

CHAPTER 24: ROAD AND PAVEMENT WORKS

Item No.	Description of Item	Unit	Unit Rate (Dhaka, Mymensingh)	Unit Rate (Chattogram, Sylhet)	Unit Rate (Khulna, Barisal, Gopalganj)	Unit Rate (Rajshahi, Rangpur)
24.1	Earth work in road embankment up to a lift of 1.5 m in all kinds of soil including cutting and throwing earth in layers not exceeding 150 mm in thickness, breaking clods up to 40 mm size in each layer, ramming, leveling and dressing as per required side slope and alignment with earth borrowed from the road side govt. acquired land for any leads and maintaining the embankment true to level and side slopes as per profiles for one year from the date of completion including making dug, bailing, profiling etc. complete and accepted by the Engineer-in-charge.					
24.1.1	For initial lift of 1.5 m	cum	Tk. 201.00	Tk. 197.00	Tk. 183.00	Tk. 183.00
24.1.2	For additional lift of 1 m beyond 1.5 m up to 2.5 m	cum	Tk. 229.00	Tk. 225.00	Tk. 209.00	Tk. 209.00
24.1.3	For additional lift of 1 m beyond 2.5 m up to 3.5 m	cum	Tk. 258.00	Tk. 253.00	Tk. 234.00	Tk. 234.00
24.1.4	For additional lift of 1 m beyond 3.5 m up to 4.5 m	cum	Tk. 286.00	Tk. 281.00	Tk. 261.00	Tk. 261.00
24.1.5	For additional lift of 1 m beyond 4.5 m up to 5.5 m	cum	Tk. 315.00	Tk. 309.00	Tk. 286.00	Tk. 286.00
24.1.6	For additional lift of 1 m beyond 5.5 m up to 6.5 m	cum	Tk. 344.00	Tk. 338.00	Tk. 313.00	Tk. 313.00
24.2	Earthwork in box cutting in all types of soil. Removing soil to a safe distance, maintaining proper alignment, camber and grade including leveling, dressing and compacting the sub grade as per drawing and accepted by the Engineer-in-charge.					
24.2.1	Depth up to 300 mm	sqm	Tk. 66.00	Tk. 65.00	Tk. 60.00	Tk. 60.00
24.2.2	Depth up to 450 mm	sqm	Tk. 99.00	Tk. 97.00	Tk. 90.00	Tk. 90.00
24.3	Creating turf on the side slopes and top of embankment with good quality turf not less than 225 mm square chunk, watering till the grass grown including all leads and lifts etc. complete and accepted by the Engineer-in-charge.	sqm	Tk. 23.00	Tk. 22.00	Tk. 21.00	Tk. 21.00
24.4.1	Single layer brick flat soling in road work with first class or picked jhama bricks as per alignment, camber and grade including filling joints with sand (F.M. 0.80) etc. complete including cost of all materials and accepted by the Engineer-in-charge.	sqm	Tk. 553.00	Tk. 549.00	Tk. 532.00	Tk. 524.00
24.4.2	One layer of Concrete Solid Block Soling having minimum compressive strength of 15 MPa and water absorption not greater than 7% of size (240 x 114 x 70) mm in road work including preparation of bed and filling the interstices with fine sand (F.M.= 0.8), leveling etc. all completed by the contractor and accepted by the Engineer-in-charge	Sqm	Tk. 662.00	Tk. 659.00	Tk. 649.00	Tk. 649.00
24.5.1	Brick on edges pavement in herring bone bond (HBB) with first class or picked jhama bricks as per alignment, camber and grade over 12 mm thick sand cushion (F.M. 0.80) including filling the joints with the same sand including cost of all materials and accepted by the Engineer-in-charge.	sqm	Tk. 892.00	Tk. 889.00	Tk. 861.00	Tk. 848.00

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24.5.2	Brick on edges pavement in herring bone bond (HBB) with Concrete Solid Block (240 x 114 x 70 mm) having minimum compressive strength of 15 MPa and water absorption not greater than 7% of of size (240 x 114 x 70) mm as per alignment, camber and grade over 12 mm thick sand cushion (F.M. 0.80) including filling the joints with the same sand including cost of all materials and accepted by the Engineer-in-charge.	Sqm	Tk. 1,090.00	Tk. 1,087.00	Tk. 1,073.00	Tk. 1,073.00
24.6	Double brick flat soling in roadwork with first class or picked jhama bricks as per alignment, camber and grade including filling the joints with fine sand (F.M. 0.80) and also providing 12 mm thick sand cushion in between the two layers of brick flat soling with the same quality of sand including cost of all materials and accepted by the Engineer-in-charge.	sqm	Tk. 1,113.00	Tk. 1,107.00	Tk. 1,073.00	Tk. 1,057.00
