EXBOUND (XBS)

FIRE RATED BOUNDARY WALL INSTALLATION MANUAL

MULTIBOARD
www.multiboard.com.au

MULTIBOARD
MGO PERFORMANCE WALLS

EXTERNAL EXCELLENCE

PRODUCT DESCRIPTION

eXBound is a versatile, glass fibre reinforced, (50%) recycled wood fibre and magnesium based cladding. The panels have been specifically fabricated for external use with the latest fire retardant chemicals to provide a lightweight and exceptionally strong board for fire rated boundary walls.

The **eXBound** external fire rated cladding system can be erected quickly and efficiently. The various **eXBound** wall systems are designed to satisfy the BCA fire rating requirements for walls built close to a neighbouring property. The unique benefit of the **eXBound** wall system is there is no need for additional layers of fire rated materials that can add significant time and cost to other comparable lightweight wall systems. The **eXBound** wall systems also provide high acoustic performance.

eXBound has been designed for both use as a substrate for texture coat applications, concealed and expressed edge joints. The **eXBound** wall systems are suitable wall cladding for new homes, re-cladding existing homes, multi-residential developments and commercial buildings requiring fire rated boundary walls.

EXBOUND Thickness in mm	15	17
External Wall Claddings (Concealed Joints)	✓	✓
Eaves & Soffits	✓	✓
Fire Rated Walls	✓	✓
Tile Backing Board	✓	✓
High Impact Resistance	✓	✓
Wind Bracing	✓	✓
Left in Place Formwork	✓	✓

DECORATIVE FINISHES - PAINTING

All exposed edges, including the board's front face, are to be sealed with an appropriate paint system, e.g. Haymes Paints - Multiboard, to ensure weatherproofing.

PRODUCT INFORMATION

Compliance with AS2908.2

Multiboard 15mm and 17mm **eXBound** products are classified Type A, Category 3, in accordance with AS2908.2 'Cellulose-Cement Products'.

Appearance

Multiboard **eXBound** has a smooth glass fibre reinforced face. The sheets are available in square-edge.

Edge Details

Square Edge


Mass and Dimensions

eXBound is available in the following lengths:

EXBOUND				
Width (mm)	Length (mm)	Thickness (mm)	Approx Weight (kg/m²)	Weight (kg)
1100	2400	15	16.5	43.56kg
	3000			54.45kg
	2400	17	18.7	49.37kg
	3000			61.71kg

eXBound is dimensionally stable, allowing it to be an excellent external cladding panel.

The manufacturing tolerances for **eXBound** are as follows:

- Width (+/- 01.5mm)
- Length (+/- 01.5mm)
- Thickness (+/- 0.1mm)

Fire Resistance

eXBound is classified as a non-combustible and has been tested in accordance with AS1530.1.

When tested in accordance with AS1530.3 Early Fire Hazard Indices are as follows:

Ignitability Index	0	Range 0-20
Spread of Flame Index	0	Range 0-10
Heat Evolved Index	0	Range 0-10
Smoke Developed Index	0-1	Range 0-10

eXBound was tested to AS 3837 and found to have a Group 1 classification and average specific extinction area > 0.1m2/kg.

There are a number of Multiboard **eXBound** fire rated boundary wall applications. Cavity stud wall system specifications are available for 30, 60 and 90 minute durations. Individual specification sheets are available on request or can be downloaded from Multiboard's web site at **www.multiboard.com.au**. The **eXBound** installation manual is to be used in conjunction with the fire rated specification for external concealed joint applications and Multiboard iLine installation manual for internal lining applications.

Thickness (mm)	Fire Rating (FRL)
15	90/90/90
17	90/90/90

MULTIBOARD PROPERTIES

eXBound outperforms other building boards in many important ways including the following:

Moisture Resistant

Tested to ASTM E 514-03 Standard test Method for Water Penetration & Leakage through Masonry.

Termite Resistant

Laboratory tested by Termimesh Australia.

Ease of Use and Installation

Conventional woodworking equipment required to cut and shape.

