



Brick Bonds

The way that bricks are arranged affects a veneers stability and strength and is referred to as a 'bond', or 'bonding'.

RUNNING OR STRETCHER BOND

Section 9.2.2 of E2/AS1 requires that bricks are laid with a 'running bond' (also referred to as 'stretcher bond'). [E2/AS1 \(part4\)](#).

To maintain a running, or stretcher bond, bricks of each course must overlap the previous course by between 25% and 75% of the length of the bricks (NZS 4210:2001 Section 1.3 Definitions).

A bond pattern should be consistent throughout the veneer.

BRICK CUTTING

To achieve a stretcher or runner bond and meet industry aesthetic standards the minimum size a masonry unit should be cut to is the greater of: $\frac{1}{4}$ the length of the units, or the width of the units.

The practice of brick cutting should comply with the Master Brick and Blocklayer Practice Advisory – Brick and Block cutting: [Click here](#)

MINIMUM WALL OR PANEL WIDTH

Section 9.2.3 of E2/AS1 advises that no length of veneer wall or panel can be less than 230mm.

If the wall or panel turns (usually 90°) then this is usually referred to as a return. The measurement of a return is taken as the total length of the wall, rather than treating the wall as two separate panels.

INTERNAL CORNERS

An internal corner should mirror an external corner as closely as possible. To meet industry standards and avoid the appearance of an undersized cut masonry unit, the length of the masonry unit visible in an internal corner should be the greater of: $\frac{1}{4}$ the length of the unit, or the width of the unit.

STACKBONDING

Stackbonding provides the ability to create a brick cladding that presents both vertical and horizontal lines and patterns that add new dimensions to the aesthetic appeal of the veneer.

Stackbonding is not recognised under the Acceptable Solution for brick veneers (E2/AS1) and therefore requires specific engineering design.

To assist with the design of stack bonded systems the New Zealand Concrete Masonry Association (NZCMA) has released design guidance that provides the following specification and limitations for stackbond use:

Studs are to be positioned at a maximum 400mm centres.

Screw fixed brick ties are to be installed at maximum 400mm centres horizontally and 400mm centres vertically (every 4th course commencing at two courses above the base, or equivalent in the case of a double height brick).

In-joint reinforcement is to be installed every 4th course (or maximum of 400mm) alternating with the rows of brick ties.

The maximum permitted height is 4.0m unless Specific Engineering Design has been undertaken to cover the additional required height specified.

You can read this information here:

Concrete: [NZCMA MM 5.5 Stack Bond Veneer](#)

Clay: [CBPMA Stack Bond Design Appraisal](#)

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