

CHAPTER NO. 27

QUANTITIES OF MATERIALS

Note :-

One cement bag weighs 50 Kg and measures 0.03472 cum.

Sr. No.	Description		Unit	Quantities			
				Cement (Bags)	Fine aggregates (cum)	Coarse aggregates (cum)	
1	2	3	4	5	6		
27.1	Cement concrete :-						
	(i)	M-20	cum	7.50	0.43	0.85	
	(ii)	M-25	cum	8.50	0.43	0.85	
	(iii)	M-30	cum	9.00	0.43	0.85	
	(iv)	M-35	cum	9.50	0.43	0.85	
	(v)	M-40	cum	10.00	0.43	0.85	
	(ii)	1:2:4	cum	6.50	0.45	0.90	
	(iii)	1 : 2 $\frac{1}{2}$: 5	cum	5.30	0.46	0.91	
	(iv)	1:3:6	cum	4.50	0.47	0.94	
	(v)	1:4:8	cum	3.50	0.48	0.96	
	(vi)	1:5:10	cum	2.80	0.49	0.98	
	(vii)	1:6:12	cum	2.35	0.495	0.99	
	(viii)	1:8:16	cum	1.80	0.50	1.00	
				Lime (cum)	Surkhi (cum)	Ballast (cum)	
27.2	Lime concrete						
	(i)	1:2:8 (Brick ballast 40mm gauge)	cum	0.13 (76 Kg)	0.26	1.00	
	(ii)	16:24:100 (Brick ballast 30mm gauge)	cum	0.16 (93.54 Kg)	0.24	1.00	
	(iii)	16:24:100 (Brick ballast 20mm gauge)	cum	0.16 (93.54 Kg)	0.24	1.00	
				Cement (Bags)	Sand (cum)	Bricks (Nos)	
27.3	(a)	Brick work in cement sand mortar with bricks of size 22.86 cmx11.11cmx6.83c m :-					
	(i)	1:2	cum	3.45	0.24	480	

	(ii)	1:3	cum	2.40	0.25	480		
	(iii)	1:4	cum	1.75	0.25	480		
	(iv)	1:5	cum	1.45	0.25	480		
	(v)	1:6	cum	1.20	0.25	480		
	(vi)	1:7	cum	1.00	0.25	480		
				Lime Qtl	Surkhi (cu m)	Bricks (Nos)	Sand (cu m)	
	(b)	Brick work laid in lime surkhi mortar 1:2 with bricks of size 22.86cm x 11.11cm x 6.83cm						
	(i)	1:2	cum	0.70	0.24	480	-	
	(c)	Brick work laid in lime, surkhi, sand mortar 1:1:1 with bricks of size 22.86cm x 11.11cm x 6.83cm	cum	0.84	0.12	480	0.12	
				Cement (Bags)	Lime Qtl	Sand (cum)	Bricks (Nos)	
	(d)	Brick work laid in cement, lime, sand mortar with bricks of size 22.86cm x 11.11cm x 6.83cm						
	(i)	1:1:6	cum	1.20	0.29	0.25	480	
	(ii)	1:2:9	cum	0.80	0.39	0.25	480	
	(iii)	1:3:12	cum	0.61	0.44	0.25	480	
	(e)	115mm thick brick wall laid in cement, lime, sand mortar 1:1:6 with bricks size of 22.86cm x 11.11cm x 6.83cm.						
	(i)	1:1:6	sqm	0.137	0.032	0.0286	55	
				Cement (Bags)	Sand (cum)	Tiles (Nos)		
27.4	(a)	Brick work in cement sand mortar with tiles size 22.86 cm X 11.43cm x 3.81 cm						
	(i)	1:4	cum	2.85	0.40	780		

