

CHAPTER - 8 : STEEL AND ALUMINIUM WORK				
Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
	STEEL WORK			
081010	Structural steel work in single section including cutting, bending, straightening, drilling, rivetting, bolting, hoisting, fixing in position, including applying a priming coat of approved steel primer, complete - upto 6m height above GL			
081011	In RSJ, tees, angles and channels	Kg	52.19	
081012	In flats, plates, round or square bars	Kg	52.01	
081020	Structural steel work riveted or bolted in built up sections, trusses and framed work, girders, staging, racks etc including cutting, bending, straightening, drilling, rivetting, bolting, hoisting, fixing in position including applying a priming coat of a approved steel primer complete - upto 6m height above GL			
081021	In RSJ, tees, angles and channels	Kg	55.34	
081022	In flats, plates, round or square bars	Kg	54.10	
081030	Structural steel work welded in built up sections, trusses and framed work, girders, stagings, racks, etc including cutting, bending, straightening, hoisting, fixing in position, including applying a priming coat of approved steel primer, complete - upto 6m height above GL			
081031	In RSJ, tees, angles and channels	Kg	72.84	
081032	In flats, plates , round or square bars	Kg	70.86	
	Note for Item 081030 : Purlins and wind bracings shall be paid separately under item 81010.			
	Note for Items 081011, 081021 & 081022 : These rates are not to be paid for ironwork with rails, which should be paid under each item separately.			
081040	Extra for every subsequent 3m height or part thereof over 6m height above GL for erection and fixing of steel work :			
081041	Over item no 081012	Kg	2.68	
081042	Over item no 081022	Kg	2.76	
081043	Over item no 081032	Kg	7.42	
081050	Erecting roof trusses, tank stagings, steel tanks etc. including rivetting for work upto 10 m height above G	quintal	223.72	
081060	Extra to item no 081050 for every subsequent 5m height, or part thereof, over 10m height above GL	quintal	55.93	
081070	Erecting rails in posts, platform wall copings etc. including necessary cutting and drilling	quintal	70.91	
081080	Riveting including reaming holes where necessary for every 5mm dia or part thereof	100 rivets	112.57	
081090	Cutting out rivets for every 5mm or part thereof	100 rivets	56.91	

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
081100	Providing and fixing MS round or square bars/ flats or grills in frames in window and clerestory windows	Sqm	48.35	
081110	Providing and fixing expanded metal 20X60mm strands 3.25mm wide and 1.6mm thick on angle iron flat iron frames including all incidental work complete. Cost of frames to be paid separately under relevant item	Sqm	345.24	
081120	Providing and fixing hard drawn steel wire fabric 75X25 mm mesh of weight not less than 7.75 Kg per sqm on angle iron or flat iron frame including all incidental work complete. Cost of frames to be paid separately under relevant item	Sqm	491.35	
081130	Providing and fixing MS flat 25mm x 6mm covering over expanded metal/ hard drawn wire fabric edges (executed as per Item 081110 and 081120) along the perimeter of the angle iron or flat iron framework including all incidental work, complete	metre	162.74	
081140	Supplying and fixing lewis/ holding down bolts of approved design with nuts and washers complete	Kg	53.11	0.020
081150	Rethreading bolts per 5mm dia, or part thereof per, cm length, or part thereof, of threading	cm	3.28	
081160	Cutting standard screw thread per 5mm dia. or part thereof per cm length, or part thereof, of threading when separately ordered	cm	7.14	
081170	Cutting round/ square bars per 10 mm dia/width or part thereof when separately ordered	Each	4.69	
081180	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size with top and bottom rail of T-iron 40x40x6mm with 40mm dia, steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles and hold fasts including applying a priming coat of approved steel primer	Sqm	2652.82	0.004
081190	Providing and fixing 1mm thick M.S. sheet sliding-shutters with frame and diagonal braces of 40x40x6mm angle iron, 3mm M.S. gusset plate at the junction and corners 25mm dia pulley 40x40x6mm angle and T-iron guide at the top and bottom respectively with bolts, nuts, locking arrangement, clamping arrangement, stoppers, handles and hold fasts including applying a priming coat of approved steel primer	Sqm	2326.73	0.004
081200	Providing and fixing 1mm thick M.S. sheet door shutter with frame of 40x40x6mm angle iron and 3mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer			
081201	Using M.S. angles 40x40x6mm for diagonal braces	Sqm	1900.37	0.004
081202	Using flats 30x6mm for diagonal braces and central cross piece	Sqm	1749.92	0.004

