

# Wall & Roofing substrate



**save**  
B O A R D



# NZBC Alternative Solution Product Compliance Statement

Wall substrate

Roofing substrate

## saveBOARD (Wall & Roofing substrate)

### What is saveBOARD?

saveBOARD Wall and Roofing substrate is a unique structural composite panel made from 100% upcycled materials.

The core of the product is made from shredded and compressed composite packaging, giving the user a sustainable and superior performing product.

saveBOARD does not use glues, resins or other such biological or environmentally harmful products. During construction, or in-service use saveBOARD does not create harmful dusts, vapours, or other potentially harmful Volatile Organic Compounds (VOC's).

The saveBOARD construction boards are semi-vapour permeable, durable wall and roofing products. The product is designed for use with timber or steel framing and is finished with a moisture resistant fibreglass facer on top side and a recycled paper facing on the internal side.

Using saveBOARD reduces embodied energy by -2.7 kgCO<sub>2</sub> eq/sqm. This is a significant climate change benefit compared to traditional building materials which add carbon to a building.

saveBOARD Wall and Roofing substrate are manufactured in New Zealand for exclusive use in New Zealand & Australia. Please refer to the saveBOARD Wall & Roofing Product Technical Statement for compliance with relevant performance clauses of New Zealand & Australian Building Codes / Permits.

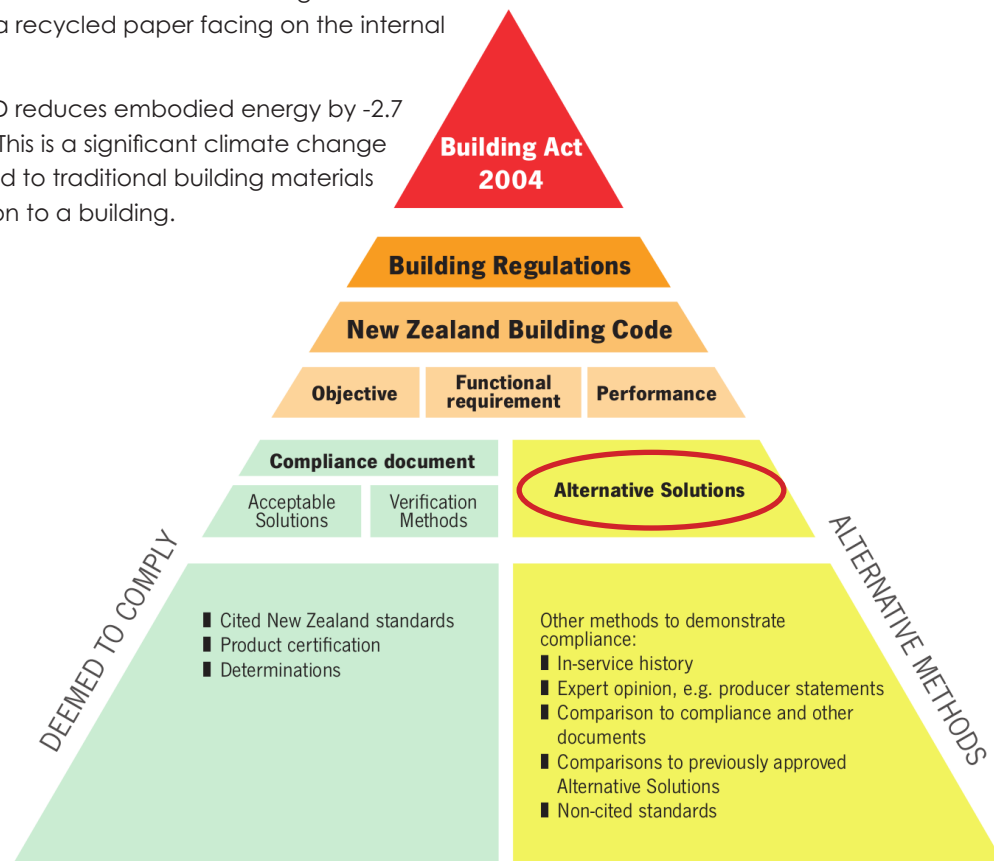
saveBOARD, Wall and Roofing substrate may be overlaid on self-supporting product/structure and can be used for the verified specified uses.

### What is saveBOARD's scope of use?

saveBOARD is a WarmWall or WarmRoof substrate confirmed for use in NZ by an Engineering Statement for NZBC compliance by Occulus Architectural Engineering Ltd and specific Structural testing by Scion laboratories.

### How does saveBOARD demonstrate compliance with NZBC?

saveBOARD Wall and Roofing substrate is as an **Alternative Solution Product**.





## Primary NZ Compliance Evidence

### NZBC Compliance Appraisal – Compliance Statements (NZ)

- saveBOARD when used as a WarmWall, or WarmRoof substrate is supported by a Compliance Statement for NZBC compliance by Oculus Architectural Engineering Ltd.

