

Hydraform Building Systems

Best practice specifications for building single storey residential housing using 220mm wide Hydraform interlocking dry stacked soil cement blocks.

Block strength and quality

- Blocks below damp proof course to have a nominal 28 days strength of 7MPa.
- Blocks above damp proof course to have a nominal 28 days strength of 4 MPa. For external walls subjected to wind and rain the nominal 28 day strength should be 7MPa or above.
- Cracked, weathered or damaged blocks should be discarded.
- Only blocks that have been cured for 7 days and allowed to stand for 14 days should be used.

Foundations

- Foundation trenches and foundations to be in accordance with professional engineers design.
- Strip footing foundations should be cast level. Steps should be 130mm to allow for the block height with mortar joint of 15mm.

Foundation walls

- To be built with 7MPa blocks bedded in a mortar bed of between 10 and 15mm.
- A minimum of three courses, bedded in mortar, is required below the damp proof course.
- Foundation wall to extend above natural ground level to a minimum height of 150mm.
- Cross bonding must occur at corners only.
- Foundation wall should stand for a minimum period of 24 hours before compaction of infill for below the surface bed commences.
- No construction on top of foundations walls should commence for a period of 24 hours after completion of foundation walls.

Superstructure

- All block work to be done with dried out blocks. There should be no moisture content inside the block.

- First course above slab or damp proof course to be bedded in mortar. Blocks in this leveling course are to be leveled in all directions and to be at the same level as adjacent blocks.
- Blocks to be dry stacked in stretcher bond until lintel level, usually 2.1m above internal floor finish.
- Windows and doorframes to be secured using lugs bent to joint level.
- Reveals to windows to be plastered.
- 75mm pre-stressed concrete lintels to be used over doors, windows and openings. Lintel bearing length on each side of the opening should not be less than 300mm.
- Gaps between block work and steel window or doorframes to be filled with mortar.
- All intersections between walls to be built using alternating half blocks.
- All corners to be build using half blocks cross- bonded.
- Gap between lintels and block work above lintel should be filled with mortar.
- Ring beam to be constructed at top of wall by bedding all block work above lintel level in mortar. Mortar joints to be between 10 and 15mm. Brickforce to be placed in all mortar joints. Brickforce to be 2.2mm longitudinal wires at 130mm centers. Brickforce to over lap at corners and intersections. A minimum of 4 mortar joints are needed to form a ring beam.
- No chasing to be done in ring beam.
- Horizontal wind bracing in the plane of the ceiling to be to professional engineers design.

Roof and Roof Anchorage

- One 4mm diameter galvanised steel wire anchor tie per rafter to be placed through mortar joint at a minimum of 4 courses below the top of the wall.
- Roof to be to professional engineers design.

Services

- Services can be wall mounted on all walls or stored in vertical rebates chased into the wall below ring beam level. Chasing to be vertical only and to a depth not exceeding 50mm.

Mortar

- All mortar to be class II mortar having a minimum 28 days compressive strength of 7MPa in respect of laboratory tests and 5MPa for on site work tests. A mix of one bag (50kg) of cement (42,5MPa) to three wheelbarrows(3 x 65litres) of building sand is suggested.