saveBOARD Installation Guide

Australia and New Zealand

saveBOARD betterBRACE

Rigid Air Barrier

June 2023

Version 1.2

Content

Purpose of Document

This document is intended to help Designers, Builders and Building Consent Authority (B.C.A.) Building Officials who want to ensure that saveBOARD betterBRACE (rigid air barrier lining is specified, installed, and performs correctly as a rigid air barrier lining.

Following the instructions within this document are important to ensure correct product use and the ongoing support of the manufacturer's warranty.

Designer and Installer Qualification and Skill level

Where saveBOARD betterBRACE is specified /installed, the designer/installers should have the appropriate skills and knowledge of the product and, where necessary, the qualification required by law.

Please Note:
The design and Installation of saveBOARD betterBRACE relates to building work that forms part of the primary structure and weathertight envelope of a building which is Restricted Building Work (RBW). RBW must be carried out or supervised by a Licensed Building Practitioner (LBP).

It is also necessary to obtain building consent before the commencement of work. Failure to do so is an offence under the Building Act 2004.

1. Technical Support

This document must be read in conjunction with the saveBOARD betterBRACE specification document and current Product Assurance Supplier Statement (PASS)Please refer to saveBOARD betterBRACE specifications and details, which are easily downloaded from the saveBOARD website www.saveBOARD.nz & www.saveBOARD.com.au

For product maintenance and warranty requirements, please refer to the guidance on the saveBOARD website www.saveBOARD.nz & www.saveBOARD.com.au

saveBOARD provides technical support for the full range of saveBOARD products. By visiting www.saveBOARD.nz & www.saveBOARD.com.au you can access all the latest information regarding our products, including:

- Product Assurance Supplier Statement (PASS)Product Specification
- Installation Guides
- Certifications

2. Product Information

saveBOARD betterBRACE is a unique structural composite panels 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.

The manufacturing process does not involve glues, resins, or other biological or environmentally harmful products. During construction or in-service use, it does not create toxic dust, vapours, or other potentially harmful inhalants Volatile Organic Compounds (V.O.C.'s) or Formaldehydes.

saveBOARD betterBRACE is a semi-vapour permeable [1], rigid air barrier designed for use with timber or steel framing (thermal break must be used). It is finished with a moisture-resistant fibreglass facer on both sides or a or a paper facing on the interior side may be specified.

saveBOARD betterBRACE is manufactured in New Zealand and Australia for exclusive use. Please refer to the saveBOARD Product Assurance Supplier Statement for compliance with relevant performance clauses of the New Zealand and Australian Building Codes / Permits.

saveBOARD betterBRACE sheet sizes are as follows:

- 2450 mm x 1200 mm x 10 mm
- 2750 mm x 1200 mm x 10 mm
- 3000 mm x 1200 mm x 10 mm

saveBOARD betterBRACE has been manufactured and tested by independent testing laboratories in New Zealand (N.Z.) - Australia (Aus), and the United States (U.S.) and has demonstrated compliance with the International Building Code, N.Z. Building Code, Australian Building Code for specific requirements relating To a rigid air barrier application.

All test certification and data have been independently evaluated for compliance with the New Zealand Building Code.

To support Australasian use, the following accredited laboratories have carried out an independent assessment and additional compliance testing to verify compliance with New Zealand Building Code and the Australian Building Code.

Assessment Area - Test	**Accredited Organisation**	**Date - Status**
Structure – P21 Bracing Test (Screw fixings)	Scion (N.Z.	2020 – Current
Durability - NZBC E2 AS1 Table 23 properties	Scion (NZ)	2022 – Current
Structure - P21 Bracing Test (Nail fixings)	BRANZ (NZ)	2022 – Current
Fire – Group Number assessment – AS 5637.1	Ignis Labs (Aus)	2022 – Current
Internal Moisture NZBC E3 - WUFI Hygrothermal Analysis	Kaizon (NZ)	2022 – Current

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

[1] saveBOARD is a semi-permeable Class II vapour retarder as defined by the International Residential Code (IRC).