Fire Resistant

Non combustible.
Tested to AS 1530.1.
FRL AS 1530.4.

Strength / Impact Resistance

Tested to the strict requirements of AS2908.2.

Lightweight

Over 30% lighter than traditional cement sheeting.

100% Safe to Use

No harmful crystalline silica or asbestos is used in its composition. Tested as safe.

Acoustic Requirements

Superior acoustic performance to fibre cement and other alternatives.

Environmentally Friendly

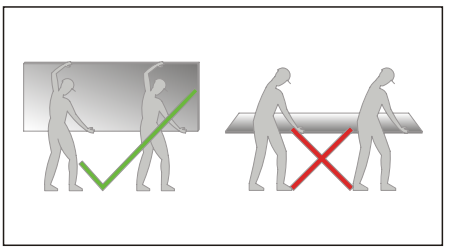
50% recycled bamboo / wood fibre, 40% less embodied energy to produce than fibre cement.

HANDLING & STORAGE

eXBound should be kept dry, and be stored in a dry and covered area.

If stored externally, **eXBound** must be stacked flat and raised off the ground. The panels should be supported on level ground and must be protected from the weather.

Care should be taken to avoid damage to the products edges, ends and surfaces. If the product becomes wet, the product must be allowed to dry before fixing. **eXBound** should be stacked and handled carefully to avoid damage.



Boards should be lifted from the pallet by sliding sideways and carried on its long edges.

SHEET CUTTING

Smooth Cutting	Sawing
	
For smooth cuts, use a circular saw.	Can be cut easily using a hand saw.
Planing	**Drilling**
	
The edge can be planed or smoothed with an electric planer, rasp or file.	Use a standard drill tip. For making holes in the board.

TYPICAL XBOUND WALL SYSTEM

FRAMING

General

eXBound fire rated systems are suitable for use with timber (load bearing/non-load bearing) and lightweight steel (load-bearing/non-load bearing) framing.

Design considerations include:

- Wind Loads
- Insulation/Sarking
- Coating Systems
- Control Joints
- Substrate Structure
- Panel Layout
- Maintenance

Multiboard recommends the use of 50mm (min) light gauge steel top hats or structural treated timber battens be installed allowing the system layout be independent of the wall frame. This installation method provides greater efficiency for the installation and improved thermal performance of the wall.

Sarking

Vapour barrier sarking between **eXBound** and the framing must be installed at all times. All warranties are void without the installation of sarking. The use of reflective sarking will enhance the insulation properties of the cladding system.

All wall openings, penetrations, intersections, connections, window sills, heads and jambs must be fully flashed and waterproofed, before any **eXBound** sheets are installed.

Timber Framing

Timber framing must comply with AS1684.2 and 3: 1999 Residential Timber - Framed Construction.

eXBound cannot be fixed to wet framing. Kiln dried timber/seasoned timber must be used. If sheets are fixed to wet framing, it is likely that problems will occur at a later date due to excessive timber shrinkage. Please note all warranties will be void if this is the case.

Steel Framing

Metal framing must comply with AS3623 - 1993 Domestic Steel Framing.

eXBound can be fixed directly to lightweight metal framing, of thickness between 0.5mm and 1.6mm (BMT), however top hats are recommended.

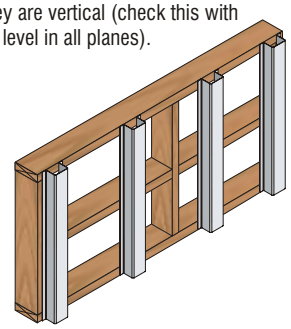
All metal top-hats must be installed vertically, at a maximum of 600mm centres. Reduced top-hat centres will provide a higher impact resistance.

If fixed directly to the frame, the minimum flange width at the joints must be 35mm, to provide adequate support for the fixing of the sheet edges. A double stud at the sheet joint must be provided if the steel framing is less than 35mm.

eXBound sheets **must not** be fixed directly to drawn steel or hot-rolled steel sections. If Multiboard **eXBound** is to be installed on these members, then 50mm (min) wide light-gauge metal top-hats must be used.

