

COROJEM WALL

The Proven "Through-The-Wall" Clay Face Brick Walling System



Construction guide for single-skin walling using CoroJem

BACKGROUND:

The National Building Regulations allows for external masonry walls of a minimum of 140mm thickness. The CoroJem is one of Corobrik's responses to the challenge of Government to provide sound, durable maintenance free clay brick houses for low cost housing within the budget constraints of the government housing subsidy industry.

The CoroJem wall is the forerunner of all accepted through-the-wall clay masonry systems and is widely used for both single and double storey buildings, in Inland climatic zones less prone to wind driven rain. Its excellent economy is due to the use of very practical clay face CoroJem bricks which measure 222(l) x 150(w) x 73(h)mm.

CoroJem versus a Standard Imperial Brick

With lighter mass per m² to transport and move around the site than for conventional twin-skin walling, less mortar, and higher productivity – CoroJem enables you to make savings to the order of:

Labour down by 25-35%

Mortar down by 25-35%

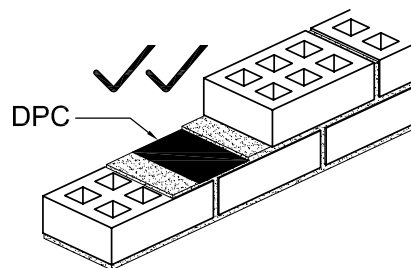
Transport down by 30-40%

NBR Approval

This walling system satisfies the National Building Regulations for single and double-storey dwellings as well as commercial and industrial buildings.

Your course-by-course guide to correct CoroJem wall construction

It is important in all brickwork to 'sandwich' the damp proofing material (DPC) by placing it on a thin bed of mortar with another bed of mortar on top and then the next course of bricks. Also the DPC must project out from the mortar by about 5mm on each side to be sure of really effective damp proofing.

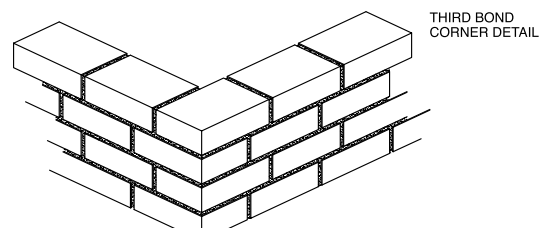
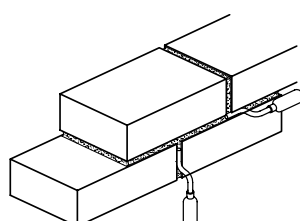
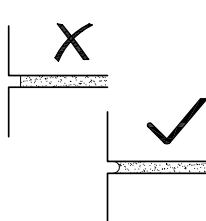


The most common reason for dampness on internal wall surfaces is when rain finds its way across the wall through fine cracks between the brick and the mortar. This is caused by several factors and is best addressed by adopting the following methods used by accomplished bricklayers.

- Always use mortar of a smooth consistency with a well graded sand component complying with SANS 1090. The sand must be clean and screened free of clay, large stones and roots or leaves. Always lay a full bed joint of mortar for each course to ensure that there are no gaps between the brick and its bed joint.
- Proprietary mortar additives such as Pretoria Portland Cements Fuge-B (supplied as a liquid) can be added in the course of making up the mortar mix to enhance the moisture resistance of the mortar joint.

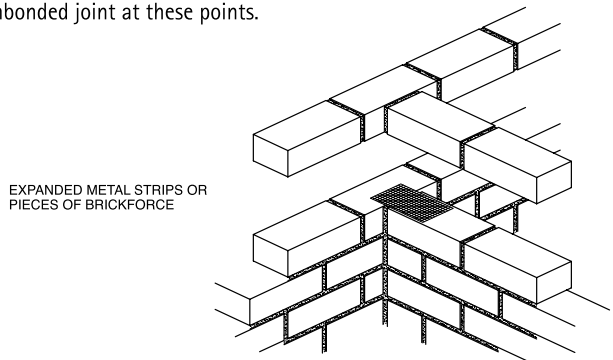


- Always ensure the vertical joints are fully filled with mortar, not just 'buttered' on the edges. This will help both enhance the walls structural integrity and rain penetration resistance.
- Always ensure the mortar joints are well polished. To achieve this horizontal and vertical joints on the face side must be finished with a jointing tool to make a half round compressed joint. You can buy these tools or make them up yourself by bending a piece of smooth 10mm or 12mm reinforcing bar to a cranked shape. You simply run this along all the joints applying pressure to make a smooth, polished, well compacted profile joint.

