

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
100	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	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	300.00	0.03018735
b	Depth exceeding 2 m but not exceeding 4 m	CUM	50.00	0.00628903
c	Depth exceeding 4 m but not exceeding 6 m	CUM	10.00	0.00157705
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1.00	0.00019737
103	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	50.00	0.00745008
b	Depth exceeding 2 m but not exceeding 4 m	CUM	50.00	0.00894018
c	Depth exceeding 4 m but not exceeding 6 m	CUM	50.00	0.0107283
d	Depth exceeding 6 m but not exceeding 8 m	CUM	10.00	0.00257472
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1.00	0.0002961
f	Depth exceeding 10 m but not exceeding 15 m	CUM	1.00	0.0003257
104	Earth work in excavation upto any depth 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	1.00	0.00031831
b	Depth exceeding 2 m but not exceeding 4 m	CUM	5.00	0.00191091
c	Depth exceeding 4 m but not exceeding 6 m	CUM	5.00	0.00229307
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1.00	0.00055052
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1.00	0.00063277
f	Depth exceeding 10 m but not exceeding 15 m	CUM	1.00	0.00069565
105	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 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	1.00	0.00031831
b	Depth exceeding 2 m but not exceeding 4 m	CUM	1.00	0.00038217
c	Depth exceeding 4 m but not exceeding 6 m	CUM	1.00	0.00045861
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1.00	0.00055052
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1.00	0.00063277
f	Depth exceeding 10 m but not exceeding 15 m	CUM	1.00	0.00069565
Ag	Depth exceeding 15 m but not exceeding 20 m	CUM	1.00	0.00076532
Ah	Depth exceeding 20 m but not exceeding 25 m	CUM	1.00	0.00084176
Ai	Depth exceeding 25 m but not exceeding 30 m	CUM	1.00	0.00092593
106	Earth work in excavation upto any depth below ground level 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 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	1.00	0.0012907
b	Depth exceeding 2 m but not exceeding 4 m	CUM	1.00	0.00154903
c	Depth exceeding 4 m but not exceeding 6 m	CUM	1.00	0.00185864
d	Depth exceeding 6 m but not exceeding 8 m	CUM	1.00	0.00223019
e	Depth exceeding 8 m but not exceeding 10 m	CUM	1.00	0.00256495
f	Depth exceeding 10 m but not exceeding 15 m	CUM	1.00	0.00282135

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
107	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 250 mm thickness using/with selected materials from compulsorily excavated earth available within a lead upto 1 Km and compacted as specified including re-excavation of stacked earth, 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	100.00	0.00861072
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	7600.00	0.72794865
108	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 250 mm thickness using/with selected materials directly from excavation within a lead upto 1Km and compacted as specified, 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	100.00	0.0035795
b	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	4500.00	0.18286571
109	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.			
a	Carriage for stacking/ backfilling of serviceable material/ earth	CUM	1600.00	0.01548069
b	Carriage for disposal of serviceable/unserviceable material/ earth	CUM	50.00	0.00048377
110	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 boorowed 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, tesing, all lead and lifts etc all complete as per specification, drawing and as directed by the engineer for the following:			
Aa	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	1.00	0.00043152
Ab	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	1.00	0.00038798
111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% 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	241.50	0.43320886
200	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.			
A201	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/pavings, at any depth below finished floor level etc.	CUM	137.50	0.42106224
202	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	455.21	1.39398246
203	Concrete of grade M15 (1 part cement, 2 part sand, 4 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	6.00	0.01837362
204	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	6.00	0.01837362
205	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.			
Aa	M 20 Grade	CUM	520.00	1.88217948
a	M 25 Grade	CUM	765.00	2.79488468
b	M 30 Grade	CUM	5.00	0.01845587

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
206	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	3412.80	12.57414097
b	M 30 Grade	CUM	10.00	0.03723107
209	Extra over St. No. 205 to 208 for controlling of temperature of fresh concrete to less than 23 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	1.00	0.00071017
210	Extra over ST Nos. 205 to 208 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	1.00	0.00033379
211	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	M 20	CUM	6.00	0.01837367
b	M 25	CUM	6.00	0.01837362
Ab	M 30	CUM	6.00	0.01837362
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at all level or thickness, drains etc complete as per following.			
a	01:02:04	CUM	155.00	0.47465199
213	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, chajas, 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 precast 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.			
a	M25	CUM	20.00	0.10937111
214	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	M30	CUM	1744.73	7.85812151
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable 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	2.00	0.00196023
b	Reinforced cement concrete of all grades	CUM	2.00	0.0028465
216	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	1.00	0.0000416
217	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	0.50	0.00000193
218	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	0.10	0.00001693
219	Providing and applying curing compound (water based) of approved make where ever required as per manufacturer's specification.	SQM	1.00	0.0000774
220	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	1.00	0.00298873
300	<b>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.</b>			