	(ii)	1:5	cum	2.30	0.40	780		
	(iii)	1:6	cum	1.90	0.40	780		
				Cement (Bags)	Sand (cum)	Tiles (Nos)		
	(b)	Brick work in cement sand mortar with tiles size 30.48cm X 15.24cm x 5.08 cm :-						
	(i)	1:4	cum	1.75	0.25	425		
	(ii)	1:6	cum	1.20	0.25	425		
				Cement (Bags)	Sand (cum)	lime (cum)	Bricks (Nos)	
							Pucca	Sundried
27.5		Gilafi masonry with jibi face (1:5 mortar)	cum	0.25	0.044	0.002	240	250
27.6		Brick work laid in mud-mortar with jibi face (1:5 mortar)	cum	0.32	0.054	-	480	-
				Cement (Bags)	Sand (cum)	Stone (cum)		
27.7		Stone Masonry :						
	(i)	Fine ashlar 1:3	cum	0.96	0.10	1.33		
	(ii)	Fine ashlar 1:6	cum	0.48	0.10	1.33		
	(iii)	Rough-tooled ashlar 1:3	cum	1.72	0.18	1.25		
	(iv)	Rough-tooled ashlar 1:6	cum	0.86	0.18	1.25		
	(v)	Block in course 1:4	cum	1.72	0.24	1.20		
	(vi)	Block in course 1:5	cum	1.38	0.24	1.20		
	(vii)	Block in course 1:6	cum	1.15	0.24	1.20		
	(viii)	Squared rubble masonry. 1:4	cum	2.15	0.30	1.10		
	(ix)	Squared rubble masonry. 1:5	cum	1.72	0.30	1.10		
	(x)	Squared rubble masonry. 1:6	cum	1.44	0.30	1.10		
	(xi)	Random or polygonal rubble 1:6	cum	1.67	0.35	1.10		

	(xii)	Boulder masonry 1:6	cum	1.90	0.40	1.10		
	(xiii)	Random or polygonal rubble 1:7	cum	1.44	0.35	1.10		
	(xiv)	Random or polygonal rubble 1:8	cum	1.24	0.35	1.10		
				Cement (Bags)	Sand (cum)			
27.8	(a)	Cement plaster 6mm thick :-						
	(i)	1:2	sqm	0.10	0.008			
	(ii)	1:3	sqm	0.08	0.008			
	(iii)	1:4	sqm	0.06	0.008			
	(b)	Cement plaster 10mm thick :-						
	(i)	1:2	sqm	0.15	0.01			
	(ii)	1:3	sqm	0.12	0.012			
	(iii)	1:4	sqm	0.09	0.012			
	(c)	Cement plaster 12.50mm thick :-						
	(i)	1:2	sqm	0.20	0.014			
	(ii)	1:3	sqm	0.16	0.016			
	(iii)	1:4	sqm	0.12	0.016			
	(iv)	1:5	sqm	0.094	0.016			
	(v)	1:6	sqm	0.078	0.016			
	(d)	Cement plaster 20mm thick :-						
	(i)	1:2	sqm	0.30	0.021			
	(ii)	1:3	sqm	0.24	0.024			
	(iii)	1:4	sqm	0.18	0.024			
	(iv)	1:5	sqm	0.14	0.024			
	(v)	1:6	sqm	0.117	0.024			
	(e)	Cement plaster 25mm thick :-						