Please refer to the saveBOARD technical support literature, NZBC Compliance Appraisals and product test information available on the saveBOARD website.

### NZ - Expert Analysis and Testing – July 2021 – Still Current

- saveBOARD has been independently appraised against NZBC compliance by Oculus Architectural Engineering Ltd.
- saveBOARD has been independently tested by a leading NZ recognised research Laboratories - SCION.

## Support Compliance Evidence

### In-service History

- The saveBOARD product has been successfully used in the US for over 12 years.

### US - Expert Analysis and Testing 2015 – Current

- saveBOARD has been independently tested and verified to internationally recognised standards by accredited testing laboratories in the US.
- saveBOARD has achieved compliance with the International Building Code for use in the US as an external wall and roofing substrate.

### NZBC Compliance Appraisal Notes

An NZBC Compliance Appraisal is a technical opinion of a building product or system's fitness for purpose. It involves extensive testing and verification of Building Code compliance and is done by an independent appraisal organisation. (Such as Chartered Engineer or Accredited Testing Laboratory).

An appraisal looks at any specific installation systems or processes. It recognises limitation on a product's intended scope of use.

Appraisals have no legal standing. However, they can form a useful part of your evidence of compliance.

Products are assessed against a wide range of performance factors. These include:

- the requirements of the Building Code
- performance under test conditions
- in-service performance
- accuracy of the product's technical information
- manufacturing procedures and quality control systems.

### Appraisal organisations

An appraisal organisation should be independent of the product's manufacturer or distributor.

It should have:

- thorough and validated testing procedures (for example, its processes are reviewed by a third party)
- suitably qualified staff (such as engineers and research scientists).

The organisation should also carry out or require:

- regular inspections to ensure the product conforms during manufacture
- regular inspections to ensure the product conforms when in use
- knowledge of the Building Code and building science.

You can use an appraisal organisation from outside New Zealand. However, the product needs to be assessed against the New Zealand Building Code.

Ref - <https://www.building.govt.nz/building-code-compliance/product-assurance-and-multiproof/product-assurance/your-product-and-the-law/>



### Product Description

saveBOARD Wall & Roofing substrate is a unique structural composite panel made from 100% upcycled materials.

The core of the product is made from shredded and compressed composite packaging, giving the user a sustainable and superior performing product.

saveBOARD does not use glues, resins or other such biological or environmentally harmful products. During construction, or in-service use saveBOARD does not create harmful dust, vapours, or other potentially harmful Volatile Organic Compounds (VOC's).

The saveBOARD Wall & Roofing substrate is a semi-vapour permeable, durable roof products. The product is designed for use with timber or steel framing and is finished with a moisture-resistant fibreglass facer on one side and a paper facing on the internal side.

saveBOARD Wall & Roofing substrate are manufactured in New Zealand for exclusive use in New Zealand & Australia. Please refer to the saveBOARD Product Assurance Supplier Statement for compliance with relevant performance clauses of New Zealand & Australian Building Codes / Permits.

saveBOARD lining may be overlaid on self-supporting product/structure and can be used for the verified specified uses as wall and roof linings.

Panel sizes are as follows:

- 2400 mm x 1200 mm x 10 mm                      2450 mm x 1200mm x 10mm
- 2400 mm x 1200 mm x 12 mm
- 2700 mm x 1200 mm x 12 mm

saveBOARD Wall & Roofing substrate has been manufactured and tested by independent testing laboratories in the United States (US) and has demonstrated compliance with International Building Code requirements for wall and roof uses.

In New Zealand (NZ) and Australia (Aus), the US test certification and data has been independently evaluated for compliance with the NZ Building Code by Oculus Architectural Engineering Ltd.

To support Oculus independent assessment additional compliance testing has been carried out by SCION laboratories to verify compliance with NZ Building Code

**\*(Please refer to saveBOARD Website for current test certification).**

- (i) The **Oculus Engineering NZBC Compliance Statement – Aug 2021** currently supports the use of saveBOARD for the following application.

#### **EXTERNAL WARMROOF SUBSTRATE:**

For use as an exterior roof vapour control layer /warm roof substrate where the roof is externally insulated and is part of an NZBC E2 compliant roof system and;

Installed in accordance with the saveBOARD Specification & Installation Guide.

