilator of approved design.	Kg	50	.0000593
C908	Extra over Item 908 for providing pre-coated (polyster painted) steel windows/ventilators	SQM	50	.0000097

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door/window frames, door/window shutters, ventilators, partitions, railing etc. with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-mettalic protection etc.including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc. as applicable), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measured.	Kg	3,695	.0025544
A910	Providing and fixing of aluminium composite panel(ACP) of following thickness with PVDF or polyester coating for interior partition, encasing of columns & bracings, exterior facade works of approved shade', color and inclusive of sub-base frame work (if necessary), sealant etc all complete as per specification.	--		
a	3mm thick with minimum 0.2mm topping of precoated aluminium foil on both side.	SQM	200	.0008496
b	4mm total thick panel having thickness of aluminium skin 0.5mm	SQM	200	.0010111
911.0	Providing and fixing of door closers as per specification,of approved make & quality all complete of following type:	--		
a	Over head hydraulic door closures as per IS 3564	EACH	20	.000046
b	Floor mounted Hydraulic door closers as per IS 6315	EACH	20	.0000784

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**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
Yadadri TPS**

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A912	Providing and fixing pressed steel door frames. Door frame shall be Single rebate profile of size 100 x 57 mm made out of 1.20 mm thick galvanised steel sheet (18 gauge) reinforced, drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars, paintings etc all complete as per specifications.	Kg	193	.0000415
B912	Providing and fixing pressed steel door frames for fire proof doors. Door frame shall be double rebate profile of size 143 x 57 mm made out of 1.60 mm (16 gauge) minimum thick galvanized steel sheet reinforced, drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars, paintings etc all complete as per specifications.	Kg	24	.000005
913.0	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath).	--		
a	Hand Operated	SQM	12	.0000429
b	Mechanically Operated	SQM	12	.000055
c	Electrically operated including motors & other accessories	SQM	156	.0020119
A913	Extra over and above Item No. 913 for providing galvanised grill instead of galvanised steel lath. (Grill area to be measured for payment under this item)	SQM	10	.0000085
A914	Providing and fixing Solid core PVC doors (25 thk double skin) with PVC frame of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	20	.00008

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
B914	Providing and fixing solid core PVC frame with PVC door shutter minimum 30mm thick and shall be factory fabricated made from min. 5 mm PVC sheet.PVC Door Frames shall be made from min. 50 x 47 mm section and fabricated from 5 mm PVC sheet having density of 600 kg./cum.The weight per running metre of the door frame including reinforcement should be a minium of 1.5 kg./sqm. Frames shall have smooth surface, without any warping or bending in any member. All the parts of the door frame are to be jointed to each other using solvent adhesive conforming to IS 14182.The sheets used for frame and shutters may be in plain colour, printed design or prelam veneer shade as approved sample, including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	6	.0000474
915.0	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.	--		
b	4 mm thick clear float glass	SQM	140	.0003001
d	6 mm thick wired glass	SQM	379	.0009434
f	4 mm thick ground glass	SQM	30	.0000769
g	6 mm thick tinted heat reflecting type float glass	SQM	20	.0000572
h	6 mm thick clear toughened safety glass	SQM	30	.000099
A915m	6 mm thick clear float glass	SQM	217	.0005118
A915n	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	30	.0001641
916.0	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	20	.0000062

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
917.0	Providing and fixing 12 mm thick BWP particle board, decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	20	.0000515
918.0	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting etc. all complete.	SQM	4	.0000166
919.0	Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	4	.0000256
920.0	Roof skylight structure for atrium with 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealant, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	SQM	100	.0004862
A920	Providing & fixing of 4mm thick Compact Polycarbonate sheet, transparent or smoke tinted, of Lexan Polycarbonate or similar approved including proper sealing with sealant, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	SQM	60	.0002768
A921	Supplying, installing and commissioning of self sliding mechanism for aluminum door (double shutter) & air curtain including photo operated sensors, fittings, motors, mechanical systems, electrical systems, warranty all inclusive in working condition as per specifications and drawings (aluminum door shutter and its glazing to be paid under separate items)	EACH	2	.0002945
A923	Providing and fixing 12 mm thick bison Cementitious board Partition wall with GI Framework and 12 mm thick bison board cladding on either side of GI section (50x38mm) in horizontal & vertical framework 600 mm c/c spacing as required for suitable rigidity & fixed from floor to ceiling of above false ceiling partition walls as reqd.	SQM	60	.0002083

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1000.0	BRICKWORK: Brickwork masonry including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.(Cement shall be supplied by BHEL free of cost)	--		
1001.0	Providing brick work in cement mortar 1:6 (1 part cement : 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.	--		
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	169	.0016167
1002.0	Providing brick work in cement mortar 1:6 (1 cement : 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.	--		
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	CUM	1,588	.0183833
1003.0	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.	--		
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm2(including cost of cement for brick making)	SQM	88	.0001249
A1003	Providing brick work in cement mortar 1:3 (1 cement 3 coarse sand) in partition walls, chambers etc. in thickness 75mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every alternate layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification.	--		