Batten/Top Hat Fixing Example

Position the battens/top hats according to predetermined and marked spacing's and ensure that they are vertical (check this with a spirit level in all planes).



Fix the battens/top hats on the flat to the frame using appropriate framing nails or screws.

Always check the alignment of all framing with a long straight edge before any installation is conducted. The maximum out of alignment should not exceed 4mm over 3000mm, 3mm over 1200mm or 2mm over 600mm. This should be checked both horizontally and vertically.

Excessive misaligned framing may contribute to an uneven surface after the coating has been applied. Multiboard will not be held responsible for this should it occur.

Please note: fixing to uneven surfaces or water saturated framing will void any warranty.

In higher wind areas, top hat/batten spacing must be reduced (Refer to table below).

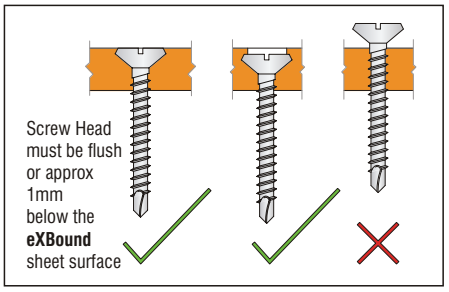
Maximum MGP10 H3 batten or 1.15 BMT top hat spacing for 15mm and 17mm XBOUND

Spacing (mm)	Location (mm)	Wind Classification to AS 4055					
		N1	N2	N3	N4	N5	N6
Top Hat/ Batten Spacing	Within 1200 of building edge	600	600	600	450	300	300
	Elsewhere	600	600	600	600	450	450
Fastener Spacing	Within 1200 of building edge	200	200	200	200	200	200
	Elsewhere	200	200	200	200	200	200

Fasteners

Fastener Recommendation:
When fastening **eXBound**, we recommend the use of Multiboard (STF 40-8-C4) or (SMF 30-8-C4) fasteners.

Where fasteners are to be countersunk, the depth must be controlled by a gauge to restrict the fasteners head depth to no more than 1mm (approx.) below the face of the board.



Fasteners must not be overdriven, as this can reduce the holding capacity of the sheet.

As a guide to the classification please refer to the following table:

Environmental Classification	Appropriate Fastener (Screw)
> 400m from ocean or from severe marine influence.	AS 3566 Class 4 or Stainless Steel.
Severe marine influence and up to 400m from marine environment.	AS 3566 Class 4 - Stainless Steel.

SHEET LAYOUT & INSTALLATION FOR EXBOUND RENDER APPLICATIONS

Concealed Joint System

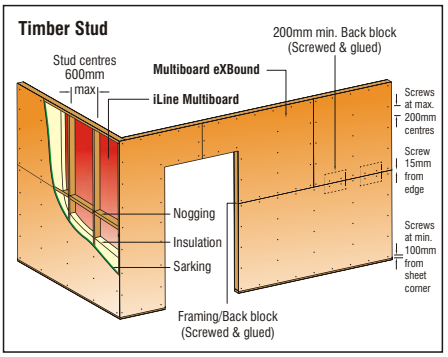
Planning the sheet layout is very important, as this minimises wastage and also the number of sheet joints required.

Orientation

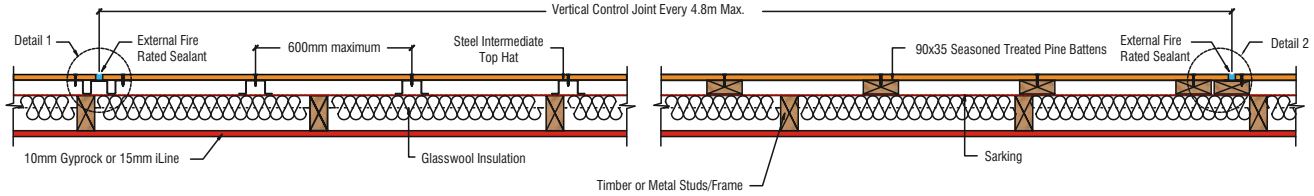
eXBound sheets must be installed horizontally, vertical joints to be staggered and always commence the first sheet from a corner.

