

CHAPTER - 21 : BRIDGE WORK - SUPERSTRUCTURE STEEL

Note - Items in this chapters are for works not requiring traffic block unless otherwise specified in the relevant item. All items are for clear span upto 45.7 M unless otherwise specified.

Item No.	Description of Item	Unit	Rate (Rs.)
211010	Supplying of all types of structural steel conforming to Fe 410 B of IS:2062, fabrication, assembling, erection / slewing / end launching of steel girders (Not requiring traffic block) upto 45.7 M span on sub-structure incl. provision of trolley refuges, if reqd. complete as per approved drawing incl. one coat of Zinc chrome primer to 1S-104 & one coat of Zinc Chrome Red Oxide to IS 2074 and painting as per IRS-B-1 on all members, (Detailed fabrication and erection drawings & launching methodology will be prepared and got approved by the contractor from Railway). Rate include fabrication of all the types of battens, bracings, ties, stiffeners, packing, diaphragms, shop rivets / welding, T&F bolts, drifts, shop welds, templates, jigs, fixtures, back up supports, accessories, transporting various components from fabrication shop. to site, contd....	MT	
 Contd. - including loading, unloading, lift and taxes complete. assembly of girders' on- drifts/bolts, field riveting/welding, assembling of temporary support for side slewing, raising of girders to the bed block level, providing sliding arrangements and slewing the girder in position, lowering of girder on bearings and bed plates. grouting holes in the bed block for fixing of HD bolts/anchor pins of bed plates, all temporary arrangements. Load testing may be done under chapter 22.The bearing sets to - be provided with the girders will be paid separately as per relevant item separately.		
	Payment Schedule		
	(i) Material at site - 40%		
	(ii) Fabrication at site - 15%		
	(iii) Erection/Launching - 20%		
	(iv) Completion incl. painting & finishing - 25%		
211011	Plate Girder/ Semi Through Girder	MT	66054.43
211012	Open web Girder	MT	70433.01
211013	Extra for metalising incl. preparation of surface and applying one coat etch primer to 1S-5666	Sqm	13.58
211014	Extra for using steel conforming to Fe 490 of IS: 8500 instead of Fe 410	MT	1161.50
211015	Deduct for using steel conforming to Fe 410 A of IS : 2062 instead of Fe 410 B	MT	1161.50

Item No.	Description of Item	Unit	Rate (Rs.)
211020	Assembling and Erection of fabricated material including rocker and roller bearings with crane/derrick at site on sub structure with labour, equipment, T&P including site riveting/welding with all' temporary arrangement! Scaffolding etc. with contractors design and scheme for longitudinal launching/side slewing (Not requiring traffic block) approved by Railway. Rate incl. Field rivets/ welding, drifts, service bolts etc, as per drawings		
211021	Plate Girder/ Semi Through Girder	MT	12939.24
211022	Open web Girder	MT	14340.63
211030	Fabricating, supplying and fixing in position Galvanized steel channel sleepers of mild steel of tested quality conforming to IS: 2062, on fabricated girders including all fixtures fastenings as per approved Railway drawings with labour, material, tools and plants etc. as a complete job including galvanizing of all components	MT	82075.54
211031	Extra for working under running traffic/traffic block conditions On item 211030	MT	6005.70
211040	Fabricating, supplying and fixing of 6 to 8 mm thick steel chequered plate conforming to IS: 3502 for pathway, trolley refuges, floor for the bridge including fixing the same over steel channel sleepers by drilling holes in channel sleepers and trolley refuges incl. nuts & bolts, tools and plants, labour as a complete job	MT	92406.26
211050	Metalizing of steel work of girder with grit blasting as per IRS-B1-2001 following by one coat of etch primer (as per IS: 5666) one coat of Zinc Chrome primer (as per IS:104) and two coats of aluminium paint (as per IS: 2339) with all labour, T&P and material as a complete job	Sqm	79.92
211060	Providing and fixing 65/50 mm nominal dia B class G.I. pipe railing used in rows for footpath or anti-crash barrier railing incl. cost of M.S. angle and channels in vertical posts, riveting, welding / rivetting, priming painting two coats, at all heights labour and material as a complete job	Kg	57.25
211070	Supplying and fixing anti-slip M.S. Angles/nosing 65mmx 65x 8mm or any other size confirming to IS: 2062 fixing 10mm dia, anchor bar 600mm C/C and fixing with main girder with M.S. flat on top of step of stair case, making anti-slip grooves 7 nos. arrangement for keeping and maintaining in position as per approved plan with all labour and material as a complete job	Kg	50.43
211080	Providing/ fixing/ leaving/ grouting various size HTS bolts / holding down bolts in concrete column or in other structural steel member with proper nuts, bolts, washers /plates as a complete job. Note - Cement used in grouting will be paid separately under relevant item	Kg	87.38

