

Sub. Proportions for Civil Works.

Proportions for all civil works shall be as given under. Unless otherwise specified by structural engineer and clearly approved by MD, these proportions to be strictly followed.

The cost of river sand is increasing steadily and therefore wherever possible use manufactured sand (Robo sand) in place of river sand. A brief comparison of rates of these materials is given below.

Sl. No.	Material type	Cost per CFT - Rs.	Cost per ton – Rs.
1.	Stone dust	24/-	600/-
2.	Manufactured coarse sand (MCS)	25/-	625/-
3.	Manufactured fine sand (MFS)	25/-	625/-
4.	River sand coarse	55/-	1,365/-
5.	River sand fine	84/-	2,100/-

Proportions for RCC & CC works (site mix)

	Description	Ratio	Material
1	M15 Concrete	1:2:4	Cement : MCS : 20 mm Metal
2	M20 Concrete	1:1½ :3	Cement : MCS : 20 mm Metal
3	M25 Concrete	1:1½ :2	Cement : MCS : 20 mm Metal
4	For CC roads – M 15 (for site mix only)	1:2:4	Cement : MCS: (1 part 20 m Metal & 3 parts machine cut 40 mm)

Commonly used CC grades are as follows:

- Footings* – M 20 / M25
- Columns – M 25
- Slabs* – M 20
- Lentils, Chajjas, RCC beds, Lofts, etc., - M 15
- Road work*# – M20 (for site mix use M15)
- Lower basement floor slab*# – M20
- DLC for road work* – as specified from time to time

Proportions for other works:

	Description	Ratio	Material
1	PCC for CRS	1:4:8	Cement : MCS : Hand cut 40 mm Metal
2	PCC for footings	1:4:8	Cement : MCS: Hand cut 40 mm Metal M10 to M15 CC can also be used
3.	Mortar for CRS & UCRS	1:8	Cement : MCS
4.	DPC – 2” – with or without steel	1:3:6	Cement : MCS : 20 mm Metal
5.	Mortar for brick work for walls of flats & bungalows	1:6	Cement : MCS
6.	Mortar for other brick work like compound wall foundation walls, labour quarters, store rooms, etc	1:6	Cement : MCS
7.	Mortar for 1 st coat plastering	1:6	Cement : MCS + Recron @ 125 gms per bag. Plasticizer @ 125 ml per bag of cement is highly recommended to improve workability.
8.	Mortar for 2 nd coat plastering	1:3	Cement : MFS. Plasticizer @ 125 ml per bag of cement is highly recommended to improve workability.

9.	Mortar for crack fill – for non-hairline cracks make a groove of 1”X1” with a ¾” chisel	1:3	Cement : MFS + Recron + Bonding Agent.
10.	For rebuilding of broken edges and minor touch-up works – to avoid curing	1:2	Birla wall care putty + MFS
11.	Mortar for flooring	1:8	Cement : MCS
12.	Dado for kitchen and bathrooms	1:6	Cement : MCS

Note:

1. Mortar for plastering, brick work, CRS, etc., - MFS and fine river sand may be interchangeably used. Similarly, MCS and coarse river sand may be interchangeably used. However, avoid using river sand.
2. RCC works - In most cases there is no distinction between manufactured coarse sand and stone dust. They can be used interchangeably. Cheaper of the two may be used wherever feasible. However, in all apartment complexes for RCC works MCS must be used.
3. * Use RMC unless otherwise specified
4. # Use vacuum dewatering
5. Check design specifications as given by the Structural Engg. In case of conflict between this circular and structural engineers specifications, clarification in writing from MD is required.
6. River sand shall be used only for the following purposes:
 - a. Hole packing
 - b. Water proofing of terrace & bathrooms
 - c. In case of non-availability of manufactured fine sand.

Soham Modi