

BUILDING PRODUCT INFORMATION SHEET

Product description and its intended use

PREMIER concrete & clay bricks are single modular building units of varying sizes, made from organic minerals found in naturally abundant clay, stone and sand sources, with small amounts of oxides and various additives to deliver colour and superior performance. Brick veneer is purely a cladding, nothing more. It consists of 3 components; metal brick ties, cement mortar and bricks, the only components PREMIER GROUP are responsible for and the focus of this information sheet. The building or dwelling is supported by structural walls made of timber, steel, or concrete, and the roof structure of timber or timber trusses. The external brick walls are laid as a single skin of brick, securely attached to the supporting structure using metal brick ties, that are screw-fixed, to the supporting structure, usually to timber framing. The exterior brick veneer wall acts as a durable weather shield, in front of a 'wet cavity' system, protecting the dwelling from wind, rain, snow and entry by vermin/insects.

Key technical data sheets for all brick products can be referenced in the Premier Brick Manual available at:

<https://premier-group.nz/resources/technical-documents/>

Relevant Building Code Clauses

Brick Veneers are required to comply with the following Building Code Clauses:

B1 -Structures B1.3.1 and B1.3.2

B2 – Durability Clause B2.3.1 (b) (i) (ii)

C1 – Protection from Fire C2.3.1(c), C2.3.3(g), C3.3.2(a) (c) (d), C3.3.5

E2 – External Moisture E2.3.2, E2.3.3, E2.3.5 and E2.3.6 plus E2/AS1 Masonry

Statement on how the building product is expected to contribute to compliance

B1.3.1 and B1.3.2 Concrete and clay bricks are a component of a cladding system and as an element, have a low probability of rupturing, becoming unstable, or altering their composition for the life of the building.

B2.3.1 (b) (i) (ii) Modern brick veneers are in most cases easy to access during the life of the building, using diamond saws. Any deterioration during the normal use of the building would be obvious when normal maintenance inspections are

carried out. Concrete and clay bricks exposed to the elements, in general, last well in excess of the required durability timeframe.

C2.3.1(c), C2.3.3(g) & C3.3.2(a) (c) (d), C3.3.5 - persons escaping using exit ways are protected from fire by brick veneer. Concrete brick veneers are non-combustible and provide good protection against fire. Clay bricks are kiln fired at over 1000°C, fires are approx. 700°C affording protection from internal fires and spread of flame from external fires. Brick veneer as a cladding option, is non-structural, and provides a non-combustible surface offering the maximum protection in all aspects relating to fire.

E2.3.2, E2.3.3, E2.3.5 and E2.3.6 – Brick veneer is a rain shield, wet cavity system designed to prevent moisture entering the main supporting structure by way of absorption, transmission or accumulation. It is also designed to allow dissipation of moisture absorbed by the brick veneer because of airflow through the ventilated cavity and evaporation due to solar heat and wind.

Limitations on the use of the building product

The performance of concrete and clay brick veneers is limited to and dependent on two fundamental factors; namely, the quality of the installed mortar and its bond strength, and the correct installation of the brick ties that secure the brick veneer to its supporting structural frame.

Brick veneer using concrete or clay brick product marketed by PREMIER GROUP, is limited to the requirements of 3 storey, 2 storey and single storey plus stack bonding as detailed in their technical manual.

Brick veneer using concrete and clay brick product marketed by PREMIER GROUP, is limited to the compliance requirements of the ‘Acceptable Solution’ E2/AS1 Masonry and its ‘sighted’ document NZS4210 or an approved ‘Alternative Solution’.

Brick veneer using concrete or clay brick product marketed by PREMIER GROUP, when used as a cladding on residential or commercial structures, is limited to brick veneer, and is not to be used in structural applications unless specific engineering design has been incorporated to the approval of the BCA.

(<https://premier-group.nz/resources/technical-documents/>)

Design requirements that would support the use of the building product.

The height of the brick veneers using concrete or clay brick product supported on a timber frame currently has a maximum panel height of 10.0m and 12.0m at the gable for three-storey. Two storey is 7.0m for panels and 9.0m at the gables. Single storey is 4.0m for panels and 5.5m for gables.

A 40mm minimum cavity between brick and supporting structure is required to prevent transference of moisture from the wet cavity system to the supporting structural frame.

Concrete and clay brick veneers may be used as a cladding, normally infill panels, on high rise buildings that have been designed by a structural engineer, using concrete and steel elements as the building's structure. The 'design requirement' being the security of the brick veneer to the supporting structure.

There are many design requirements that would support the use of concrete and clay brick products being specified and used. These would include buildings where maintenance requirements and the cost of maintaining a cladding needed to be low, such as two storey veneers and commercial structures. Claddings subject to impact damage, exposure to noise and where architectural flare can utilize the wide range of product available.

Installation requirements:

Brick veneer using concrete and clay brick product marketed PREMIER GROUP, are to be installed to our website specification

<https://premier-group.nz/resources/technical-documents/>

When systems such 2 storey veneers and stack-bonded veneers are used and specified, it is essential the designer and installer read PREMIER's Technical Manual prior to commencing work and adhere to requirements they contain.

The installation is to comply with the 'Acceptable Solution' E2/AS1 Masonry or an 'Alternative Solution' acceptable to the BCA where the building consent application is to be lodged.

The installation of the brick veneer using concrete or clay bricks marketed by PREMIER GROUP, is to be done in accordance with the approved plans and specification as designed by the trained professionals, namely the architects/architectural designers, façade engineers and structural engineers.

Concrete brick veneers are required to have control joints installed as per E2/AS1 and PREMIER's Technical Manual.

Although clay brick product does not require control joints in most situations, they must always be a consideration to accommodate potential movement in the supporting structure as opposed to expansion of the clay brick product, apply common sense and educational training.

Protection of the bricks and brick veneer from rain during the construction phase is important in preventing efflorescence.

The mortar needs to be 4 sand to 1 cement, and as wet as practical to achieve good bond strength. Use river sands to avoid high salt content. PREMIER's pre-bagged mortar should be considered as a controlled solution where quality cements and aggregates are premixed at ideal ratios.

When installing brick ties to secure the brick veneer to the supporting structure, ensure you have the correct minimum number per square metre. The brick tie is at least 50% onto the brick. The screw is the correct length into the timber stud, especially if a RAB board is installed. You have the correct durability requirement for the brick tie.

The brick cavity is between 40mm and 75mm, is clean with no mortar sitting on the ties nor mortar joints encroaching into the cavity more than 5mm, and washouts have been installed on all corners and at approximately 3.0m intervals, to facilitate this process.

Maintenance requirements:

Carry out an inspection of the brick veneer annually. Clean out all weep and vent holes.

The exterior of the brick veneer must be washed down at least once a year using a soapy water and soft scrubbing brush. It may be given a light water-blast to remove stubborn dirt particles. Spray for spiders if necessary, check for and remove all spider webs at least twice a year.

If an algae or mould is present, apply a chlorine based cleaning agent in a weak solution, leave for approximately 10 minutes then scrub and hose off.

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