24.7.1	Brick on end edging (75 mm across the road) with first class or picked jhama bricks and filling the gaps with fine sand (F.M. 0.80) including cutting trenches, true to level and grade, removing earth, refilling and ramming the sides properly including cost of all materials and accepted by the Engineer-in-charge.	meter	Tk. 140.00	Tk. 139.00	Tk. 135.00	Tk. 133.00
24.7.2	Brick on end edging (75 mm across the road) with Concrete Solid Block(240 x 114 x 70 mm) having minimum compressive strength of 15 MPa and water absorption not greater than 7% of of size (240 x 114 x 70) mm and filling the gaps with fine sand (F.M. 0.80) including cutting trenches, true to level and grade, removing earth, refilling and ramming the sides properly including cost of all materials and accepted by the Engineer-in-charge.	meter	Tk. 170.00	Tk. 169.00	Tk. 167.00	Tk. 167.00
24.8	Breaking picked jhama, first class bricks or bats including cost of bricks and bats and stacking in measurable sizes at site accepted by the Engineer-in-charge.					
24.8.1	For 62 mm to 40 mm size	cum	Tk. 4,517.00	Tk. 4,502.00	Tk. 4,368.00	Tk. 4,294.00
24.8.2	For 40 mm to 25 mm size	cum	Tk. 4,756.00	Tk. 4,736.00	Tk. 4,585.00	Tk. 4,511.00
24.9	Providing compacted water bound macadam base course with graded material of crushed well burnt, picked jhama or first class bricks and bats (50 mm downgraded brick chips having LAA value not exceeding 40%) including supplying of 12 mm downgraded chips made of same quality bricks, having compacted thickness made as per specifications including local handling and spreading uniformly to proper grade, camber and super elevation, hand packing watering, dry rolling followed by wet rolling in layers of specified thickness with 8 to 10 ton capacity power driven road roller to attain minimum soaked CBR of 80% or design CBR at minimum degree of compaction of 98% of MDD (Modified Proctor), including supplying and blinding with sand (F.M. 0.80) @ 0.012 m ³ per sqm or as required etc. all complete as per direction of the Engineer-in-charge. After adequate dry rolling, spreading of sand on the surface, sprinkling of water and rolling is to be continued until all the voids are filled. thickness of each layer should not days with supply of GI wires, remove the shuttering of ferrocement L-panel	cum	Tk. 5,851.00	Tk. 5,840.00	Tk. 5,712.00	Tk. 5,619.00

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24.10.1	Providing compacted sub-base course with well graded material of crushed well burnt picked jhama / 1st class brick bats and sand (FM 0.8) with mixing proportion 2 : 1 having compacted thickness made as per specification including local handling, spreading uniformly to proper grade camber and super elevation, packing, rolling properly with 8 to 10 ton capacity power driven road roller and watering properly for compaction of 100% MDD (standard) blinding with sand including cost of fuel, lubricants, spares, maintenance, driver etc. all complete and accepted by the Engineer-in-charge.	cum	Tk. 5,449.00	Tk. 5,416.00	Tk. 5,199.00	Tk. 5,136.00
24.10.2	Providing improved sub-grade with sand F.M.>0.80 having compacted thickness as per specification including cost of sand, carrying, local handling, spreading uniformly in layers of 150mm to proper grade camber, super elevation, rolling properly with 7-10 tone vibratory roller and watering profusely for compaction 95% MDD (Modified Proctor Test) including cost of fuel, lubricants, spares, maintenance, driver etc. all complete and accepted by the Engineer-in-charge.	Cum	Tk. 919.00	Tk. 923.00	Tk. 887.00	Tk. 887.00
24.10.3	Providing compacted aggregate base type-I with graded metal of Crushed boulder<9mm, Crushed boulder<25mm, Crushed boulder <38mm and Sylhet sand F.M>1.00 @ ratio of (2:1) (Crushed boulder : Sand) having compacted thickness of 150mm including local handling spreading uniformly to proper grade and camber and super elevation, hand packing, rolling properly with 7-10 tone vibratory roller and watering profusely for proper consolidation with blending materials etc. in/c. cost of all materials complete as per direction of the Engineer-in-charge (Payment will be made on compacted volume and compaction of 98% MDD in Modified Proctor Test).	Cum	Tk. 10,063.00	Tk. 10,220.00	Tk. 9,451.00	Tk. 9,159.00
