

CHAPTER - 23 : ROAD AND PLATFORM WORKS				
Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
SUB-BASES AND BASES				
231010	Preparation of subgrade by excavating earth upto 22.5cm depth, dressing to camber and consolidating with power road roller of 8 to 12 tonne capacity including making good the undulations etc. and disposal of surplus earth with lead upto 50 metres	Sqm	38.16	
231020	Consolidation of subgrade with power road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and re-rolling the subgrade	Sqm	1.42	
231030	Providing and laying each layer of flat brick soling hand packed and joints filled with ordinary sand			
231031	With well burnt bricks. Class 7.5 designation	Sqm	118.23	
231032	With Jhama bricks	Sqm	106.31	
231040	Providing and laying water bound macadam with specified stone aggregate, stone screening and binding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc. complete.			
231041	Sub-base with stone aggregate 90mm to 45mm including stone screening 13.2mm size	cum	1488.61	
231042	Base course with 63mm to 45mm size including stone screening 13.2mm size	cum	1276.05	
231043	Base course with 53mm to 22.4mm size including stone screening 11.2mm size	cum	1213.62	
231050	Providing and laying water bound macadam sub-base with brick aggregate and binding material, earth / moorum etc. including screening, sorting and spreading to template and consolidation with light power road roller etc. complete			
231051	Over burnt (Jhama) brick aggregate 120mm to 40mm	cum	785.92	
231052	Over burnt (Jhama) brick aggregate 90mm to 45mm	cum	836.25	
231060	Providing and laying bitumen penetration macadam with hard stone aggregate, with bitumen of suitable penetration grade including required key aggregate as specified, spreading coarse aggregate with the help of self propelled / tipper tail mounted aggregate spreader and applying bitumen by a pressure distributor and then spreading key aggregate with the help of aggregate spreader complete including consolidation with road roller of minimum 8 to 10 tonne capacity			

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231061	For 50mm compacted thickness using 6cum coarse aggregate of size 50-20mm graded, 1.5cum key aggregate of size 12.5mm graded, and 500kg paving asphalt 80/ 100 per 100sqm	Sqm	258.20	
231062	For 75mm compacted thickness in two layers using 9cum coarse aggregate of size 63-41mm graded, 1.8cum key aggregate of size 20mm graded, and 680kg paving asphalt 80/ 100 per 100sqm	Sqm	365.12	
231070	Providing and laying 4 cm thick moorum surfacing (Consolidated Thickness) on platforms, pathways, etc including spreading watering and consolidation with 3 T Roller or light power roller complete	Sqm	21.26	
231080	Providing and spreading 6mm thick layer of red bajri/ moorum, watering and rolling with 3 T roller or light power roller complete including preparation of the surface and rolling	Sqm	26.08	
	SURFACE DRESSING :			
232010	Surface dressing on new surface with paving bitumen of grade A-90/ S-90 of approved quality using 2.25 kg of bitumen. per sqm with 1.65 cum of stone chippings 13.2mm nominal size per 100 sqm of road surface including consolidation with road roller of 6 to 8 tonne capacity etc. complete	Sqm	132.81	
232020	Surface dressing on new surface in two coats with bitumen of grade A-90/ S-90 of approved quality using 1.8kg. of bitumen per sqm with 1.5cum of stone chippings 13.2mm nominal size per 100 sqm of road surface for 1st coat and 1.1kg of bitumen per sqm with 1.00cum of stone chippings 11.2mm nominal size per 100sqm of road surface for 2nd coat including consolidation of each coat separately with road roller of 6 to 8 tonne capacity etc. complete	Sqm	179.68	
232030	Surface dressing on old surface with hot bitumen of grade A-90/ S-90 of approved quality using 1.95 kg of bitumen per sqm with 1.50 cum Stone chippings 11.2mm nominal size per 100 sqm of road surface including consolidation with road roller of 6 to 8 tonne capacity etc. complete	Sqm	111.22	
232040	Surface dressing one coat on new surface with bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS: 8887) at a rate of 1.95kg/sqm of surface area with 1.5cum of stone chippings 13.2mm nominal size per 100 sqm of road surface including consolidation with road roller of 6 to 8tonne capacity etc. complete	Sqm	87.43	