	(i)	1:2	sqm	0.40	0.028			
	(ii)	1:3	sqm	0.32	0.032			
	(iii)	1:4	sqm	0.24	0.032			
	(iv)	1:5	sqm	0.188	0.032			
	(v)	1:6	sqm	0.156	0.032			
				Cement (Bags)	Sand (cum)	Lime (Kg)		
27.9	(i)	Cement lime plaster 12.5mm thick 1:1:6 mortar.	sqm	0.08	0.016	1.55		
	(ii)	Cement lime plaster 25mm thick 1:1:6 mortar.	sqm	0.16	0.032	3.10		
				lime (Kg)	Surkhi (cum)			
27.10	(a)	Lime plaster 12.5mm thick 2 lime 3 surkhi.	sqm	4.95	0.0128			
				Cement (Bags)	Sand (cum)	Bitumen (kg)		
	(b)(i)	12.5 mm thick cement plaster damp proof course 1:3 with two coats of bitumen laid hot and sanded.	sqm	0.16	0.016	1.65		
	(ii)	20mm thick cement plaster damp proof course 1:3 with two coats of bitumen laid hot and sanded.	sqm	0.24	0.024	1.65		
				Good Earth (cum)	Old Bhusa (Kg)	Cow Dung		
	(c)(i)	Mud plaster 12.50mm thick with gobri leeping.	sqm	0.35	23	L.S.		
	(ii)	Mud plaster 25mm thick with gobri leeping.	sqm	0.70	45	L.S.		
				Cement (Bags)	Sand (cum)			
27.11		Flush or deep cement pointing on brick walls or brick on edge flooring :-						
	(i)	1:2	sqm	0.044	0.003			

	(ii)	1:3	sqm	0.033	0.003			
27.12	Flush cement pointing on flat brick flooring :-							
	(i)	1:2	sqm	0.035	0.0024			
27.13	Flush cement pointing on underside of roof tiles :-							
	(30.48cm x 15.24cm x 5.08cm) 1:2 mortar		sqm	0.026	0.0018			
				Lime (cum)	Surkhi (cum)			
27.14	Lime pointing 2:3 flush or weathered and struck.		sqm	0.0013 (0.90 kg)	0.0023			
				Cement (Bags)	Sand (cum)			
27.15	Cement pointing 1:2 on stone walls :-							
	(i)	Flush	sqm	0.065	0.0046			
	(ii)	Raised	sqm	0.130	0.009			
	(iii)	On stone slab pavement	sqm	0.022	0.0015			
27.16	Cement rendering on plaster 1mm thick.		sqm	0.025	-			

				Lime (kg)				
27.17	White washing :-							
	(i)	One coat	sqm	0.15				
	(ii)	Two coats	sqm	0.25				
	(iii)	Three coats	sqm	0.35				
27.18	Colour washing :-							
	(i)	One coat	sqm	0.10				
	(ii)	Two coats	sqm	0.20				
				Cement (Bags)	Sand (cum)	Tiles (Nos)	Aggregates (cum)	
27.19	Second class mud roofing							
	(i)	When space between battens is filled with concrete blocks.	sqm	0.24	0.027	22	0.0026	
	(ii)	When space between battens is filled with wooden pieces.	sqm	0.23	0.026	22	-	
27.20	Tile terracing on roof (Tile size 22.86 cm x 11.43 cm x 3.81 cm)		sqm	0.035	0.0049	37	-	
				Paints(ISI mark) (Litres)				
27.21	Painting :-							
	(i)	Two coats of synthetic enamel paint on new wood or steel work.	sqm	0.145				
	(ii)	Two coats of ready, mixed paint on new wood or steel work.	sqm	0.122				
	(iii)	Two coats of synthetic enamel paint on old wood or steel work.	sqm	0.118				
	(iv)	Two coats of ready, mixed paint on old wood or steel work.	sqm	0.098				

	(v)	One coat of synthetic enamel paint on old wood or steel work.	sqm	0.065				
	(vi)	One coat of ready mixed paint on old wood or steel work.	sqm	0.054				
	(vii)	Priming coat on wood work.	sqm	0.061				
	(viii)	Priming coat on new steel work.	sqm	0.054				
				Red lead Genuine (Kg)	Turpentine Oil (Litre)	Linseed Oil (Litre)		
	(ix)	Priming coat consisting of red lead mixed with linseed oil and turpentine oil in equal proportion or with genuine red lead on steel work.	sqm	0.085	0.0306	0.0306		
	(x)	Two coats on iron sheets with roofing red, ready mixed paint on new work to give an even shade.	sqm	0.093	-	-		
				Red lead Genuine (Kg)	Turpentine Oil (Litre)	Linseed Oil (Litre)		
	(xi)	One coat on iron sheet with roofing red, ready mixed paint on old work to give an even shade.	sqm	0.059	-	-		
				Paints(ISI mark) (Litres)				
	(xii)	Two coats on iron sheets with roofing white, grey or green ready mixed paint on new work to give an even shade.	sqm	0.15	-	-		