3. NZBC Building Compliance Approval

saveBOARD betterBRACE has been evaluated as an ALTERNATIVE SOLUTION material through testing to the reference standards in the NZ ACCEPTABLE SOLUTIONS for the following N.Z. Building Code clauses:

B1 structure.
B1.3.1, B1.3.2, B1.3.3(a,b,f,h), B1.3.4(d)
B2 Durability
B2.3.1(a), B2.3.2.
C4 Movement to a place of safety
C4(a)- Specific to Material Group Rating
E2 External moisture
E2.3.2 (contributes to), E2.3.7
E3 Internal moisture
E3.2 , E3.3.1 (contributes to)
F2 Hazardous building materials
F2.2, F2.3.1
H1 Energy efficiency
H1.3.1 (contributes to), H1.3.2E (contributes to)

4. Working safely with saveBOARD

All saveBOARD products are safe to work and live with.

- saveBOARD can be cut, drilled, and sanded in the same manner and methods as most wood-based products.
- saveBOARD products do not contain materials that are known to cause cancer if work-related dust is inhaled.
- saveBOARD cutting activities do not generate harmful dust, but we recommend you always follow Health & Safety best practices to reduce or limit inhalation.

Safety recommendations for working with saveBOARD betterBRACE We recommend cutting is completed outside or in a well-ventilated area.

- ALWAYS wear Personal Protective Equipment (P.P.E.). We recommend minimum P.P.E. of Safety glasses - Hearing protection – Dusk mask. When working near others, instruct them to also wear P.P.E.A LWAYS use the right tool(s), following the manufacturer's safety recommendations.

Refer to saveBOARD Material Safety Data Sheet for further details.

5.1 Cutting – Hand saw and Power tools
saveBOARD betterBRACE can be cut in the same manner and methods as most wood-based products.

STEP 1 – Using a standard carpentry pencil, mark the cut line on the saveBOARD betterBRACE
Hand-Cut - For handsaw cutting, a standard 500mm Handsaw with a > 7 Teeth Per Inch (T.P.I.) is suitable.

STEP 2 - For accurate cutting, it is always recommended that the cut is made with a power saw running against a fixed straight edge.
Power Cut - For power saw cutting, a circular saw with > 1200w motor fitted with a standard ripping blade > 40 Teeth is suitable.

Step 3 – Clean up the cut with a sandpaper block/ 80 Grade sandpaper or as required.

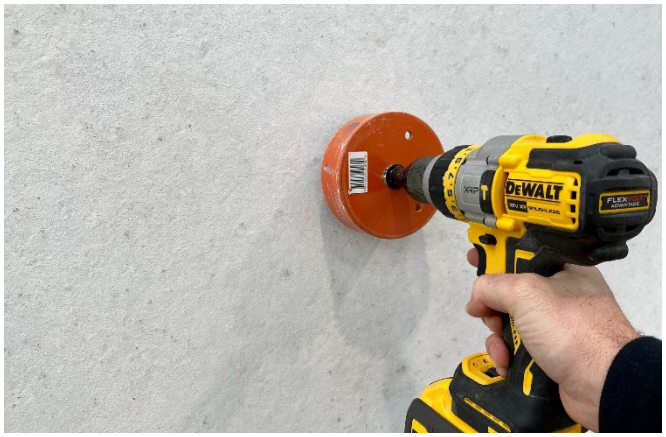
*For all cutting, always follow the tool manufacturer's safety recommendations.

5.2 Drilling - Hole forming - For smooth, clean-cut circular holes:
saveBOARD betterBRACE can be drilled in the same manner and methods as most wood-based products.

STEP 1 – Mark the centre of the hole required on the sheet.

STEP 2 – Using a 3 – 5mm standard drill bit, pre-drill a central 'pilot' hole.

STEP 3 - Using the pilot hole as a guide, cut the hole with the hole saw that is correct for the hole size required. It is recommended to use a heavy-duty power drill, but a battery drill with sufficient power can achieve a good result.



T.I.P. – Allow the hole saw to cut. Do not apply excessive pressure as this may damage the back of the board upon exit.
Always follow the tool manufacturer's safety recommendations.