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
232050	Surface dressing one coat on old surface with bitumen emulsion (minimum 50% bitumen content- RS grade conforming to IS: 8887) at the rate of 1.22kg/ sqm of surface area with 1.11cum of stone chippings 11.2mm nominal size per 100 sqm of road surface including consolidation with road roller of 6 to 8tonne capacity etc. complete	Sqm	56.61	
	PRE MIX CARPET :			
233010	Providing and applying tack coat using bitumen emulsion (Rapid setting) complying with IS: 8887- 1995, spraying the bitumen emulsion with mechanically operated spray unit, cleaning and preparing the existing road surface as per specification			
233011	On W.B.M. @ 0.4kg/ sqm	Sqm	21.79	
233012	On bituminous surface @ 0.25kg/ sqm	Sqm	15.04	
233020	Providing and laying 2cm premix carpet surfacing with 1.8cum and 0.90cum of stone chippings of 13.2mm size and 11.2mm size respectively and 144 kg of hot bitumen per 100 sqm over a tack coat including consolidation with road roller of 6 to 8 tonne capacity etc. complete (tack coat to be paid separately)			
233021	With paving asphalt 80/ 100 heated and then mixed with solvent at the rate of 70grams per kg. of asphalt	Sqm	109.94	
233022	With paving asphalt 60/ 70 with no solvent	Sqm	108.39	
233023	With refinery modified bitumen CRMB 55 conforming to IRC: SR: 53- 1999	Sqm	138.62	
233030	Providing and laying 2.5cm premix carpet surfacing with 2.25Cum and 1.12cum of stone chippings of 13.2mm size and 11.2mm size respectively and 180kg of hot bitumen per 100sqm over a tack coat including consolidation with road roller of 6 to 8tonne capacity etc. complete (tack coat to be paid separately.			
233031	With paving asphalt 80/ 100 heated and then mixed with solvent at the rate of 70grams per kg. of asphalt	Sqm	134.82	
233032	With paving asphalt 60/ 70 with no solvent	Sqm	133.78	
233033	With refinery modified bitumen CRMB 55 conforming to IRC: SR: 53- 1999	Sqm	170.67	
233040	Providing and laying 2cm premix carpet surfacing with 2.4cum of stone chippings 11.2mm nominal size and 230kg bitumen emulsion (medium setting min. 65% bitumen content) complying with IS: 8887- 1995 per 100sqm including consolidation with road roller of 6 to 8tonne capacity etc. complete	Sqm	128.08	

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
233050	Providing and laying 2.5cm premix carpet surfacing with 3cum of stone chippings 10mm nominal size and 288kg bitumen emulsion (medium setting min. 65% bitumen content) complying with IS: 8887- 1995 per 100sqm including consolidation with road roller etc. complete	Sqm	158.43	
	BITUMASTIC SHEET WEARING COURSE :			
234010	2.5 cm thick bitumastic sheet with hot bitumen of approved quality using stone chippings (60% 12.5 mm nominal size and 40% 10 mm nominal size) @ 1.65 cum per 100 sqm and coarse sand at 1.65 cum per 100 sqm of road surface and with bitumen @ 56 kg/cum of stone chippings and @ 128 kg/cum, of sand over a tack coat with hot straight run bitumen including consolidation with road roller of 8 to 10 tonne etc. complete, (tack coat to be paid separately) :			
234011	With paving bitumen 80/ 100 heated and then mixed with solvent at the rate of 70grams per kg. of asphalt	Sqm	165.09	
234012	With paving bitumen 60/ 70 with no solvent	Sqm	163.63	
234013	With refinery modified bitumen CRMB 55 conforming to IRC: SR: 53- 1999	Sqm	218.57	
234020	4cm thick bitumastic sheet with hot bitumen of approved quality using stone chippings (60% 12.5mm nominal size and 40% 10mm nominal size) 2.60cum and coarse sand 2.60cum of road surface and with 478kg bitumen per 100sqm of road surface over a tack coat including consolidation with road roller of 8 to 10tonne etc. complete (tack coat to be paid separately)			
234021	With paving bitumen 80/ 100 heated and then mixed with solvent at the rate of 70grams per kg. of asphalt	Sqm	250.36	
234022	With paving bitumen 60/ 70 with no solvent	Sqm	252.72	
234023	With refinery modified bitumen CRMB 55 conforming to IRC: SR: 53- 1999	Sqm	345.77	
	SEAL COAT :			
235010	Providing and laying seal coat of premixed fine aggregate (passing 2.36mm and retained on 180micron sieve) with bitumen using 128 kg of bitumen of grade 80/ 100 bitumen and 0.60cum of fine aggregate per 100sqm of road surface including rolling and finishing with road roller all complete. Note - This should not be operated along with Hot mix carpeting	Sqm	44.02	
	CONCRETE PAVEMENTS :			