A horizontal, staggered sheet installation of **eXBound** facilitates maximum bracing strength across the wall installation. Material wastage is minimised when the batten or top hat spacings are 600mm wide, although 450mm centres would provide a higher impact resistance.

Vertical sheet layout is not recommended for **eXBound.**



Typical Vertical Sheet Joint and Frame Layout - Concealed Joint



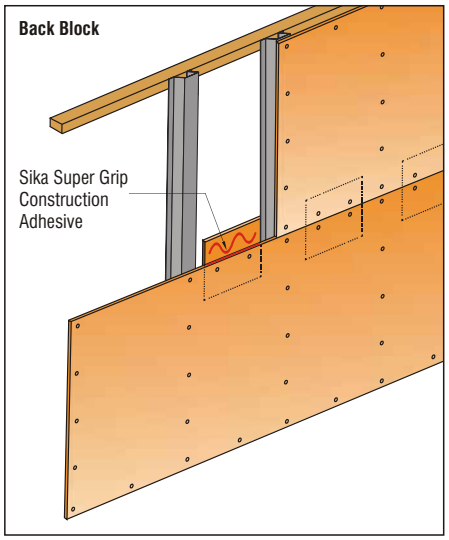
Fixing

The panels are screw fixed along the edge and centre of the sheet at a maximum of 200mm centres. Do not place fixings closer than 15mm from sheet edges, or closer than 100mm from the **eXBound** sheet corners

The sheet must be held firmly against the framing when fixing to ensure breakout does not occur at the back. Fixing is recommended from the centre of the sheet and work outwards, to ensure sheets are hard against the frame, to avoid drumminess.

Joints

The **eXBound** joints should be butt jointed together, except where movement joints are required.



Joints between **eXBound** panels are to be back blocked using a 200mm section of Multiboard offcuts, glued and screwed behind the sheet edges to provide support across the joint. **Sika Super Grip** construction adhesive is recommended or similar.

The success of any joining system is very much dependent upon the correct construction of the framing, the fixing of **eXBound** and the application of the jointing accessories/materials.

Corners

When using **eXBound** at external corners, the sheet joint must finish flush - no gap should be left in these circumstances. Sheets at the corners should either be both recessed or both straight edge.

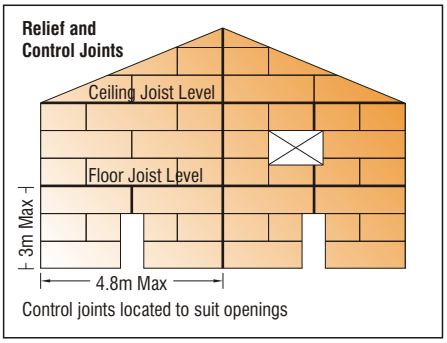
Multiboard recommends alkaline-resistance fibreglass corner mesh to be installed at the corner before the coating system is applied. Please refer to the coating manufacturer's recommendations before application.

On an internal corner it is necessary to leave a 3mm - 6mm gap, which should be completely filled with a flexible fire rated acrylic sealant.

Control Joints

Vertical Control Joints

Control joints are required for **eXBound** when a continuous wall spans longer than 4800mm. Relief and control gaps require a 10mm gap between sheets and are best incorporated in the structure at window and door openings or behind where a nearby downpipe is located.



Form a 10mm gap between the **eXBound** sheets and fill with flexible fire rated acrylic sealant according to the FRL required.

Horizontal Control Joints

Horizontal control joints are located at 3.0m maximum and also in between floor joist levels and at gable ends. This allows for sheet and frame movement.