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
Aa	Using machine moulded fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² and minimum percentage of fly ash 50% (including cost of cement for brick making)	SQM	10	.0000156
1005.0	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	4	.00001
1006.0	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar of 1:6. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh to paid separately)	--		
a	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ² (including cost of cement for brick making)	CUM	25	.0002492
1007.0	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	2	.0000005
1008.0	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	4	.0000119
1009.0	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	202	.0000264
1010.0	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at all level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	12	.000017
1011.0	Providing and filling brick bats in soak pits all complete.	CUM	17	.0000282

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1100.0	DAMP PROOF COURSE: Damp proof course including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, shuttering, centering, curing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)	--		
1101.0	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC all complete as per specification.	--		
a	40mm thick	SQM	449	.0001911
1200.0	PLASTERING: Cement mortar plaster including making grooves wherever required including all labour, material (unless otherwise specified in BOQ/contract specification), scaffolding, curing etc at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)	--		
A1201	Providing 20mm thick plaster in two layers outside the building/rough surface of internal wall in cement mortar 1:4 on walls, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.The two layer include 1:4 cement sand mortar 12mm thick first layer and 1:3 cement sand mortar with 8mm.	SQM	6,515	.0047309
B1201	Providing 18mm thick sand faced plaster in two layers (12 mm under coat and then 6mm finishing coat) outside the building/boundary wall/rough side of interior brick wall in cement sand mortar 1:4 including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete as per specification.	SQM	350	.0001479
1202.0	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification all complete.	SQM	300	.0000876
A1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification all complete.	SQM	5,503	.0016064

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	11,189	.0030875
1205.0	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	600	.0001542
1207.0	Forming groove of uniform size from 12X12 mm upto 25X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battens, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	210	.0000113
1208.0	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over chicken wire mesh including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of engineer in charge (chicken wire mesh to be paid separately)	SQM	110	.0000967
A1210	Providing drip course on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	110	.0000212
1300.0	FINISHES TO CONCRETE/ PLASTERED SURFACES: Finishes, painting to concrete, plastered surfaces including all labour, material (unless otherwise specified in BOQ/ contract specification), equipment, surface preparation, scaffolding etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--		
A1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer and 3 mm thick white cement putty punning on walls and ceiling (Birla White/ JK White or Similar approved) including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer	SQM	11,139	.0031708

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1305.0	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturer's guideline.(Cost of primer is included in this item and wall putty is payable under separate item).	SQM	5,603	.0010334
A1305	Providing and applying two or more coats of waterproof external quality acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.(Cost of primer is included in this item and wall putty is payable under separate item).	SQM	6,515	.0015517
1306.0	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	900	.0004313
A1307	Providing and applying ready made Acid/Alkali resistant Epoxy Paint over areas other than steel structure with suitable pigments of approved shade as per manufacturer's specification and direction of Engineer.	SQM	200	.0001269
1308.0	Providing and applying 2 or more coats of Chlorinated Rubber paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying chlorinated rubber zinc phosphate primer confirming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, inclusive of intermediate coat of Titanium dioxide / micaceous iron oxide complete as per specifications.	SQM	300	.0000815
A1311	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces including base preparation, primer etc. complete as per manufacturer's specifications.	SQM	750	.0000784

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1312.0	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	550	.0000599
A1313	Providing and applying resin bonded granular textured finish (Vineratex), for external applications of approved natural color/shade applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	200	.0001197
A1314	Providing and applying textured finish (sandtex matt), for external applications of approved natural color/shade applied on cured and dried plaster surface. Cost shall include surface preparation and primer application. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	200	.0001595
A1317	Providing and applying 3 mm thick white cement putty punning on walls and ceiling (Birla White/ JK White or Similar approved) including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	16,642	.0024411
A1319	Providing and applying two or more coats of waterproof External Quality Acrylic Emulsion weather coat paint of approved brand and manufacturer and required shade over one coat of primer after necessary cleaning/ washing, preparing the surface using coir brush/ wire brush, sand paper, including filling of cracks with putty wherever required etc. all complete to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant and extremely durable with color fastness as per specification	SQM	600	.0001508

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1400.0	FLOORING AND SKIRTING: Flooring and skirting at all level including base layer, labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling, curing, polishing etc. at all level as per specification, drawings and as directed by engineer - in - charge. (Cement shall be supplied by BHEL free of cost)	--		
A1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, glass strips etc. all complete. (Quoted item rate shall be inclusive of providing glass joint strips)	SQM	13,678	.0111044
B1401	Providing and laying 40 mm thick heavy duty patent stone cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 28mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, glass strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips): as per spec.	SQM	250	.0001932
1402.0	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado. Under layer of 15mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5 mm well graded) and top layer of 10mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete as per specification. (Quoted item rate shall be inclusive of providing glass joint strips).	SQM	100	.0000712

