

# Brick Consulting Ltd

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9 September 2024  
The Secretary  
CB&PMA  
[www.bricksnz.co.nz](http://www.bricksnz.co.nz)

Dear Sir/Madam,

## TO WHOM IT MAY CONCERN

### **ALTERNATIVE SOLUTION TO E2/AS1 MASONRY CL.9.2.3 (d) LENGTH OF PIERS & RETURNS IN BRICK VENEER IN NEW ZEALAND**

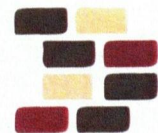
Please Note: This is a generic 'Alternative Solution' applicable ONLY to brick veneers that are constructed using clay brick products supplied by one of the member companies of the Clay Brick & Paver Manufacturers Association, namely – Brickworks NZ, CSR Building Products NZ, Midland Bricks, Clay Bricks Ltd and Canterbury Clay Bricks Ltd. It is applicable in all design situations that may occur.

The above clause in the Acceptable Solution, E2, calls for a brick pier or panel width, to be a minimum of 230mm. The need for this Alternative Solution to be presented, being a result of the BCA have correctly identified an area or areas on the project in question, either at the building consent stage or during a field inspection, that has an area or areas where the panel length is less than 230mm, as required in the 'Acceptable Solution'.

Alternatively, and preferable, the architect or architectural designer, is aware of this requirement, and has included this 'Alternative Solution' in their building consent application to the BCA.

In situations like this, one should question why is there a minimum panel width of 230mm? The answer is found, in the history of when homes were built using bricks structurally. A minimum pier size of 400mm was required and needed, to install reinforced concrete inside the pier or return, to not only support wall loads, but more importantly, the roof load. So size was all important. It is all to do with structural stability and performance, then and now.

We have not built like this in New Zealand, probably for 100 years, it is all brick veneer with modern screw-fixed brick tying systems. I personally sat on the masonry sub-committee of NZS3604 in 1999, when we reduced the pier and return size, from 400mm to 230mm; what we should have done, was remove any minimum requirement, the only relevance is the support for a lintel bar to





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carry bricks above the window head, which could have been made conditional at the time.

Common sense dictates, the smaller the pier width, the less weight, and the less damage should it fall in an earthquake, which is highly unlikely with modern mortars and modern screw-fixed brick ties. The clause is just not applicable or warranted in relation to modern 70 – 110mm clay brick veneers installed in today's New Zealand build environment.

I have no concerns providing this letter as an 'Alternative Solution' conditional upon the following:

- 1. Vertically over the height of the pier, or return, the bricks are either secured to the supporting structural frame using screw-fixed brick ties at no more than 400mm crs or alternatively, and if practical to do so, MASONS Bricklock joint reinforcement is used to secure the pier or return at a spacing not exceeding 400mm crs vertically.*
- 2. If the pier or return has a face measurement of less than 200mm in length, it cannot support a lintel bar, installed in the traditional manner, where the lintel bar sits free of the structural support. In these situations, the solution is found in Design Note TB1(S.E.D) where the steel lintel bar is screw-fixed to the timber lintel ensuring a 5 – 10mm gap between the end of the angle and the brick veneer, to accommodate any minor movement.*

Conditional upon the above requirements being satisfied, BCA's can have complete confidence in accepting this 'Alternative Solution' and I have no hesitation in stating that the 'Performance Clauses' of the NZ Building Code for B1, B2 and E2 will be met.

Regards



John Oliver

Specialist in Veneer Construction  
Author of John Oliver's BRICK BOOK  
Ex board member of the NZ Claddings Institute  
Ex board member of NZ certified Builders  
Ex board member of NZ Masonry Trades Registration Board

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