Construction Joints

Vertical

Vertical construction joints are required when **eXBound** is installed alongside an existing structure. Always leave a 10mm gap between the two construction types and fill with a flexible fire rated acrylic sealant.

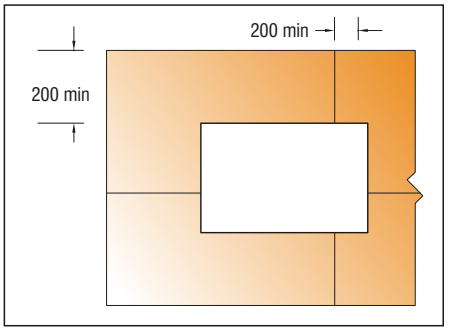
Horizontal

Horizontal construction joints are required where upper levels are constructed on an existing ground floor structure.

Window & Door Openings

To reduce the incidence of cracks appearing in the jointing, **eXBound** sheets should be cut in a minimum of 200mm around window and door openings.

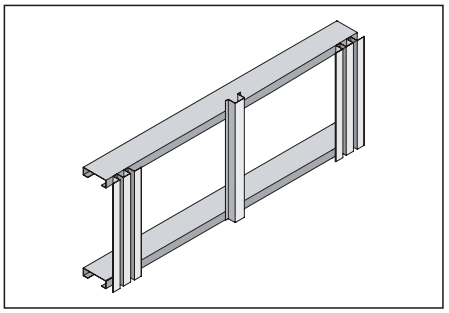
Where cutting in of **eXBound** panels around openings is not possible (eg: windows & doors), the use of control joints at the opening junctions is highly recommended. This will minimise the potential for any cracking.



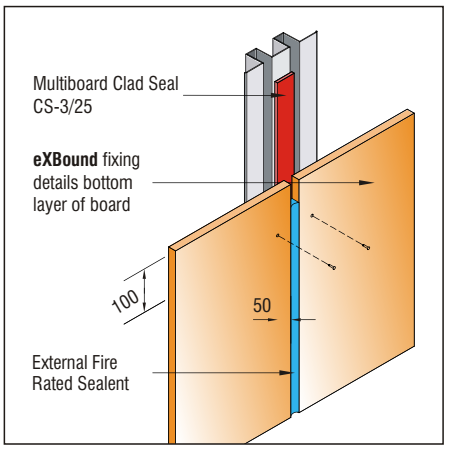
SHEET LAYOUT & INSTALLATION FOR EXBOUND SQUARE-EDGE EXPRESS JOIN SYSTEM

Expressed-Edge System

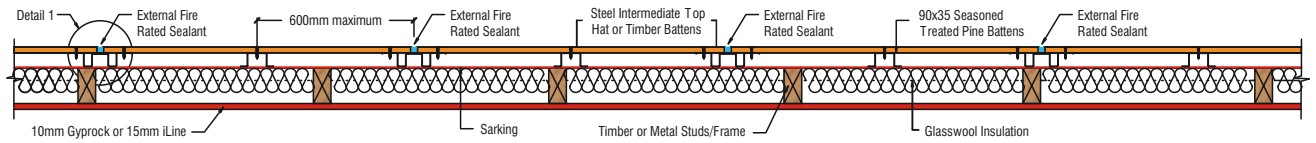
Position the top hats/battens according to predetermined and marked spacing's and ensure that they are vertical (check this with a spirit level in all planes).

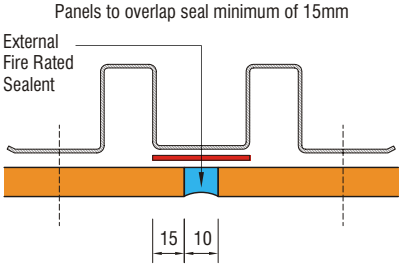


Fix the bottom row of expressed panels allowing a 15mm overlap of the Multiboard Clad Seal 50mm CS-3/25. Leave the top row of fasteners in the Multiboard panels loose to facilitate the insertion of the backing strip to the board.



