

**RATE SCHEDULE FOR FABRICATION & ERECTION OF BUNKER STRUCTURE OF UNIT 1 OF 2X600 MW VPL (VISA POWER LIMITED) PROJECT NEAR VILLAGE DEVERI & DUMARPALI DISTRICT RAIGARH IN CHHATTISGARH STATE**

**STRUCTURAL STEEL WORKS FOR MILL AND BUNKER BUILDING TILL BUNKER TOP INCLUDING BUNKERS (EXCLUDING RCC & CIVIL WORKS) :** All items for fabrication should include supply (Other than BHEL Supplied Materials), transportation of materials from stores and return of surplus/waste steel materials to stores, preparation of fabrication drawings, including appointing an independent agency with the approval of BHEL for checking of fabrications drawings prepared by the bidder, joint design calculations, fabrication, surface preparation, painting with primer coat, delivery of fabricated structure to site, erection, labour and all other general & specific requirements, all other activities required for completion of work as per specifications and also inclusive of all necessary non destructive and special testing, rectification to the satisfaction of engineer/customer for the following:

ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE IN FIGURE ( IN Rs.)	RATE IN WORDS (IN RS)	Amount ( ie Rate X Quantity) in (Rs.)
800	<b>GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:</b>					
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 <b>Conbextra GP-2 or equivalent</b> . (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	<b>CUM</b>	<b>11</b>			
<b>2300 STRUCTURAL STEEL</b>						
2301	Taking delivery from BHEL store / store yard, loading, transportation, unloading at work site, fabrication and erection of <b>structural steel with mild steel rolled section / built up section / combination of both</b> 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, etc including, 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, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL. (For Non Destructive testing like RT, UT, MPT & DPT, the payment shall be made separately under item no.2321, 2322, 2324 & 2325 respectively)					

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ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE IN FIGURE ( IN Rs.)	RATE IN WORDS (IN RS)	Amount ( ie Rate X Quantity) in (Rs.)
(a)	<b>Fabrication</b>	MT	<b>4900</b>			
(b)	<b>Erection, alignment, welding</b>	MT	<b>4900</b>			
2302	Surface Preparation by blast cleaning of steel structures (Mentioned in Item No. 2301) using copper slag as abrasive material or method approved by engineer-in-charge to near white metal surface of quality (SA 2 ½ )and applying 2 coats of epoxy resin based Zinc Phosphate Primer DFT 50 microns each (one coat at shop and one coat after erection) including touch-up painting etc all complete.	MT	<b>4900</b>			
2305	Providing and applying two coats of <b>epoxy resin based paint pigmented with Titanium dioxide</b> with <b>minimum DFT of 100 microns</b> . <b>Top coat</b> shall consist of one coat of epoxy paint suitably pigmented of approved shade and colour with glossy finish and <b>DFT of 75 microns</b> . Additionally <b>finishing coat of polyurethane of minimum DFT of 25 microns</b> shall be provided. The paint shall give a smooth, hard, durable and glossy finish to all surfaces. Bidder shall supply the paints in the exact colour / shade and type of finish of the paint, as per IS Codes & direction of BHEL and no extra payment shall be entertained by BHEL for the above.	MT	<b>5000</b>			
2307	Supplying, fabrication, erection and alignment of factory made <b>electroforged galvanised grating units</b> with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	<b>3</b>			
2309	Extra over above ST NO. 2301 for <b>finishing the grating units</b> with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-phosphate primer all complete.	MT	<b>3</b>			

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ST. NO	DESCRIPTION OF ITEM	UNIT	Quantity	RATE IN FIGURE ( IN Rs.)	RATE IN WORDS (IN RS)	Amount ( ie Rate X Quantity) in (Rs.)
2311	<b>Providing and fixing in positing of high strength structural bolts</b> (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	Quintal	<b>115</b>			
2312	<b>Dismantling of steel structure</b> , lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions ( weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	<b>10</b>			
2313	Addition to, alterations in and/or modification of " <b>Erection Marks</b> " including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:					
a	In erected position	MT	<b>15</b>			
b	In fabrication yard	MT	<b>10</b>			

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2314	<b>Re-erection of dismantled fabricated structural steel</b> members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	<b>10</b>			
2315	Taking delivery from BHEL store / store yard, loading, transportation, unloading at work site, fabrication and erection of <b>minimum 3.15 mm thick stainless steel liner of grade AISI - 304</b> on M.S. plate for the <b>inner faces of entire inclined portion of Hoppers and Mouth of the Hoppers</b> including fixing with stainless steel studs, bolting (including countersunk), <b>welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel</b> etc. all complete.	MT	<b>35</b>			
2318	Providing and fixing flexible open ended <b>bellow strap of neoprene</b> of minimum thickness 2 mm and minimum width 200 mm with aluminium stripped edges as sealing below top of bunker and bottom of tripper floor to avoid the coal dust nuisance all complete.	RM	<b>300</b>			
2320	Supply, fabrication and fixing of <b>GI pipe hand railing (1000 mm high)</b> of 32 mm/40 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete..	MT	<b>3</b>			
2321	Conducting <b>radiography test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	<b>50</b>			
2322	Conducting <b>ultrasonic test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	<b>50</b>			
2324	Conducting <b>magnetic particle test on welds</b> wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	<b>50</b>			
2325	Conducting <b>dye penetration test on welds</b> wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	<b>50</b>			