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
236010	Cement concrete Grade M15 of coarse aggregate 40mm nominal size, in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete	cum	1551.77	3.200
236020	Providing and laying design mix cement concrete in roads, having a cube strength of M-30 using cement, coarse sand and graded stone aggregate of 40mm nominal size as per approved design. mechanically vibrated, steel form work, curing, providing and filling construction & dummy joints with approved joint filler (conforming to grade B of IS: 1834) rounding of the edges, making & filling the grooves as per drawing	cum	1973.24	3.4 or as per design mix
236030	Providing and fixing at or near ground level factory made RCC pavement slab of M-30 grade of size 450x450x50mm with reinforcement of 6mm dia M.S. bars 4 nos. on each side including setting in position in footpath to the required level and line over a bed of 20 mm average thick cement mortar (1 cement: 3 coarse sand) joint thickness not more than 5mm except on curve including filling of joints with same cement mortar and making grooves etc. complete as per direction of Engineer-in-charge	Sqm	461.38	0.070
236040	Extra over item236010 & 236020 for providing and mixing hardening compound of approved quality as per manufacturer's specification	litre	48.01	
236050	Providing and fixing in position pre-moulded joint filler in expansion joints	per cm width per cm depth / metre	3.51	
236060	Providing and laying in position bitumen hot sealing compound for expansion joints etc. using grade 'A' sealing compound	per cm width per cm depth / metre	1.54	
236070	Painting road surface marking with adequate number of coats to give uniform finish with ready mixed road marking paint conforming to IS: 164, on bituminous surface in white/ yellow shade including cleaning the surface of all dirt, scales, oil, grease and foreign material etc. complete			
236071	New work (minimum two coats)	Sqm	72.27	
236072	Old work (one or more coats)	Sqm	46.68	
	MISCELLANEOUS :			
237010	Providing and fixing Cat's Eye (Glow studs) heavy integral stem, reflective, aluminium die cast with elegant finish of size 100x100mm and 20mm high having a stem of 50mm (or 12mm dia. 90mm long) screwed and nailed to fix into the road surface or at the nosing of the central verge. The road studs should have reflectors fitted on one side of the studs (3Nos. 7 element or 1No. 29 element reflector) complete	Each	583.81	

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
237020	Deduct for using hand roller instead of power road roller for consolidation, If due to site conditions the power road roller can not be used and use of hand roller is specifically permitted in writing. 10% deduction is made on the total unit cost of the item concerned	Sqm	10% of Basic Items	
237030	Supplying and laying Kerb stone 30cm X 20cm (In Section / including chamfering as per design if any) chisel dressed on top and sides including fixing in 1:6 cement sand mortar and pointing with 1:2 cement mortar (1cement:2 Sand ordinary) including all excavation / refilling, ramming and other incidental works as required	metre	763.65	0.020
237040	Supplying and laying Channel stone 30cmX 10 cm (In Section) chisel dressed on top and sides including fixing in 1:6 cement sand mortar and pointing with 1:2 cement mortar (1cement:2 Sand ordinary) including all excavation/ refilling, ramming and other incidental works as required	metre	402.42	0.020
237050	Supplying and laying precast Kerb Stone of concrete M25 Grade 30cmX 20 cm (In Section / including chamfering as per design if any) including fixing in 1:6 cement sand mortar and pointing with 1:2 cement mortar (1cement:2 Sand ordinary) including all excavation /refilling, ramming and other incidental works as required.	metre	319.96	0.020
237060	Supplying and laying precast Channel Stone of concrete M25 Grade 30cmX 10 cm (In Section) including fixing in 1:6 cement sand mortar and pointing with 1:2 cement mortar (1cement:2 Sand ordinary) including all excavation /refilling, ramming and other incidental works as required	metre	180.58	0.020
237070	Providing and laying Dry Brick (FPS bricks of class designation 7.5) edging of full brick width and half brick depth including excavation, refilling / ramming and disposal of surplus earth lead upto 50 metres	metre	59.78	
237080	Providing and laying Dry Brick (FPS bricks of class designation 7.5) edging laid length wise with half brick depth including excavation, refilling / ramming and disposal of surplus earth lead upto 50 metres	metre	16.99	
237090	Providing and laying toothed (Diagonal) brick edging along paths etc at an angle of 60 Degree to the horizontal including excavation, refilling / ramming and disposal of surplus earth lead upto 50 metres	metre	19.78	
237100	Scarifying 50mm metallised (water-bound) road surface including disposal of rubbish lead upto 50metres and consolidation of the aggregate received from scarifying with power road roller of 8 to 10 tonne capacity	Sqm	6.97	