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1403.0	Providing and laying precast polished heavy duty cement concrete tiles (Carborundum topping pigment content is 3.5 kg per 50 kg of Cement) of size 300X300X25 thick of approved shade as per IS 1237, including minimum 20mm cement mortar bedding of 1:3 (1 cement : 3 sand) jointed with neat cement slurry@4.4 kg/sqm,labour,materials, etc. all complete with pigment to match the shade of the tiles including rubbing, curing, grinding and polishing complete with laying as per IS 1443 etc.(inclusive of cost of cement for tiles manufacturing) all complete for following:	--		
b	Laid in skirting	SQM	50	.0001095
A1404	Providing and laying 50 mm thick coloured interlocking M30 concrete tile in paving with approved colour and pattern and should be laid on the subbase and bedding as per specifications and recommendations of manufacturer.	SQM	350	.0003187
1405.0	Providing and laying 50 mm thick floor finish with 25mm thk Terrazo Tiles including minimum 25mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with neat cement slurry@4.4 kg/sqm,labour,materials, etc. all complete.(inclusive of cost of cement for tiles manufacturing)	SQM	3,304	.0046161
1406.0	Providing and laying polished Kota stone 18mm to 20mm thk in flooring. Under bed shall average 30mm thk of 1 cement : 2 sand : 4 stone aggregates by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	50	.000128
1409.0	Providing polished Kota stone 14mm to 16mm thk in skirting projecting 6mm from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @4.4kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete.	SQM	50	.0001088

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1412.0	Providing and laying 18-20mm thick polished Granite stone of approved color and texture in flooring. Under bed shall average 30 mm thick of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The granite stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. all complete.	SQM	100	.0006259
1415.0	Providing and laying polished Granite stone 14-16mm thk in skirting and dado with 6mm thick projection from adjacent plaster including mortar ,cement slurry ,pigments, curing, grinding,moulding, granite polishing etc. all complete.	SQM	100	.0005716
1416.0	Providing and laying vitrified ceramic tiles of polished variety of size 600x600 from reputed / approved manufacturer, complete including underbed of cement mortar 1:3 minimum 20mm thick underbed for flooring and 12mm thick underbed for dado/skirting with neat cement slurry @3.3Kg/sqm etc. all complete for following	--		
c	7mm thick tiles In skirting and dado upto specific height	SQM	100	.0002059
d	10mm thick tiles In skirting and dado upto specific height	SQM	50	.0001053
A1417	Providing and laying vitrified ceramic tiles of matt finish of minimum size 400x400mm from reputed / approved manufacturer including underbed of cement mortar 1:3 with neat cement slurry etc. all complete for following.	--		
a	7mm thick tiles in flooring	SQM	50	.0001056
b	10mm thick tiles in flooring	SQM	150	.0003311

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1418	Providing and laying non-skid, full body vitrified, 10 mm thick non-porous, homogenous, abrasion resistant, floor tiles of 1st quality dual charged similar to MARBONITE, FERRASTONE of BOSS Profile Ltd, RESTILE, ENDURA of H & R Jonson (India) Pvt. Ltd of size minimum 600 mm x 600 mm of approved colour in flooring and shall be laid over minimum 30mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification.	--		
b	600X600 mm	SQM	560	.0012712
B1418	Providing and laying non-skid, full body vitrified, 10 mm thick non-porous, homogenous, abrasion resistant, floor tiles of 1st quality dual charged similar to MARBONITE, FERRASTONE of BOSS Profile Ltd, RESTILE, ENDURA of H & R Jonson (India) Pvt. Ltd of approved colour in skirting and shall be laid over cement mortar of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification.	SQM	150	.0003425
C1418	Providing and laying vitrified tiles of 1st quality, full body vitrified, 10 mm thick nonporous, homogenous, abrasion resistant cover base of matching colour, internal and external corner strip similar to MARBONITE, FERRASTONE of BOSS Profile Ltd, RESTILE, ENDURA of H & R Jonson (India) Pvt. Ltd of approved size & colour in flooring and shall be laid over minimum 30mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification.	--		
b	600X600 mm	SQM	150	.0003405
D1418	Providing and laying vitrified tiles of 1st quality, full body vitrified, 10 mm thick nonporous, homogenous, abrasion resistant cover base of matching colour, internal and external corner strip similar to MARBONITE, FERRASTONE of BOSS Profile Ltd, RESTILE, ENDURA of H & R Jonson (India) Pvt. Ltd of approved size & colour in skirting and shall be laid over cement mortar of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification.	SQM	150	.0003425

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**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
Yadadri TPS**

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1419.0	Providing and laying granite stone slab of 20mm thickness single piece for wash basin / sink slab /facia of black or approved colour including 20mm underbed of cement mortar 1:3 with cutting,making corners,moulding and opening etc. all complete.	SQM	20	.000158
1422.0	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado and shall be laid over bitumastic lining of min 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441, 4443 & 4832 and including preparation of surface, application of bitumen primer, curing etc. all complete for following thicknesses. The tiles should be abrasion resistant & durable.	--		
a	20mm thick	SQM	290	.0011789
1423.0	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado beded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.	--		
a	20mm thick	SQM	200	.0004624
b	38mm thick	SQM	100	.0002542
A1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) tiles (75mm thick) conforming to IS:4457 in the floor of neutralization pit . Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR tiles. The joints between AR tiles shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR tiles shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	20	.0000965