Typical Vertical Sheet Joint and Frame Layout - Expressed Edge Joint

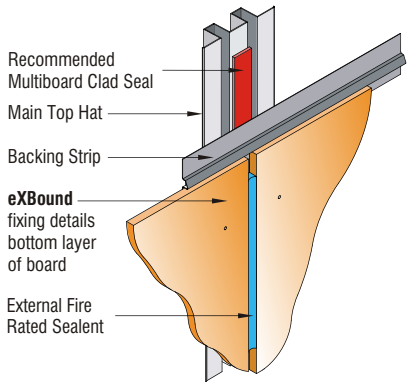




Prepare the backing strip for installation by applying recommended Multiboard Clad Seal to the bottom (9mm) edge of the backing strip or by applying the sealer to the top edge of the **eXBound** sheet.

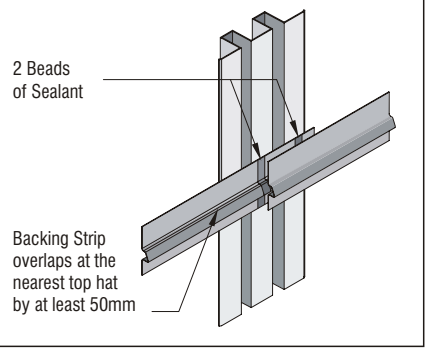
Ensure that a bead of at least 8mm in diameter is applied.

Insert the backing strip behind the top of the board. Fasteners are left loose to allow for the insertion of the backing strip.



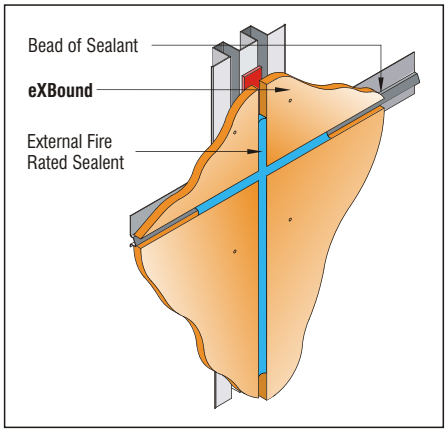
The backing strip joint has been designed to overlap whilst retaining a flush fit behind the board.

Backing strip joints must overlap the nearest top hat and be sealed with two beads of an appropriate sealant, to ensure a water tight joint.



After the backing strip is in position, the top row of fasteners need to be tightened to draw the **eXBound** and backing strip against the top hat, completing the seal.

When installing the next layer of **eXBound**, apply a bead of the appropriate sealant to the top of the backing strip and rest a **eXBound** on the purpose designed 3mm edge of the backing strip.



Position the **eXBound** sheet ensuring all joints are 10mm, then fasten the sheet to the top hats using the appropriate fasteners.

Continue with this installation process until all **eXBound** sheets are installed.

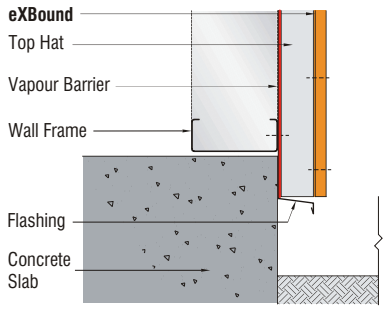
All counter-sunk fasteners, must be covered with a fine acrylic modified render (patch), such as MB T7 Patch Filler.

All expressed joints are to be filled and completely sealed with a flexible, fire-rated acrylic sealant. The sealant can be applied directly onto the expanded recommended Multiboard Clad Seal.

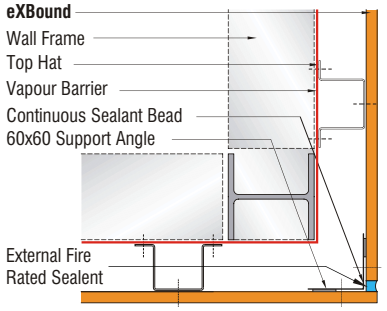
Use fire rated caulk sealant FFG-S to achieve required FRL.

