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Manufacturer's Product Technical Statement

Version 1

12th September 2024

1. Product Description

CLICKBRICK masonry panels are 40–50mm thick, lightweight, prefabricated modular cladding components. Panels feature a hidden fixing system where two SPAX screws are inserted through the top of each panel, with the panel above concealing the fixings of the one below. The back of each panel incorporates a 20mm cavity, which connects to form a drainable vapour layer, complete with 4mm weep holes to prevent vermin intrusion. Panels are faced with real masonry and backed with rigid closed cell polyisocyanurate to repel moisture, not rot or deteriorate, be non-flammable or fire resistant, and provide a thermal break.

CLICKBRICK's patented technology (NZ Pat: 723482) eliminates the need for masons, mortar, and adhesives and is installed by LBP builder, which is why we confidently offer a 50-year durability warranty to all our customers.

CLICKBRICK Panels weight:

- Real Series Panels: 56kg/m2
- Faux Series Panels: 3.4kg/m2

2. Purpose and Use

CLICKBRICK panels are designed to withstand extreme conditions while ensuring quick on-site assembly. Developed in the wake of the Christchurch earthquake, these panels address masonry failures by incorporating valuable insights from that experience. Key features include:

- **Lightweight Design:** Easier to handle and transport,
- **Mechanical Attachment:** Panels are secured without mortar, enhancing stability,
- **Deformable and Durable:** Unlike traditional masonry, CLICKBRICK panels are not brittle, allowing for greater flexibility under stress,
- **Reduced Dependency on Sub-Trades:** Eliminates potential failure points related to masons and subcontractors,

- **Robotic Manufacturing:** Produced in a controlled environment for consistent precision and performance. These innovations make CLICKBRICK a reliable choice for modern construction needs.

CLICKBRICK is used over **Solitex Extasana Adhero Self-Adhesive Underlay** (BRANZ Appraisal: 989), applied directly onto a 12mm plywood backing board. This system has been rigorously tested and has passed E2/VM1 for weather tightness, ensuring reliable performance in harsh New Zealand conditions.

CLICKBRICK can be applied to timber or lightweight steel frames, as well as structural masonry, including Insulated Concrete Forms (ICF).

3. Scope

- Suitable in wind zones up to and including Extra High as defined in NZS 3604:2011, or to a wind pressure maximum design differential ultimate limit (ULS) of 2.5kPa, or SED when approved in writing by **CLICKBRICK** Manager,
- Suitable in all corrosion zones as defined in NZS 3604:2011,
- Suitable for 10m high residential and light commercial projects. Not multistory high-rise,
- On buildings any proximity to a relevant boundary,
- Must only be installed on vertical surfaces
- Suitable for the following building Types: timber framed, steel framed and masonry.

4. Compliance with the New Zealand Building Code

If designed, used, installed and maintained in accordance with the technical information, **CLICKBRICK** will meet the following provisions of the NZBC:

Clause B1 STRUCTURE:

Performance Clauses B1.3.1, B1.3.2, B1.3.3(a-q), and B1.3.4(a-e).

B1.3.1 - Building elements should have a low probability of rupturing, becoming unstable, or collapsing during construction, alteration, or lifetime.

CLICKBRICK panels are modular building components that have a low probability of becoming unstable as:

- Panels are easy to handle and stable,
- They can be attached and detached during alterations,
- They are designed to perform reliably without damage when the building is in use.

(Means of compliance ~ Alternative Solution. 50-year Durability Warranty. Available on our Resources Webpage for more details).

B1.3.2 - Building elements shall have a low probability of causing loss of amenity through deformation, vibratory response, degradation, or physical characteristics during construction, alteration, or lifetime.

CLICKBRICK panels are modular building components with a low probability of loss of amenity due to:

Deformable Design: Panels are deformable, allowing them to accommodate movement without compromising their function,

Vibration Resistance: Their mechanical fixing method enables them handle vibrations effectively,

Durable Material: Panels are made from PIR, which does not degrade,

Stable Characteristics: The panel's physical properties ensure no loss of amenity.

(Means of compliance ~ Alternative Solution. 50-year Durability Warranty. Available on our Resources Webpage for more details).

B1.3.3(a) - Physical condition: self-weight

CLICKBRICK stone and brick panels weigh under 80 kg/m^2, classifying them as medium-weight cladding under NZS 3604. In contrast, CLICKBRICK faux panels are lighter at just 3.4 kg/m^2, making them lightweight. Each panel is secured with two SPAX screws, positioned at 400 mm vertical and 170 mm horizontal centers. These screws serve a dual purpose: they act as a top anchor for the panel and provide lintel support for the panels directly above.

(Means of compliance ~ Alternative Solution - Construction Method - refer to CB Specifications Sheet for mass weight table data and SPAX anchor capacity, also see BRANZ Aged Flatwise Pull Test on our Resources webpage)

B1.3.3(b) - Physical condition: Imposed gravity loads arising from use

CLICKBRICK building elements will support their own mass (dead load) and are sufficiently deformable to manage live load (people and contents) physical conditions.