Warm Roof: A warm roof system has a continuous layer of insulation on the exterior side of the structure



<p>Scope of Use</p>	<p><b>WARMWALL &amp; WARMROOF SUBSTRATE:</b></p> <p>saveBOARD Wall &amp; Roofing substrate is suitable for use as a Warm Wall or Roof substrate for all roof applications when all of the following conditions are met;</p> <ul style="list-style-type: none"> <li>(i) saveBOARD is used only as part of an externally insulated roof system</li> <li>(ii) saveBOARD is used as part of a compliant roof system.</li> <li>(iii) saveBOARD is installed in accordance with the current saveBOARD Specification &amp; Roof Installation Guide.</li> </ul> <p>Wall &amp; Roofing substrate is suitable for use as a warm wall &amp; roof substrate subject to loading and spans conditions detailed in the saveBOARD Specification &amp; Installation Guide respectively. saveBOARD Wall &amp; Roofing substrate may be used as a Wall &amp; Roof diaphragm in bracing applications subject to specific engineering design and detailing.</p> <p>The durability of saveBOARD Wall &amp; Roofing substrate used as a Wall &amp; Roofing substrate is subject to the requirements of the Oculus Engineering NZBC Compliance Statement – Aug 2021 in accordance with NZBC Clause B2 Durability.</p>
<p>Limitations / Disclaimer</p>	<p>saveBOARD Wall &amp; Roofing substrate is limited to use as part of a WARM WALL &amp; ROOF element only. Externally insulated. Please Note: External insulation refers to &gt;70% of the primary thermal resisting element located on the external surface of the saveBOARD.</p> <p>saveBOARD does not support the use of its products on wall &amp; roof structures with insulation installed only in between the primary structure framing.</p> <p>Always refer to the wall &amp; roofing system/membrane supplier's information for compatibility with saveBOARD and surface preparation requirements for specific roofing products.</p> <p>Please refer to the current saveBOARD Specification &amp; Installation Guide for information, limitations, and requirements for the storage, handling, installation, usage, and maintenance of saveBOARD - Wall &amp; Roofing substrate.</p>
<p>Compliance with the New Zealand Building Code</p>	<p>saveBOARD Wall &amp; Roofing substrate specified as a WARM WALL &amp; ROOF substrate and installed in accordance with saveBOARD Specification &amp; Installation Guide, contributes to meeting the following provisions of the NZ Building Code:</p>
<p>Compliance Pathway</p>	
<p>B1 Structure</p>	<p><b>Clause B1 Structure: Performance B1.3.1, B1.3.2, B1.3.3(a,c,g,h,q), B1.3.4(d)</b></p> <p>saveBOARD has demonstrated appropriate structural properties through independent analysis. Please refer to the Oculus Engineering Compliance Statement and Scion test results (August 2021).</p> <p><b>*(Please refer to saveBOARD Website for current test certification).</b></p> <p>The product has been assessed as an: ALTERNATIVE SOLUTION – Equivalent to (verification method B1/VM1). Material structural performance parameters are established through the Oculus Engineering Compliance Statement and Scion test results (August 2021).</p>



<p><b>B2 Durability</b></p>	<p><b>Clause B2 Durability: Performance B2.3.1(a)</b></p> <p>saveBOARD Wall &amp; Roofing substrate is manufactured to meet the requirements of the NZBC Clause B2 Durability.</p> <p>The product has been assessed as an: ALTERNATIVE SOLUTION – Equivalent to (Acceptable Solution B2/AS1, 3.2.1).</p> <p>Compliance has been verified through analysis of US compliance testing; supported by an independent verification for use in NZ by Oculus Architectural Engineering, and Independent Laboratory testing by SCION.</p> <p>If saveBOARD is appropriately stored and used in accordance with good building practices and the saveBOARD Specification &amp; Installation Guide, it will comply with the requirements of the NZBC B2.</p> <p>saveBOARD achieves NZBC B2 Durability requirements as part of a combined system reliant upon other building products.</p>
<p><b>C3 Fire affecting areas beyond the fire source</b></p>	<p><b>Clause C3 Fire: Performance</b></p> <p>saveBOARD Wall &amp; Roofing substrate is manufactured to meet the requirements of the NZBC Clause C3.4 Fire.</p> <p>The product has been assessed as an: ALTERNATIVE SOLUTION – Equivalent to (Acceptable Solution CVM2/AS1, 3.2.1).</p> <p>Compliance has been verified through US compliance testing.</p> <p>NOTE: Under the current evaluated NZ scope of use saveBOARD does not support the use of saveBOARD as a building product roof element to comply with the requirements of the NZBC C3.4 (Fire Spread).</p> <p>Designers wishing to use saveBOARD for roof fire spread use must undertake further independent verification before specifying/construction.</p>
	<p><b>Clause C3 Fire - Spread of flame Group Number</b></p> <p>saveBOARD has been tested and independently verified as <b>Material Group Number 3</b> in accordance with ISO9705:1993.</p> <p>Compliance has been verified through US and NZ compliance testing supported by an independent verification for use in NZ by Oculus Architectural Engineering.</p> <p>As a Warm Roof substrate saveBOARD Wall &amp; Roofing substrate meets the flashover criteria of the performance requirement of Clause. C3.4 (a).</p>
<p><b>E2 External moisture</b></p>	<p><b>Clause E2 External Moisture: Performance E2.3.1, E2.3.2, E2.3.5, E2.3.7</b></p> <p>saveBOARD Wall &amp; Roofing substrate when used as part of a Warm wall &amp; roof structure as a wall &amp; roofing substrate combined with a compliant roof membrane or metal tray deck and underlay roof system, will meet the performance requirements of E2.3.1, E2.3.2 E2.3.5 and E2.3.7.</p>
<p><b>F2 Hazardous building materials</b></p>	<p><b>Clause F2 Hazardous Building Materials: F2.3.1</b></p> <p>saveBOARD Wall &amp; Roofing substrate meets the requirement of NZBC F2 and the performance requirement of F2.3.1. No harmful chemical treatment is used in the manufacturing process.</p> <p>It does not present a health hazard to people (during construction and building use). No harmful dust or gases are released.</p>