CONSTRUCTION DETAILS

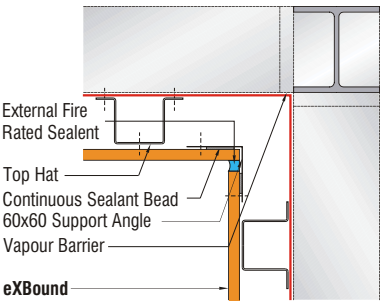
Edge Detail



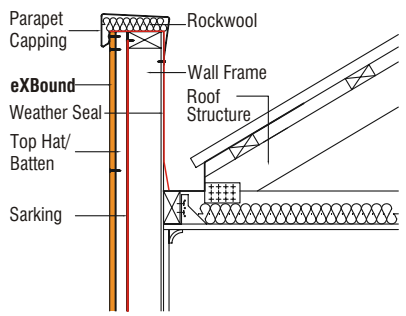
External Corner Detail



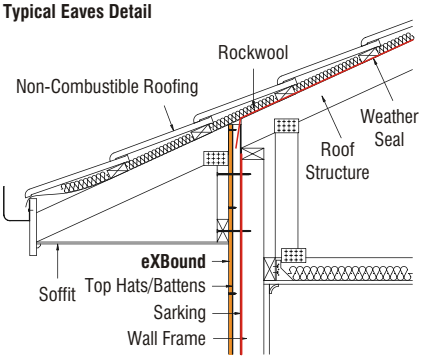
Internal Corner Detail



Typical eXBound Detail at Roof and Parapet



Typical Eaves Detail



Cold Climates

eXBound is not designed to be in contact with snow for long periods of time. **eXBound** is not recommended for conditions of freeze/thaw.

Multiboard has been tested for resistance to frost in accordance with AS/NZS 2908.2 Clause 8.2.3.

Termite Protection

eXBound is termite resistant and will not be affected by this pest. Consideration must be made for selection of sub-frame and the possibility of termite ingress through other areas of the building construction.

There are many ways for managing termite entry to buildings and selecting the appropriate method depends on various risk factors and the form of construction.

Further details can be obtained from the BCA, AS3660 or local building authorities.

Ground Clearance & Slab on Ground

When **eXBound** is installed as an external cladding on the ground floor, a 150mm minimum clearance must be provided between the earth on the exterior and **eXBound**.

Paved areas, such as driveways, paths steps etc., require a 50mm min clearance.

eXBound must overlap slab on ground and/or footings by a maximum overhang of 100mm.

JOINT & COATING SYSTEMS FOR RENDER APPLICATION

Propriety joint/coating systems applied to **eXBound** must be able to withstand the stresses across the joints. Therefore the most suitable coating systems for **eXBound** are 100% acrylic based or elastomeric high-build texture coatings.

A number of joint/coating systems have been developed by a number of painting and rendering manufacturers which would be suitable for **eXBound**. All application systems must be chosen from reputable system providers such as Euroset, Rockcoat, Dulux, Taubmans and Watyll.

The joint and coating system must be applied by experienced applicators, as suggested by the joint and coating manufacturer. Any sand based rendering systems must use ionised sand bases.

The selected joint and coating system must be applied to dry, clean sheets only. Application must be completed within 2 months of the sheets being fixed on site.

Multiboard strongly recommends dark colours be avoided, as they may cause high temperature variations within the substrate and lead to excessive thermal movement. It is recommended that colours with a Light Reflectance Value [LRV] over 25% should be used.

Heavier texture coatings are preferred over smoother finishes, as any minor surface imperfections are less likely to become apparent in critical lighting conditions.

It is the applicator's responsibility to use the appropriate compounds in the coating system sufficient to eliminate cracking of the joints under normal building settlement conditions.