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
301	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	10119.40	4.31777165
302	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	19369.50	10.26997631
304	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	40.00	0.00746927
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	6.00	0.00195056
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	16.00	0.00952056
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	2.00	0.00189251
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	2.00	0.00275943
305	Extra over item no. 301 and 302 for curved form work for foundations, footings, beams, columns, walls, trenches, domes, arches etc as per specification.			
a	Extra for Curve Shuttering for Item No. 301	SQM	1.00	0.00008514
b	Extra for Curve Shuttering for Item No. 302	SQM	1.00	0.00010642
AA306	Providing, fixing & removing curved type of shuttering including staging, propping (cost incl. of submitting supporting design & drawing and approval etc.) at all locations, heights and levels above or below ground with Slip Formwork complete as per specification and directions of engineer incharge	SQM		
400	<b>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.</b>			
401	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	1.00	0.05623652
403A	Transportation, straightening, cutting, bending, placing in position at all level, binding in position of steel reinforcements of TMT steel of grade Fe-500 or Fe-500D or 500EQR conforming 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	805.00	7.31594582
405	Providing & fixing of Rebar in existing concrete surface by inserting reinforcement bar with Epoxy based suitable bonding compound of Hilti or equivalent make (HIT-RE-500 of Hilti or equivalent make) for interconnection of new R.C. structure with existing R.C. structure. Depth of drilled hole should be suitable to develop maximum recommended strength as per approved manufacturer's recommendation. This item includes supply of all materials including bonding chemicals, T&P required to execute the work, cost of all labour, transportation of chemical, staging to reach work place etc. all complete as directed by Engineer - in - Charge. Random Pull out non destructive test as directed by engineer shall be conducted to ensure strength of bond and same is included in this item. Reinforcement bar shall be paid separately under item no. 402, 403, 405 as applicable.			
a	12mm Reinforcement bar	Nos.	2.00	0.00062889
b	16mm Reinforcement bar	Nos.	2.00	0.00099076
c	20mm Reinforcement bar	Nos.	2.00	0.00139326
500	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	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	4930.04	0.515163
A503	Providing and laying in-situ light weight foam concrete insulation as per relevant IS Code in suitable panels over roofs followed by a layer of 12 mm thick cement sand plaster 1:4 (1 cement: 4 coarse sand) after the curing period of laid foam concrete and providing of expansion joint at intervals as per the recommendation of manufacturer. The insulating properties shall be such that the thermal conductivity shall not exceed 0.125 Kcal/sqm-hr deg C. The weight of the insulating material shall be from 0.3 to 0.5 gm/cm. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints at suitable intervals etc all complete for following.			
b	Average 75 mm thickness	SQM	2.00	0.00026122

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
A506	Providing and applying pre-fabricated APP (atactic polypropylene) modified waterproofing membrane with reinforced with non-woven polyester matt of 4 mm thickness (min. 5kg/sqmt) consisting 160 gsm polyester core coated on both sides with APP modified bitumen and finally finished with thermo fusible film laid over a coat of bituminous primer @ 0.27 L/Sqm (IS: 3384) including 18 mm thick cement sand mortar (1:4) with 0.56mm dia galvanized chicken wire mesh interposed layer over waterproofing treatment. The testing of material shall be done from authorised lab and same shall be furnished before execution of work. The vital physical and chemical parameters of the membrane shall be as under: Joint strength in longitudinal and transverse direction at 23°C as 650/ 450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibilities shall be up to -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane. Item includes surface preparation, polyscrim cloth /fabric for edges, joints & vulnerable points etc all complete as per specifications and directions of engineer in charge.	SQM	4930.04	5.93391466
510	Providing and laying cement concrete chequered flooring tiles of 22 mm thickness and size 300x300 mm conforming to IS 13801 with 8 mm thick 1:4 cement mortar over the top most layer of roofing treatment in pathway or entire area with fine joints including sealing of joints (silicon/elastomeric sealant) and providing expansion gap in both directions including underbed(as per drawings) filled up with (silicon/elastomeric) joint sealant etc all complete. (Water proofing paid elsewhere)(including cost of cement for tiles making)	SQM	3000.04	1.27136903
511	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	2435.63	0.21680471
A511	Providing and applying three 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	1.00	0.00010062
513	Providing and mixing water proofing compound conforming to IS:2645 in concrete or cement mortar all complete.	KG	1.00	0.00013739
A518	Providing and laying 50mm thick P.C.C. (1:2:4 with 10 mm nominal size stone aggregates), shall be provided under the raft i.e. over the lean concrete, followed by polymer modified cementitious coating in two layers (slurry mix application) as per manufacturer's specification. 50 mm thick P.C.C. (1:2:4) with 10 mm nominal size stone aggregates shall then be laid over the polymer modified cementitious coating before laying the raft. For Slurry Mix: A minimum of 2 coats shall be applied on the surface. The first coat being applied, when the surface is still damp and left to harden for 4 to 6 hours. After 4 to 6 hours of the application of second coat, it shall be finished by rubbing down with a soft dry sponge. The coverage shall not be less than 1 : 1 Kgs. / m2 in the 2 coats. A lap of 75 mm shall be provided at the joints. The coating shall be air dried for 4 to 6 hours and, thereafter, cured for 7 days after the application of last coat. The rate quoted should be all inclusive.	SQM	702.57	0.39222268
B518	Providing and applying on the outer surface of walls, frames and roof slabs coming in contact with earth, polymer modified cementitious coating in two layers as specified and as per manufacturer's specifications shall be provided directly on the concrete surface. Modified liquid polymer blend shall be a dispersion containing 100 % acrylic based polymer solids. Polymer shall be mixed in the ratio of 1 cement: 0.5 polymer (for minimum solid content of polymer 30%). Portland cement based dry powder. Clean, fine specially prepared quartz sand approximately 0.6 mm size. The liquid polymer shall be stirred well and cement based powder shall then be added slowly to make a Slurry Mix. For preparation of Brush Topping Mix, quartz sand shall be added slowly and mixed well till a homogeneous mixture is obtained. The mix shall be used within half an hour of the preparation. Addition of quartz sand may not be necessary, in case dry power contains the same. For Brush Topping Mix: This shall be applied in two coats. A primary coat of slurry mix can also be first applied on the surface as first coat. After the coating has dried up, a coat of Brush Topping Mix shall be applied over it with a push broom or any other similar brush. It shall be left in broom finished condition. The nominal thickness shall be 1.5 mm and minimum thickness shall be 1.0 mm. A lap of 75 mm shall be provided at the joints. It shall be ensured that no pinhole exists and rebrushing shall be done to cover the pinholes, if any. The Coating shall be air dried for 4 to 6 hours and thereafter cured for 7 days after the application of last coat. Rate of application of coating shall be established to achieve the required thickness. The rate quoted should be all inclusive.	SQM	4243.45	1.18244799
600	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	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/bitumin etc. all complete.			
a	12 mm wide joints.	SQM	2.00	0.00078757
b	20 mm wide joints.	SQM	2.00	0.00122684
c	25 mm wide joints	SQM	2.00	0.00150162