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
B1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (115 mm thick) conforming to IS:4860 in the walls of neutralization pit including pillars. Surface on which lining to be applied shall be prepared in accordance with IS:2395. Bitumen primer as per IS:158 followed by 12mm thick bituminastic followed by 6mm thick potassium silicate mortar bedding shall be provided before laying AR bricks. The joints between AR bricks shall be filled with resin type of mortar conforming to IS:4832, part II, seal coat of readymade epoxy paint shall be provided on joints to cover up any porosity that may be left in mortar. End sealing shall be done with bituminastic AR bricks shall be laid with 6mm wide & 50mm deep pointing (epoxy / furnace / CNSL) & acid curing shall be done all complete as per specification.	SQM	20	.000148
A1425	Providing and laying polished Marble slabs (Aranga white and Abu green marble or Baroda green & Jaisalmer yellow combination or equivalent approved shade/color /design) 18 mm thk in staircase landing/skirting and corridors over minimum 20 mm thick underbed of 1 cement : 2 sand : 4 stone aggregates by volume mixed with sufficient water to form a stiff workable mass. The marble slabs shall be laid over under-bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including moulded marble nosing, pigments, curing, grinding, making corners, granite polishing etc. complete as per spec.	SQM	50	.0002009
1426.0	Providing and laying marble skirting /dado (Aranga white or approved shade/color /design) equivalent of minimum 20mm thickness projecting 6mm from adjacent plaster all complete including underbed 20mm cement mortar 1:3, with thick cement slurry 3.3kg/sqm spread over the surface scaffolding etc. all complete.	SQM	50	.0001407
1427.0	Providing and fixing glazed ceramic tiles of approved color and design of size 200x300mm / 300x300mm in dado of approved size, projecting 6mm uniformly from adjacent plaster or wall finish. The mix for 20mm thick underbed plaster shall consist of 1part cement and 3 parts sand by weight. fairly moist but firm, tiles shall be pressed over under bed by applying cement slurry @ 3.3kg/sqm including pigments, curing etc all complete for following thicknesses:	--		

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
b	7mm thick	SQM	100	.0001502
A1428	Providing and laying flexible electric insulated PVC synthetic sheet as per IS 15652-2006 of Suntex Insulatic Pvt. Ltd. Or similar all complete as per specification.	SQM	100	.0000915
A1430	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.	--		
b	PVC strips 40 mm wide and minimum 2 mm thick	RM	100	.0000087
c	Aluminium strips 40 mm wide and minimum 2 mm thick	RM	100	.0000142
A1432	Providing and laying self levelling epoxy flooring consisting of first coat of solvent free resin based dispersion primer @ 200gm/sqm , first layer of epoxy floorin @4.4kg/sqm of 2mm thckness,second layer of primer@100gm/sqm,final decorative epoxy topping @3.6 Kg/Sqm of approx 2mm thickness complete as per specification. including all material, labour, etc all complete.	SQM	25	.0000582
1500.0	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--		

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1502.0	Designing, providing, erection and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyster paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.	--		
a	Span Upto 1800mm	SQM	6,944	.0176989
1503.0	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	10	.0003193

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1504	Designing, providing, Erection and fixing profiled External/Internal Cladding sheet manufactured out of 0.8 mm TCT(Total Coated Thickness) of permanently colour (approved shade) coated Zinalume steel (150gsm. zinc-aluminium alloy coating total of both sides as per AS 1397) having minimum 550MPa yield strength. The colour coating shall comprise of silicon modified polyester finish of thickness 20 microns finish coat over a 5 micron (DFT) primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on reverse side.The sheet shall have a min depth 34.5mm at 333mm pitch with special male/female side laps and anti-siphoning features to prevent leakage. The permanently colour coated sheet shall meet the general requirements of IS:513, IS:277 & IS:14246. The sheet shall be fixed with the help of concealed compatible interlocking clips and wafer head zinc coated self drilling fasteners/screws 4.2 X 25mm long on to the sub-girts. The clips shall be concealed and no fasteners are to penetrate the external sheeting, all complete as per specification.	SQM	8,840	.0225315
1505.0	Designing, providing, Erection and fixing profiled External Cladding sheet manufactured out of 0.55 mm TCT(Total Coated Thickness) of permanently colour coated zinalume steel (150gsm. zinc-aluminium alloy coating total of both sides as per AS 1397:1993) having 300MPa yield strength. The colour coating shall comprise of 20 microns finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on reverse side.The sheet shall have 500 mm cover width, 47mm height crests at 250mm centres with special male/female side laps and anti-siphoning features to prevent leakage. The sheet shall be fixed with the help of concealed compatible interlocking clips and wafer head zinc coated self drilling fasteners/screws 4.2 X 25mm long on to the sub-girts. The clips shall be concealed and no fasteners are to penetrate the external sheeting, all complete as per specification.	--		
a	final painting with Silicon Modified Polyester(SMP)	SQM	1,450	.0037274

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Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW Yadadri TPS