The **eXBound** system requires as a minimum, that the following be met for the coating system:

- Fill joint with a polymer modified acrylic render (patch) Quikcote Flexipatch/ Quikcote Wet Patch or similar.
- Install a 100mm wide alkaline-resistant 5mm weave fibre-glass mesh (160g/m2).
- Apply a 2nd layer of polymer modified acrylic render (patch) in the joint whilst 1st layer of patch is still wet.
- Render entire board surface with polymer modified acrylic render (patch) Quikcote Flexipatch/Quikcote Wet Patch, or similar, at a minimum of 2mm thick. Ensure the entire surface is level (taking into account the joint). Make sure the joint is not proud of the remaining surface. Apply another layer of fibreglass mesh across the entire **eXBound** sheet. The mesh is to be trowelled into the surface of the wet render, positioned just below the surface. Under no circumstances should the mesh be fixed to the walls and render applied over it. Overlap all fiberglass mesh sheets a minimum of 50mm. Apply a second coat if the outline of the joint and fixings is not eliminated.
- Apply trowel-on texture/colour to entire surface.
- Apply one or two coats of an elastomeric membrane.

Please note: all coatings must be applied and maintained in accordance with the coating manufacturer's instructions.

HEALTH & SAFETY

eXBound is manufactured from woven glass fibre, recycled wood fibres, magnesium cement, and additives which catalyse the cementing action. As manufactured, the product will not release airborne dust, however during drilling and sanding, operations glass fibres and fine dust may be released.

When using power saws in a confined space, dust extraction equipment is recommended to control dust levels. If power tools are used externally, wear an approved P1 or P2 dust mask, respirator and safety glasses.

No special safety precautions are necessary when handling or working with **eXBound.**

For further information refer to the **eXBound** Materials Safety Data Sheet available from the website **www.multiboard.com.au**

WARRANTY

eXBound (Multiboard) warrants for a period of ten (10) years ("the warranty period") from the date of purchase that all **eXBound** products ("the product") will be free from defects due to faulty manufacture or materials, and will be resistant to cracking, rotting, fire and damage to the extent set out in Multiboard's published literature current at the time of installation, and strictly subject to the conditions set out below.

Nothing in this document shall exclude or modify any legal rights of any person under the Trade Practices Act or otherwise which cannot be excluded or modified at law.

Conditions of Warranty:

The Warranty is strictly subject to the following conditions:-

1. The product, and any other products including fasteners and jointing systems, applied to or used in conjunction with the product must be used and installed strictly in accordance with the recommended installation methods at the time of installation.

2. Under no circumstances will Multiboard be liable for defects arising from:-
   (a) A failure to use and/or install the product, or any products, strictly in accordance with the product manual.
   (b) Defective materials not supplied by Multiboard; or
   (c) Impact.

3. Multiboard will not be liable for breach of Warranty, and no breach of Warranty claim will be accepted, unless the Claimant makes a written claim and provides proof of purchase within 30 days of the alleged defect becoming apparent.

4. This Warranty is not transferable under any circumstances without the prior written consent of Multiboard.

5. A Claimant's sole remedy for breach of Warranty is (at Multiboard's option) that Multiboard will either replace or repair the defect, supply replacement product, or pay for the cost of replacement or rectification of the affected product.

6. Under no circumstances shall Multiboard be liable for any consequential loss, property damage or personal injury, economic loss or loss of profits, arising in Contract or negligence or howsoever arising. Without limiting the foregoing, Multiboard will not be liable for any claims, damages or defects arising from or in any way attributable to poor or defective workmanship, defective materials or poor design or detailing, settlement or structural movement and/or movement of materials to which the product is attached, incorrect design of the structure, in the event of but not limited to earthquakes, cyclones, floods or other severe weather conditions or unusual climatic conditions, normal wear and tear, or growth of any organism on any product surface.

7. The express warranties set out above are in lieu of all other representations, warranties or conditions, express or implied including but not limited to implied warranties or conditions of merchantable quality and fitness for a particular purpose, and those arising by statute or otherwise in law or from a course of dealing or use of trade and which are excluded to the fullest extent permitted by law.

MULTIBOARD
www.multiboard.com.au

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