	(xiii)	One coat on iron sheets with roofing white, grey or green ready mixed paint on new work to give an even shade.	sqm	0.0947	-	-		
	(xiv)	Two coats with aluminium paint on new work to give an even shade.	sqm	0.093	-	-		
	(xv)	One coat with aluminium paint on new work to give an even shade.	sqm	0.0445	-	-		
	(xvi)	Two coats with anti-corrosive bitumastic paint on new work to give an even shade (with black enamel paint).	sqm	0.1086	-	-		
	(xvii)	One coat with anti-corrosive bitumastic paints on old work to give an even shade (with black enamel paint)	sqm	0.0543	-	-		
27.22	Solignum or creosote paint :-							
	(i)	Two coats	sqm	0.069				
	(ii)	One coat	sqm	0.039				
27.23	Distempering (dry or oil-bound)							
	(i)	Two coats on new work.	sqm	0.171				
	(ii)	One coat on old work.	sqm	0.073				
	(iii)	Two coats on old work.	sqm	0.146				

			Timber (cum)				
			Deodar	Teak	Kail		
27.24	Door panelled, glazed or glazed and panelled (including chowkat)						
	(i) (40mm) thick	sqm	0.049	--	0.049		
	(ii) (35mm) thick	sqm	0.045	0.038	0.045		
	(iii) (30mm) thick	sqm	0.0418	0.0360	--		
	(iv) (25mm) thick	sqm	--	0.0325	--		
27.25	Battened and braced doors (50mm) thick including chowkat.	sqm	0.0565	--	--		
27.26	Battened and framed doors (including chowkat) :-			--	--		
	(i) (50mm) Thick	sqm	0.060	--	--		
	(ii) (45mm) Thick	sqm	0.057	--	--		
27.27	Wire gauge door shutters with out springs :-						
	(i) (35mm) thick	sqm	0.0259	--	0.0259		
	(ii) (30mm) thick	sqm	0.0224	0.0214	0.0224		
	(iii) (25mm) thick	sqm	--	0.0172	--		
			Cement (bags)	Sand (cum)	Tiles (30.48cm x 15.24cm x 5.08cm.) (Nos)		
27.28	Double layer tile lining (13.36 cm thick)	sqm	0.355	0.049	40		
27.29	Single layer tile lining	sqm	0.273	0.040	20		
Note :-	Materials for curing-drains seepage drains, bed sleepers and rungs to be extra in case of item Nos 27.28 and 27.29.						
			Stone (cum)	G.I. Wire No. 6 S.W.G (4.75 mm)			
27.30	Filling stone in wire-crates (hand packed)	cum	1.00	3.3kg per sqm of wire netting 15cm mesh.			

Note :-	For other gauge of G.I. wire No. 6 S.W.G (4.75mm) used in item No. 27.30 weight per sqm of netting (15cm) mesh will vary accordingly.							
				Stone (cum)				
27.31	Stone pitching.		cum	1.00 Shingle or stone aggregates (10mm) ring				
27.32	Dry grouting dry stone pitching.		cum	0.20				
				Cement Mortar (cum)				
27.33	Cement mortar dry brick pitching or flooring :-							
	(i)	7.5cm thick floor	sqm	0.019				
	(ii)	11.50 cm thick floor	sqm	0.029				
Note :-	Quantities of cement for any mortar ratio may be worked out accordingly.							
				Cement (bags)	Sand (cum)	Shingle or Aggregate (cum)		
27.34	Cement grouting stone pitching :-							
	(i)	1:2:4	cum	1.45	0.10	0.20		
	(ii)	1:3:6	cum	0.96	0.10	0.20		
Note :-	For grouting with cement mortar only use 0.36cum of sand per cum of the contents and work out the quantity of cement according to the mix used.							
				Cement (bags)	Sand (cum)	15 percent extra sand for wastage (cum)	Total Sand (cum)	