5.3 Sanding
Clean up cut edges with a sandpaper block /80 Grade Sandpaper or as required.

5.4 Handling and Storage
Safe handling in transport and storage on-site is essential for worker's safety and protection of saveBOARD betterBRACE.

When manually handling saveBOARD betterBRACE ensure the panels are lifted correctly. For safety, we recommend a minimum of 2 people.

When stored on-site saveBOARD betterBRACE should be laid flat on suitable bearers. The spacing between the bearers should be no more than 600mm apart.

Where multiple pallets are stacked, all storage bearers must align to the ground. For safe working, it is not advisable to stack materials above chest height on-site and materials should always remain restrained to protect against high wind exposure.

5.5 Storage
When stored external on-site, there must be a minimum of 50mm clearance from the ground and water sources. If delivered sheets are stored outside prior to use they MUST be covered with temporary waterproofing.
It is good to trade practice to allow sheet materials to climatize to the site conditions for 48 hours prior to Installation.

When correctly installed SaveBOARD betterBRACE must not be exposed to the weather for more than 90 days. Please note tape joint manufacturers' requirements may be different.

5. Standard Installation

6.1 Installation Scope

saveBOARD betterBRACE is suitable for use as a rigid air barrier for buildings up to and including V.H. wind zone within the scope of NZS 3604 and E2/AS1, not exceeding 10 metres in height For bracing applications, follow the saveBOARD betterBRACE bracing details specified in this installation guide. Bracing with rigid air barriers can only be achieved when fixed directly to the frame. The board must be fixed in accordance with the bracing details of all framing.

saveBOARD betterBRACE must always be fixed directly to the framing, the vertical face joints and bottom edge must be sealed with appropriate tape systems (see recommended tapes).

The cladding systems used over saveBOARD betterBRACE must satisfy the various performance requirements of the NZBC E2 (Accepted or Alternative Solution) saveBOARD betterBRACE is suitable for use behind NZBC E2/AS1 complying cladding systems approved by a B.C.A.

The cladding system must not be directly fixed to saveBOARD betterBRACE and must be installed by incorporating a ventilated cavity E2/AS1 type cladding system.

6.2 Support Framing

All support timber framing shall comply with NZS 3604 or comply with the Specific Engineering Design (S.E.D.) requirements.

All steel support framing shall comply with NASH Standard Part 2:2019 Light Steel Framed Buildings or S.E.D.

All frame durability treatments must comply with NZBC B2/AS1. saveBOARD does not recommend board installation (Externally or Internally) on very wet timber framing. It is the builder's responsibility to ensure that framing is confirmed at a moisture content $\leq$ 16% before internal linings are applied. This is a saveBOARD warranty requirement.

90 x 45mm minimum timber framing size is the minimum recommended for fixing saveBOARD betterBRACE. It is the designer's responsibility to ensure that the framing and the saveBOARD substrate are suitable for installing the selected cladding.

Table 1. Structural framing stud set out

Wind Exposure	Stud Centres (Max)
Up to including H (High)	600mm
VH (Very High)	400mm
EH (Extra High)	400mm nogs/dwangs at 600mm

6.3 Vertical Installation and Joints

Before Installation, check that each saveBOARD is not damaged to ensure optimal performance, and it is dust-free and dry to ensure correct joint tape adhesion. The joint tape products recommended by saveBOARD do not require the sheets to be primed.

All saveBOARD betterBRACE sheets must be installed vertically, with an expansion gap between the sheet edges of 2-4mm required. This includes external and internal vertical corner joints.

All vertical board joints should be fully supported by vertical timber/ metal studs. Any horizontal joints or cut-outs within a sheet should be supported by backing blocks.

The bottom edge of sheets must overhang below the bottom plate by 15 – 20mm. The bottom sheet edge must remain a minimum of 100mm clearance (150mm recommended) to the ground and saveBOARD betterBRACE should not be in contact or exposed to standing water during construction.

