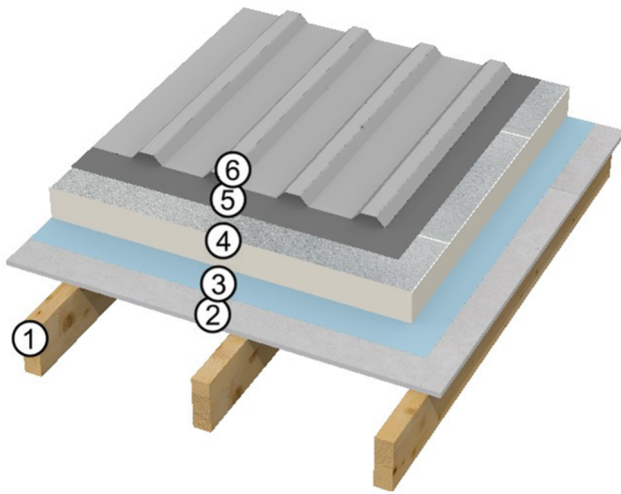


Compliance Statement Fibreglass-faced saveBoard Roof Substrate



1. Timber or steel purlins
2. Fibreglass-faced saveBoard
3. Vapour barrier
4. External insulation (such as PIR or Rockwool)
5. Roofing underlay
6. Exterior cladding

Compliance with Building Code

B1 Structure:

Gravity

The Fibreglass-faced saveBoard sheathing boards weigh 6 kg/m² and 12 kg/m², for the 6mm and 13mm board thicknesses respectively. This sheathing could be used in conjunction with a number of different cladding systems. Therefore, its weight classification, in terms of NZS 3604, will be determined by the other products that make up the system that define the overall wall assembly weight.

Compared to traditional gypsum boards, Fibreglass-faced saveBoard is approximately half as dense. Therefore, typical fixing patterns for gypsum boards will be more than sufficient to resist the board's self-weight.

Imposed loads

Fibreglass-faced saveBoard sheathing boards were tested in accordance with ASTM E661 Performance of Wood and Wood-based floor and roof Sheathing Under Concentrated Static and Impact Loads and achieved the results tabulated below. This test method determines whether the resistance to deflection and damage is acceptable. The test procedure includes the following conditions:

- a static load of 0.89kN,
- an impact load of 13.6kg dropped from increasing heights until significant damage occurs,
- Maximum concentrated load increasing until significant damage occurs.

The tested static load is similar to the requirements of NZS 1170.1:2002 with a concentrated action of 1.1kN listed as the design value for a roof cladding providing direct support in Table 3.2. Further testing is required to validate earlier results of structural properties.

Wind

Fibreglass-faced saveBoard sheathing boards will be tested to determine the maximum wind pressures for roof framing at 400mm, 600mm and 900mm centres as below:

- For 6mm (1/4") thick Fibreglass-faced saveBoard:
 - Framing at 400mm cts: up to ± 0.60 kPa SLS
 - Framing at 600mm cts: up to ± 0.18 kPa SLS
- For 13mm (1/2") thick Fibreglass-faced saveBoard:
 - Framing at 400mm cts: up to ± 0.33 kPa SLS
 - Framing at 600mm cts: up to ± 0.10 kPa SLS
 - Framing at 900mm cts: up to ± 0.03 kPa SLS

Note for these pressures to be valid, fixing centres will be limited to a maximum spacing with fixings used having a head diameter greater than the minimum determined through testing.

B2 Durability:

In the roof assembly pictured, the Fibreglass-faced saveBoard is protected in use behind a roof cladding system. We are reasonably satisfied that this product will achieve the 15 years minimum durability requirement when installed in the roof assembly pictured above.

As the Fibreglass-faced saveBoard relies on the protection of other elements in the wall assembly, correct installation and regular maintenance of the cladding is required to ensure satisfactory durability performance. The design of the other elements in the wall assembly is the responsibility of the building designer and does not form part of this review.

E2 External Moisture:

In its application as a roof substrate, the Fibreglass-faced saveBoard will not form part of the exterior moisture protection. The roof cladding will be designed and detailed to prevent exterior moisture reaching the other products in the roof assembly.

All timber and wood-based building components must be protected against damage from moisture, and against significant variations of moisture content, both before and after installation or enclosure.

E3 Internal Moisture:

Fibreglass-faced saveBoard can be used as a roof substrate in New Zealand climates provided that the insulation is on the exterior side of the Fibreglass-faced saveBoard.

In its application as a roof substrate, Fibreglass-faced saveBoard spans between structural support members and provides a substrate for a vapour barrier membrane. These are protected by the thermal insulation and roof cladding above. This assembly prevents interior moisture advancing through the assembly, stopping it at the vapour barrier. As the vapour barrier and Fibreglass-faced saveBoard are positioned on the warm side of the insulation, there is a low risk of interstitial condensation occurring within the roof assembly.

With adequate interior ventilation, the levels of interior moisture the Fibreglass-faced saveBoard would be exposed to in service is not expected to be of a level that would cause it to degrade due to its resistance to mould growth.

Ventilation of internal spaces is an integral part of compliance with code clause E3 Internal Moisture. The ventilation system should be designed to maintain the interior environment between 40 – 60% RH during normal operation and should prevent high levels of moisture occurring (above 70% RH).

There are scenarios where the “rule of thirds” might be applied to insulation position and this should be modelled to ensure specific conditions are assessed adequately.

H1 Energy Efficiency:

Fibreglass-faced saveBoard can be manufactured at varying densities depending on the product application. As density is typically proportional to thermal conductivity, this indicates that its thermal conductivity will vary depending on the product application.

When measured by Intertek in 2012, a board with a density of 591 kg/m³ was measured to have a relatively low thermal conductivity of 0.08 W/(mK) which is comparable to insulating materials such as sawdust and wool/felt. Based on this thermal conductivity and density, the board has the following R-values: [RR1]

Density (kg/m ³)	Board thickness (mm)	R-value (m ² K/W)
591	6	0.08
591	10	0.13
591	13	0.16

In it's application in a wall assembly, the main thermal control will be provided by the insulation, so these R-values are not required to meet the minimum schedule method values listed in NZS4218 or NZS4243.1, however they may be used to contribute to the overall R-value of an assembly. Meeting the thermal control requirements of the wall or roof assembly remains the responsibility of the building designer.