(Means of compliance ~ Alternative Solution - Construction Method - refer to CB Specifications Sheet for mass weight table data and SPAX anchor capacity, also see BRANZ Aged Flatwise Pull Test on our Resources webpage)

B1.3.3(c) - Physical condition: Temperature

CLICKBRICK building elements are designed to have an innate ability to accommodate temperature fluctuations due to margins for expansion and contraction:

- 1mm around every panel,
- 5mm around all wall terminations.

(Means of compliance ~ Alternative Solution - Construction Method - refer to Technical Manual on our Resources webpage for more details).

B1.3.3(e) - Physical condition: Water

CLICKBRICK building elements are designed to avoid, withstand, or manage physical water conditions:

- Panels are installed above the flow of surface water,
  (Means of compliance ~ Alternative Solution - Construction Method - refer to Architectural Slab Edge Detail on our Resources webpage for more details).
- **CLICKBRICK** is weather tested to E2/VM1 for external moisture,
  (Means of compliance ~ Verification Method E2/VM1 - refer to test data on our Resources webpage for more details).
- CLICKBRICK's inbuilt cavity and vapour layer ensure any moisture behind the panel can escape down and out through the cavity closer.
  (Means of compliance ~ Alternative Solution - Construction Method - refer to Technical Manual on our Resources webpage for more details).

B1.3.3(f) - Earthquake Zones

CLICKBRICK is suitable for use in all Earthquake Zones of NZS 3604.

(Means of compliance ~ Alternative Solution. Refer to BRANZ Aged Flatwise Pull Test on our Resources webpage)

(Means of compliance ~ Alternative Solution – Component - Please refer to the reinforcement ribs, inlaid into each panel to manage the tension and compression forces resulting from earthquakes.

B1.3.3(h) - Wind Load

CLICKBRICK is suitable for all Wind Zones in NZS 3604, including Extra High ULS wind pressures of up to 2.5 kPa. When approved by **CLICKBRICK**, our panels may also be used for specific engineered design (SED) buildings.

(Means of compliance ~ Verification Method E2/VM1. Refer to Shelby Wright test data on our Resources webpage)

B1.3.3(i) - Fire

CLICKBRICK is suitable for use on buildings with an SH Risk Group classification, a building height of ≤ 10 m, up to two levels and at a distance of ≥ 1 m to the relevant boundary.

(Means of compliance ~ Verification Method – Acceptable Solution. Refer to NZBC Acceptable Solutions C/AS2 - C/AS6 Paragraph 5.8)

B1.3.3(j) - Impact Resistance

CLICKBRICK panels have adequate resistance to impact loads encountered in normal residential use. The likelihood of impact damage to the system when used in light commercial situations should be considered at the design stage, and appropriate protection, such as the installation of bollards and barriers should be considered for vulnerable areas.

(Means of compliance ~ Alternative Solution - Construction Method - Designers to detail protection as appropriate)

B1.3.3(l) - Reversing or fluctuation effects

CLICKBRICK panels have undergone negative pressure testing and cycling between positive and negative pressures to verify their performance against reversing and fluctuating effects.

(Means of compliance ~ Verification Method E2/VM1 - Test report available on our Resources Webpage for more details)

B1.3.3(m) - Differential movement

CLICKBRICK panel installation includes a clear gap beneath the panels and at the top of the masonry cladding, allowing for differential movement to occur on a building height of ≤ 10 m, up to two levels.

(Means of compliance ~ Alternative Solution – Construction Method - Refer to Slab Edge and Soffit Termination details available on our Resources Webpage for more details)

CLICKBRICK designers should allow for differential movement when designing foundations.

(Means of compliance ~ Verification Method B1/VM1 – Refer MBIE guidance document: Appendix B (informative) – b.1.0.2)

CLICKBRICK panel installation requires timber framing to have a maximum moisture content of 16% at the time of cladding application.

(Means of compliance ~ Alternative Solution – Construction Method - Refer to Technical and Installation Manual available on our Resources Webpage for more details)

B1.3.3(q) - Time-dependent effects, including creep and shrinkage

CLICKBRICK panels are formed using rigid polyisocyanurate, which may be susceptible to creep. To prevent this, our panels are inlaid with reinforcement ribs that include a 15 kg wire around the perimeter, ensuring no unwanted creep occurs over the product's lifetime.

(Means of compliance ~ Alternative Solution. Component - Please refer to the reinforcement ribs within each panel designed to eliminate creep.

B1.3.4(a) - Allowances for the Consequence of Failure

CLICKBRICK 50-year Durability Warranty ensures that in the case of cladding failure, damaged panels will be unscrewed and replaced.

