

## CHAPTER NO. 10

### CONCRETE

#### Notes :-

- (i) Unless otherwise stated, the labour rates include the rehandling charges of material within 100 metres.
- (ii) The labour and through rates include the cost of water. Where water is supplied by the department, the rate shall be decreased accordingly.
- (iii) The labour rates as well as through rates of concrete include the cost of curing and protecting in bad weather conditions.
- (iv) The rates given below are for hand-mixed concrete.
- (v) The rates given below are for non-vibrated concrete.
- (vi) The rates given in item no. 10.15 is for work done up to a height of 4 metres above plinth level or up to the first storey roof top level which ever may be lower.
- (vii) To the extent the plinth area of an inter floor remains within and up to 40 percent of the plinth area of the main storey of the building immediately below the said inter-floor such an inter floor should be regarded as mezzanine and if plinth area of the said inter-floor exceeds this limiting figure of 40 per cent then the said inter-floor should be regarded for purposes of note (vi) above as a regular storey. A mezzanine floor is not to be regarded as a separate additional storey in the structure for purposes of allowing extra rate for concrete work under item no. 10.15. In the case of building storey having such a mezzanine, therefore, the storey shall be considered for the full height ignoring the existence of the mezzanine inter-floor.
- (viii) The rates given below are for both cast-in-situ and precast work. The precast work includes the cost of hoisting and fixing in position.
- (ix) The rates for all items exclude the cost of steel reinforcement and form work/centring and shuttering except for item No. 10.40 rate of which includes the labour and material for centring and shuttering complete.
- (x) The labour rates given in this chapter include the cost of water, Tools and Plant, Scaffolding (Labour and material) and cost of good earth for mud mortar, wherever required.
- (xi) Coarse sand for item No. 10.11 to 10.30, 10.40, 10.59 to 10.65 & 10.70 shall be as per Punjab PWD Specifications No.3.30.
- (xii) 10 percent extra is payable on labour only for work in RCC slabs having inclination more than 25 degrees with the horizontal. Nothing extra shall be paid for lesser inclinations.
- (xiii) For estimate purposes shuttering may be taken as under:-
  - (a) For foundation work and plinth beams @ 1.50sqm/cum
  - (b) For slabs & stair case @ 8.25sqm/cum
  - (c) For columns, beams, door lintels @ 8.00sqm/cum
  - (d) For R.C.C. domes @ 10.00sqm/cum
  - (e) For walls @ 13.00sqm/cum
  - (f) For shelves @ 18.50sqm/cum

(g) For facia or any thin section @ 20.00sqm/cum

(xiv) For estimate purposes steel reinforcement may be taken as under:-

(a) For foundation @ 60kg/cum

(b) For roof slab and door lintels @ 80kg/cum

(c) For columns, beams @ 100kg/cum

(d) For R.C.C. domes @ 60kg/cum

(e) For walls @ 90kg/cum

(f) For shelves @ 60kg/cum

(g) For facia or any thin section @ 50kg/cum

(h) For piles @ 30kg/cum

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.1	Mud concrete with brick ballast 40mm gauge	cum	273.47	877.55	300.82	904.90
10.2	Mud concrete with stone ballast 40mm gauge	cum	273.47	745.89	300.82	773.24
10.3	Lime concrete 1:2:8 (0.13 cum lime 0.26 cum surkhi one cum brick ballast) 40mm gauge	cum	330.21	1635.45	363.23	1668.47
10.4	Lime concrete 16:24:10 (0.16 cum Lime, 0.24 cum Surkhi, one cum brick ballast 30mm gauge)	cum	330.21	1731.73	363.23	1764.75
10.5	Lime concrete 16:24:100 (0.16 cum Lime, 0.24 cum Surkhi, one cum brick aggregate 20mm gauge)	cum	330.21	1840.05	363.23	1873.07
10.6	(a) Cement Concrete 1:8:16 with brick ballast 40mm gauge.	cum	330.21	1570.22	363.23	1603.24
	(b) Cement Concrete 1:8:16 with 40mm gauge stone aggregate.	cum	330.21	1438.55	363.23	1471.57
10.7	(a) Cement concrete 1:6:12 with brick ballast 40mm gauge.	cum	330.21	1723.30	363.23	1756.32
	(b) Cement Concrete 1:6:12 with 40mm gauge stone aggregate.	cum	330.21	1592.96	363.23	1625.98

