

**CHAPTER NO. 23**  
**RIVER AND CANAL PROTECTION WORK**

**Notes:-**

- (i) The rates for carriage of materials manually upto 0.50 km and by mechanical means for every km lead have been given. The actual lead is to be paid if the lead is in fraction, the rate is to be worked out by interpolation.

Sr. No.	Description	Unit	Rate for Plains as well as Sub-Mountainous Region	
			Labour Rate	Through Rate
1	2	3	4	5
23.1	Cutting pilchi, farash and sarkanda and carriage to work lead two kms including loading and unloading :-			
	(a) Loose	cum	48.41	-
	(b) Compacted in rolls of required diameter and length.	cum	201.44	-
23.2	Loading pilchi, farash and sarkanda in boats within 15 ms:-			
	(a) Loose	cum	10.93	-
	(b) Compacted in rolls.	cum	24.20	-
23.3	Carriage of pilchi, farash and sarkanda by boats including loading and unloading :-			
	(a) Loose :-			
	(i) One km	cum	30.45	-
	(ii) Two kms	cum	56.55	-
	(iii) Three kms	cum	76.13	-
	(iv) Four kms	cum	92.22	-
	(v) Five kms	cum	106.58	-
	(vi) Subsequent km per km	cum	10.88	-
	(b) Compacted :-			
	(i) One km	cum	73.95	-
	(ii) Two kms	cum	136.59	-
	(iii) Three kms	cum	182.27	-
	(iv) Four kms	cum	222.72	-
	(v) Five kms	cum	265.18	-
	(vi) Subsequent km per km	cum	28.28	-
23.4	Unloading Pilchi, farash and sarkanda from boats and carriage to yard upto one km :-			
	(a) Loose	cum	24.20	-

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				Labour Rate	Through Rate
1	2		3	4	5
	(b)	Compacted	cum	60.51	-
23.5	Making Pilchi, farash and sarkanda rolls excluding supply of materials :--				
	(a)	20 cm or 23 cm dia. and 9 m long	each	42.36	-
	(b)	15 cm dia. and 9 m long	each	28.24	-
	(c)	15 cm dia. and 1.5 m long	each	3.39	-
Note :-	(i)	The payment under item No. 23.5 is not to be made in addition to those of item No. 23.1(b), 23.8, 23.9 and 23.10.			
23.6	Making 0.75 m dia. and 5.5 m long pilchi rolls for permeable spurs.		each	190.59	-
23.7	Launching the above and placing in position.		each	135.53	-
23.8	Pilchi, farash or sarkanda pitching on slope with rolls 15 cm dia. and 1.5 m long including supply of pilchi involving carriage within 2 kms and labour for making rolls.		sqm	173.67	-
Note :-	(i)	For above items, pitching shall be of 15cm dia. Layers of pilchi laid as header and 1.5. ms in length alternating with 15 cm covering of earth for consolidation including pegs and tying with wire (to be supplied by the department free of cost.)			
23.9	Extra for carriage beyond 2 kms of pilchi rolls 15 cm dia. and 1.5m long (vide item No. 23.8)				
	(a)	3rd km	sqm of pitching surface	34.80	-
	(b)	Subsequent km per km	sqm of pitching surface	21.75	-
23.10	Pilchi, farash or sarkanda pitching one m depth.		sqm of pitching surface	80 percent rate of item No. 23.8 & 23.9.	-
23.11	Pilchi revetment including carriage upto 2 km		sqm	84.28	-
23.12	Surface protection with pilchi mattress lead upto 2 km		sqm	56.47	-
23.13	Weaving mattresses of pilchi 30 cm thick.		sqm	38.74	-

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1	2	3	4	5
23.14	Rolling pilchi mattress to river edge and floating after unrolling :-			
	(a) area of mattress upto 200 sqm	sqm	15.81	-
	(b) area of mattress exceeding 200 sqm but upto 250 sqm	sqm	21.56	-
	(c) area of mattress above 250 sqm	sqm	22.59	-
23.15	Laying kahi mattress lead upto 2 km	sqm	50.83	-
23.16	Special kahi revetment double lead upto 2 km	sqm	105.96	-
23.17	Gachi pitching with average thickness of 30 cm (joints to be broken)	sqm	50.83	-
23.18	Gachi pitching (done with silt clearance and berm dressing) with thickness of 30 cm (joints to be broken)	sqm	48.41	-
23.19	Fixing floating spurs in channels with material from canal plantation within 2 km :-			
	(a) upto F.S. depth 0.5m	each	2.18	-
	(b) F.S. depth exceeding 0.5 m but upto 1.0 m	each	4.35	-
	(c) F.S. depth exceeding 1.0 m but upto 1.25 m	each	6.96	-
	(d) above 1.25 m F.S. depth.	each	8.70	-
23.20	Stacking and bushing with canal plantation within 1.0 km			
	(a)(i) Pegs 1.0 m long, 5 cm dia	100 nos	143.59	-
	(ii) Driving pegs 1.0m long, 5 cm dia	100 nos	84.71	-
	(iii) Wattling brush wood between stakes and intertwining.	m of one row.	2.26	-
	(b)(i) Pegs 1.25 m long, 7.5 cm dia. sharpened at one end.	100 nos	152.48	-
	(ii) Driving pegs 1.25 m long, 7.5 cm dia.	100 nos	112.94	-
	(iii) Wattling brush wood between stakes and intertwining.	m of one row.	2.26	-
	(c)(i) Pegs 1.5 m long, 7.5 cm dia. sharpened at one end.	100 nos	160.10	-
	(ii) Driving pegs 1.5 m long, 7.5 cm dia.	100 nos	121.01	-