(Means of compliance ~ Alternative Solution. 50-year Durability Warranty. Available on our Resources Webpage)

B1.3.4(b) - Allowances for the Intended Building Use

CLICKBRICK has made allowances for movement, expansion and contraction, alterations, and repairs for buildings covered in this document (see section 3.0 Scope), specifically for residential homes and light commercial type buildings.

(Means of compliance ~ Alternative Solution – Construction Method - Designers should engage a Council-approved facade engineer for a PS1 project-specific opinion verifying compliance for their project).

B1.3.4(c) - Allowances for Uncertainties from Construction Activities or Sequence.

CLICKBRICK eliminates the following uncertainties and construction risks:

Unsupervised Installers:

Installation is conducted by a qualified LBP builder, reducing reliance on bricklayers, masons, or tilers.

Mortar Issues:

With mechanical fixing, there's no need for mortar mixing or application, mitigating risks from dust or rain overnight.

Weather Vulnerability:

CLICKBRICK panels are not susceptible to temperature, rain, snow, or other adverse environmental factors during on-site assembly.

(Means of compliance ~ Alternative Solution – Construction Method - See Technical Manual available at our Resources Webpage for more details).

B1.3.4(d) - Allowances in Material Properties and Site Characteristics

CLICKBRICK is manufactured in a factory under stringent quality control, utilising reliable automation. This process eliminates the need to account for variations in material properties.

(Means of compliance ~ Alternative Solution – Construction Method - Manufacturing Product Quality Plan - MPQP available at our Resources Webpage for more details).

B1.3.4(e) - Allowances for Uncertain Building Stability

CLICKBRICK panels are deformable, and 5mm tolerances are allowed at terminations to allow for uncertain building stability.

(Means of compliance ~ Alternative Solution – Construction Method - See Technical Manual available at our Resources Webpage for more details).

Clause B2 DURABILITY:

B2.3.1 - Performance clauses duration

CLICKBRICK is expected to have a serviceable life of no less than 50 years, provided the system is maintained according to technical literature.

(Means of compliance ~ Alternative Solution - See 50-Year Durability Warranty available at our Resources Webpage for more details).

B2.3.2(a) - Building elements all have the same durability

CLICKBRICK panels and Proclima Adhero Self Adhesive Underlay both have durability of no less than 50 years.

(Means of compliance ~ Alternative Solution - See BRANZ SOLITEX EXTASANA ADHERO® Appraisal 989 (2023) clause 9.1 available from our Resources Webpage for more details).

Clause E2 EXTERNAL MOISTURE:

E2.3.3 - Walls in close proximity to the ground must not absorb or transmit moisture

CLICKBRICK cladding terminates 150mm above exterior ground level, and its closed cell PIR backing is impervious to water wicking and penetration.

(Means of compliance ~ Alternative Solution – Construction Method & Material – see Technical Literature on our Resources Webpage for more details).

E2.3.5 - Concealed spaces and cavities must prevent moisture accumulation causing condensation, fungal growth, or degradation.

CLICKBRICK panels feature cavity pockets built into the back of each panel. These pockets are vented and drained through an interconnecting vapour plane, which allows moisture to exit via the perforated cavity closer at the base of the cladding.

(Means of compliance ~ Verification Method E2/VM1 – The test report can be found on our Resources Webpage for more details).

E2.3.6 - Excess moisture present after construction must be capable of being dissipated without damage to building elements:

The **CLICKBRICK** inbuilt cavity and vapour plane allow moisture to exit through the foot of the wall cladding via a perforated cavity closer, even after construction. Shelby Wright Laboratories inspected and visibly witnessed this during E2/VM1 testing.

(Means of compliance ~ Verification Method E2/VM1 – The test report can be found on our Resources Webpage for more details).

E2.3.7(a, b, c) - Building elements must be constructed to allow for the consequences of failure, effects of construction uncertainties, and variations in properties:

CLICKBRICK panels can be unscrewed and removed/replaced to allow for maintenance or repair and to address the consequences of moisture failure.

(Means of compliance ~ Alternative Solution – Construction Method – see Technical Literature on our Resources Webpage for more details).

Clause F2 HAZARDOUS BUILDING MATERIALS:

F2.3.1 - The quantities of solid particles emitted shall not give rise to harmful concentrations in the atmosphere:

Tradespeople must wear dust masks when using power tools to modify any CLICKBRICK panels, as these tools create masonry and PIR dust that can cause irritation if inhaled. This is particularly important with our Faux products, which contain silica; inhalation can lead to serious health issues.

(Means of compliance ~ Alternative Solution – Construction Method & Material – see Technical Literature on our Resources Webpage for more details).

CLICKBRICK has prepared this document for designers and building consent authorities. It is intended to assist with NZBC compliance by demonstrating conformity to the relevant performance clauses for cladding and not to be used in any other means.

Please contact our office if you have questions relating to this document.