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
081210	Supplying and fixing rolling shutters of approved make as per IS 6248, made of required size M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire spring grade No.2 and M.S. top cover of required thickness for rolling shutters			
081211	80x1.25mm M.S. laths with 1.25mm thick top cover	Sqm	2136.73	0.004
081212	80x1.20mm M.S. laths with 1.20mm thick top cover	Sqm	1152.59	0.004
081213	80x0.90mm M.S. laths with 0.90mm thick top cover	Sqm	1025.79	0.004
081220	Providing and fixing ball bearing for rolling shutters	Each	393.19	
081230	Extra for providing mechanical device chain and crank operation for operating rolling shutters			
081231	Exceeding 10.00Sqm and upto 16.80 Sqm. in the area	Sqm	770.68	
081232	Exceeding 16.80 Sqm in area	Sqm	851.03	
081240	Extra for providing grilled rolling shutters manufactured out of 8mm dia. M.S. bar instead of laths as per design approved by the Engineer-in-Charge (area of grill to be measured)	Sqm	505.25	
081250	Providing and fixing ISI standard steel glazed doors, windows and ventilators of standard rolled steel sections (shutters & frame), joints mitered and welded with 15x3mm lugs, 10cm long, embedded in cement concrete blocks 15x10x10cm of 1:3:6 (1cement: 3coarse sand: 6graded stone aggregate 20mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing glass panes with glazing clips and special metal sash putty of approved make, necessary fittings such as brass handles, brass peg stays, brass spring catch, bolts, hinges, locks etc as required, applying a priming coat of approved steel primer but excluding the cost of			
081251	Doors	Sqm	2692.11	0.010
081252	Windows fixed	Sqm	2570.88	0.010
081253	Windows-side hung	Sqm	2775.93	0.010
081254	Ventilators-top hung	Sqm	2806.13	0.010
081255	Ventilators-centre hung	Sqm	2806.13	0.010
081260	Extra for providing and fixing steel beading of approved shape and section with screws instead of glazing clips and metal sash putty in steel doors, windows, ventilators and composite units	metre	22.09	

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
081270	Providing and fixing T-iron frames for doors, windows and ventilators of mild steel Tee-sections, joints mitered and welded with 15x3mm lugs 10cm long embedded in cement concrete blocks 15x10x10cm of 1:3:6 (1cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as require including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer	Kg	99.06	0.001
081280	Providing and fixing pressed steel door frames manufactured from commercial mild steel sheet of 1.25mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 25mm thick with mortar guard, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pretreatment of the surface as directed by the Engineer-in-Charge			
081281	Profile-A (105x60mm) Single rebate	metre	425.00	
081282	Profile-B (125x60mm) Single rebate	metre	456.94	
081283	Profile-C (160x60mm) Double rebate	metre	464.25	
081290	Steel work in built up tubular trusses including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete			
081291	Hot finished welded type tubes	Kg	86.05	
081292	Hot finished seamless type tubes	Kg	93.37	
081293	Electric resistance or induction butt welded tubes	Kg	106.18	
081300	Providing and fixing 20x6mm mild steel 15cm long clamps for securing chick tops	Each	23.06	
081310	Providing and fixing mild-steel rings of 6mm round bars and 40mm internal dia for fastening ropes of chicks	Each	16.67	
081320	Providing and fixing M.S. fan clamp of 16mm dia M.S. bar bent to shape with hooked ends in R.C.C. slabs during laying including painting the exposed portion of loop, all as per standard design complete	Each	83.99	
081330	Extra over rate of Item No. 081320 for providing and fixing M.S. fan clamp as per design in R.C.C. beams during laying towards the additional height of the clamps due to beam rib	cm height	1.30	
081340	Providing and fixing circular cast iron box for ceiling fan clamps 140mm internal dia. 73mm height, 5mm thick rim, bottom and top lid of 1.5mm thick M.S. sheet with its top surface hacked .. Contd. -	Each	91.26	