<p>H1 Energy efficiency</p>	<p><b>Clause H1 Energy Efficiency: H1.3.3.1</b> saveBOARD Wall &amp; Roofing substrate when used as part of a warm wall &amp; roof structure as the wall &amp; roofing substrate combined with a compliant wall &amp; roof membrane and insulation system, will meet the performance requirements of H1.3.1, H1.3.2 and H1.3.3.</p>
<p>Quality Assurance</p>	<p>saveBOARD's QA process and records are independently audited by a third-party product appraisal organisation.</p> <p>The Third-party organisation have demonstrated/accredited knowledge of the Building Code and building science, and carry out appropriate sample analysis and reporting on;</p> <ul style="list-style-type: none"> <li>• Regular inspections, testing and monitoring of properties to ensure the product conforms during manufacturing.</li> <li>• Periodic inspections, observations to ensure the product continues to meet the performance requirements when in use.</li> </ul>
<p>Sustainability</p>	<p>saveBOARD is proudly manufactured in New Zealand, at the saveBOARD plant in Te Rapa Hamilton.</p> <p>saveBOARD is an NZ upcycled product made from recycled drink/plastic cartons.</p>
<p>Installation Requirements</p>	<p>saveBOARD Wall &amp; Roofing substrate used as a warm roof roofing substrate must be installed in accordance with good building practice, sound design principles, and the requirements of saveBOARD Wall &amp; Roofing substrate Specification &amp; Installation Guide" or details provided by a Licensed Building Practitioner. Always refer to the roofing system/membrane supplier for installation, substrate selection and surface preparation requirements for specific roofing products.</p>
<p>Installation information</p>	<p>The specifications and details are available at saveBOARD web site <b>www.saveBOARD.nz</b></p>
<p>Service Life</p>	<p>saveBOARD Wall &amp; Roofing substrate will continue to satisfy the relevant performance requirements of the NZBC for 50 years if all the requirements set out in this Product Technical Statement and the specific design parameters of the project are met.</p>
<p>Maintenance Requirements</p>	<p>If the membrane or metal roof product is properly maintained and inspected saveBOARD Roofing substrate will not normally require maintenance as the substrate of a roofing system.</p>
<p>Product Support</p>	<p>saveBOARD provides extensive product support for the full range of saveBOARD products. By visiting <a href="http://www.saveBOARD.co.nz">www.saveBOARD.co.nz</a> you can access all the latest information regarding our products including Product Guides, Specification and Installation Guides, Technical Notes, Information Bulletins, CAD Drawings, Design Software, and other useful information.</p> <p>Roofing substrate specifications and details are available at saveBOARD web site <b>www.saveBOARD.nz</b>.</p> <p>saveBOARD has Technical Experts available to assist with any product enquiries. You can contact the team via the contact details on the website.</p>
<p>Legal Disclaimer</p>	<p>The information contained in this document is current as of August 2021 and is based on data available at the time of going to print.</p> <p>saveBOARD reserves the right to change the information contained in this document without prior notice. It is your responsibility to ensure that you have the most up to date information available. You can contact the team via the contact details on the website.</p> <p>saveBOARD has used all reasonable endeavours to ensure the accuracy and reliability of the information contained in this document. However, to the maximum extent permitted by law, saveBOARD assumes no responsibility or liability for any inaccuracies, omissions, or errors in this information nor for any actions taken in reliance on this information.</p>



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## 1.0 GENERAL NOTES

### 1.1 saveBOARD EXPLAINED

saveBOARD's Wall & Roofing substrate is a unique structural composite panel made from 100% upcycled materials. The core of the product is made from shredded and compressed composite packaging, giving the user a sustainable and superior performing product. It is for use with timber or steel framing.

Finished with an external moisture resistant Fiberglass facing paper and recycled paper on the interior side saveBOARD Wall & Roofing substrate is a low carbon, semi-permeable, high strength and durable roof product.

When used as a Wall & Roofing substrate the installation of saveBOARD Wall & Roofing provides exceptional strength in all directions, excellent fire performance that is mould resistant with zero VOC's or formaldehyde.

**Every 100m<sup>2</sup> of saveBOARD installed prevents 360kg of plastic and 540kg of paper being landfilled.**

### 1.2 GENERAL

saveBOARD Wall & Roofing substrate is manufactured in New Zealand & in Australia from mid 2022. See the saveBOARD Roofing Product Assurance Supplier Statement for compliance with relevant performance clauses of New Zealand & Australian Building Codes / Permits.