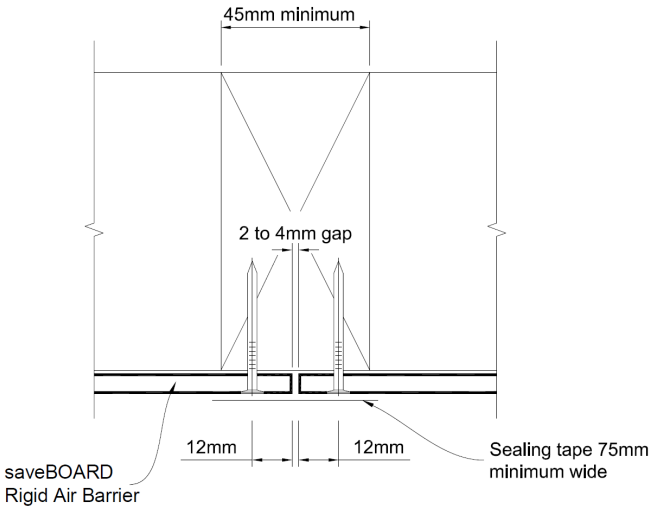


DIAGRAM 1 – Vertical Board Layout

6.4. Horizontal Joints

For two storey buildings (not exceeding10mtrs) saveBOARD betterBRACE must not be fixed directly to intermediate floor joists. At the intermediate floor level, a horizontal joint detail is required.

Step 1: The lower vertical board should project over the intermediate floor joist to a maximum of 50mm.

Step2: A continuous Z type flashing must be installed horizontally to the full length of the wall. For wall lengths over 3m the Z flashing must be lapped 50mm and silicone sealed. The Z flashing must provide face covering to the lower sheets to a minimum of 40mm.

Any vertical or internal corners to the horizontal Z flashing must be sealed with appropriate joint tape with a minimum 75mm cover to the corner joint.

When installing the intermediate level boards, a minimum of a 15mm movement gap is required between lower and upper boards. The Z flashing upstand behind the intermediate boards must provide a minimum 30-35mm back cover.

No fixings are allowed in the floor joist or Z flashing area.

The lowest sheet fixing to the upper intermediate boards must be into the intermediate floor subframe bottom plate and stud only.

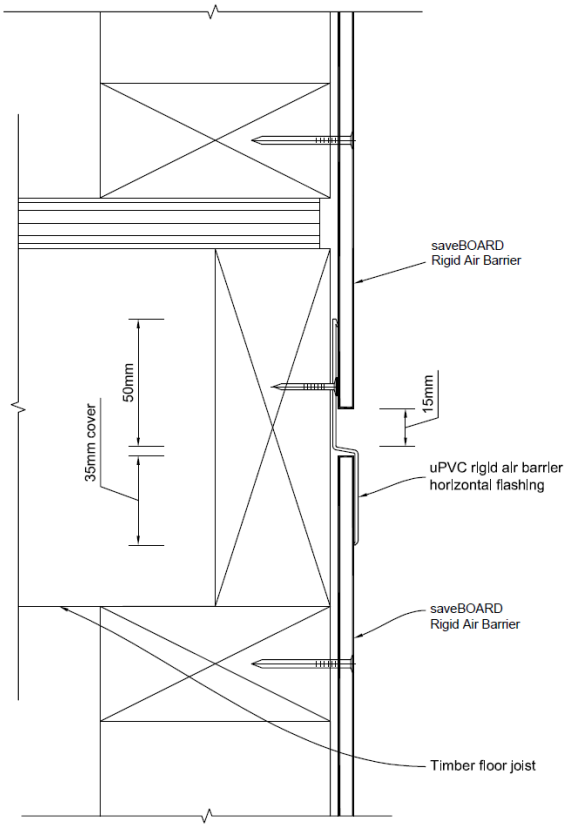
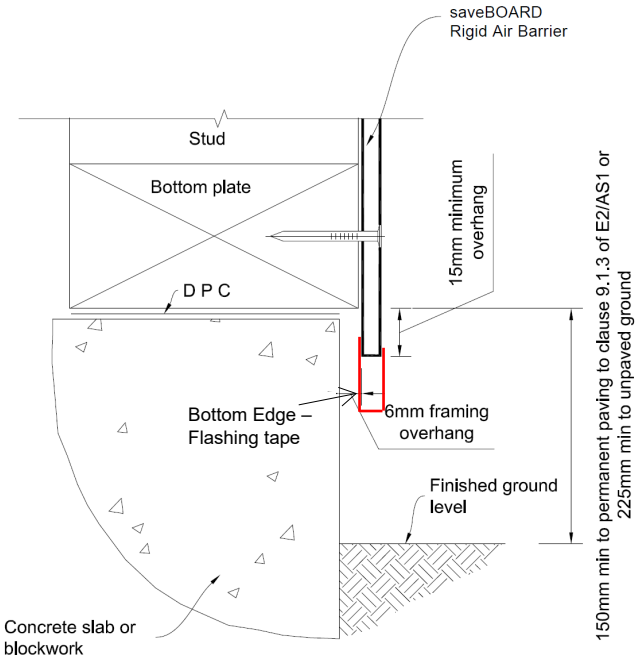