24.10.4	Providing compacted aggregate base type-I (With Pever) with graded metal of Crushed boulder<9mm, Crushed boulder<25mm, Crushed boulder <38mm and Sylhet sand F.M>1.00 @ ratio of (2:1) (Brick Khoa : Sand) having compacted thickness of 150mm including local handling spreading uniformly to proper grade and camber and super elevation, hand packing, rolling properly with 7-10 tone vibratory roller and watering profusely for proper consolidation with blending materials etc. in/c. cost of all materials complete as per direction of the Engineer-in-charge (Payment will be made on compacted volume and compaction of 98% MDD in Modified Proctor Test).	Cum	Tk. 10,308.00	Tk. 10,465.00	Tk. 9,696.00	Tk. 9,404.00
24.10.5	Providing compacted aggregate base type-II with graded metal of crushed well burnt picked jhama, 1st class brick chips 25mm to 38mm size and Sylhet sand F.M>1.00 @ ratio of (2:1) (Brick Khoa : Sand) having compacted thickness of 150mm including local handling spreading uniformly to proper grade and camber and super elevation, hand packing, rolling properly with 7-10 tone vibratory roller and watering profusely for proper consolidation with blending materials etc. in/c. cost of all materials complete as per direction of the Engineer-in-charge (Payment will be made on compacted volume and compaction of 98% MDD in Modified Proctor Test).	Cum	Tk. 6,410.00	Tk. 6,406.00	Tk. 6,290.00	Tk. 6,213.00

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24.10.6	Providing compacted aggregate base type-II (With Pever) with graded metal of crushed well burnt picked jhama, 1st class brick chips 25mm to 38mm size and Sylhet sand F.M>1.00 @ ratio of (2:1) (Brick Khoa : Sand) having compacted thickness of 150mm including local handling spreading uniformly to proper grade and camber and super elevation, hand packing, rolling properly with 7-10 tone vibratory roller and watering profusely for proper consolidation with blending materials etc. in/c. cost of all materials complete as per direction of the Engineer-in-charge (Payment will be made on compacted volume and compaction of 98% MDD in Modified Proctor Test).	Cum	Tk. 6,649.00	Tk. 6,646.00	Tk. 6,529.00	Tk. 6,452.00
24.11	50 mm thick compacted pre-mixed bituminous carpeting with 20 mm down graded stone-chips (having LAA value <= 30%, water absorption not greater than 2%, flakiness index not greater than 35) of gradation as specified @ 0.68 cum of stonechips mixed with 46 kg of heated bitumen of 60/70 penetration grade heated straight run bitumen satisfying the requirements of ASTM/AASHTO. Bitumen content % by wt. of total is 4.5% to 5.50% or as determined by job mix design. The bitumen and stone-chips shall be separately heated to a temperature of 140°C – 155°C and 150°C – 170°C respectively before mixing. The mixing shall be done at temperature between 140°C – 160°C at a separate place away from the fire. The bitumen and stone-chips mixture shall be laid uniformly over 10 sqm of surface in proper camber, grade and super-elevation only on the prepared and accepted base or surface in a single appropriate layer to give the specified compacted thickness. The mixture should be rolled with appropriate steel drum roller (3-5 tons) & days with supply of GI wires, remove the shuttering of ferrocement L-panel, lifting the panel to floor/roof level, keeping on proper position, the cost of water, electricity and other charges all complete as per design, drawing and accepted by the Engineer-in-charge. illing with mortar (1:2), casting of 25 mm thick as screeding (1:1.5:3) using 6 mm down stone chips and M.S. rod (fy=400 MPa) with fabrication over F.C. panel including the cost of reinforcement & wire mesh, curin	sqm	Tk. 979.00	Tk. 978.00	Tk. 951.00	Tk. 935.00