This section relates to the supply and installation of saveBOARD Wall & Roofing substrate.

### 1.3 DOCUMENTS

The following documents are referenced in this section:

- NZS3604: 2011 Timber Framed Buildings
- AS 1684: Residential Timber Framed Construction

### 1.4 saveBOARD DOCUMENTS

The following documents are referenced in this section:

- saveBOARD Wall & Roofing technical documentation.

### 1.5 WARRANTY

saveBOARD warranty for saveBOARD Roofing is available at: [www.saveBOARD.nz](http://www.saveBOARD.nz) & [www.saveBOARD.com.au](http://www.saveBOARD.com.au)

### 1.6 NO SUBSTITUTIONS

saveBOARD Roofing substrate may not be substituted for any alternative Roofing materials or other saveBOARD products.

### 1.7 QUALIFICATIONS

Preparation and installation of saveBOARD Wall & Roofing substrate shall be carried out by persons with the appropriate skills who have access to current saveBOARD technical documentation.





# Product Specification

## Wall & Roofing substrate



### 2.0 PRODUCT

#### 2.1 saveBOARD Wall & Roofing substrate

saveBOARD Wall & Roofing is a unique structural composite panel made from 100% upcycled materials.

Panel sizes are as follows:

- 2400 mm x 1200 mm x 6 mm
- 2400 mm x 1200 mm x 12 mm
- 2400 mm x 1200 mm x 15 mm

#### 2.2 saveBOARD PROPERTIES

Roofing substrate Properties	6mm	12mm	15mm
Width	1200 mm	1200 mm	1200 mm
Length	2400 mm	2400 mm	2400 mm
No. of pieces per pallet	40	32	25
Weight (kg/m <sup>2</sup> )	4.5	9.0	11.3
Compressive Strength, ASTM D2394	27.5 MPa	27.5 MPa	27.5 MPa
Material Group Number – ISO 5660	3	3	3
Flue Spanability, ASTM E661	280 mm	432 mm	TBC
Water Vapor Transmission, ASTM E96	6.9 MNg/s	6.9 MNg/s	6.9 MNg/s
Mould Resistance, ASTM D3273	10	10	10
Impact Resistance, UL 2218	Class 4	Class 4	TBC
Thermal Resistance (R-Value)	0.08	0.16	TBC
Fastener Pull-out Resistance (kN)	1.2 kN	2.3 kN	TBC
Water Absorption (Immersion), % Max – ASTM C473	6.1	3.9	TBC
Water Absorption (Surface), grams – ASTM C473	1.9	2.8	TBC
Volatile Organic Compounds	None	None	None



### 3. DESIGN CONSIDERATIONS

#### 3.1 GRANTING OF BUILDING CONSENT/PERMIT

saveBOARD Roofing substrate have available the following in support of building consent / permit:

- saveBOARD Wall & Roofing substrate Design & Installation Guide
- saveBOARD warranty
- Current Product Assurance Supplier Statement

#### 3.2 DESIGNER CONSIDERATIONS

When specifying saveBOARD Wall & Roofing substrate, the designer must consider the specific project including:

- environmental (exposure) zone
- wind zone
- wall bracing table for wind and EQ demand
- structural design loads
- structural framing requirements
- preparation of substrate
- external envelope
- other materials likely to affect the performance

### 4. EXECUTION

#### 4.1 GENERAL

saveBOARD requires that installers record the installation of saveBOARD Wall & Roofing substrate including evidence of delivery, installation notes and photos.

This evidence must be recorded as evidence for any Warranty claim.

#### 4.2 INSTALLATION

The Wall & Roofing substrate must be installed as per the design details provided by the architect or engineer.

#### Warm wall & roof installation (recommended detail):

In the roof assembly pictured, the Fibreglass-faced saveBOARD is protected in use behind a roof cladding system.

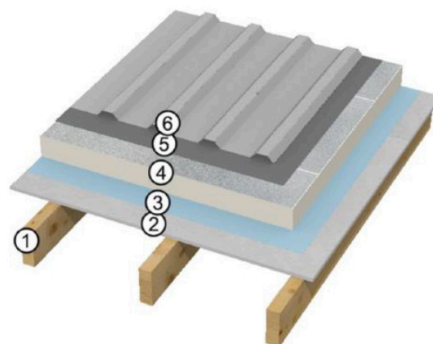
As the Fibreglass-faced saveBOARD relies on the protection of other elements in the roof assembly, correct installation and regular maintenance of the cladding is required to ensure satisfactory durability performance. The design of the other elements in the roof assembly is the responsibility of the building designer.