CSR Sr. No.	Description		Unit	Rate			
				For Plain		For Sub-Mountainous Region	
				Labour Rate	Through Rate	Labour Rate	Through Rate
1	2		3	4	5	6	7
10.8	(a)	Cement concrete 1:5:10 with brick ballast 40mm gauge.	cum	330.21	1847.29	363.23	1880.31
	(b)	Cement concrete 1:5:10 with 40 mm gauge stone ballast.	cum	330.21	1719.37	363.23	1752.39
10.9	(a)	Cement Concrete 1:4:8 with brick ballast 40mm gauge.	cum	330.21	2036.94	363.23	2069.96
10.10		Cement Concrete 1:4:8 with stone ballast of size.					
	(a)	20mm gauge	cum	330.21	1921.23	363.23	1954.25
	(b)	40 mm gauge.	cum	330.21	1910.54	363.23	1943.56
10.11		Cement Concrete 1:3:6 with stone ballast or shingle.	cum	330.21	2200.72	363.23	2233.74
10.12		Cement Concrete 1:2:4 with stone ballast or shingle.	cum	330.21	2799.75	363.23	2832.77
10.13		Extra over item 10.1 to 10.12 when work is done in situ in small quantities not exceeding 0.30 cum per block in situ such as staggered block arrows, concrete block over inverted filters, bed plates arches etc.	cum	36.00	36.00	39.60	39.60
10.14		Reinforced cement concrete 1:2:4 hand mixed but excluding steel reinforcement, centring and shuttering in foundation and plinth.	cum	611.92	3081.46	673.11	3142.65
10.15		Reinforced cement concrete M-20 with cement @375/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in foundation and plinth	cum	611.92	3372.85	673.11	3434.04
10.16		Reinforced cement concrete M-25 with cement @425/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in foundation and plinth	cum	611.92	3664.23	673.11	3725.42
10.17		Reinforced cement concrete M-30 with cement @450/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in foundation and plinth	cum	611.92	3809.91	673.11	3871.10

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.18	Reinforced cement concrete M-35 with cement @475/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in foundation and plinth	cum	611.92	3955.61	673.11	4016.80
10.19	Reinforced cement concrete M-40 with cement @500/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in foundation and plinth	cum	611.92	4101.30	673.11	4162.49
10.20	Reinforced cement concrete 1:2:4 hand mixed but excluding steel reinforcement, centring and shuttering in super structure.	cum	928.56	3398.10	1021.42	3490.96
10.21	Reinforced cement concrete M-20 with cement @375/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in superstructure.	cum	928.56	3689.49	1021.42	3782.35
10.22	Reinforced cement concrete M-25 with cement @425/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in superstructure.	cum	928.56	3980.87	1021.42	4073.73
10.23	Reinforced cement concrete M-30 with cement @450/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in superstructure.	cum	928.56	4126.55	1021.42	4219.41
10.24	Reinforced cement concrete M-35 with cement @475/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in superstructure.	cum	928.56	4272.25	1021.42	4365.11
10.25	Reinforced cement concrete M-40 with cement @500/kg per cum hand mixed but excluding steel reinforcement centring and shuttering in superstructure.	cum	928.56	4417.94	1021.42	4510.80
10.26	Add/subtract for using excess/less cement content in designed concrete mix for variation of cement content from that required for nominal cement concrete 1:2:4.	Per Bag	262.27	262.27	262.27	262.27
10.27	Damp proof course 7.5 cm thick of cement concrete 1: 2: 4 with two coats of bitumen 20/30 penetration at 1.65 kg per sqm laid hot and sanded.	sqm	52.32	302.22	57.55	307.45