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1509.0	Designing, providing, erection and fixing profiled Internal Cladding sheet manufactured out of 0.6 mm TCT(Total Coated Thickness) of permanently colour coated zincalume steel (150/180 gsm. zinc-aluminium alloy coating mass total of both sides as per AS 1397:1993). The colour coating shall comprise of 20 microns finish coat over a 5 micron primer coat on the exposed side and a back coat of 5 micron over a primer coat of 5 micron on reverse side. The sheet shall have 980 mm cover width, 28mm height crests at 195mm centres with special male/female side laps and anti-siphoning features to prevent leakage. The sheet shall be fixed to the structure by means of self drilling fasteners no. 12-24 X 25mm conforms to AS :3566 Class-3 long at valley.Sub- girts of size 50mm X 50mm X 50mm manufactured out of 16G GI (1.6mm GI) 'Z' shape would be fixed the inner sheeting on face side at runner locations all complete as per specification.	--		
a)	For final painting with Silicon Modified Polyester(SMP)	--		
ii)	For zincalume sheet 180gsm. And having 240MPa yield strength.	SQM	1,450	.0040748
1511.0	Providing and fixing insulation of resin bonded mineral wool of 50 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including application of glue and tying with lacing wire, for glass/rock wool as per manufacturer's recommendations.	--		
a	For insulation in Sandwich Cladding	SQM	1,450	.0014236
b	For underdeck insulation below RCC slabs	SQM	200	.0001981
B1511	Providing and fixing insulation of resin bonded mineral wool of 25 mm nominal thickness conforming to IS 8183 having a density of 32 kg/cum glass wool or 48 kg/cum for rock wool, for cladding/under deck insulation including application of glue and tying with lacing wire, for glass/rock wool as per manufacturer's recommendations.	--		
a	For underdeck insulation below RCC slabs	SQM	100	.0000594

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1511	Providing and installing under deck insulation using Closed Cell Elastomeric Nitrile Rubber (minimum 25mm thick) of density 40 to 60 kg/cum fixed at various elevations with rawl plugs including clips etc as per specification.	SQM	100	.0002048
A1518	Providing and installing fire resistant under deck insulation using Lloyd Foam or equivalent 50 mm thick polyurethane Foam of density 36 kg/cubic meter including minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 24 Gx 25 mm mesh GI wire netting, fixed at various elevations with glue/rawl plugs including clips.	SQM	10	.0000082
1600.0	FALSE CEILING: False ceiling including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, suspension system etc at all level as per specification, drawings and as directed by engineer - in - charge.	--		
A1601	Providing and fixing Moisture and fire resistant glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preperation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc (but excluding the cost of catwalkway grid) all complete as per drawings, specification and instructions of the engineer.	--		
a	12.5 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).	SQM	960	.0010694

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 25mm thick mineral wool insulation(density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Materials for structural platform grid made up of MS Channels/ Beams/ Angles shall be supplied by BHEL free of cost and Fabrication & Erection shall be paid under S No A2301)	SQM	220	.0006202
1604.0	Providing, fixing and laying permanently colour coated aluminium false ceiling of approved colour with stove enamel finish of approved make in LINEAR and SQUARE type with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures etc. Suitable M.S. channel (minimum MC 75) grid 1200 mm C/C maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Materials for structural platform for movement shall be supplied by BHEL free of cost and Fabrication & Erection shall be paid under S No A2301)	SQM	150	.0003976

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1604	Providing, fixing and laying acoustic permanently colour coated plain/perforated aluminium false ceiling of approved colour with stove enamel finish of approved make of either lineal panel system or aluminium tile/plank system with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 25mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid 1200 c/c maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL free of cost and fabrication & Erection shall be paid under S No A2301)	SQM	50	.0003681
1700.0	RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.	--		
1707.0	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.	--		
b	150 mm Dia	RM	600	.0016504
A1709	Providing and fixing HDPE down take pipes of pressure rating PN 4 conforming to IS:4984 as per specification of following diameters.	--		
a	110 mm Dia	RM	50	.0000325
b	160 mm Dia	RM	736	.000729
1800.0	MISCELLANEOUS: Miscellaneous works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.	--		

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1801.0	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	6,234.52	.0184893
1802.0	Supply and laying approved quality Stone aggregate 40mm size in transformer yards.	CUM	170	.0007096
1803.0	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	30	.0001169
1807.0	Anti termite chemical treatment of soil with Chlorpyriphos/Lindane E.C. 20% with 1% concentration conforming to IS:8944 and as per IS 6313 all complete. (Plinth area of building at ground floor only shall be measured for payment).	SQM	10,400	.0022052
A1808	Laying of Earthing Mat (Main Grounding Conductor), transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. Earthing mats/rods shall be supplied by BHEL free of cost)	MT	24	.0003852
A1809	Construction of Treated Earthing pit as per drawing with charcoal & salt, GI pipes, earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete. (Material for GI pipes, earth electrodes, GI wire, GI strips shall be supplied by BHEL free of cost).	EACH	40	.0013318
1810.0	Construction of below ground earthing system test links as per drawing/ sketches including concreting, reinforcement, formwork, providing & fixing GI strip etc as per drawing & specification (excavation & backfilling only will be paid under applicable BOQ items.	NO.	54	.0006526
1811.0	Construction of below ground earthing system earth electrodes as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items)	EACH	54	.0001944