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
A601	Supplying & installation of engineering grade polystyrene foam backer rod (circular cross section) at 12 mm depth with minimum density of 22 kg/cum and compressive strength of 0.40 kg/sqm having dia. 25% more than the expansion joint width as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.			
a	12 mm wide joints.	SQM	1.00	0.00002128
b	20 mm wide joints.	SQM	1.00	0.00003289
c	25 mm wide joints	SQM	35.00	0.00128683
d	50 mm wide joints	SQM	1.00	0.00004837
603	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:			
Aa	12mm X 25mm	RM	10.00	0.00116105
AAa	20mm X 25mm	RM	10.00	0.00164482
a	25mmX25mm	RM	170.00	0.03322544
b	50mmX25mm	RM	10.00	0.00348315
604	Supplying and filling in position hot applied bitumin sealing compund (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	5.00	0.0001548
b	12mm X 25mm	RM	5.00	0.00014027
c	20mmX25mm	RM	5.00	0.00016448
Ad	32mmx25mm	RM	5.00	0.00020804
606	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 vulcanished as needed.	RM	10.00	0.0007644
608	Supplying and filling in position hot applied bitumin sealing compund (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	1.00	0.00003096
b	12mm X 25mm	RM	1.00	0.00002805
c	20mmX25mm	RM	1.00	0.00003289
609	Providing and sealing of joints with premium grade silicon sealant (Silpruf of GE silicon 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	1.00	0.00016544
b	50mmX25mm	RM	1.00	0.00028929
A609	Supply and installation of Polystyrene board of type-1 conforming to IS 4671 with density 20 kg/cum as joint filler at joint of concrete including nailing, coating of both faces with coal tar pitch /butimen etc. all complete.			
a	50mm	SQM	1.00	0.00038314
610	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following: (Bulb or Kicker type)			
a	150 mm wide and 8 mm thick	RM	1.00	0.00014319
b	230 mm wide and 8 mm thick	RM	1.00	0.00021383
Ab	250 mm wide and 10 mm thick	RM	1100.00	0.32673492
c	150 mm wide and 6 mm thick	RM	1.00	0.00010933
700	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	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	12.00	0.83146421
702	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, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	3.20	0.25975676
703	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	4.00	0.06423329

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
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	2.00	0.03048728
704	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	1.00	0.00002612
b	PVC pipes / conduits of all diameters	kg	101.00	0.02882836
c	UPVC pipes / conduits of all diameters	kg	1.00	0.00028542
d	Expansion anchor fasteners (galvanised) of HILTI make(HUD-1 Universal Fastners) or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	8mm Dia	Nos	5.00	0.00013545
ii	10mm Dia	Nos	5.00	0.0001548
iii	12mm Dia	Nos	5.00	0.00017415
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			
i	HST M8	Nos	5.00	0.00053214
ii	HST M10	Nos	5.00	0.00076435
iii	HST M12	Nos	5.00	0.00119007
iv	HST M16	Nos	5.00	0.00219146
v	HST M20	Nos	5.00	0.00440718
vi	HST M24	Nos	5.00	0.00593585
707	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	0.50	0.03092655
800	<b>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.</b>			
801	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	1.00	0.00047505
802	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.	CUM	0.50	0.00914715
803	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. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	0.50	0.00846116
804	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 ConbextraGP-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	1.00	0.03697853
805	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	0.50	0.02003685
806	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	1.00	0.00109041
900	<b>DOORS &amp; WINDOWS:</b> 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.			
901	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	1.00	0.1209855

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
902	Providing and fixing teak wood frame panel door 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 handles 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	2.00	0.00606069
903	Providing, fitting and fixing solid core flush door shutter 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 handles 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	5.00	0.01256838
A904	Providing and fixing single or double steel door shutters with 45 mm (min.) thick insulated 16 gauge double plated hollow metal sheets (factory galvanized, primed and field painted) rigidly connected and reinforced inside with continuous vertical 1.0 mm stiffeners spot welded in position at not more than 150mm on centres. Side, top and bottom edges of shutters shall be reinforced by continuous pressed steel channel of minimum 1.2 mm thickness conforming to IS-1038 and IS4351 including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	104.18	0.63210806
906	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	2050.00	0.56727071
A906	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 black powder coated (thickness 60 microns min.) 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	410.00	0.0936195
A907	Providing and fixing fire proof steel doors (single or double shutter) with interlayered fire rated vision panel glass, panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets 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, accessories, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs. All hardware shall be fire rated.	SQM	44.00	0.4113722
908	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	408.64	0.73184106
b	fixed type	SQM	200.00	0.25775357