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.28	Damp proof course 4 cm thick of cement concrete 1: 2: 4 with two coats of bitumen 20/30 penetration @ 1.65 kg per sqm laid hot and sanded.	sqm	37.92	202.79	41.71	206.58
10.29	Damp proof course 4 cm thick of cement concrete 1:2:4 with water proofing compound as per manufacturer guide lines.	sqm	37.92	146.28	41.71	150.07
10.30	Damp proof course 2.5 cm thick of cement concrete 1 : 2 : 4 with two coats of bitumen 20/30 penetration @1.65 kg per sqm laid hot and sanded.	sqm	37.92	166.35	41.71	170.14
10.31	Supplying & Laying dry brick bats.	cum	51.83	615.50	57.01	620.68
10.32	Supplying & Laying dry brick ballast.	cum	51.83	716.32	57.01	721.50
10.33	Nicking cement concrete surface (Over 28 days old including preparation and laying slurry).	sqm	8.43	16.73	9.27	17.57
10.34	Washing concrete surface, scrubbing with brushes including preparing and laying slurry.	sqm	5.17	13.47	5.69	13.99
10.35	Nicking lime concrete surface.	sqm	5.76	5.76	6.34	6.34
10.36	Extra for grouting concrete between the grooves of gates including labour for shuttering.	sqm	121.36	121.36	133.50	133.50
10.37	Preparing, watering and ramming surface for laying concrete.					
	<b>(a) Head works</b>					
	(i) Horizontal	sqm	9.60	9.60	10.56	10.56
	(ii) Glacis and crest	sqm	19.20	19.20	21.12	21.12
	<b>(b) Channels (Irrigation)</b>					
	(i) Horizontal	sqm	8.24	8.24	9.06	9.06
	(ii) Glacis and crest	sqm	12.45	12.45	13.70	13.70
10.38	Preparing surface for inverted filters.	sqm	4.74	4.74	5.21	5.21

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.39	Skipping concrete in wells.	cum	416.88	416.88	458.57	458.57
10.40	Reinforced cement concrete work hand mixed 1:2:4 for well caps excluding steel reinforcement, but including the cost of centring and shuttering laid in position complete in all respects in rectangular, square, polygonal, circular and all elliptical wells.					
	(a) For wells plugged up to top.	cum	611.92	3041.40	673.11	3102.59
	(b) For wells not plugged upto top reinforced cement concrete	cum	611.92	3041.40	673.11	3102.59
10.41	Plain cement concrete 1:8:16 with stone ballast 40mm guage using 20% plum	cum	330.21	1267.79	363.23	1300.81
10.42	Plum cement concrete 1:6:12 with stone ballast 40mm gauge, using 20% plum	cum	330.21	1379.66	363.23	1412.68
10.43	Plum cement concrete 1:5:10 with stone ballast 40mm gauge using 20 percent plum	cum	330.21	1491.55	363.23	1524.57
10.44	(a) Cement concrete 1:8:16 with brick ballast 20mm gauge in foundation and plinth	cum	330.21	1678.54	363.23	1711.56
	(b) Cement concrete 1:8:16 with stone ballast 20mm gauge in foundation and plinth	cum	330.21	1438.55	363.23	1471.57
10.45	(a) Cement concrete 1:8:16 with brick ballast 32 mm gauge in foundation and plinth.	cum	330.21	1678.54	363.23	1711.56
	(b) Cement Concrete 1:8:16 with stone ballast 32 mm gauge in foundation and plinth.	cum	330.21	1438.55	363.23	1471.57
10.46	Extra for mechanical mixer used by the contractor at his own cost.	cum	48.00	48.00	48.00	48.00
10.47	Extra for vibrator used by the contractor at his own cost.	cum	160.00	160.00	160.00	160.00
10.48	Extra for R.C.C. work done in subsequent storey above the first storey up to height of 4 metres or part thereof up to the roof top level of that storey.	cum	24.00	24.00	24.00	24.00