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
1812.0	Construction of below ground earthing system - Earth connection and riser pig tails as per drawing and specification. (Excavation and backfilling only will be paid under applicable BOQ items& steel shall be supplied by BHEL free of cost.)	EACH	520	.0016516
A1813	Construction of Electronic Test Pit with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete.(Material for GI pipes, GI earth electrodes, GI wire, GI strips shall be supplied by BHEL free of cost)	EACH	9	.0002997
A1814	Construction of Untreated Test Pit for Interconnection as per drawing/ sketches including brickwork, plaster, concreting, reinforcement, formwork, providing & fixing GI strips/pipes, GI wires, covers etc as per drawing & specification including associated earthwork.	EACH	4	.0001024
1815.0	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	220	.000024
1818.0	Fire proofing of steel structures with VERMICULITE cementious coating including supply of all materials for vermiculite materials, reinforcement mesh (3mm thick wire, 50x50 size mesh) , nuts, tie wires, weldings, suface preparation, curing, staging, compatible paintings etc. all complete.	CUM	20	.0026569
1821.0	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust supression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	2,402	.0016221
1824.0	Disposal of scrap steel, scrap wood, broken packing crates, cable scrap, debris and other civil waste, electrical waste materials etc. from project site to a designated place within 5 KM range, with all manpower T & P etc. including loading and unloading as and when directed by BHEL.	--		
a	Steel scrap / metal scrap	MTÂ	1	.0000011

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
b	Debris & Other waste materials.	CUM	2	.0000004
1827.0	Anti weed chemical treatment of soil with suitable chemical pertaining to the types of weeds found in the vicinity including providing anti-weed/ soil sterilization test certificate, performance guarantee of three years etc. all complete.	SQM	1,000	.0000073
1831.0	Providing random rubble (RR) stone masonry in foundation, super structure, boundary wall, retaining wall and embankment with cement mortar 1:6 at all elevations including all labour, material, equipment, handling, scaffolding etc. all complete.	CUM	124	.0007974
1832.0	Providing and fixing sliding layer of bitumen paper or craft paper over the screed layer for water retaining structures to destroy the bond between the screed and the base slab concrete of the water retaining structure etc all complete.	SQM	300	.0000078
A1837	Supply & fixing 18G chicken wire mesh on brick/ stone masonry and RCC joints and fixed with GI type nails etc. complete	SQM	100	.000011
A1838	Supply, fabrication and fixing of 20 mm square MS bar balustrades with suitable MS flats & anodized aluminium handrails including transporation, loading/unloading, painting etc. all complete. Measurement shall be running metre of handrail in staircase.	RM	10	.0000456
A1839	Providing Chemical injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved cement, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	20	.000079
A1840	Dismantling old existing reinforced/non-reinforced brickwork/ blockwork/ stone masonry work in mud/lime/ cement mortar at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto1km all complete.	CUM	10	.0000196
A1841	Rebate over ST No. A1840 for taking into account the deemed cost of all serviceable material which bidder will be getting out of it by taking them outside plant for bidder's purpose instead of stacking at plant site.	CUM	10	-.0000014
A1842	Marking, lettering on floor/ walls with synthetic enamel paint of design & size as per customer's instruction.	SQM	100	.0002116

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A1843	Providing & fixing 150 long MS lug made from 25mmX3mm flat on the structural member for anchoring in brick wall.	Each	50	.0000006
A1844	Providing and applying two finish coats of high built epoxy finish of 90 microns each over two primer coats of Zinc silicate 50 microns each on exterior steel work.	MT	2	.0000167
A1845	Providing 50mm thick premix carpet surfacing laid to slope in two layers 30mm and 20mm respectively with 12mm downgraded stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction etc. all complete.	SQM	261	.0001801
A1846	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete as per specification.	SQM	1,411.417	.0009737
2000.0	FENCING AND GATES: Fencing and gates including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc at all level as per specification, drawings and as directed by engineer - in - charge.	--		
A2003	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 4 mm (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 2.5 mm. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertina shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be separately under ST No. 2007)	RM	870	.0025624

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at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2006.0	Supplying and fixing 600mm high concertina on top of boundary wall including GI tension wires, clips, anchors, accessories etc. all complete. Concertinal shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. (Structural post shall be separately under ST No. 2007)	RM	870	.0003626
2007.0	Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m2 on steel posts.	MT	2	.000282
2008.0	Supply, fabrication and fixing of mild steel posts for fencing including painting etc all complete.	MT	9	.0011947
2009.0	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	6	.0009154
2010.0	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	1	.0001457
2100.0	WATER SUPPLY: Water supply work including men, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--		
2101.0	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	EACH	14	.0000162

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2102.0	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	10	.0000037
2103.0	Providing and fixing in position heavy duty brass full way valve with wheel of approved quality including all specials etc all complete for following sizes:	--		
a	25mm nominal bore.	EACH	4	.0000025
b	50mm nominal bore.	EACH	4	.0000044
A2104	Providing and fixing Galvanised MS pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with MS sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:	--		
a	15 mm nominal bore.	RM	40	.0000238
b	20 mm nominal bore.	RM	20	.0000132
c	25 mm nominal bore.	RM	20	.0000156
2105.0	Providing and fixing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:	--		
a	15 mm nominal bore.	RM	20	.0000092
b	20 mm nominal bore.	RM	20	.0000105
c	25 mm nominal bore.	RM	40	.0000259
Ae	32 mm nominal bore.	RM	100	.000104