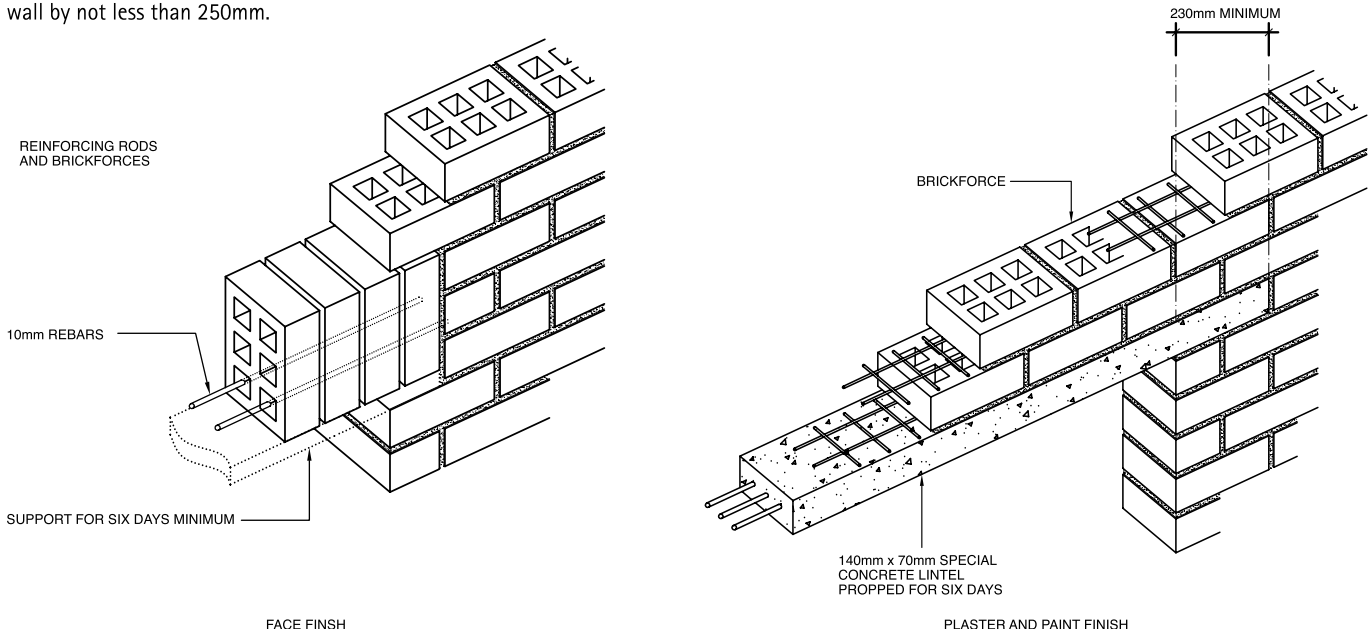


All building materials move due to temperature changes and/or moisture absorption or both. To contain this movement and reduce the potential for cracking in the building brickwork, reinforcing must be added. It is very necessary to add brickforce in the two courses below and above windows, and the two courses above door openings. As all the window and door openings are normally at the same level at the top, it is recommended that these two courses of brickforce run all round the external walling of the building (with 300mm overlaps where joins are necessary).

The junction between internal walls using CoroJem or normal size plaster bricks (222 x 106 x 73mm) and CoroJem external walls is laid differently from the usual method of cross bonding. Expanded metal strips (or pieces of brickforce) require to be built into the bedjoint of every third course at the intersection, to add strength to the straight unbonded joint at these points.

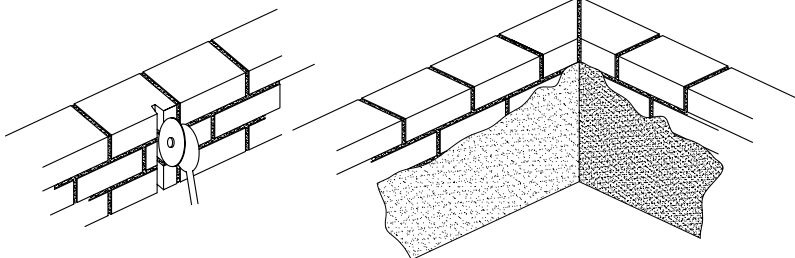


For quality face brickwork, brick lintels should be built over doors and windows and skilled bricklayers always do it this way to avoid showing plastered concrete lintels on the face brick exterior. For NFP CoroJem walls which are plastered outside and inside, it obviously doesn't matter and the reinforced concrete lintel is the best solution. These are available in a suitable 140x70mm size for CoroJem construction. Make sure the lintel sits on each supporting wall by not less than 250mm.