DIAGRAM 2 – 2 Storey Horizontal Joint detail

6.5 Bottom Edge Detail

The bottom must be sealed with an appropriate joint tape with a minimum cover of 35mm on the back face, 10mm around the bottom edge and 30mm around the front face.



6. saveBOARD betterBRACE FIXINGS

saveBOARD betterBRACE must be installed with its fiberglass side facing out towards the external cladding. The fiberglass applied on the face helps the board to drain the moisture freely over the face and keeps it dry. To retain board integrity, all fixings (nails or screws) must finish flush with the board surface.

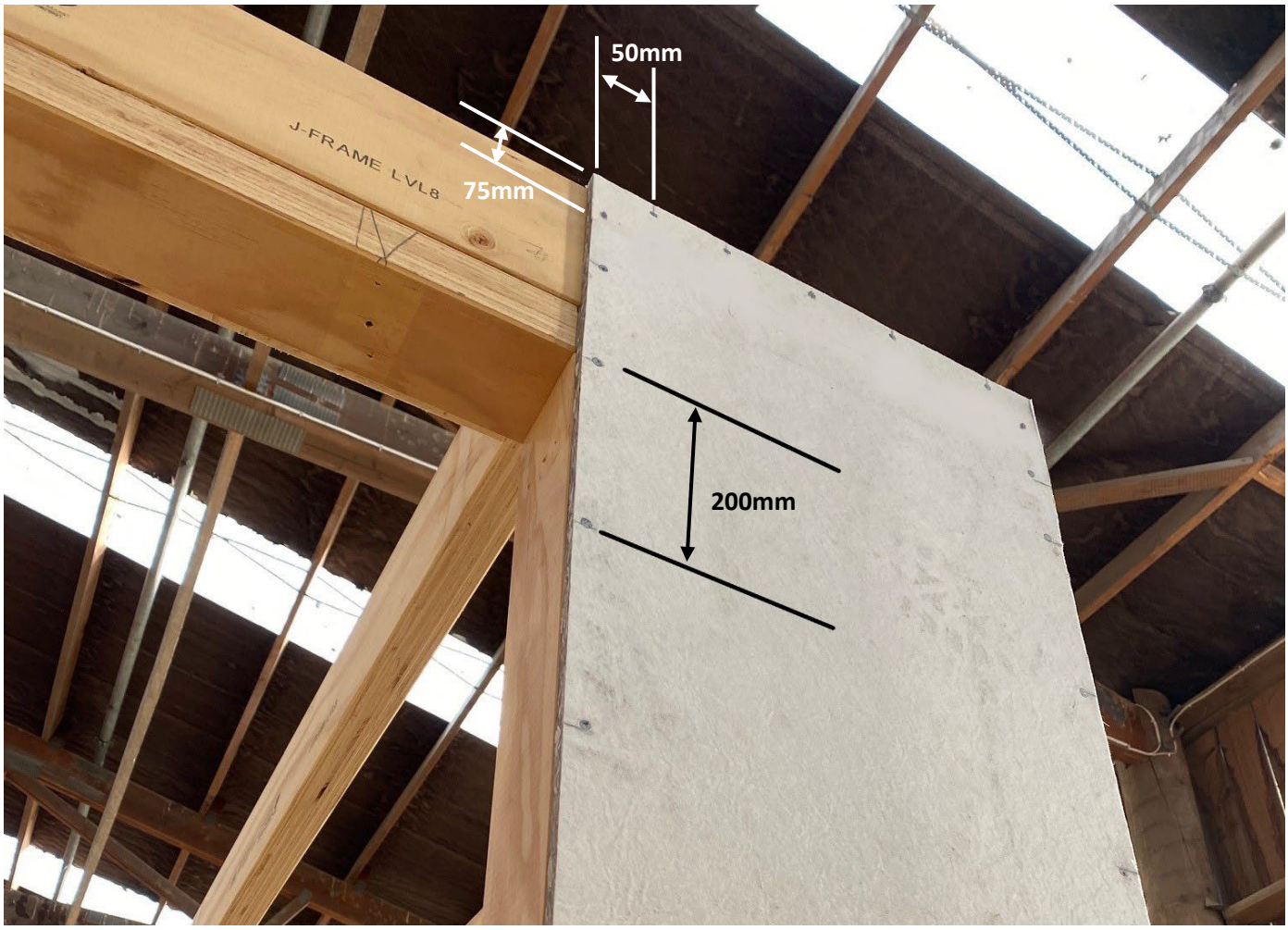


DIAGRAM 4 - Standard Board fixings

7.1 Bracing and Non-Bracing fixings

saveBOARD betterBRACE can either be fixed with screws, pneumatic nails (gun nails) or hand nails. Tables 2 & 3 below lists the recommended fixing types.

All fixings must have a minimum clearance of 50mm horizontally and vertically from the sheet corners and 20mm from the sheet edges.

Nail gun fixings must be of a suitable round head type to provide the minimum hold capacity required.

Table 2. saveBOARD betterBRACE 10mm Fixings (Non-Bracing)

Type of fixing	Description	Fixing centres	Frame type
Hand Nail	50 x 2.8mm Galvanized Flat Head Nail	Corner pattern - 50, 200mm horizontal. 75, 200mm vertical	Timber Only
Nail Gun	50 x 2.8mm Galvanized Flat Head Ring Shank Nails	Corner pattern - 50, 200mm horizontal. 75, 200mm vertical	Timber Only
Screw	GIB® Grabber® 32mm x 8g Ceramic Coated High Thread Screws. (Or equivalent)	Corner pattern - 50, 200mm horizontal. 75, 200mm vertical	Timber or Steel frame

Table 3. saveBOARD betterBRACE 10mm Fixings (Bracing)