**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, 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-metalic 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.), 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 measure.	Kg	300.00	0.11407214
A909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS-733 and IS-1285, black powder coated (thickness 60 microns min.) 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-metalic 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.), 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 measure.	Kg	300.00	0.09955899
911	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	27.00	0.0491125
b	Floor mounted Hydraulic door closers as per IS 6315	Each	5.00	0.0101205
A912	Providing and fixing pressed steel frames fabricated from 18 gauge M.S sheet mortised, 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	300.00	0.03279849
A913	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 of 75mm wide and 3mm thick (min.) and arrangements for inside and outside locking with push and pull operation including wire springs, top/hood cover 0.9mm thick (min.), factory galvanized, primer & field painted with 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	20.00	0.03541208
b	Mechanically Operated	SQM	78.00	0.18218068
c	Electrically operated	SQM	20.00	0.05048633
A914	Providing and fixing FRP (fibre reinforced plastic) doors complete including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	10.00	0.02515612
915	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.			
a	4 mm thick clear sheet glass	SQM	30.00	0.03152256
b	4 mm thick clear float glass	SQM	70.00	0.06129359
c	5.5 mm thick clear float glass	SQM	50.00	0.05273111
Ac	6 mm thick clear float glass	SQM	1200.00	1.29921243
d	6 mm thick wired glass	SQM	220.00	0.28416661
f	4 mm thick ground glass	SQM	20.00	0.02366603
g	6 mm thick tinted heat reflecting type float glass	SQM	5.00	0.00675827
h	6 mm thick clear toughened safety glass	SQM	40.00	0.06393527
Ah	8 mm thick clear toughened safety glass	SQM	5.00	0.00912879
AAh	6 mm thick toughened tinted glass	SQM	8.00	0.01406417
i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	15.00	0.03716812
Ai	Two nos. 6 mm thick clear float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	10.00	0.03250945
Ak	One outer 6mm thick tinted heat-reflecting type toghened float glass and one inner 6mm thick plain toghened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	15.00	0.04277019

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	5.00	0.00076435
917	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	24.00	0.02668087
918	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting etc. all complete.	SQM	70.00	0.17677018
919	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	5.00	0.01734323
1000	<b>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.</b>			
1001	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.			
b	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)	CUM	45.00	0.19740788
1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm to 460mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
b	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)	CUM	2054.98	10.98525198
1003	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 fixing two nos. 8 mm diameter MS/TMT/HYSD bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification. (MS/TMT/HYSD bar shall be provided by BHEL free of cost)			
b	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)	SQM	2.00	0.00131391
c	Using burnt clay bricks of class designation 7.5 of nominal dimension	SQM	2.00	0.001401
d	Using burnt clay bricks of class designation 5.0 of nominal dimension	SQM	2.00	0.001401
1004	Providing brick soling including spreading of earth, ramming, watering including 25mm thick cushion of sand complete but excluding excavation and disposal of surplus earth (excavation and disposal of surplus earth shall be measured under applicable item). Using brick on long edge.			
b	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2(including cost of cement for brick making)	SQM	2.00	0.00099656
1005	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	2.00	0.00247883
1006	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)			
Aa	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50 kg/cm2 (including cost of cement for brick making)	CUM	2.00	0.0095361
1007	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	2.00	0.00027478
1008	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	2.00	0.00274008
A1009	Supply and placing in position welded wire mesh/ chicken wire mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete/ brick/ plaster including cutting, bending, fixing etc. complete.	SQM	10.00	0.00197378
1100	<b>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.</b>			
A1102	Providing Damp Proof Course of following thickness with 1:1.5:3 concrete (10mm and down graded aggregate) with 10% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 80/100 grade as per IS:702 @ 1.7Kg./sqm shall be applied one before & one after the DPC.			
a	40mm thick	SQM	86.00	0.03203571

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
B1102	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 80/100 grade as per IS:702 @ 1.7Kg/sqm shall be applied one before & one after the DPC.			
a	40mm thick	SQM	10.00	0.00213831
1200	<b>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.</b>			
A1201	Providing 20mm thick plaster in two layers outside the building/boundary 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	SQM	8903.60	1.75738243
1202	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	11213.60	1.47555173
1204	Providing 6mm thick plaster on ceiling in cement mortar 1:4 finished to a smooth all complete.	SQM	9360.00	1.16821244
1205	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	1.00	0.00011514
A1206	Providing and making decorative plaster of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	1.00	0.0002264
1207	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	360.00	0.0090562
A1207	Providing drip coarse, moldings and cornices 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	10.00	0.00023221
1208	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 enginner in charge (chicken wire mesh to be paid separately)	SQM	1.00	0.00039669
1209	Ruled pointing in masonry in Cement Mortar 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	1.00	0.00011804
1300	<b>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.</b>			
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	1500.00	0.03555415
1303	Providing and applying two or more coats of oil bound destemper as per IS 428 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.	SQM	6800.00	0.52040283
1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete.	SQM	1700.00	0.1301007
1305	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 manufacturers guideline.	SQM	1250.00	0.13049589
1306	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	504.40	0.12727464
1307	Providing and applying two coats of Epoxy coating with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, oil, splash, spillage & acidic environment. The epoxy paint coating shall be of minimum 150 micron thickness over epoxy primer.	SQM	200.00	0.03796689
1308	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	100.00	0.01328433
1309	Two or more coats of fire resistant transparent paint (@3.5 litre per sqm per coat) as per IS 162 on all woodwork over french polish as per IS 348 or flat oil paint as per IS 137 of approved grade and manufacture to give an even shade as per specifications. French polish payment will be made seperately.	SQM	10.00	0.0019964