Item No.	Description of Item	Unit	Rate (Rs.)
211090	Providing, cutting , fabricating , treating , fixing & painting structural steel conforming to IS:2062 in access ladders, inspection platforms, Trolley refuge, railing, etc, joints welded to neat finish incl. one coat of primer & two coats of synthetic enamel paints	MT	49974.06
211100	Supplying, fitting and fixing in position true to line and level cast steel rocker bearing complete as per IS : 7666, IS:9565, IS:1030,IS:919 ,IS:3073 and as per bridge code including all accessories as per drawing and Technical Specifications	MT	96665.97
211110	Supplying, fitting and fixing in position true to line and level forged steel roller bearing conforming complete as per IS : 7666, IS:9565, IS:1030,IS:919 ,IS:3073 and as per bridge code including all accessories as per drawing and Technical Specifications	MT	102707.64
211120	Supplying, fitting and fixing in position true to line and level sliding plate bearing with PTFE Surface sliding on stainless steel as per BS: 3784, BS 5400.complete including all accessories as per drawing and Technical Specifications	MT	99085.73
211130	Design, Supplying, fitting and fixing in position true to line and level elastomeric bearing conforming to IS: 3400, IS:226, BS 5400.complete including all accessories as per drawing and Technical Specifications	cu cm	1.20
211140	Supplying, fitting and fixing in position true to line and level POT-PTFE bearing consisting of a metal piston supported by a disc or un reinforced elastomer confined within a metal cylinder, sealing rings, dust seals, PTFE surface sliding against stainless steel mating surface, complete assembly to be of cast steel / fabricated structural steel, metal and elastomer elements complete as per IS 2062, IS: 1030, AISI:304, AISI:316, IS:6911, BS:3784, IS:3400, IS:226, BS 5400.,Bridge code and as per drawing and approved Technical Specifications The design of the bearings shall be submitted by the manufacturers/ contractor and got approved from Railway before fixing. Test report of the bearings should be got approved before the materials are lifted from the manufacturer premises. Payment is based on capacity of Bearing		
211141	POT-PTFE Bearing	MT	96666.54
211142	POT Bearing	MT	96666.65
211143	PIN Bearing	MT	96666.65
211150	Providing vertical guide bearings as per approved drawings and fixing them with transversal and longitudinal stoppers using reinforced neoprene pads and PTFE-SS sliding system as per approved drawings and specifications. Payment is based on capacity of Bearing	MT	96665.93

Item No.	Description of Item	Unit	Rate (Rs.)
211151	Longitudinal stopper bearings	MT	96665.83
211152	Transverse stopper bearings	MT	96666.19
211160	Supply & applying two coats of bitumen emulsion conforming to IS 3117 - 1965 on the top surface of steel deck slab (New bridges)@ 1.70 kg per sqm after cleaning surface with all materials, labour, tools and plants, equipment etc. complete.	Sqm	101.55
211170	Painting steel works (New bridges) with two cover coats of red oxide paint conforming to IS 123-62 as per IRS-B1-2001 to given an even shade with all labour & material including scaffolding, shuttering and strutting along with provision of Jhoola/ hanging scaffolding where required	Sqm	80.44
211180	Providing road crane of different capacity with diff. jib length revolving type for material handling, assembly & erection of girders/slab/RCC Box etc.		
211181	12MT capacity with 36 feet jib	day	2990.86
211182	25 MT capacity with 60 feet jib	day	4785.38
211183	40 MT capacity with 75 feet jib	day	8673.50
211184	75 MT capacity with 75 feet jib	day	17945.18
211185	100 MT capacity with 75 feet jib	day	23926.90
211186	150 MT capacity with 75 feet jib	Day	29908.63
211190	Cleaning of steel work of bridge girders Up to 30.50 m. clear span with scrappers and/or wire brushes to remove all rust and loose or perished paint to prepare perfectly clean & dry bare metal surface free from all dirt/foreign material & ready for initial coat of paint. Rate include cost of labour, consumables, brushes, tools and plants, ladders, scaffoldings, jhoola, hanging scaffolding staging etc.	Sqm	17.90
211200	Cleaning of steel work of bridge triangulated girders with scrappers and/or wire brushes to remove all rust and loose or perished paint to prepare perfectly clean & dry bare metal surface free from all dirt/foreign material & ready for initial coat of paint. Rate include cost of labour, consumables, brushes, misc. tools and plants, ladders, scaffoldings, jhoola, hanging scaffolding staging etc.	Sqm	26.85
211210	Painting cleaned bridge plate girders including all scaffolding, shuttering and strutting along with provision of Jhoola / hanging scaffolding where required		
211211	With one coat. ready mix red lead conforming to IS : 102	Sqm	21.18
211212	With one coat ready mix Zinc Chromate conforming to IS : 104 followed by one coat of Zinc Chromate red oxide conforming to IS: 2074	Sqm	33.29
211213	With two coats. ready mix red oxide conforming to IS:123	Sqm	33.06

Item No.	Description of Item	Unit	Rate (Rs.)
211214	With two coats Aluminium paints in dual containers conforming to IS : 2339	Sqm	38.90
211215	With two coats epoxy paint	Sqm	60.71
211220	Painting cleaned bridge girders exceeding 30.50 m clear span including all scaffolding, shuttering and strutting along with provision of Jhoola / hanging scaffolding where required		
211221	With one coat. ready mix red lead conforming to IS : 102	Sqm	24.17
211222	With one coat ready mix Zinc Chromate conforming to IS : 104 followed by one coat of Zinc Chromate red oxide conforming to IS : 2074	Sqm	38.07
211223	With two coats. ready mix red oxide conforming to IS : 123	Sqm	38.44
211224	With two coats Aluminium paints in dual containers conforming to IS : 2339	Sqm	43.69
211225	With two coats epoxy paint	Sqm	65.49
211230	Supply, fabrication and erection of bed plate of approved sizes in exact position over bed block on pier/abutments by giving full and even bearing, setting them on the layer of free flow non -shrinkable grouting compound, scrapping or chipping of bed block if required, fabrication and fixing of HD bolts of suitable sizes along with nuts, washers etc., drilling of holes of required size, grouting of holes by epoxy mortar after fixing HD bolts. Total work to be done during traffic		
211231	Upto 12.2 m clear span	Kg	2204.58
211232	More than 12.2 m but upto 18.3 m clear span	Kg	2755.73
211233	More than 18.3 m but up to 30.5 m clear span	Kg	3306.87
	New Items To Be Added By Zonal Railways		
212010			
212020			
212030			
212040			
212050			
212060			
212070			
212080			
212090			
212100			