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
	.. Contd. - for proper bonding top lid shall be screwed into the cast iron box by means of 3.3mm dia. Round headed screws, one lock at the corners, clamps shall be made of 12mm dia. M.S. bar bent to shape as per standard drawing			
081350	Providing and fixing circular/ hexagonal M.S. sheet ceiling fan box with clamps of internal dia 140mm, 73mm height, 3mm thick rim, top and bottom lid of 1.5mm M.S. sheet. Lids shall be screws into M.S. box by means of 3mm round beaded screws, clamps shall be made of 12mm dia M.S. bar bent to shape as per standard drawing with over all length as 80cm. (it includes cost of clamps also)	Each	107.52	
081360	Providing and fixing M.S. round holding down bolts with nuts and washer plates complete	Kg	68.17	
081370	Providing and fixing bolts including nuts and washers complete	Kg	88.20	
081380	Providing and fixing M.S. rivets of sizes in position	Kg	86.02	
081390	6mm welding by gas plant including transportation of gas welding plant at site etc. complete	cm	7.96	
081400	6mm welding by electric plant including transportation of electric welding plant at site etc. complete	cm	6.79	
081410	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required			
081411	In stringers, treads, landings etc. of stair cases including use of chequered plate wherever required all complete	Kg	77.82	
081412	In gratings, frames, guard bar, ladders, railings, brackets, gates and similar works	Kg	73.68	
081420	Providing and fixing hand rail by welding etc. to steel ladders railing, balcony railing and staircase railing including applying a priming coat of approved steel primer			
081421	M.S. tube (medium) 40mm nominal bore	Kg	89.30	
081422	E.R.W. tubes 40mm nominal dia.	Kg	115.89	
081423	G.I. pipes 40mm nominal bore (class B)	Kg	99.39	
081430	Supplying and fixing to pan type latrines 0.91 mm thick M.S. Steel Flat Cover (hinged on 12 mm dia M.S. bar on top) with 6.0mm dia bar handle welded or riveted on the flap. (including all labour and material)	Sqm	435.38	
	ALUMINIUM WORK			
082010	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS:733 and IS:1285, anodised transparent or dyed to required shade according to IS:1868 (Minimum anodic coating of grade AC 15), ... Contd. -			

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
	... Contd. -- fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitered and jointed mechanically wherever required including cleat angle. Aluminium snap beading for glazing/ panelling, C.P. brass/stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately)			
082011	For fixed portion	Kg	420.48	0.001
082012	For openable/sliding portions and fixing hinges / pivots, PVC/ neoprene gasket required and making provision for fixing of fittings. (Fittings shall be paid for separately)	Kg	436.46	
082020	Providing and fixing 12mm thick prelaminated three layer medium density (exterior grade) particle board Grade I, Type II conforming to IS: 12823 bonded with phenol formaldehyde synthetic resin, of approved brand and manufacture in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge			
082021	Pre-laminated particle board with decorative lamination on one side and balancing lamination on other side	Sqm	849.42	
082022	Prelaminated particle board with decorative lamination on both sides	Sqm	849.42	
082030	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item)			
082031	With float/frosted glass panes of 4mm thickness (weight not less than 10.0 kg/sqm)	Sqm	841.80	
082032	With float/frosted glass panes of 5.5mm thickness (weight not less than 13.75 kg/sqm)	Sqm	914.76	
082040	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS:6315 including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece M.S. Sheet outer box with slide plate etc. complete as per the direction of Engineer-incharge			
082041	With Stainless Steel cover plate	Each	2116.07	
082042	With Brass cover plate	Each	2380.22	

