

TECHNICAL SPECIFICATIONS – Water Supply and Sanitation Facilities

Iron Works:

- All Iron poles be new, well-seasoned and free from loose knots, shakes, cracks, warping, and other defects. it shall be properly stacked and protected from injury from any sources.
- Any Iron sheets poles which bad warped or cracked, shall be rejected.

Iron shelf in the female facilities:

Iron plate dimensions (225x300x25mm) should be properly fixed to the (Iron Sheet) and welded to the Iron tube.

Squat Whole cover for pit latrine:

Made from piece of timber with a handle to lift and place to cover squat hole the dimensions same as the latrine whole plus 5mm in each side to fit to latrine hole without allowing any spaces in the sides.

Doors:

The thick of door shutter should be 50mm and dimensions is size 2000mm x 800mm to fit door space; steel box posts and covered with **Zinc sheet** 0.35 to size and fixed with capped wire nails. With three hinges (in the top, middle and bottom to make the door easily open and close) and two latches from inside and outside the door fixed with capped wire nails.

Iron sheet cladding:

Made from iron sheets unreflecting and protect the privacy with height not less than 2m.

Internal wall/screen surface PVC cover:

Dark colored PVC Tarpaulin sheeting to internal screening surface of the sanitation facilities fixed and fastened with appropriate wire rope string.

Brick wall lining to pit latrines:

Use solid burnt bricks with compressive strength approved by Local Authority guidelines or not less than 7.5N/mm^2 and of size 200x100x50mm. The **compressive strength** of any individual **brick** shall not be fall below the **minimum** average **compressive strength** by more than 20%.

Mortar mix:

Boding of mortar for the brick wall lining shall be of mix 1:3 cement/sand or shall be advised by the site engineer depending on the quality of sand available.

Concrete mix:

Composition of concrete shall be a homogeneous mixture of coarse aggregate, fine aggregate, water and Ordinary Portland cement, all as specified in the relevant Clauses of this Specification, together with any such admixture as the Engineer may specify or approve.

Classes of Concrete Table:

CLASS	Characteristic Compressive Strength (N/mm ²)	Maximum Aggregate size (mm)	Maximum free Water/ Cement Ratio	Minimum Cement Content (Kg/m ³)	Maximum cement Content (Kg/m ³)
C20/20	20	20	0.55	390	400
C10/40	10	40	0.55	150	540

Compressive Strength (N/mm²)/Aggregate size (mm)

Mix Design Table:

Class	Portland cement, kg	Fine Aggregates, m ³	Coarse Aggregates, m ³	Nominal Mix proportions
20	50	0.07	0.14	1:2:4
10	50	0.1	0.2	1:3:6

Steel:

Bars shall be high yield steel & mild steel; cold worked according BS 4461 and BS 4449 including bends, hooks, tying wire, spacer blocks and spacers

steel bar Dia 10 mm

All reinforcement should be free from contamination and grease. light corrosion should be brushed to remove the rust.

Steel Box:

All steel box thickness not less than 1.5mm

Corrugated Zinc sheet:

Corrugated zinc sheet must be high quality and the thickness not less than 0.35.

Landscaping and site clearance:

Areas should be cleared of all debris and the contractor should avoid practice that affect the environment negatively. Slab level to all pit latrine facilities shall be 250mm above ground level.