



Company name and contact details

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PTS version and date

PTS Version 1.0, 9 Jan 2024

Name of building product/system

Super Panels Type A system

CBI (Co-ordinated Building Information) numbering 3874

Product description

Structural Insulated Panel System (SIPS) made from stressed skins.

Stressed skins, glue laminated to both sides of a core of solid Expanded Polystyrene (EPS). By utilising stressed skins, the panels are capable of supporting loads and providing bracing. Purpose-made SIPS screws, Galvanised nails, Nailbond sealant/adhesive and one-part Polyurethane expanding foam.

Purpose and use

Because of the significant reduction in framing, the insulation performance (R Value) is relatively high. SIPS can be used for floors, walls or roof structure. For shorter spans, the panel can span on its own, with insulated hidden connector strips (splines). For longer spans or heavier loads, additional support is added.

SIPS Direct panel system has been appraised for use on buildings within the following scope:

- constructed within the scope limitations of NZBC Acceptable Solution E2/AS1 or, covered by specific engineering design; and
- with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity complying with NZBC Acceptable Solution E2/AS1 or covered by a valid BRANZ Appraisal that specifies a flexible wall underlay or a rigid wall underlay with flexible underlay over and flexible flashing system; or,
- with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1; and,
- situated in NZS 3604 Wind Zones up to and including SED.

The panels can be used with residential and light commercial loads for floors and act as diaphragms. Walls of up to two floors are generally non-problematic, and all panels contribute to bracing capacity. Roofs panels can be designed for moderate spans, low-pitch or snow loads.

Because the entire surface of the panel is structural, moderate loads such as from cladding fixings can be located anywhere on the surface.

The EPS core has a PolyFR fire retardant added, which meets the criteria for buildings up to 10m high.



Conditions

The system must be installed in accordance with the specifications and latest technical information. SIPS can be exposed to weather for 60 days providing the joints are taped with SIPS tape.

Compliance with the New Zealand Building Code

Clause B1 STRUCTURE as an alternative solution using the Super Panels design guide or by B1/VM1 verification method using structural calculations according to: AS/NZS 1170 Functional Requirement B1.2

Clause B2 DURABILITY: Performance B2.3.1 (a) not less than 50 years, and B2.3.2. The Super Panels Type A system meets this requirement.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. The Super Panels Type A system contributes to exterior walls meeting this requirement.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. The Super Panels Type A system meets this requirement and will not present a health hazard to people.

Clause H1 ENERGY EFFICIENCY: Performance H1.3.1. The Super Panels Type A system contributes to exterior walls meeting this requirement.

Justification of Compliance

Testing

Independent testing was conducted by Scion Testing Lab in 2019 and 2021 to establish structural capacities using NZS4063 and NZS3603.

Calculation

Structures are designed by a cPEng for B1/VM1 using AS/NZS1170 using the test data obtained above.

Similar Systems

The panel system is similar to a competing NZ system which has a Codemark. Both are based on the USA system, which is regularly imported and consented using only USA data.

Previous Consents

Previous projects have been approved under NZBC B1/VM1 in the following Territorial Areas: Waikato, Waitomo, Hawkes Bay, Wellington, Hamilton, Tauranga, Northland, Auckland.

Design, construction and installation instructions

Super Panels has a set of standard details available for use, and can provide additional advice and support to designers and constructors.

Timber based skins are rated for humid conditions, but will absorb some moisture especially at the edges. The skins can be factory primed to provide protection. Due to the very low vapour permeability of the system, a ventilation system should be installed that provides fresh air via a heat-exchanger.

While the thermal performance of the panels is very good, the window type should be carefully considered. Over-glazing should be avoided, and the performance of the windows should be considered for upgrade to avoid thermal bridging as well as total R-value performance and condensation avoidance.



In high altitude/high frost areas, freeze-bridging needs to be considered in the design.

SIPS need to be kept dry in service. Care with detailing to ensure continued dryness is required. For exterior walls, building wrap and cavity construction enables the use of almost any cladding. For roofs, a ventilated cavity formed by laying ventilated battens (eg Cavibat) over the roof underlay is recommended. Internal moisture sources should be avoided by good detailing of wet areas and ventilation design.

Maintenance requirements

All buildings built using SIPS need to be maintained. Interior high risk areas are bathrooms and kitchens. Attention to leaky pipes, showers and the like will cause damage to any structural system. Leaks from roofs, claddings, or penetration details need to be fixed promptly, which requires occasional inspection.

In the event of significant damage, a whole section of panel can be removed. Advice from the supplier is highly recommended.

Quality assurance

Super Panels has a quality assurance programme leading to an ISO 9001 accreditation.

Structural properties of the panels have been established by Scion Research and the data is available on request.

Product support

www.supersub.co.nz has contact details for the company.

Warranty information

All products used in the Super Panels system are warranted to be free of defect in manufacture for a period of ten years providing it was installed in accordance with the design guide, and the building being maintained adequately. This warranty is limited to replacement of the products only. Super Panels Ltd is not liable for incorrect installation or any accidental or wilful damage. Further information on this is available on request.

Disclaimer

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