#### General installation:

- Stagger end joints of the adjacent lengths of saveBOARD Roofing substrate. Butt board edges and ends in typical installations.
- Use fasteners specified in accordance with the Specification. Ensure mechanical fasteners do not protrude above the surface of the board and are finished flush. Proper fastener spacing is essential to achieve wind uplift performance.

#### Sawing, drilling and shaping:

- saveBOARD Wall & Roofing substrate may be cut with any commercial or common woodworking tools. Keep blades sharp for best results and always wear safety goggles and other forms of personal protective equipment.



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

#### 4.3 QUALITY ASSURANCE

Carry out and record regular checks of material quality and accuracy. Where any material, quality or dimension falls outside the specified or required tolerances obtain written direction from the designer and saveBOARD.

Where building consent / permit approval is affected, confirm remedial action with the Building Consent Authority (in New Zealand) & Building Permit Authority (in Australia).

### SUPPORTING DOCUMENTS

#### For compliance information of saveBOARD Roofing substrate refer to:

- saveBOARD Product Technical Statement

#### Information to help with the design and specification of saveBOARD Roofing substrate refer to:

- saveBOARD Product Specification
- saveBOARD Design & Installation Guide



# Product Specification

## Wall & Roofing substrate



### Information to help with the installation of saveBOARD

#### Roofing substrate refer to:

- saveBOARD Design & Installation Guide

#### Our warranty for saveBOARD supplied Roofing substrate refer to:

- saveBOARD Warranty

For more information on saveBOARD Roofing substrate visit: [www.saveBOARD.com.au](http://www.saveBOARD.com.au) or [www.saveBOARD.nz](http://www.saveBOARD.nz)

## ABOUT saveBOARD

### saveBOARD

is focused on building a circular economy by turning composite packaging waste, back into products that re-enter the local supply chain eliminating future waste.

### Closed Loop Solution

Our core business is to provide a Closed Loop solution for composite packaging (such as milk cartons, ingredients bags, coffee cups and soft plastics) by turning them into products that are commonly used in the building industry.

### Product Stewardship

saveBOARD will also provide a product stewardship programme for our own products rather than create another waste problem. During construction the off cuts and waste saveBOARD products can be separated at source into a 'saveBOARD FlexiBin or skip bin'. Instead of going to landfill, the saveBOARD waste can be returned to our facility to be shredded and reused in our boards providing a ZERO waste solution.

### Climate change

Using saveBOARD reduces embodied energy by -2.7 kgCO<sub>2</sub> eq/sqm. This is a significant climate change benefit compared to traditional building materials which add carbon to a building.

## NOTES:





# Maintenance Sheet

## Wall & Roofing substrate



## Care and Maintenance of saveBOARD Wall & Roofing substrate

### saveBOARD Wall & Roofing substrate

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Finished with an external moisture resistant Fiberglass facing paper and recycled paper on the interior side, saveBOARD Roofing is a semi-vapour permeable high strength and durable roof product.

### Finishing the Roofing substrate

saveBOARD Roof Board requires no maintenance; however, the external cladding system must be well maintained.

Check the external cladding system on a regular basis and carry out any required maintenance as per the suppliers instructions.

### Maintenance

Under normal conditions saveBOARD Wall & Roofing substrate requires no maintenance providing that the protective covering has been maintained.

If water damage occurs to an area where saveBOARD Roofing substrate is installed, ensure the area is allowed to dry before replacing any cladding. Maximum exposure to weather must not exceed three months.



## USEFUL LINKS

**For compliance information of saveBOARD Roofing substrate refer to:**

- saveBOARD Product Technical Statement.
- Information to help with the design and specification of saveBOARD Roof Board refer to:
- saveBOARD Product Specification
- saveBOARD Design & Installation Guide

**Information to help with the installation of saveBOARD Roof Board refer to:**

- saveBOARD Design & Installation Guide

**Our warranty for saveBOARD supplied Roof Board refer to:**

- saveBOARD Warranty

**For more information on saveBOARD Roof Board visit: [www.saveBOARD.com.au](http://www.saveBOARD.com.au) or [www.saveBOARD.nz](http://www.saveBOARD.nz)**

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## Product Warranty Wall & Roofing substrate



This warranty applies to saveBOARD Wall & Roofing substrate where used in accordance with all saveBOARD Roofing substrate information.

### Warranty period:

15 years from proven date of purchase.

All enquiries relating to this warranty must be directed to the point of sale or installer in the first instance.

### saveBOARD warrants that:

- At the time of delivery to the merchant or site (where applicable), the saveBOARD Wall & Roofing substrate, is free from freight related defects, factory defects.
- The design, installation, storage and handling advice provided by saveBOARD will result in building work that complies with relevant provisions of the New Zealand Building Code & Australian Building Permit, providing that all advice from saveBOARD has been followed, and providing the required maintenance has been undertaken.