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
1310	Two or more coats of black anti-corrosive bitumastic painting of approved brand and manufacture to give an even shade complete.	SQM	1.00	0.00004676
1311	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 complete.	SQM	100.00	0.00663726
1312	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	10.00	0.00090565
1316	Providing and applying 2 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	1000.00	0.06250248
1317	Providing and applying 2 mm thick white cement punning on walls including preparation of surface, staging, etc to achieve a smooth even surface all complete as per specification and as directed by engineer.	SQM	760.00	0.05764762
1319	Providing and applying two or more coats of Acrylic based weather coat paint of approved brand and manufacture 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 repellent and extremely durable with color fastness as per specification.	SQM	8703.60	0.65599389
1320	Providing and applying acid alkali and oil resistant high build, solvent free, self smoothing, seamless epoxy based amine cured floor finish 150 microns over primer on C.C. flooring	SQM	10.00	0.00251561
1400	<b>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.</b>			
A1401	Providing and laying 40 mm thick heavy duty cement concrete in flooring with metallic/Steelcrete finish 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 12.5 mm 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, etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	9125.20	3.29318997
C1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron paricles in flooring. Under layer of 38mm thick M20 grade cement concrete mix (with stone chips of size 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 joint strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	34.00	0.01289541
D1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron paricles in flooring. Under layer of 38mm thick M20 grade cement concrete mix (with stone chips of size 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, aluminium joint strips etc. all complete for following (Quoted item rate shall be inclusive of providing aluminium joint strips):	SQM	10.00	0.00398627
1402	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, etc. all complete as per specification.	SQM	5.00	0.00157227
1406	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	74.20	0.10151349
1410	Marble stone Flooring laid in 50mm overall thickness with 18-20mm thick marble slabs (grade -1) with minium 30mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The marbel slabs/tiles laid over underbed with mortar 1:3, 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	170.00	0.40018494

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
1411	Marble stone Flooring laid in 50mm overall thickness with 14 -16mm thick marble slabs (grade -1) with minium 35mm thick underbed of 1 cement : 2 sand : 4 stone aggregate by volume and brought to proper level. The marbel slabs/tiles laid over underbed with mortar 1:3, 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	10.00	0.02038609
1412	Providing and laying 18-20mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. 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	230.00	0.54565579
1413	Providing and laying 14 to 16mm thick polished Granite stone of approved color and texture in flooring with brass/ stainless steel strips. Under bed shall average 35mm thk 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	10.00	0.01965084
1414	Providing and laying polished Granite stone 18-20mm thk in skirting and dado with 6mm thick projection from adjacent plaster minimum 12 mm thick cement mortar bedding of 1:3 (1 cement : 3 sand) with thick cement slurry @3.3kg/sqm spread over the surface with fine joint finished including cutting brickwall upto the required depth, edging, finishing etc. all complete. including mortar ,cement slurry, pigments, curing, grinding, moulding, granite polishing etc. all complete.	SQM	110.00	0.26320039
1415	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	10.00	0.01969918
1416	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			
a	7mm thick tiles In flooring	SQM	50.00	0.04663559
b	10mm thick tiles In flooring	SQM	100.00	0.10875188
d	10mm thick tiles In skirting and dado upto specific height	SQM	75.00	0.08381375
1417	Providing and laying vitrified ceramic tiles of matt finish of size 600x600mm 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			
a	7mm thick tiles In flooring	SQM	4.00	0.0061265
b	10mm thick tiles In flooring	SQM	174.00	0.26650139
c	7mm thick tiles In skirting and dado upto specific height	SQM	86.00	0.13429889
d	10mm thick tiles In skirting and dado upto specific height	SQM	44.00	0.06871106
1418	Providing and laying 10 mm thk non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE' of BOSS Profile limited' or 'JOHNSON' or 'VARMORA' or 'QUTONE' or equivalent in flooring and skirting over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, cement slurry 3.3kg/sqm complete as per specification laid in pattern of following sizes			
b	600X600 mm	SQM	300.00	0.46819304
1420	Providing and laying Heavy Duty dust pressed (Grade-5) Ceramic Tiles (Matt Finish) of 7mm thick of reputed manufacturer of approved finish shade and colour including 20mm underbed of cement mortar 1:3 with neat cement slurry @3.3kg/sqm etc. all complete.			
a	300X300 mm	SQM	5.00	0.00440713
b	600X600 mm	SQM	5.00	0.00440713
1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado bedded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
a	20mm thick	SQM	306.00	1.37434901
b	38mm thick	SQM	153.00	0.90063974
1424	Providing & fixing chemical resistant (AR)(Acid / Alkali) bricks (75mm thick) conforming to IS:4860 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 18mm 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	30.00	0.07372681

