

Engineering Information

Estimating Qualities of Cement, Fine Aggregate

100 Cu, feet compact assumption-voids in sand 40% broken

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ESTIMATING QUALITIES OF CEMENT, FINE AGGREGATE 100 Cu. feet Compact Assumption-Voids in sand 40% broken					
Nominal mix Cement Fine Aggregate Coarse Aggregate		Water Water/ Cement Ratio (by weight) for Minimum Consistency			In Gallons per bag
1	1	-	.25	2.8	
1	1, 1/2	-	.28	3.1	
1	2	-	.30	3.3	
1	2, 1/2	-	.35	3.9	
1	3	-	.40	4.4	
1	4	-	.53	5.9	
1	6	-	.70	7.8	
1	8	-	.90	10.0	
1	1	2	.30	3.3	
1	1, 1/2	3	.42	4.7	
1	1, 2/3	3 1/2	.48	5.3	
1	2	2	.42	4.7	
1	2	3	.50	5.5	
1	2	3 1/2	.53	5.9	
1	2	4	.55	6.1	
1	2	3 1/2	.55	6.1	
1	2, 1/2	4	.57	6.3	
1	2, 1/4	4	.60	6.6	
1	2, 1/2	5	.65	7.2	
1	3	4	.65	7.2	
1	3	5	.69	7.7	
1	3	6	.75	8.3	
1	4	8	.95	10.5	

1. Also known as 1:2:4 1:2:2:4
No allowance made in table for waste.

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QUANTITIES AND COARSE AGGREGATE REQUIRED FOR Mortar or concrete. ¹ Stone 45% specific Gravity of Cement = 3.1			
Cement in Bags	Sand Dry Cu. ft.	Fine Aggregate	
		Sand moist (Bulking) 20% Cu. ft.	Coarse Age: (Broken Stone) Cu. ft.
07.5	69.0	82.8	-
46.5	84.0	101.0	-
39.5	94.0	113.0	-
33.5	100.0	120.0	-
29.0	105.0	126.0	-
22.8	110.0	132.0	-
16.3	118.0	142.0	-
12.7	122.0	147.0	-
31.9	38.4	46.1	76.4
22.9	41.2	49.5	82.4
20.6	41.2	49.5	82.4
24.5	59.2	70.8	59.0
20.5	49.2	59.0	73.8
19.0	46.1	55.5	79.8
17.75	42.7	51.2	85.4
18.25	49.3	59.2	76.7
17.55	52.6	63.1	73.8
16.5	49.5	59.5	79.2
14.7	44.0	52.9	88.0
15.35	52.2	66.2	73.8
13.35	49.6	59.5	82.6
12.50	44.9	53.9	89.8
9.60	46.1	55.5	92.2

1. For gravel aggregate decrease cement by 5% fine aggregate by 2 cu. ft. and coarse aggregate in proportion to fine aggregate as gives in the mix.

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