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.49	Extra for P.C.C. work done in subsequent storey above the first storey up to height of 4 metres or part thereof up to the roof top level of that storey.	cum	16.00	16.00	16.00	16.00
10.50	Extra for R.C.C. work done above 4 metres height (where any single storey exceeds 4 metres in height) for every additional height of 2 metres or part thereof.	cum	24.00	24.00	24.00	24.00
10.51	Extra for P.C.C. work done above 4 metres height (where any single storey exceeds 4 metres in height ) for every additional height of 2 metres or part thereof.	cum	16.00	16.00	16.00	16.00
10.52	Extra for using admixture in designed mix concrete.	kg	-	49.50	-	49.50
10.53	Boring, providing and installing bored cast-in-situ reinforced cement concrete pile of specified diameter and length below the pile cap to carry a safe working load not less than specified, excluding the cost of concrete and steel reinforcement (The rates of concrete and steel reinforcement are to be taken for respective item of chapter 10 & 18 respectively) but including the cost of boring with manual auger (without bentonite solution) and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. all complete as per BIS Specifications/ Codes, including removal of excavated earth with all lifts and leads. (Length of pile for payment shall be measured up to bottom of pile cap).					
	(a) 200 mm dia piles	m	176.10	176.10	176.10	176.10
	(b) 250 mm dia piles	m	194.50	194.50	194.50	194.50
	(c) 300 mm dia piles	m	228.24	228.24	228.24	228.24
	(d) 400 mm dia piles	m	271.50	271.50	271.50	271.50
	(e) 450 mm dia piles	m	323.64	323.64	323.64	323.64
	(f) 500 mm dia piles	m	362.47	362.47	362.47	362.47
	(g) 600 mm dia piles	m	336.22	336.22	336.22	336.22

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.54	Extra for providing under reamed bulb as per BIS Specifications/Codes.					
	(a) 200 mm dia piles	each	179.46	179.46	179.46	179.46
	(b) 250 mm dia piles	each	200.93	200.93	200.93	200.93
	(c) 300 mm dia piles	each	231.61	231.61	231.61	231.61
	(d) 400 mm dia piles	each	250.33	250.33	250.33	250.33
	(e) 450 mm dia piles	each	268.73	268.73	268.73	268.73
	(f) 500 mm dia piles	each	317.81	317.81	317.81	317.81
	(g) 600 mm dia piles	each	336.22	336.22	336.22	336.22
10.55	Extra for using Bentonite slurry with Bentonite pump in case of unstable bore.					
	(a) 200 mm dia piles.	m	101.24	101.24	101.24	101.24
	(b) 250 mm dia piles	m	101.24	101.24	101.24	101.24
	(c) 300 mm dia piles	m	197.88	197.88	197.88	197.88
	(d) 400 mm dia piles	m	233.15	233.15	233.15	233.15
	(e) 450 mm dia piles	m	263.83	263.83	263.83	263.83
	(f) 500 mm dia piles	m	299.11	299.11	299.11	299.11
	(g) 600 mm dia piles	m	365.07	365.07	365.07	365.07
10.56	Providing precast cement concrete Jali 1:2:4 (1 cement: 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia mild steel wire including centring and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits.					
a	50 mm thick	sqm	228.89	691.20	251.78	714.09
b	40 mm thick	sqm	198.79	568.27	218.67	588.15
c	25 mm thick	sqm	198.77	460.82	218.65	480.70
10.57	Deleted	-	-	-	-	-



CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.58	Extra for laying PCC/RCC in or under foul positions	cum	78.80	78.80	78.80	78.80
10.59	Providing and laying in position reinforced cement concrete using batch mixing plant design mix of M-20 grade by using 375kg of cement per cum, laying but excluding the cost of centring, shuttering, reinforcement in superstructure, as per direction of Engineer-in-charge.	cum	754.11	3570.25	829.52	3645.66
10.60	Providing, hoisting and fixing in super structure for first storey precast reinforced cement concrete work in string courses, bands, copings, bed plates, anchor blocks, plain window sills and the like including the cost of required centring & shuttering, cost of 1:2:4 hand mixed (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size) but excluding the cost of steel reinforcement.(Qty of each unit shall not exceed 0.04 cum)	cum	2238.78	4757.72	2462.66	4981.60
10.61	Providing, hoisting and fixing in super structure for first storey precast reinforced cement concrete in small lintels not exceeding 1.5m clear span including the cost of required centring & shuttering, cost of 1:2:4 hand mixed (1 cement: 2 coarse sand : 4 graded stone aggregate 20mm nominal-size) but excluding the cost of steel reinforcement.(Qty of each unit shall not exceed 0.06cum)	cum	2144.32	4663.21	2358.75	4877.64
10.62	Deleted	-	-	-	-	-
10.63	Deleted	-	-	-	-	-
10.64	Deleted	-	-	-	-	-
10.65	Deleted	-	-	-	-	-