24.12	38 mm thick compacted pre-mixed bituminous carpeting with 20 mm down graded stone-chips (having LAA value <= 30%, water absorption not greater than 2%, flakiness index not greater than 35) of gradation as specified @ 0.63 cum of stonechips mixed with 37 kg heated bitumen of 60/70 penetration grade heated straight run bitumen satisfying the requirements of ASTM/AASHTO. Bitumen content % by wt. of total is 4.5% to 5.50% or as determined by job mix design. The bitumen and stone-chips shall be separately heated to a temperature of 140°C – 155°C and 150°C – 170°C respectively before mixing. The mixing shall be done at temperature between 140°C – 160°C at a separate place away from the fire. The bitumen and stone-chips mixture shall be laid uniformly over 10 sqm of surface in proper camber, grade and super-elevation only on the prepared and accepted base or surface in a single appropriate layer to give the specified compacted thickness. The mixture should be rolled with appropriate steel drum roller (3-5 tons) & pndays with supply of GI wires, remove the shuttering of ferrocement L-panel, lifting the panel to floor/roof level, keeping on proper position, the cost of water, electricity and other charges all complete as per design, drawing and accepted by the Engineer-in-charge. illing with mortar (1:2), casting of 25 mm thick as screeding (1:1.5:3) using 6 mm down stone chips and M.S. rod (fy=400 MPa) with fabrication over F.C. panel including the cost of reinforcement & wire mesh, cu	sqm	Tk. 791.00	Tk. 791.00	Tk. 770.00	Tk. 757.00

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24.13	25 mm thick compacted pre-mixed bituminous carpeting with 12 mm down graded stone-chips (having LAA value <= 30%, water absorption not greater than 2%, flakiness index not greater than 35) of gradation as specified @ 0.34 cum of stone chips mixed with 23 kg heated bitumen of 60/70 penetration grade heated straight run bitumen satisfying the requirements of ASTM/AASHTO. Bitumen content % by wt. of total is 4.5% to 5.50% or as determined by job mix design. The bitumen and stone-chips shall be separately heated to a temperature of 140°C – 155°C and 150°C – 170°C respectively before mixing. The mixing shall be done at temperature between 140°C – 160°C at a separate place away from the fire. The bitumen and stone-chips mixture shall be laid uniformly over 10 sqm of surface in proper camber, grade and super-elevation only on the prepared and accepted base or surface in a single appropriate layer to give the specified compacted thickness. The mixture should be rolled with appropriate steel drum roller (3-5 tons) & pdays with supply of GI wires, remove the shuttering of ferrocement L-panel, lifting the panel to floor/roof level, keeping on proper position, the cost of water, electricity and other charges all complete as per design, drawing and accepted by the Engineer-in-charge. illing with mortar (1:2), casting of 25 mm thick as screeding (1:1.5:3) using 6 mm down stone chips and M.S. rod (fy=400 MPa) with fabrication over F.C. panel including the cost of reinforcement & wire mesh, cur	sqm	Tk. 505.00	Tk. 502.00	Tk. 493.00	Tk. 487.00
24.14	38 mm thick compacted pre-mixed dense bituminous carpeting with 20 mm down graded stone-chips (having LAA value <= 30%, water absorption not greater than 2%, flakiness index not greater than 35) of gradation as specified @ 0.56 cum of stone chips mixed with 45 kg heated bitumen of 60/70 penetration grade heated straight run bitumen satisfying the requirements of ASTM/ AASHTO. Bitumen content % by wt. of total is 4.5% to 5.50% or as determined by job mix design. The bitumen and stone-chips shall be separately heated to a temperature of 140°C – 155°C and 150°C – 170°C respectively before mixing. The mixing shall be done at temperature between 140°C – 160°C at a separate place away from the fire. The bitumen and stone-chips mixture shall be laid uniformly over 10 sqm of surface in proper camber, grade and super-elevation only on the prepared and accepted base or surface in a single appropriate layer to give the specified compacted thickness. The mixture should be rolled with appropriate steel drum roller (3-5 todays with supply of GI wires, remove the shuttering of ferrocement L-panel, lifting the panel to floor/roof level, keeping on proper position, the cost of water, electricity and other charges all complete as per design, drawing and accepted by the Engineer-in-charge. illing with mortar (1:2), casting of 25 mm thick as screeding (1:1.5:3) using 6 mm down stone chips and M.S. rod (fy=400 MPa) with fabrication over F.C. panel including the cost of reinforcement & wire mesh, curing at	sqm	Tk. 845.00	Tk. 843.00	Tk. 826.00	Tk. 814.00