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2106	Providing and fixing 450X 750 mm high square edge 6 mm thick float glass mirror of adequate width to match toilet lay-out and interior decor and as per spec.	EACH	4	.0000065
2107.0	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	EACH	5	.0000053
2108.0	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	EACH	4	.0000042
2109.0	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	EACH	5	.0000044
2110.0	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	EACH	4	.0000029
A2111	Providing and fixing stainless steel liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	EACH	4	.0000039
A2112	Providing and fixing wall mounted stainless steel paper holder with suitable cover cum cutter fitted with screws etc. all complete.	EACH	2	.0000011
2113.0	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	EACH	3	.0000003
2114.0	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.	--		
a	500 litres capacity	EACH	3	.0000136
b	1000 litres capacity	EACH	1	.0000091
c	2000 litres capacity	EACH	1	.0000181

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2114	Providing & fixing in position High density polyethylene (cylindrical/vertical) molded seamless type tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.	--		
a	1000 litres capacity	EACH	2	.0000784
A2115	Providing and fixing grab bars, barrier-free access and appropriate fittings and fixtures for toilets for handicapped etc. all complete.	EACH	1	.0000037
2200.0	SANITARY: Sanitary work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--		
2201.0	Supply and fixing glazed vitreous china Wash Basin of approved make conforming to IS:2556 part 4 of oval shape with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug, 32mm chromium plated brass bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete.	--		
a	White	EACH	4	.0000209
b	Colored	EACH	3	.0000167
2202.0	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, 40mm CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete.	EACH	3	.0000122
2203.0	Providing and fixing stainless steel kitchen sink of size 610x510x200mm conforming to IS: 13983 including all fittings etc. all complete.	EACH	2	.000014

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2203	Providing and fixing approved stainless steel sink with integrated drainboard as per IS:13983 of size 915x460x178mm with CI brackets, stainless steel chain with rubber plug 40mm, cp brass waste trap with necessary union complete including painting the fittings, cutting and making good the wall where required etc. all complete as per spec.	EACH	2	.0000206
2204.0	Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.	--		
a	Floor mounted	EACH	10	.0000752
2205.0	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete.	EACH	3	.0000234
2206.0	Providing and fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	10	.0000943
A2207	Supply, laying and jointing UPVC pipes of Type B as per IS:13592 including bends, branches and all other necessary fittings, M.S. holder bats/ clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.	--		
a	75mm dia pipes	RM	20	.0000128
b	110mm dia pipes	RM	60	.000047
c	160mm dia pipes	RM	20	.0000178

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars or male and female jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.	--		
a	200mm dia	RM	20	.0000155
b	300mm dia	RM	30	.0000304
c	450mm dia	RM	20	.0000585
A2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars or male and female jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.	--		
a	150mm dia	RM	100	.0000555
2211.0	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	6	.0000247
2212.0	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	4	.0000145
2213.0	Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber(Clay Brickwork in 1:6 mortar, 12mm plaster in 1:6 mortar & 1:2:4 Cement Concrete) and water tight CI cover with 300x300mm (inside). The weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg etc all complete for following sizes:	--		
a	100x100mm P or S Type.	EACH	10	.0000205
c	150x150mm P or S Type.	EACH	4	.0000092
2214.0	Providing and fixing C.I. floor traps size 100 mm Inlet and 100 mm Outlet Sand Cast Iron S&S as per IS: 1729 with C.P jalli all complete.	EACH	10	.0000184

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2215.0	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	5	.0000089
2216.0	Providing and installing approved brand single tap water cooler of 80 L cooling capacity all complete.	EACH	2	.0000924
2217.0	Providing and installing approved brand single tap water cooler of 150 L cooling capacity all complete.	EACH	2	.0001151
2218.0	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	5	.0000101
2219.0	Providing and fixing eye and face drinking water fountain (combined unit with receptacle conforming to IS: 10592) all complete as per specification.	EACH	1	.0000347
A2221	Providing and fixing Cast Iron Pressure Pipes of Class LA as per IS:1536 for external work with all gaskets, jointing, hydro testing etc. complete including trenching & refilling, anti-corrosive paint etc all complete for following sizes:	--		
a	200 mm nominal bore.	RM	100	.000566
b	300 mm nominal bore.	RM	100	.0008797
A2222	Supply, laying and jointing HDPE pipes of pressure rating PN 2.5 confirming to IS:4984 in concrete/ brickwork including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete as per specifications for following.	--		
a	Upto 75mm dia pipes	RM	20	.0000131
b	100mm dia pipes	RM	20	.0000131
c	150mm dia pipes	RM	20	.0000189

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
d	200mm dia pipes	RM	20	.0000256
2300. 0	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2301	Fabrication,erection and alignment of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (Structural steel shall be supplied by BHEL free of cost)	--		
a	For Built up sections composed of Structural plates only (Grade E250) including stiffeners e.g. plated columns, girders, etc. (other than coal bunker)	MT	1,245	.0492354
b	For built up section composed of	MT	830	.0328236