Type of fixing	Description	Fixing centres	Frame type
Hand Nail	50 x 2.8mm Galvanized Flat Head Nail	Corner pattern - 50,150mm horizontal. 75, 150mm vertical	Timber Only
Nail Gun	50 x 2.8mm Galvanized Flat Head Ring Shank Nails	Corner pattern - 50,100mm horizontal. 75, 100mm vertical	Timber Only
Screw	GIB® Grabber® 32mm betterBRACE 8g Ceramic Coated High Thread Screws. (Or equivalent)	Corner pattern - 50,50, 50, 75, 75, 150mm	Timber Only

structural wall system. Tables 2 and 3 list fixings suitable fixings for NZBC Corrosion Zones A-C only.

DIAGRAM 5 – Bracing Board fixings

7.2 Fixing Durability

Structural fixings are a critical component of a building system. To comply with the NZBC B2 Durability requirements, all structural fixings must have the same level of Durability as required for a

It is the designer's responsibility to confirm exposure requirements for individual projects. When such corrosion risks as Sea Spray or Geothermal exposure exist, it will be necessary to increase the fixing Durability to Stainless steel type or equivalent to the satisfaction of the B.C.A.

8. BRACING DESIGN AND INSTALLATION

saveBOARD betterBRACE may be used as a bracing element with structural timber wall and steel framing systems that comply with New Zealand Building Code

8.1 Scope of use:

saveBOARD betterBRACE bracing may be used for;

- New buildings construction; and
- Alterations to existing buildings

For alterations to existing buildings, the designer/ builder must satisfy themselves that the existing subframe/structure is suitable to achieve the desired bracing performance, and the saveBOARD betterBRACE BU/m must be considered indicative only when applied to the existing structure.