### In the event of proven product failure, the following applies:

- saveBOARD will supply replacement materials without charge.
- The installer will be responsible for the cost of removing and installing any replacement materials.
- Consequential losses or damage, as a result of product failure, are not covered.
- saveBOARD obligations under this warranty are limited to the replacement of defective materials (supplied by saveBOARD) or the value of these materials. The value of the materials will be reduced pro-rata based on the remaining life of the product (as defined by the durability provision of the New Zealand Building Code or Australian Building Permit).

In the event of proven failure that results from the design, installation, storage and handling advice provided by saveBOARD the following applies:

- saveBOARD will supply replacement materials, remove existing materials and install the replacement materials or provide the value of the materials and associated work.
- The value of the materials will be reduced pro-rata based on the remaining life of the product (as defined by the durability provision of the New Zealand Building Code or Australian Building Permit).
- Consequential losses or damage, as a result of product failure, are not covered.

saveBOARD reserves the right to supply other compatible materials for repair should the warranted materials no longer be supplied by saveBOARD.

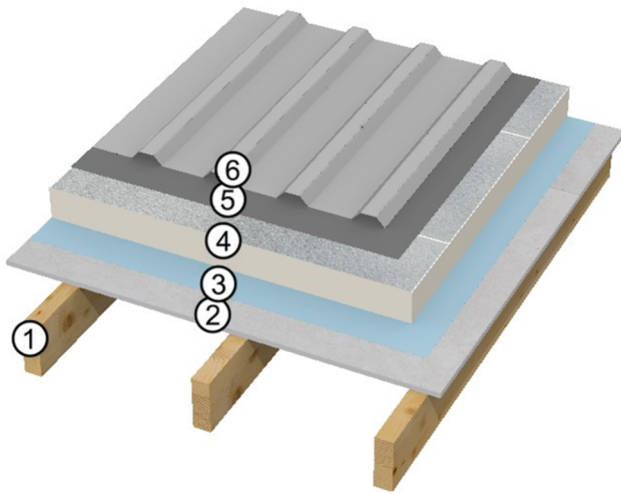
### This warranty is subject to the following:

- Receipt of date of purchase of the product.
- Evidence of failure.
- Receipt of a written claim from the claimant within 30 days after the defect would have become reasonably apparent or, if the defect was reasonably apparent prior to installation, then the claim must be made prior to installation.
- Satisfactory evidence that all storage, handling and maintenance requirements have been carried out.
- The warranty does not cover failure or problems caused by defective use, failure relating to improper design of the project structure, structural failure, settlement, movement of materials to which the product is attached or dependent on, acts of God including but not limited to earthquakes, cyclones, floods or other severe weather conditions, inadequate maintenance, growth of mould, mildew, fungi, bacteria or any organism on any product, or has acts or omissions of a third party over whom saveBOARD has not control.
- The warranty does not cover failure arising from the failure to follow saveBOARD design, installation, storage, handling or maintenance advice.
- Normal wear and tear is excluded from this warranty.
- All relevant saveBOARD Roofing substrate technical information is available from saveBOARD.

[www.saveBOARD.com.au](http://www.saveBOARD.com.au) [www.saveBOARD.nz](http://www.saveBOARD.nz)

## Compliance Statement Fibreglass-faced saveBoard Roof Substrate

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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/m<sup>2</sup> and 12 kg/m<sup>2</sup>, 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  $\pm 0.60$  kPa SLS
  - Framing at 600mm cts: up to  $\pm 0.18$  kPa SLS
- For 13mm (1/2") thick Fibreglass-faced saveBoard:
  - Framing at 400mm cts: up to  $\pm 0.33$  kPa SLS
  - Framing at 600mm cts: up to  $\pm 0.10$  kPa SLS
  - Framing at 900mm cts: up to  $\pm 0.03$  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.

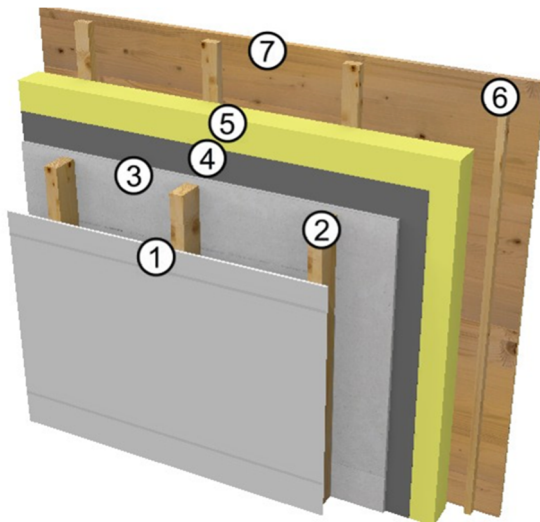
When measured by Intertek in 2012, a board with a density of 591 kg/m<sup>3</sup> was measured to have a relatively low thermal conductivity of 0.08 W/(mK) which is comparable to insulating materials such as sawdust and wool/felt. Based on this thermal conductivity and density, the board has the following R-values: [RR1]

Density (kg/m <sup>3</sup> )	Board thickness (mm)	R-value (m <sup>2</sup> 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.