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
1425	Providing and laying polished Marble slabs (Aranga white or equivalent approved shade/color /design) 20 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 3.3kg/sqm spread over the surface with fine joint finished including moulded marbel nosing, pigments, curing, grinding, making corners, granite polishing etc. complete.	SQM	14.00	0.02606175
1426	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	28.00	0.04670525
1427	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:			
b	7mm thick	SQM	10.00	0.00547629
A1428	Providing and laying 2mm thick antistatic PVC (Virgin) flooring / skirting of approved shade, as per IS:3462 and laying as per IS:5318 all complete.	SQM	300.00	0.05166681
1429	Providing and fixing removable type flooring system consisting of fire resistant particle board of size 600X600X35 mm with 0.05 mm thick aluminium foil lining at bottom and with 2 mm thick anti static PVC topping including proprietary floor supporting system complete as per specification.	SQM	30.00	0.08597591
1430	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.			
a	Glass strips 40 mm wide and minimum 6 mm thick.	RM	20.00	0.00063866
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	420.00	0.03250945
1500	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.			
1502	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 polyester 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	671.00	0.83230215
b	Span Exceeding 1800mm and upto 2500 mm	SQM	1.00	0.00124039
1503	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	2.50	0.03871141
A1503	Providing and fixing shear connectors of mild steel studs having 19mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	0.50	0.00774228
A1506	Designing, providing and fixing External sheet of Permanent colour coated metal cladding with troughed high tensile steel sheets of 0.5mm bare metal thickness having minimum yield strength 350 MPa and zinc-aluminium alloy coating not less than 150 gm/sqm on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing, gutter, etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2) / SMP of minimum dry film thickness (DFT) 20 microns over suitable primer. Inner face of the sheet shall be provided with silicon modified polyester paint of minimum DFT 20 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246, AS-1397, A446, A611 and shall conform to class 3 for the durability, including design of installation pattern with its erection drawing specifying Bill of Material.	SQM	151.00	0.15354949

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
A1507	Designing, providing and fixing External sheet of Permanent colour coated metal cladding with high strength tensile steel sheet 0.5mm bare metal thickness having minimum yield strength 350 MPa and zinc-aluminium alloy coating not less than 150 gm/sqm total on both sides including fixing to supports /rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently colour coated with Polyfluro Vinyl Coating (PVF2)/SMP of minimum dry film thickness (DFT) 20 microns over suitable primer. Inner face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability.	SQM	1.00	0.00086981
A1508	Designing, providing and fixing Inner sheet of Permanent colour coated metal cladding with troughed M.S. sheets of 0.5mm bare metal thickness having minimum yield strength 350 MPa and zinc-aluminium alloy coating not less than 150 gm/sqm total on both sides of both sheets including fixing to supports / rails by concealed fixing system (Z Purlin), corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed surface of the sheet shall be permanently colour coated with silicon modified polyester paint of minimum dry film thickness (DFT) 20 microns over suitable primer. Other face of the sheet shall be provided with suitable pre-coating of minimum DFT 7 microns over suitable primer. The permanent colour coated sheet shall meet the general requirements of IS : 14246 and shall conform to class 3 for the durability. The sheet shall be fixed directly to side runners and Z spacers as per IS : 277. The sheet shall be fixed at the rate not more than 1500mm center to center to hold the insulation and external sheeting.	SQM	1.00	0.00095012
1511	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	1.00	0.00035412
b)	For underdeck insulation below RCC slabs	SQM	300.00	0.12249099
1512	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 wrapping in black polythene black supported over weld mesh 75X75X1.6 MM dia to hold in position and application of glue & tying with lacing wire, for glass/rock wool as per manufacturer's recommendation.			
Ac	mineral wool/rock wool insulation (density 48 kg/cum) bound in polythene bags on top of false ceiling panels	SQM	50.00	0.02501079
A1519	Providing and Fixing fire resistant and UV resistant polycarbonate translucent sheets of 2mm thickness on roof & side cladding as per the specification and approved drawings and directions of engineer in charge	SQM	1.00	0.00202312
1600	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.			
1601	Providing and fixing 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 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).	SQM	10.00	0.00493447
b	12 mm thick GRG board in profile (dome, curved profiled etc.) with galvanised light gauge steel load bearing supporting GI frame and finished smooth (seamless).	SQM	10.00	0.00741138
1603	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. 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 and shall be paid under ST No 2301)	SQM	540.00	0.61756362
1700	<b>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.</b>			
1701	Providing and fixing HCI down take pipes of 100 mm dia. with water tight lead joint, fixing clamps etc. all complete.	RM	5.00	0.00487641
1702	Providing and fixing HCI down take pipes of 150mm dia with water tight lead joint etc. all complete.	RM	5.00	0.00810801