8.2 Bracing Design requirements

When specifying saveBOARD betterBRACE as a design bracing element, it is the designer's responsibility to confirm the following site-specific conditions:

-Environmental exposure zone
-Wind zone
-Critical structural design input (Wind and Earthquake loads) as applicable to the wall bracing calculations required
-Structural framing specification requirements
-Suitable durability treatment for structural frames/substrate
- Suitable design and specification for an NZBC compliant cladding and roof system
-All other matters that may affect performance

8.3 Bracing Design performance Input

saveBOARD betterBRACE Bracing Units (BU/m) comparison

Product	Wind	Earthquake
saveBOARD 10mm	143	154
OSB 8mm	131	107
Cement Board 6mm	125	102
Plywood 7mm	123	139

Based on a 2450 x 1200 Sheet (Nail fixed)

8.4 Design Exposure Limitations –

Wind zones: Extra High.
Wind pressure: Up to 4.5 kPa U.L.S.

Substrate structural fixings: saveBOARD betterBRACE installation must be as per the instructions in this manual. Bracing elements can be achieved effectively by using all current New Zealand Building Code approved mechanical fixing strap, bracket, and hold down systems (Pryda, HandiBrac, Mitek, etc.).

Substrate framing - timber: Wall stud spacing must not exceed 600 mm centres. Prior to internal lining installation, the structural framing moisture content is recommended to be ≤ 16%.

Substrate framing – steel:

Bracing Sheet service penetrations: Service penetrations holes must not exceed 100mm x 100mm in dimension or 100mm diameter maximum. Penetrations are limited to a maximum of 2 holes per sheet, and multiple penetrations must be a minimum of 750mm apart. Penetrations are not to be located within the top 150mm or bottom 250mm of a bracing sheet.

Description	Concrete Slab		Timber Floor	
	Wind (BU/m)	EQ (BU/m)	Wind (BU/m)	EQ (BU/m)
System 1: saveBOARD - 400mm x 2400mm with GIB Handibrac. Fixing 50 x 2.8mm Galvanized Flat Head Ring Shank Nails	65 BU/m	76 BU/m	65 BU/m	76 BU/m
System 2: saveBOARD - 600mm x 2400mm with GIB Handibrac. Fixing 50 x 2.8mm Galvanized Flat Head Ring Shank Nails	87 BU/m	98 BU/m	87 BU/m	98 BU/m
System 3: saveBOARD - 1200mm x 2400mm with GIB Handibrac. Fixing 50 x 2.8mm Galvanized Flat Head Ring Shank Nails	143 BU/m	154 BU/m	143 BU/m	154 BU/m

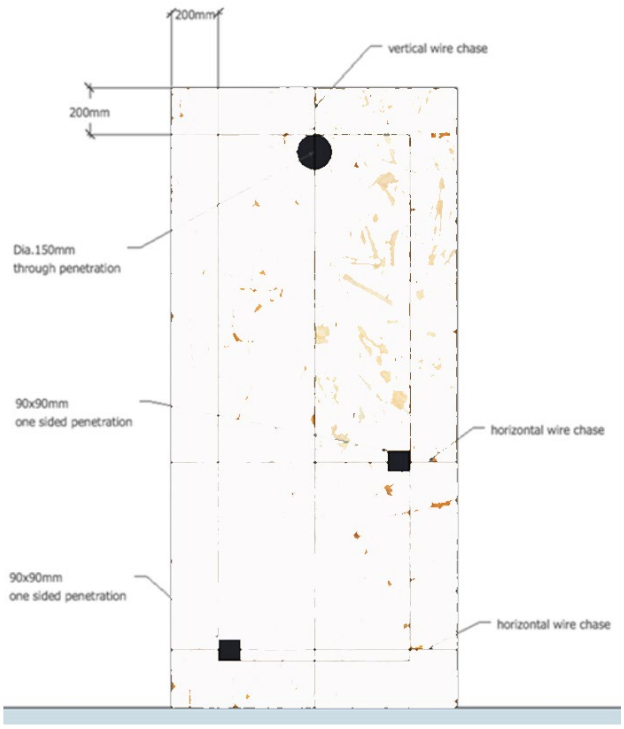


DIAGRAM 6 – Permitted penetrations in Bracing board.
Note: All penetrations are to be sealed as per the instructions in this guide.