## Compliance Statement Fibreglass-faced saveBoard Exterior Sheathing

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1. Interior gypsum lining
2. Timber or steel stud framing
3. Fibreglass-faced saveBoard
4. Weather resistive barrier
5. External insulation (such as PIR or Rockwool)
6. Cavity battens
7. Exterior cladding

### Compliance with Building Code

#### B1 Structure:

##### Gravity

The Fibreglass-faced saveBoard exterior sheathing boards weigh approximately 6 kg/m<sup>2</sup> and 12 kg/m<sup>2</sup>, 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 are less dense than gypsum. Therefore, typical fixing patterns for gypsum boards will be more than sufficient to resist the board's self-weight.

##### Seismic

Due to its excellent racking resistance, Fibreglass-faced saveBoard can be designed to contribute towards the lateral stability of a building as a bracing wall. Scion Research have carried out two P21 tests to establish the in-plane racking capacity (or Bracing Units per meter) of wall assemblies with Fibreglass-faced saveBoard. The results of this testing is tabulated below.



<b>Fibreglass-faced saveBoard Bracing Units to P21 Test Procedure</b>		
<b>Wall Construction</b>	<b>Wind (BU/m)</b>	<b>Earthquake (BU/m)</b>
10mm Fibreglass-faced saveBoard sheathing board to 1 side 90x45 H1.2 SG8 timber studs 600mm c/c (no nogs) fixed to saveBoard with Gibgrabber 6g x 32mm screws to specified fixing pattern*	<b>106</b>	<b>93</b>
10mm Fibreglass-faced saveBoard sheathing board to 1 side 90x45 H1.2 SG8 timber studs 600mm c/c (no nogs) fixed to saveBoard with Gibgrabber 6g x 32mm screws to specified fixing pattern* PRYDA Bracing Anchor brackets (88/85 x 50 x 5mm) at each end of bracing wall	<b>128</b>	<b>141</b>

Note: Bracing units must be calculated and built in accordance with NZS 3604:2011

\*Fixing pattern: 150mm centres to the perimeter of the sheet with corners fixed at 50, 100, 150, 225, and 300mm centres each way.

In addition to providing bracing strength, the board must accommodate the movement of the structural frame of the building during a seismic event. Deflections up to an SLS event are accommodated by butt joints between panels and located around the perimeter at internal/exterior corners and at each floor joint. Exact movement capacity will depend on the number of joints and the widths of the panels. However, in general we expect a system like this to be suitable for use on buildings with an expected L/100 (1%) of interstorey drift without sustaining permanent damage that would impede the bracing function of the sheathing board.

## **Wind**

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

- For 6mm (1/4") thick Fibreglass-faced saveBoard:
  - Framing at 400mm cts: up to  $\pm 0.60$  kPa SLS
  - Framing at 600mm cts: up to  $\pm 0.18$  kPa SLS
- For 13mm (1/2") thick Fibreglass-faced saveBoard:
  - Framing at 400mm cts: up to  $\pm 0.33$  kPa SLS
  - Framing at 600mm cts: up to  $\pm 0.10$  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 Fibreglass-faced saveBoard wall assembly pictured, the saveBoard is protected in use behind a rainscreen cladding system and further protected by a weather resistive barrier. We are reasonably satisfied that this product will achieve the 15 years minimum durability requirement when installed in the wall 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:**

Fibreglass-faced saveBoard sheathing board is used to form part of a rainscreen cladding system to manage external moisture. It functions as a rigid substrate for a weather resistive barrier such as a peel and stick membrane or specific wall underlay which protects the stud framing from coming into contact with water.

The sheathing board should be installed with cross-cavity flashings at the base of every storey or 3.5m (whichever is lesser) to drain any water running down the internal face of the cavity to the exterior. A drained and ventilated cavity should be used to promote airflow and drying in the cavity.

All timber and wood-based building components shall 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 an exterior sheathing board in New Zealand climates provided that the insulation is on the exterior side of the board.

In this application as a sheathing board, Fibreglass-faced saveBoard is fixed to structural framing members and provides a rigid substrate for the weather resistive barrier. Exterior insulation and a rainscreen cladding system are placed on the exterior side of the sheathing board. This assembly prevents interior moisture advancing beyond the Fibreglass-faced saveBoard. As the weather resistive 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 wall 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 excellent 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).

saveBoard has been tested by Intertek (2013) and has a mould growth resistance of 10/10 when tested in accordance with ASTM D3273-12. This ASTM lab test may not accurately represent the mould performance of building materials in actual use. Given unsuitable project conditions during storage, installation or after completion, any building material can be affected by mould. To manage the growth of mould, the best and most cost-effective strategy is to protect building products from water exposure during storage and installation as well as after completion of the building. This can be accomplished by using good design and construction practices.

## 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/m<sup>3</sup> 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:

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

In its 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.