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
d	For all other items (Grade E250) not covered above e.g. rolled sections, pipes, chequered plate etc	MT	3,683	.1456498
S2301	Supply including delivery at site, structural steel with mild steel rolled sections, conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, etc. complete all as per specifications, drawings and as directed by Engineer. Note - This item shall be operated if required, at the discretion of BHEL.	MT	100	.0101704
A2302	Extra over ST No. A2301 for surface preparation by blast cleaning of steel structures as per IS:1477 (Part 1 and 2) and applying epoxy resin based zinc rich primer as per IS:14589 in 2 coats, one at shop and second coat after erection, including touch-up painting etc all complete.	MT	5,550.5	.0471573
B2302	Extra over ST No A2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coating of inorganic zinc silicate primer in one coat @ 65-75 micron DFT /coat at shop immediately after blast cleaning, including touch-up painting etc all complete.	MT	207.5	.0017063
A2305	Providing and applying two coats of epoxy paint with minimum 25 micron total dry film thickness (DFT) per coat of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 115 microns including protection and cleaning, scaffolding etc. all complete.	MT	5,758	.045408
B2305	Providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 115 microns including protection and cleaning, scaffolding etc. all complete.	MT	10	.0000422

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2307.0	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	--		
a	Minimum galvanisation of 610 g/sqm	MT	152.5	.0259129
A2308	Supplying, fabrication, erection and alignment of factory made welded grating units with mild steel conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	65	.008445
A2309	Extra over above ST NO. A2301 for finishing with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces all complete.	MT	15	.0005588
AA2309	Extra over above ST NO. A2308 for finishing the grating units with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.	MT	65	.0021751
2311.0	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete.	KG	50	.0000098
2312.0	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	KG	8,089	.0016447

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2313.0	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	5	.0000705
2314.0	Addition to, alterations in and/or modification of	--		
a	In erected position	MT	25	.0009026
b	In fabrication yard	MT	25	.0007459
2320.0	Supply, fabrication and fixing of stainless steel pipe hand railing conforming to SS 409 of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete..	MT	3	.001398
A2322	Supply, fabrication and fixing of GI pipe hand railing (1000 mm high) of 32 mm/40 mm dia (Medium/ Heavy Grade) including transportation, loading/unloading, painting etc. all complete..	MT	26	.0044179
2323.0	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	10	.0000138
2324.0	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	10	.0000124
2325.0	Conducting ultasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	10	.0000056
2326.0	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	10	.0000105

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2327.0	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	10	.0000091
2400.0	ROAD WORKS	--		
--	ROAD WORKS: Road works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation etc. as per specification drawing, relevant IRC & IS codes and as directed by the Engineer-in-charge for the following:	--		
A2415	Supply and laying 150mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:3) in 13mm thick joints, finishing of joints with neat cement paste etc all complete. Payment terms - a) On receipt of materials at site - 50%; b) On completion of erection & fixing - 50%.	RM	40	.0000706
B2415	Supply and laying 300mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:3) in 13mm thick joints, finishing of joints with neat cement paste etc all complete. Payment terms - a) On receipt of materials at site - 50%; b) On completion of erection & fixing - 50%.	RM	20	.0000549
C2415	Supply and laying 500mm dia R.C.C NP-3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:3) in 13mm thick joints, finishing of joints with neat cement paste etc all complete. Payment terms - a) On receipt of materials at site - 50%; b) On completion of erection & fixing - 50%.	RM	20	.0000837
2600.0	LEVELING & GRADING: Levelling & grading works including all labour, material (unless otherwise specified in BOQ/contract specification), equipment etc. as per specification, drawings and as directed by engineer - in - charge.	--		

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2602	Earth work in stripping of top soil upto a maximum depth of 0.15m below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300 mm including roots and organic materials etc for leveling and grading including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	1,351	.0001452
C2609	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 250mm loose thickness so as to achieve at least 95% maximum dry density (modified proctor) as per IS-2720 (Part-VIII) with selected stacked earth available within a lead upto 1km and compacted as specified including re-excavation of stacked earth, all lifts, breaking of oversized rocks, sorting & segregation of rock pieces of size less than 150mm through mechanical means, sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing etc. all complete as per specification, drawing and as directed by the engineer.	CUM	1,000	.000228
2610.0	Extra over ST No. 2601 to 2609 for carriage of material/earth for every 500m or part thereof beyond an initial lead of 1km.	--		
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	10,000	.0001743
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	2,500	.0000436
A2611	Earth work in filling upto any depth below ground level for grading to proper grade and level in layers not exceeding 250 mm loose thickness so as to achieve at least 95% maximum dry density (modified proctor) as per IS-2720 (Part-VIII) with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed earth, royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer.	CUM	1,000	.000793

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:2047 for Civil, Architectural & Structural works for FGD Package for 5x800 MW
Yadadri TPS**

at 5 X 800 MW Yadadri TPS

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2612.0	Providing and laying 225mm thick stone pitching including caulking with 1 cement: 4 sand mortar on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.	CUM	600	.0024146
2614.0	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course, mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	24	.000139
2615.0	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size at all level below / above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.	--		
a	M25 Grade	CUM	35	.0002225
2616.0	Fairface form work with good quality water proof ply wood of required thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.	SQM	300	.0002714
2617.0	Providing, straightening, cutting, bending, placing in position at all levels, binding in position of steel reinforcements of TMT steel of grade Fe-500D or 500EQR confirming to IS:1786 including cost of binding wire, labour etc all complete per specification, drawing and as directed by engineer-in-charge.	MT	2	.0000459
TOTAL Weightage				1.0