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
237110	Making bajri path including preparation of subgrade, supplying and laying brick aggregate of 50mm nominal size 7.5cm deep with binding material consisting of 12mm thick layer of moorum and 12mm thick layer of red bajri consolidated with road roller	Sqm	105.97	
237120	Providing and laying Dry brick (F.P.S. bricks of class designation 7.5) pitching half brick thick in drains including supply of brick and preparing the surface complete	metre	188.45	
237130	Cutting road and making good the same including supply of extra quantities of materials i.e. aggregate, moorum screening, red bajri, Bitumen, compaction, protection during work, etc and labour complete			
237131	Bituminous portion	cum	1262.44	
237132	Water bound macadam	cum	603.89	
237140	Cutting bajri paths and making good the same including supply of extra quantities of brick aggregate, moorum and red bajri etc and labour with compaction, protection during work complete	cum	92.69	
	DENSE MACADAM FOR HEAVY DUTY ROADS			
238010	Providing and laying Dense Bituminous macadam on prepared surface with specified graded crushed stone aggregate for profile corrective base/ binding course mixing of stone aggregate, filler and bitumen in hot mix plant, transporting the mixed material and laying with paver finisher fitted with electronic sensing device to the required level and grade and rolling by road roller as per specifications, to achieve the desired density, but excluding the cost of primer I tack coat			
238011	75 mm average compacted thickness with bitumen of 60/70 grade @ 5% by weight of total mix and lime filler @ 2% by weight of Aggregate. (For very heavy traffic condition)	Sqm	501.69	
238012	75mm average compacted thickness with bitumen of 60/70 grade @ 3.5% by weight of total mix	Sqm	389.59	
238013	50 mm average compacted thickness with bitumen of 60/70 grade @ 5% by weight of total mix and lime filler @ 2% by weight of Aggregate. (For very heavy traffic condition)	Sqm	334.37	
238014	50mm average compacted thickness with bitumen of 60/70 grade @ 3.5% by weight of total mix	Sqm	259.66	

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
238020	Providing and laying Dense Bituminous concrete on prepared surface with specified graded stone aggregate for wearing course, mixing of bitumen, filler & stone aggregate in hot mix plant, transporting the mixed material and laying with mechanical paver finisher fitted with electronic sensing device to the required level and grade and rolling with road rollers, as per specification, to achieve the desired density and compaction but excluding cost of primer / tack			
238021	40 mm / 50mm compacted thickness with bitumen of grade 60/70 @ 6.5% and lime @ 3% by weight of total mix	cum	7329.06	
238022	40 mm / 50mm compacted thickness with bitumen of grade CRMB (Crumb rubber Modified Bitumen) 60 @ 5.5% and lime @ 3% by weight of total mix	cum	9850.94	
238023	40 mm /50mm compacted thickness with bitumen of grade PMB-(Polymer Modified Binder -Plastomeric Thermoplastic) - 40 @ 5.5% and lime @3% by weight of total mix	cum	8569.19	
238030	Providing and laying bitumen mastic wearing course (as per specifications) with industrial bitumen of grade 85/25 conforming to IS : 702 prepared by using mastic cooker and laid to required level and slope including providing antiskid surface with bitumen precoated fine grained hard stone chipping of approved size at the rate of 0.005 cum per 10 sqm and at approximate spacing of 10cm centre to centre in both directions, pressed into surface protruding 1mm to 4mm over mastic surface, including cleaning the surface, removal of debris etc. all complete. (Considering bitumen using 10.2% as per MORTH specification)			
238031	25 mm thick	Sqm	626.69	
238032	40 mm thick	Sqm	1002.71	

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
238040	Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm alongwith theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up of M.S. Tee section ISMT 50x50x6 mm - contd. ...			
	... contd.- welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours). Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing, specification and direction of Engineer-in-charge. (Note : Concreting for fixing may be done as per site requirement and paid for separately)			
238041	Cautionary/warning sign boards of equilateral triangular shape having each side of 900mm with support length of 3650mm	Each	2700.32	
238050	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour, T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and in accordance with applicable specifications	Sqm	612.04	

Item No.	Description Of Item	Unit	Rate (Rs.)	Cement Qty.(qtl.)
238060	Providing and fixing of raised pavement markers made of polycarbonate moulded body and reflective panels with micro prismatic lens made of polycarbonate with abrasion resistant coating. The length, weight and width of body shall not exceed 95 mm, 18mm and 105mm respectively. The lower surface of the RPM shall be supported with two nylon shanks, each of length not less than 25mm. Fixed to the road by using twin nylon shanks using bituminous adhesive on bitumen roads or without nylon shanks with epoxy resin adhesive on concrete roads as per directions of Engineer Incharge. The RPM should conform to the quality standards as laid down in IR Standard Specifications	Each	636.27	
New Items To Be Added By Zonal Railways				
239010				
239020				
239030				
239040				
239050				