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
1703	Providing and fixing galvanised MS down take pipes of 100 mm dia- Medium quality as per IS:1239(part-I) / IS:3589 all complete.	RM	5.00	0.00484257
1704	Providing and fixing galvanised MS down take pipes of 150 mm dia- Medium quality as per IS:1239(part-I) all complete.	RM	168.00	0.2140741
1705	Providing and fixing UPVC down take pipes of 110mm diameter- Class 3 as per IS:4985 all complete.	RM	5.00	0.00231242
1706	Providing and fixing UPVC down take pipes of 160mm diameter- Class 3 as per IS:4985 all complete.	RM	10.00	0.00945285
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.			
a	100 mm Dia	RM	5.00	0.00538921
b	150 mm Dia	RM	605.00	0.91199677
c	200 mm Dia	RM	5.00	0.01036239
1709	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.			
a	110 mm Dia	RM	5.00	0.00212859
b	160 mm Dia	RM	5.00	0.00362828
c	200 mm Dia	RM	5.00	0.00518117
A1711	Providing 450x450mm KHURRAS for rain water down take pipes having minimum thickness of 30mm with 1:2:4 concrete over PVC sheet of 1000mmx1000mmx400 micron and finished with 12mm thk, cement sand plaster 1:3 etc. all complete as per specification.	Each	53.00	0.03897264
1800	<b>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.</b>			
1801	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	1030.95	1.51518144
1803	Supply and laying approved quality rounded pebbles / gravels of 40mm size in transformer yards.	CUM	1.00	0.00217213
1804	Providing and fixing weep holes of length 150mm to 300mm in Retaining wall, drains, etc consisting of 100 mm dia HDPE pipe sleeves with single side covering for the pipe mouth with galvanised welded wire fabric of 20 mm sq. opening all complete.	EACH	1.00	0.00013062
1807	Anti termite chemical treatment of soil with Chlorpyrifos/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	50.00	0.00565992
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	1.00	0.00005998
1817	Providing and laying dry stone pitching of 230 mm thickness for slope protection in cement mortar 1:6 including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.	SQM	1.00	0.00170481
A1817	Providing and laying dry stone pitching of 230 mm thickness for slope protection in cement mortar 1:4 including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.	SQM	1.00	0.00170481
1821	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 suppression 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	1.00	0.00046829
A1825	Providing & Laying 125micron thick polythene sheet below the concrete base including materials, labour etc. complete as per drawing / direction of engineer.	SQM	1.00	0.00009288
1827	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	1.00	0.00000289
2000	<b>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.</b>			
2001	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 8 gauge (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 12 gauge. GI barbed wire fencing of height of 600 mm conforming to IS 298 at top of chain link fencing shall be provided with 4 strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply of wires with barbs of 16G spaced at 100mm. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts, accessories etc. all complete. (Structural post shall be paid separately under item 2007)	RM	10.00	0.01192013



**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
2003	Supplying and erecting in position 2.4 m high PVC coated gavanised chain linked fencing of minimum 8 gauge (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 12 gauge. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. 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. 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 paid separately under ST No. 2007)	RM	0.50	0.00064825
A2005	Supplying and fixing 600mm high G.I. barbed wire fencing on top of boundary/compound wall consisting of min. 9 nos. strands of barbed wire hot dip galvanised wire of 12G comprising of 2 ply with barbs of 16G spaced at 100mm including GI clips, anchors, accessories etc. all complete. (Structural post shall be paid separately under ST No. 2007/ 2008 as the case may be) Measurement shall be for per running meter of fencing.	RM	0.50	0.00004305
A2006	Supplying and fixing 1000mm high double concertina adjacent to boundry/compound wall etc. with 450 mm appx. above G.L. including GI tension wires, clips, anchors, fixing in wall, 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. Cost to include for GI hook, bolts, rings & washers, hot dip galvanized tension wires, 25x6 mm GI flat strecher bar at end post etc. all complete. (Structural post shall be separately under ST No. 2007).	RM	0.50	0.00032896
2007	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	0.50	0.03810863
2008	Supply, fabrication and fixing of mild steel posts for fencing including painting (Chlorinated Rubber) etc all complete.	MT	0.50	0.03568396
2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffners, 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	0.50	0.03920099
2100	<b>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.</b>			
2101	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.	NOS	2.00	0.00089013
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	NOS	2.00	0.00041605
2103	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.	NOS	2.00	0.00069276
b	50mm nominal bore.	NOS	2.00	0.00122684
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrsvive paint, complete for internal works with GI 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	10.00	0.00259301
b	20 mm nominal bore.	RM	10.00	0.00283494
c	25 mm nominal bore.	RM	25.00	0.00742579
Ac	32 mm nominal bore.	RM	25.00	0.00829658
2105	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	10.00	0.0019061
b	20 mm nominal bore.	RM	10.00	0.00215758
c	25 mm nominal bore.	RM	25.00	0.00573279
Ac	32 mm nominal bore.	RM	25.00	0.00621636
d	50 mm nominal bore.	RM	25.00	0.00882873
2106	Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets with CP screws etc all complete.	NOS	2.00	0.00133326
A2106	Providing and fixing looking mirror 600x900x6mm, edge mounted with teak beading and minimum 12 mm thick plywood backing with fittings, fixtures, accessories, cutting and making good the walls etc. all complete as per specification and as directed by Engineer-in-charge. etc all complete.	EACH	2.00	0.00260462