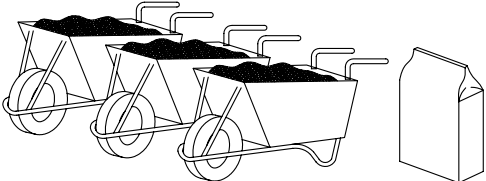


Spans greater than 1,5m with no frame support (garage doors for example) need stronger reinforcement and the best method is a soldier course threaded over two 10mm reinforcing bars in the lowest core holes, and two courses of brickforce in the stretcher courses above. The vertical joints in the soldier course must have very well filled joints to be strong.

Where it is necessary to provide chases for the installation of electrical conduits this must be done with an angle grinder to a cut a 'V' recess in the wall or simply surface mount the conduit.

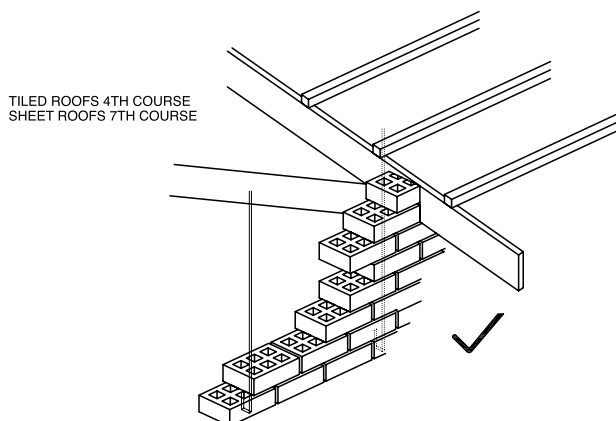


The proportions used for the mortar should also be used when mixing the plaster and it is recommended that the mix be one part cement to six parts sand. When measuring with wheelbarrows this becomes 1 pocket cement to three level and full barrows of sand.



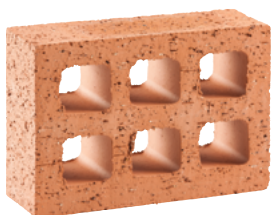
A common error by unskilled bricklayers is to make the roof tie wires too short, with the result that in high winds the roof can lift causing major damage. The roof tie wires (made from 4mm diameter galvanized wire) must be cut to 650mm lengths for tiled roofs or 900mm lengths for sheet material roofs and positioned accurately in line with the eventual truss positions.

For tiled roofs the 'tied' brick must be in the fourth course below the wall plate level and for sheet roofs set it into the seventh course below the wallplate. Tie the wire around the brick through the core holes and thread the bricks of each following course over the wire leaving the last 200-250mm projecting above the wall plate course, to be secured to the roof timber later.

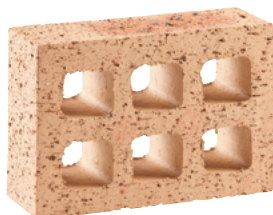


These recommendations are published in good faith and are largely based on recognized principles of design and construction. As Corobrik has no control over design, workmanship or material selection, its responsibility is limited to ensuring that only good quality bricks are supplied compliant with the specification as ordered and thus cannot accept responsibility for the performance of structures built using this guideline. This guide should be read and used in conjunction with the requirements set down in the National Building Regulations.

CoroJem Range



Classic Blend Travertine FBS
Rietvlei: Gauteng



Manor Blend Travertine FBS
Rietvlei: Gauteng



Red Travertine FBA
Odendaalsrus: Welkom

CoroJem Specifications

Factory of manufacture	Colour Brand	Category	Dimensions			Unit Mass kg	Quantity per m ² (12mm joint)	Typical Compressive Strength MPa	Water Absorption %
			L mm	W mm	H mm				
Rietvlei	Classic Blend Travertine	FBS	222	150	73	3.2kg	52	19	9
Rietvlei	Manor Blend Travertine	FBS	222	150	73	3.2kg	52	21	9
Odendaalsrus	Red Travertine	FBA	222	150	73	3.4kg	52	17	9

For more information please contact your nearest Corobrik sales office or visit www.corobrik.co.za

GAUTENG: JOHANNESBURG

Dick Kemp Road, Meadowdale, Edenvale
P.O.Box 49, Germiston, 1400
T: (011) 871 8600 F: (011) 871 8610/11

WESTERN CAPE: STELLENBOSCH

7 Electron Road, Octo Place
Block D1, Techno Park, Stellenbosch
P.O.Box 38, Stellenbosch, 7599
T: (021) 888 2300 F: (021) 880 1926

KWAZULU-NATAL: DURBAN

20 Toncoro Road, Avoca, Durban
P.O.Box 201367, Durban North, 4016
T: (031) 560 3111 F: (031) 560 3102
Email: info@corobrik.co.za