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	(iii)	Wattling brush wood between stakes and intertwining.	m of one row.	2.82	-
	(d)(i)	Pegs 2 m long, 7.5 cm dia. sharpened at one end.	100 nos	228.71	-
	(ii)	Driving pegs 2 m long, 7.5 cm dia	100 nos	150.59	-
	(iii)	Wattling brush wood between stakes and intertwining.	m of one row.	3.76	-
23.21	Filling brush wood only.		cum	13.55	-
23.22	Filling cement bags with sand or earth and sewing including cost of E.C. bag & strings.		100 nos	169.42	473.29
23.23	Loading cement bags filled with sand or earth into trucks or boats within 100 ms.		100 nos	225.89	-
23.24	Carriage of sand filled in bags by boats :--				
	(a)	1st chain of 30 ms.	100 nos	34.80	-
	(b)	2nd to 4th chain per chain of 30 ms.	100 nos	20.88	-
	(c)	5th and subsequent chains per chain of 30 ms.	100 nos	13.92	-
23.25	Unloading from boats, bags filled with sand and :--				
	(a)	Placing in dry.	100 nos	211.78	-
	(b)	Placing in water.	100 nos	423.55	-
23.26	Filling cement bags with sand, sewing and laying in position within 30 ms in dry including cost of E.C. bag & strings.		100 nos	338.84	676.48
23.27	Filling cement bags with sand sewing and laying in position within 30 ms in water including cost of E.C. bag & strings.		100 nos	564.73	931.66
23.28	Sewing empty cement bags in to sheets.		100 nos	112.95	414.80
23.29	Weaving wire netting for wire crates including binding sides and partitions to make crates of 15 cm x 15 cm or 25cm x 7.5 cm mesh.		sqm	23.73	119.51
23.30	Filling brick bats in crates and hand packing.		cum	39.86	643.94
23.31	Filling bricks in crates and hand packing.		cum	75.30	1744.47
23.32	Filling stones or spalls into crates and hand packing.		cum	104.26	650.78
23.33	Tipping wire crates including equipment.		cum	75.30	-

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23.34	Opening out old wire crates and remaking after filling.	sqm	8.93	-
23.35	Labour for dismantling existing portion of old protection work including cutting old trangger and stacking old stones for re-use.	cum	90.21	-
23.36	Filling spaces and foundations with old stones obtained from dismantling including labour for dismantling.	cum	203.30	-
23.37	Spreading wire crates over pitching connecting with side protective walls inclusive of wire etc.	sqm	26.65	-
23.38	Wire crates of specified dimensions from all directions of G.I. wire filled with boulders with square cut faces against the wire.			
	(a) 4 mm dia. G.I. wire 25 cm x 7.5 cm mesh	cum	196.24	-
	(b) 4 mm dia. G.I. wire 15 cm x 15 cm mesh (diagonal wise)	cum	196.24	-
	(c) 4.75 mm dia. GI wire 25 cm x 7.5 cm mesh (diagonal wise)	cum	196.24	-
	(d) 4.75 mm dia. G.I. wire 15 cm x 15 cm mesh (diagonal wise)	cum	196.24	-
	(e) 3.25 mm dia. G.I. wire 25 cm x 7.5 cm mesh (diagonal wise)	cum	196.24	-
	(f) 3.25 mm dia. G.I. wire 15 cm x 15 cm mesh (diagonal wise)	cum	196.24	-
Note :-	(i) The through rate of the above item is dependent on the size of the crate which varies as per the site conditions and design/drawing.			
23.39	Dumping stone.	cum	56.47	602.99
23.40	Extra for anchoring boat for dumping in position.	cum	17.40	-
23.41	Dismantling brush wood boulder bund.	cum	150.59	-
23.42	Stone or kankar block pitching :-			
	(a) Horizontal	cum	188.24	-
	(b) On slopes of guide banks and protection works.	cum	242.02	-
23.43	Stone pitching top coping only.	cum	418.56	965.08
23.44	Filling stone or spall :-			
	(a) On level	cum	56.47	602.99

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1	2	3	4	5
	(b) On side slopes behind pitching	cum	59.79	446.32
23.45	Grouting stone filling or pitching :--			
	(a) With bajri or shingle	sqm	24.20	47.77
	(b) With mortar	sqm	41.02	76.56
23.46	Grouting masonry joints of floors including finishing :--			
	(a) When stones are upto 23 cm square	sqm	19.14	-
	(b) When stones are more than 23 cm square but under 45 cm square	sqm	12.35	-
Note :-	(i) The through rate of the above item varies as per thickness of stone & richness of mix as per requirements.			
23.47	Sand grouting stone apron with high pressure hose.	sqm	6.96	-
23.48	Weaving Coir rope netting for Coir rope crates including binding sides and partitions to make crates of 22.5 cm x 22.5 cm mesh (including cost of coir rope). (Min. weight per crate = 2.80 Kg) Size 8' x 4' x 3'	sqm	5.88	13.54
Note :-	(i) The Chief Engineer in-charge of works concerned, may allow on works of temporary nature, the use of black annealed MS Wire number 6 or 8 SWG (4.75 mm or 4.00 mm) conforming to the relevant ISI specifications, in lieu of G.I. Wire.			