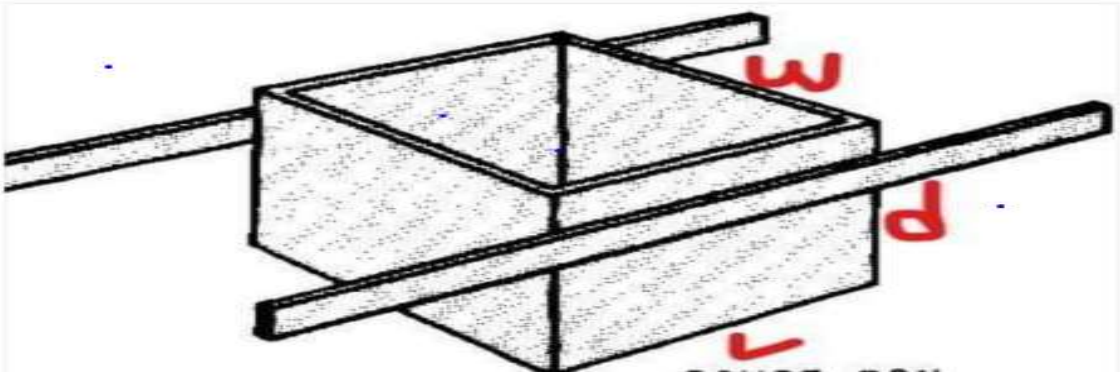
Concrete production methodology

1. Mixing ratio

For water tight concrete, foundation or walls of structures the same ratio is always applied: 1:2:3 (C25). To obtain a precise mix use a standard measuring box:



Length of the box is **L=25 cm,** width is **W =40 cm** and depth is **d =17.5 cm**.

This volume represent a 50kg bag of cement to keep the weight not to heavy when mixing. Jerrycan can be used for mixing only in remote and narrow springs.

Material	Cement (bag)	Sand (m3)	Sand (boxes)	Gravel (m3)	Gravel (boxes)
Quantity	2	0.14	4	0.21	6

For lean concrete on foundations, use 1:3:6 ratio as follow:

Material	Cement (bag)	Sand (m3)	Sand (boxes)	Gravel (m3)	Gravel (boxes)
Quantity	2	0.21	6	0.42	12

2. Local construction material approval

Sand and gravel shall be approved by visually inspection. It should be free from debris, dusts and impurities. Recommended aggregate size is between **5mm and 20mm** except if specified otherwise in specific methodology.

Good quality samples:


Bad quality sample:

3. Spacer

Assure Concrete spacer or uniform size crushed stone used for rebars to have adequate concrete cover:


4. Mix of concrete

Assure the platform which mixing takes place shall be on clear surface

- First one bag of cement and two boxes of sands shall be mixed dry thoroughly and then this dry mix of cement and sand shall be placed over a stack of 3 boxes of stone aggregate and the whole mixed dry turning at least three times to have uniform mix.
- Water shall then be added gradually with a water-can; 20 to 25 liters per bag of cement, to give a plastic mix of the required workability and water cement ratio.
- Repeat mixing until the concrete has a consistent color and texture by adding water slow

Dry mix:

Mix with water (use jerrycan for water to control closely the workability)