

- Before starting, make sure that you have sufficient materials to complete the job.
- To calculate the quantities required, measure the area to be concreted and multiply the length x width x depth.
- Example: For an area measuring 10m (length) x 15m (width) x 100mm (depth), the calculation is 10 x 15 x 0.1 which equals 15m³.
- Always allow 10-15% wastage; thus, 15m³ becomes approximately 17m³. If the sand is damp, you may need to reduce the amount of water required by up to 20%.
- Add water slowly to keep the concrete mix as “firm” as possible.

APPLICATION / PURPOSE	MIX BY VOLUME (parts per mix)				Approximate MPa <small>(estimated guide only)</small>	MATERIALS <small>(required to make up 1m³ of concrete)</small>		
	Cement	Sand	Coarse Aggregate	Water		Cement (20kg Bags)	Sand (m ³)	Coarse Aggregate (m ³)
High Structural Strength Grade concrete for thin reinforced walls, slender reinforced columns, fence columns, heavy duty floors EXAMPLE BELOW	1	1.5	3	0.66	40 MPa	21 (=420kg/m ³)	0.5	1
Commonly adopted mixture for reinforced concrete beams, floor slabs, driveways and paths.	1	2.5	4	0.66	32 MPa	16 (=320kg/m ³)	0.5	1
Footings for domestic buildings and walls.	1	2.5	5	0.75	25 MPa	14 (=280kg/m ³)	0.5	1
Toppings for two-course concrete paths.	1	1	2	0.66	50 MPa	28 (=560kg/m ³)	0.5	1
EXAMPLE: for each →	1kg of Cement you need 1.5kg Sand & 3kg Agg				& 660ml Water (example based on first rows mix)			



i NOTE:

1. All the above mixes yield an amount of concrete slightly more than the quantity of coarse aggregate in the mix.
2. Sand should be clean, well graded, free from excessive clay, organic material and fine silts.
3. The often-used engineering term “water-cement ratio” is a ratio of weights. For example, a typical “water-cement” ration of 0.5 equates to mix ‘mix-by-volume’ ratio of about 0.66.
4. Always consult a qualified engineer for the design and specification of concrete for structural elements.