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.66 a	Vertical load testing of piles in accordance with IS 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.					
	Initial test.					
	Single pile up to 50 tonne capacity	each test	27219.50	27219.50	27219.50	27219.50
b	Vertical load testing of piles in accordance with IS 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.					
	Routine test.					
	Single pile up to 50 tonne capacity	each test	16109.50	16109.50	16109.50	16109.50
c	Vertical load testing of piles in accordance with IS 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.					
	Single pile above 50 tonne and up to 100 tonne capacity					
	Initial test.	each test	38329.50	38329.50	38329.50	38330
d	Vertical load testing of piles in accordance with IS 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.					
	Single pile above 50 tonne and up to 100 tonne capacity					
	Routine test.	each test	24997.50	24997.50	24997.50	24997.50

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
e	Vertical load testing of piles in accordance with IS 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.					
	Group of two or more piles up to 50 tonne capacity					
	Initial test.	each test	52772.50	52772.50	52772.50	52772.50
f	Vertical load testing of piles in accordance with IS 2911 (Part-IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge.					
	Group of two or more piles up to 50 tonne capacity					
	Routine test.	each test	32219.00	32219.00	32219.00	32219.00
10.67 a	Cyclic vertical load testing of pile in accordance with IS code of practice IS : 2911 (part-IV) including preparation of pile head etc for.					
	Single pile					
	Up to 50 tonne capacity pile	each test	16109.50	16109.50	16109.50	16109.50
b	Cyclic vertical load testing of pile in accordance with IS code of practice IS : 2911 (part-IV) including preparation of pile head etc for.					
	Single pile					
	Above 50 tonne and up to 100 tonne capacity pile	each test	24997.50	24997.50	24997.50	24997.50
c	Cyclic vertical load testing of pile in accordance with IS code of practice IS : 2911 (part-IV) including preparation of pile head etc for.					
	Group of two piles					
	Up to 50 tonne capacity pile	each test	32219.00	32219.00	32219.00	32219.00

CSR Sr. No.	Description	Unit	Rate			
			For Plain		For Sub-Mountainous Region	
			Labour Rate	Through Rate	Labour Rate	Through Rate
1	2	3	4	5	6	7
10.68 a	Lateral load testing of single pile in accordance with IS code of practice IS : 2911 (part-IV) for determining safe allowable lateral load on pile.					
	Up to 50 tonne capacity pile	each test	16109.50	16109.50	16109.50	16109.50
b	Lateral load testing of single pile in accordance with IS code of practice IS : 2911 (part-IV) for determining safe allowable lateral load on pile.					
	Above 50 tonne and up to 100 tonne capacity pile	each test	24997.50	24997.50	24997.50	24997.50
10.69	Deleted	-	-	-	-	-
10.70	Providing and laying in position ready mixed concrete M-20 grade by using cement 375kg. per cum manufactured in fully automatic batching plant and transported to site of work in transit mixer for a lead upto 1km having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work from transit mixer to site of laying including cost of admixtures in recommended proportions as per IS:9103 to accelerate/retard setting of concrete, improve workability without impairing strength and durability excluding the cost of centering, shuttering, reinforcement as per direction of the Engineer-in-charge.	cum	1004.37	4011.75	1104.82	4112.19
10.71	Extra for pumping charges of Batch Mix Concrete / Ready-mix concrete work up to floor 5 levels.	cum	56.10	56.10	61.71	61.71
10.72	Extra for pumping charges Batch Mix Concrete/Ready-mix concrete work above floor V level for each four floors or part thereof.	cum	126.22	126.22	138.84	138.84
10.73	Extra for carriage of Ready-mix concrete beyond the initial lead of 10km.	cum/km	101.99	101.99	112.19	112.19