24.15	25 mm thick compacted pre-mixed dense bituminous carpeting with 12 mm down graded stone-chips	sqm	Tk. 538.00	Tk. 535.00	Tk. 529.00	Tk. 524.00

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24.16	Providing and laying pre-mixed dense bituminous carpeting with hot mix plant using coarse aggregate, fine aggregate, filler and bituminous binder as per design Job Mix Formula conforming Marshall Method as per specification, LAA value of aggregate should be <=30%, water absorption not >2%, flakiness index not >35 mixed with 60/70 penetration grade straight run bitumen satisfying the requirements of ASTM/AASHTO. including screening, cleaning of chips and preparing a uniform and quality mix in hot mix plant and ensuring a homogenous mix, in which all particles of the mineral aggregates are coated uniformly, carrying the hot premixed materials by means of dump/tipper truck, spreading the mixed materials at specified laying temperature with a hydrostatic paver finisher with sensor control to the required grade, level and alignment over the prepared surface, tamping and finishing the mix at specified compacted thickness, maintaining specified camber, grade, super-elevation and cross section, through rolling wdays with supply of GI wires, remove the shuttering of ferrocement L-panel, lifting the panel to floor/roof level, keeping on proper position, the cost of water, electricity and other charges all complete as per design, drawing and accepted by the Engineer-in-charge. illing with mortar (1:2), casting of 25 mm thick as screeding (1:1.5:3) using 6 mm down stone chips and M.S. rod (fy=400 MPa) with fabrication over F.C. panel including the cost of reinforcement & wire mesh, curing at least for 7 days including the cost of water, electricity and other charges all complete as per design, drawing and accepted by the Engineer-in-charge.m.lush bolt , bolts and nuts including sea	cum	Tk. 21,695.00	Tk. 21,668.00	Tk. 21,345.00	Tk. 21,049.00
24.17	Providing tack coat @ 7.50 kg of bitumen (60/70 penetration grade) per 10 sqm including heating bitumen up to 175°C to 185°C etc. all complete (cost of bitumen included) and accepted by the Engineer-in-charge.	sqm	Tk. 89.00	Tk. 87.00	Tk. 88.00	Tk. 88.00
24.18.1	Providing seal coat with 4 cft of Sylhet sand (FM 2.2) mixed with @ 7.32 kg of bitumen (60/70 penetration grade) per 10 sqm of road surface including supplying and spreading of dry sand (F.M. 0.80) @ 0.09 cum per 10 sqm, including heating bitumen upto 176°C to 190°C, and spreading, rolling at a temperature not below 90°C celsius with appropriate steel drum roller (3 -5 ton) and pneumatic multiple tire roller (8-10 tons) to the desired compaction etc. all complete (cost of bitumen included) and accepted by the Engineer-in-charge.	sqm	Tk. 132.00	Tk. 129.00	Tk. 131.00	Tk. 130.00
24.18.2	Premixed bituminous seal coat with 0.12 cum of pea gravels mixed with 80 kg of bitumen (60/70 penetration grade) per cum of pea gravels and laid over 10 sqm road surface, spreading with proper camber, grade, surface blinding with dry sand (F.M. 1.2) @ 0.09 cum per 10 sqm, rolling at a temperature not below 90°C with appropriate steel drum roller (3-5 ton) and pneumatic multiple tire roller (8-10 tons) to the desired compaction etc. all complete and accepted by the Engineer-in-charge.	sqm	Tk. 179.00	Tk. 177.00	Tk. 174.00	Tk. 174.00
24.19.1	Providing prime coat @ 1.2 liter/sqm with cutback bitumen to be prepared by cutting back 60/70 penetration grade bitumen in the ratio of 100 parts by volume of bitumen to 40-60 parts by volume of kerosene depending on the porosity of surface and will be decided by field trials, carefully cleaning of the surface of base material to be primed and spraying cutback bitumen at a temperature from 100 degree celcius to 120 degree celcius by appropriate hand device etc.all complete as per direction of the Engineer-in-charge.	sqm	Tk. 110.00	Tk. 109.00	Tk. 111.00	Tk. 111.00

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