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
082050	Providing and fixing anodised aluminium work (with minimum 15 micron uniform anodic coating) consisting of tee/angle sections, of approved make conforming to IS:733 in frames of false ceiling including aluminium angle cleats with necessary C.P. brass/stainless steel sunk screws, aluminium perimeter angles fixed to wall with rawl plugs @ 450 mm centre to centre and fixing the frame work to level adjusting hangers (6mm dia. M.S. rods) with necessary cadmium plated machine screws all complete as per approved architectural drawings and direction of the Engineer-in-charge (level adjusting hangers, ceiling cleats and expansion hold fasteners to	Kg	572.86	
082060	Providing and fixing level adjusting hangers of 6mm dia. M.S. rods (upto 1200mm length) fixed to roof slabs by means of M.S. angle ceiling cleats 40x40x5mm size, 40mm long and expansion hold fasteners 12.5 mm dia. 40mm long including applying priming coat of zinc chromate yellow primer for steel members complete	Each	130.11	
082070	Providing and fixing machine moulded anodised aluminium covering of approved pattern & design, made out of machine cut aluminium sheet and machine holed for receiving screws, over expansion joints on vertical surfaces / ceilings with full threaded, cadmium plated steel screws 4 mm dia. stem, 30mm long and aluminium washers 2mm thick, 15mm dia, at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete. (Anodising on the aluminium sheet and washers to be 15 micron thick)			
082071	Made out of 170mm wide anodised aluminium sheet 2.5 mm thick	Kg	334.46	
082072	Made out of 210mm wide anodised aluminium sheet 2.5 mm thick	Kg	333.72	
082080	Aluminium Composite Cladding - Providing and fixing Aluminium Composite Panels having total thickness of 4mm (with 0.5mm thick aluminium foil skin on both sides) alongwith minimum 25 micron PVdF Coating on top coil and Polymer/epoxy coating on Back coil (4-7 microns) fixed on aluminium substructure of 50mm x 25mm x 3mm or 38mm x 38mm x 4mm (IS Grade Aluminium Extrusion) with stainless steel fastening system of Hilti/Fischer Dash Fasteners on facade, horizontal / vertical surfaces of columns, suspended ceiling, sills, jambs, canopies etc. and making 25mm grooves and applying non staining and non streaking sealant 789 or 991 HP with Baker Rod complete as per approved shop drawings and as per specifications (straight and curved). Only exposed surfaces to be measured and paid.	Sqm	2171.45	0.020

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
082081	Extra for using 5mm thick aluminium composite panel (with 0.5mm thick aluminium foil skin on both sides) in lieu of 4mm Aluminium composite panel (only thickness of core to be 4mm in lieu of 3mm in item 082080 above)	Sqm	2.90	
082082	Deduct if 3mm thick aluminium composite panel (with 0.25mm thick aluminium foil skin on both sides) is used in lieu of 4mm Aluminium composite panel (thickness of core to be 2.5mm in lieu of 3mm in item 082080 above)	Sqm	635.92	
083010	Repairing aluminium glazed door/ window/partition leaf & frame by replacing damaged portion i.e style, rails, horizontal and vertical members with necessary anodized aluminium hollow tubes, angles, taper cleats, screws etc. of any section to match with existing one including taking out the door leaf/ frame, if required with due care to prevent further damage and refixing the same in original position after repairing complete in all respect. Extra fittings if required to be paid separately	Kg	444.82	
083020	Providing and fixing Aluminium round/ square bars / flats or grill in frame of windows and cleastory windows	Sqm	682.87	
083030	Providing and fixing acrylic sheet for glazing in aluminium door, window, ventilator shutter, partition, reservation counter etc. with Aluminium round / square bars / flats or grill in frame of windows and cleastory windows etc. with PVC/neoprene gasket etc. complete (cost of aluminium frame/grill shall be paid separately in relevant item)			
083031	3 mm thick	Sqm	797.52	
083032	5 mm thick	Sqm	1048.80	
083040	Extra for using coloured acrylic sheet instead of transparent / translucent sheet	Sqm	79.75	
083050	Fabricating, supplying & installing stainless steel railings for staircases, balconies, FOBs, Enquiry/Reservation complex etc., made of SS 304 grade stainless steel, laser cut / water jet cut (no shearing), polished with Automatic round/flat polishing machine to get a uniform hairline finish. All parts shall be connected to each other with the help of prescribed size CNC made solid connectors, countersunk screws. Welding should be finished ensuring that no welding marks are visible and assembly is mounted on floor with the help of dash fasteners. Railings shall be fabricated as per approved drawings by engineer-in-charge. Manufacturer shall submit maintenance manual and basic material test report for grade certification.	Kg	590.96	
083060	Extra over item 083050 for using SS 316 Grade stainless steel (to be used in corrosive coastal areas) instead of SS 304 Grade	Kg	98.73	

Item No.	Description of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
	New Items To Be Added By Zonal Railways			
084010				
084020				
084030				
084040				
084050				
084060				
084070				
084080				
084090				
084100				