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

**Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 & Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6**

Sl. NO	Item Description	Unit	Qty	Weightage %
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P. Guard rails and mounted on C.P. brackets etc all complete.	NOS	2.00	0.00101398
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) with C.P. mounting brackets all complete.	NOS	2.00	0.00111461
A2108	Providing and fixing 20 mm diameter stainless steel towel rails (600mm X 20mm) with C.P. mounting brackets all complete.	NOS	2.00	0.00089206
AA2108	Providing and fixing 16 mm diameter stainless steel towel rails (750mm X 16mm) with C.P. mounting brackets all complete.	NOS	1.00	0.0005573
2109	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	NOS	1.00	0.00041797
2110	Providing and fixing C.P. Soap holder mounted with C.P. screws etc all complete.	NOS	1.00	0.00034928
2111	Providing and fixing stainless steel / C.P. liquid soap dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	NOS	1.00	0.00049151
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	NOS	1.00	0.00028058
2113	Providing and fixing chromium plated brass shower rose 100mm dia with 15 or 20 mm inlet dia all complete.	NOS	1.00	0.00004934
2114	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	NOS	1.00	0.00254366
b	1000 litres capacity	NOS	1.00	0.00508734
c	2000 litres capacity	NOS	1.00	0.01017468
2200	<b>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.</b>			
2201	Supply and fixing glazed vitreous china Wash Basin of size 550mm x 400mm 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	1.00	0.00458131
b	Colored	EACH	1.00	0.00484449
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.	EACH	1.00	0.0101292
2204	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 UPVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P. connections etc all complete.			
a	Floor mounted	EACH	1.00	0.00506412
b	Wall mounted	EACH	1.00	0.00701468
A2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (600x400mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre UPVC flushing cistern with valveless fittings, necessary C.P. connections etc all complete.	EACH	1.00	0.0033206
A2206	Providing and fixing white flat back glazed vitreous china urinals of size 610x410x380 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	1.00	0.00564367
2207	Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 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	10.00	0.00171251
b	110mm dia pipes	RM	10.00	0.00256394
c	160mm dia pipes	RM	10.00	0.00348315
d	200mm dia pipes	RM	10.00	0.00424755
2208	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc all complete for following.			
a	200mm dia	RM	1.00	0.00050699
b	300mm dia	RM	1.00	0.00107687
c	450mm dia	RM	1.00	0.00226114
d	600mm dia	RM	1.00	0.00332254
e	900mm dia	RM	1.00	0.00628225
2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.			
a	150mm dia	RM	1.00	0.00045184
b	250mm dia	RM	1.00	0.00055536

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

<b>Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 &amp; Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6</b>				
<b>Sl. NO</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Weightage %</b>
c	300mm dia	RM	1.00	0.00078371
2210	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following:			
a	450mm dia	RM	1.00	0.00182382
b	600mm dia	RM	1.00	0.00234048
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	2.00	0.01760542
2213	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	2.00	0.00211118
b	150x100mm P or S Type.	EACH	2.00	0.00220405
c	150x150mm P or S Type.	EACH	2.00	0.00237048
2214	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	2.00	0.00170674
2215	Providing and fixing 100mm heavy duty UPVC floor traps with 100 mm inlet and 100 mm outlet & C.P jalli all complete.	EACH	1.00	0.00082724
2216	Providing and installing approved brand single tap water cooler of 80 L cooling capacity all complete.	EACH	1.00	0.0236216
2218	Providing and fixing white vitreous urinal partitions of size 675x325x85mm all complete.	EACH	2.00	0.00192734
2220	Providing and fixing heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.			
a	75mm dia pipes	RM	5.00	0.00546662
b	100mm dia pipes	RM	10.00	0.01408743
c	150mm dia pipes	RM	10.00	0.01945725
d	200mm dia pipes	RM	5.00	0.01511784
e	250mm dia pipes	RM	5.00	0.0191525
A2220	Providing and fixing extra heavy duty cast iron pipes for above and below ground sanitary works with water tight lead joint, fixing clamps, excavation, filling, disposal etc. all complete for the following.			
a	75mm dia pipes	RM	5.00	0.00503122
b	100mm dia pipes	RM	5.00	0.00696631
c	150mm dia pipes	RM	5.00	0.01161052
d	200mm dia pipes	RM	5.00	0.01741578
e	250mm dia pipes	RM	5.00	0.02515612
2222	Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.			
a	Upto 75 mm dia	RM	2.00	0.00022834
b	100 mm dia	RM	2.00	0.00039283
c	150 mm dia	RM	2.00	0.00085143
d	200 mm dia	RM	2.00	0.00148808
2300	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.			

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**CHAPTER XI-2468**  
**BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE**

**Scope of Work: BHE/PW/PUR/BWT6-CVL/BAL-CHP-AHP/2468 Balance work of AHP MCC Cum Compressor building, ERH, ERH Tunnel, CHP MCC-1, CHP MCC-2 & Ash Slurry Pump House at 1x660 MW Bhusawal Thermal Power Station, Unit-6**

Sl. NO	Item Description	Unit	Qty	Weightage %
A2301	Taking delivery of steel from BHEL stores / store yard, loading, Transportation, unloading, 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 including 2 coats of inorganic zinc (85% Zinc) primer (one coat at shop and one coat after erection and final alignment), 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 20°C for welding over 20 mm and upto 40 mm & 66°C for welding over 40 mm and upto 63 mm & 110°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, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, 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 an independent separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL (BHEL to supply steel free of cost).	MT		
(a)	Fabrication	MT	18.50	0.23085046
(b)	Erection, alignment, welding Payment Break up: a) Erection : 70% b) Alignment and Welding : 30 %	MT	18.50	0.12431232
A2302	Extra over ST NO. 2301 for Shot blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ) etc all complete.	MT	18.50	0.05727857
A2304	Providing and applying minimum total 150 microns DFT of polyamide epoxy paint composed of 77% solids (by volume) in three coats (each coat shall be minimum 50 micron DFT) as finishing coat of approved make and shade to achieve an even shade over steel sections already having primer coats including protection and cleaning, scaffolding etc. all complete.	MT	18.50	0.06773191
2322	Supply, fabrication and fixing of GI pipe hand railing (Min. 1000 mm high, 610 gms/Sqm ) of 32 mm/40 mm/50 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete..	MT	7.50	0.62765026
	<b>Total</b>			<b>100.00000</b>