27.35	Cement Sand mortar :-						
	(i) 1:2	cum	13.63	0.96	0.14	1.10	
	(ii) 1:3	cum	9.60	1.00	0.15	1.15	
	(iii) 1:4	cum	6.89	1.00	0.15	1.15	
				Cement (bags)	Sand (cum)	15 percent extra sand for wastage (cum)	Total Sand (cum)
	(iv) 1:5	cum	5.75	1.00	0.15	1.15	
	(v) 1:6	cum	4.80	1.00	0.15	1.15	
				No. of bricks of size 22.86cm x 11.11cm x 6.83cm (Nos)	Cement in bags of 50 Kg (Bags)	Sand (cum)	Lime (quintal)
							Surkhi (cum)
27.36	Flat brick paving laid dry over 25mm thick mud mortar grouted with sand.	10 sqm	364	--	0.075	--	--
27.37	Dry brick on edge paving sand grouted over 50mm thick earth and mud plaster.	10 sqm	575	--	0.15	--	--
27.38	First class dry flat brick flooring templates over rammed and dressed foundations and to correct longitudinal and cross slopes.	10 sqm	364	--	0.075	--	--
27.39	First class dry brick on edge flooring as described in item no. 27.38	10 sqm	575	--	0.15	--	--
27.40	First class flat brick paving or flooring laid over and in lime mortar/in cement sand mortar 1:5 or 1:6 etc.						
	(i) In & on lime mortar	10 sqm	383	--	--	0.74	0.125
	(ii) In & on cement sand mortar 1:6	10 sqm	383	0.599	0.144	--	--
	(iii) In & on cement sand mortar 1:5	10 sqm	383	0.718	0.144	--	--

	(iv)	In & on cement sand mortar 1:4	10 sqm	383	0.860	0.144	--	--
27.41	First class brick on edge paving or flooring laid over and in lime mortar/in cement sand mortar 1:4, 1:5 or 1:6 etc.							
	(i)	In & on lime mortar	10 sqm	617	--	--	0.87	0.149
				No. of bricks of size 22.86cm x 11.11cm x 6.83cm (Nos)	Cement in bags of 50 Kg (Bags)	Sand (cum)	Lime (quintal)	Surkhi (cum)
	(ii)	In & on cement sand mortar 1:6	10 sqm	617	0.714	0.171	--	--
	(iii)	In & on cement sand mortar 1:5	10 sqm	617	0.856	0.171	--	--
	(iv)	In & on cement sand mortar 1:4	10 sqm	617	1.025	0.171	--	--
				No. of bricks of size 22.86cm x 11.11cm x 6.83cm (Nos)	Cement in bags of 50 Kg (Bags)	Sand (cum)		
27.42	Dry brick on edge paving sand grouted over 50mm thick rammed brick aggregate 40mm gauge.		10 sqm	575	--	0.15		
27.43	Flat brick or tile flooring laid in cement sand mortar 1:4 on 100mm thick cement concrete 1:8:16 and 100mm sand filling and cement pointing 1:2 on top.		10 sqm	383	3.01	0.668		
27.44	Brick on edge flooring laid in cement sand mortar 1:4 in 75mm thick cement concrete 1:8:16 and cement pointing 1:2 on top.		10 sqm	617	2.725	1.570		

27.45	Flat brick or tile flooring laid dry over bed of 6mm thick cement sand mortar 1:6 grouted with cement sand mortar 1:4 and top surface to be cleaned with wire brushes.	10 sqm	383	0.70	0.13	
27.46	Laying flat brick soling in road work.	10 sqm	383	--	--	
27.47	Laying brick on edge soling in road work.	10 sqm	617	--	--	