Sheet Installation and fixing: Must be strictly in accordance with the instructions in this guide.

9. saveBOARD JOINT TREATMENT

All vertical board joints must be sealed to stop the moisture ingress into the framing behind saveBOARD betterBRACE.

The vertical joints must be sealed with a minimum of a compatible 75mm wide joint tape applied with even coverage to both sheets.

9.1 Board Joint Tape

The following products are recommended:

- *Mashall Innovations SUPER-STICK Building Tape*
- SIGA Wigluv
- Proclima adhesive tapes - TESCON
- Thermakraft Premium Joining Tape

It is important to follow the joint tape manufacturers' recommendations regarding the installation of their jointing tapes in specific climatic conditions and substrate preparation. We recommend the use of a firm rubber roller to ensure firm and even pressure resulting in the correct bond when installing the joint tape to the saveBOARD betterBRACE surface.

We recommend that the joint tape is installed with 48hrs of board installation. Prolonged exposure to U.V. and weather may affect the joint tape manufacturer's warranty.

Any horizontal joints or service penetrations should be sealed with the minimum of a suitable flexible flashing tape providing a minimum of 100mm cover beyond the joint or penetration or a penetration seal

The following Penetration Seals recommended

- Thermakraft OneSeal
- Marshalls Tradeseal

9.2 Sealing Cut Edges

It is not necessary to seal saveBOARD betterBRACE cut edges, but all joints must be covered by approved joint tape.

9.3 Building Wraps

saveBOARD has been tested and has demonstrated compliance with the durability performance requirements of NZBC E2/AS1 - Table 23.

Where saveBOARD betterBRACE is relied upon as the building wrap, care must be taken to ensure board fixings must finish flush with the board surface.

The use of building wrap or wall underlays over saveBOARD betterBRACE are only recommended for higher risk designs where the E2/AS1 risk matrix scores ≥ 13.

10. saveBOARD PENETRATION TREATMENTS

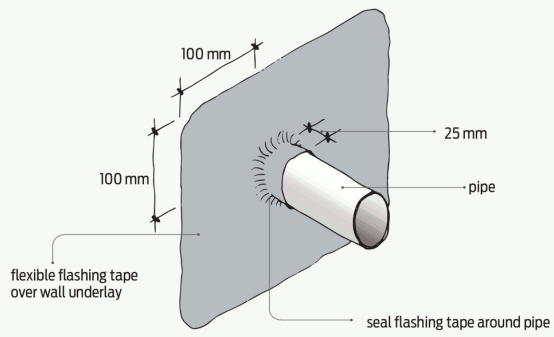
Only use saveBOARD betterBRACE approved flexible flashing tapes.

The following flashing tapes are recommended

- Thermakraft Thermaflash
- Marshalls Superstick
- Proclima TESCON EXTOSEAL

10.1 Installing Service Penetrations

Service penetrations through saveBOARD betterBRACE must slope to the outside (Angle of > 5°).



The flashing tape or penetration seal must be installed with a minimum of 25 mm cover projecting around the pipe and 100 mm minimum surface adhesion to saveBOARD betterBRACE surrounding the penetration.

10.2 Installing Window /Door Penetrations

The surface of the betterBRACE must be free of dust and dirt and must be dry before applying any tape. Tape manufacturer installation instructions must be followed.

Using a recommended flashing tape or sealing tape seal the full opening to cover all exposed timber of joinery openings.

Wrap the recommended flashing tape or sealing tape a minimum of 60mm on to the face of the betterBRACE.

Use a strip of tape 75mm x 150mm across all corners at a 45 degree angle (butterfly strip). Apply first, under the tape used to seal the opening on the bottom of the opening, apply secondary, over the top sealing tape, at the top corners. Roll the sealing tape into the corner of the opening. This provides a secondary measure of protection in the corners.