



MDF V-Groove PanelLine Brace Design and Installation Guide



AUGUST 2021

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NZBN 9429000097253

IBS PanelLine V-Groove MDF Product Details			
L x W x Thickness (mm)	Weight (kg)	IBS Product Code	GTIN
2400 x 1200 x 9	19.1	PAN092412V	09421028764728
2745 x 1200 x 9	21.5	PAN092712V	09421028764742
3660 x 1200 x 9	28.7	PAN093612V	09421028768504

Contact us for more information or to talk to our team.

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1. Introduction

This document is intended for designers and installers to ensure that IBS MDF V-Groove PanelLine Brace is specified and installed correctly.

1.1 What is MDF V-Groove PanelLine Brace?

IBS MDF V-Groove PanelLine Brace is a medium density fibreboard (MDF) manufactured by Nelson Pine Industries Limited from Pinus Radiata, in accordance with AS/NZS 1859.2.

IBS supplies MDF V-Groove PanelLine Brace to be used as an internal lining with bracing capacity. Uses for IBS PanelLine Brace include:

- An internal wall bracing system
- A full or partial internal wall lining
- A ceiling lining

The panels are available with a V groove profile running the length of the panel for easy horizontal or vertical fixing. The ends have a tongue and groove

for seamless width joints.

Available Sheet Sizes

- Length (mm): 2440, 2745, 3660
- Width (mm): 1200
- Thickness (mm): 9.0

1.2 MDF V-Groove PanelLine Brace Intended Use

Scope

Building

- In new buildings with framing that complies with the NZ Building Code (NZBC).
- In existing buildings where the designer or installer have assured themselves that the existing building is suitable for the intended building work.
- As a wall bracing element on timber framed buildings, in conjunction with GIB HandiBrac® or 400mm x 25mm flat strap with a M12 bottom plate connection.

Limitations

Building

- IBS PanelLine Brace should not be installed if the moisture content of the supporting timber framing exceeds 18%.
- IBS PanelLine Brace is not recommended for use in areas subject to high moisture content or water splashes such as kitchens, bathrooms, toilets or laundries.
- The minimum framing dimensions must be 90 x 45 mm for external walls and 75 x 45 mm for non-structural internal walls.
- Do not expose the sheets to temperatures of 50°C or greater for prolonged periods.

1.3 Supporting Information

This document must be read in conjunction with:

- IBS PanelLine Brace pass™ (Product Assurance Supplier Statement)
- IBS PanelLine Brace Care & Maintenance
- IBS PanelLine Brace Warranty

2. Best Practice

2.1 Health and Safety

When installing the panels take all necessary steps to ensure your safety and the safety of others:

- When you are cutting or drilling ensure there is adequate ventilation or mechanical dust extraction.
- Ensure each panel is well supported when you are cutting and fixing.
- Use a dust mask, safety glasses, ear protection, and wear appropriate clothing and footwear.
- Any offcuts or shavings should be removed without generating dust.
- Use all tools in accordance with the relevant instruction manuals.
- Select and use the right equipment for working at height.
- Plan and monitor a safe approach for working at height.
- Use ladders and stepladders to ensure safe working.
- Clear the work area of any obstructions before you start.

For further Health & Safety information refer to:

- The Absolutely Essential Health and Safety Toolkit
- Worksafe New Zealand Quick Guide

2.2 Handling and Storage

Panels should be fully protected from the weather when they are transported. The storage area should be well ventilated and dry.

To ensure the compatibility of IBS PanelLine Brace with other construction materials, you will also need to store them at the installation site for at least 48 hours before you start work.

Store the panels horizontally and lift them clear of the floor using dry bearers as supports.

The individual bearers should be of equal thickness, vertically aligned if they are supporting several layers and placed at not more than 800mm centres.

Stack the panels flush to minimise damage to protruding edges or overhanging corners.

2.3 Certifications

Certifications held by Nelson Pine:

- ISO 9001: 2008 Quality System (Ref-AR0430-IQNet Certification)
- ISO 14001: 2004 Environmental System (Ref-ER0642-IQNet Certification)
- FSC Mixed Sources Certification (FSC C019095)

2.4 Useful Links

For information on the design and specification of IBS PanelLine Brace refer to:

- AS/NZS 1859.2: 2004, Reconstituted wood-based panels
- IBS PanelLine Brace pass™ (Product Assurance Supplier Statements)

2.5 Finishing

Once installed, IBS PanelLine Brace should not be left in its raw state. To achieve a uniformly smooth surface, first use 120 grit sandpaper then 240 or 320 grit paper.

Fill all visible screw, nail or staple holes with a flexible interior grade wood filler. Talk to your preferred manufacturer for recommendations on the best product and matching colours. Once any holes have been filled, lightly sand with 320 grit paper.

Then finish the panels with polyurethane or paint. We recommend using three coats: a primer and two top coats. We also recommend sanding the surface after each coat with 280-320 grit sandpaper.

3. Information for Designers

3.1 Skills Required

The designer will need to have knowledge of the product and access to all the IBS technical information on www.ibs.co.nz.

3.2 Considerations When Designing

When specifying IBS PanelLine Brace the designer must ensure that the project falls within the specified scope.

The designer must also consider the following indicative list:

Location:

- Wind zone
- Corrosion zone
- Earthquake zone

The building work:

Compliance of the building with all relevant provisions of the NZBC, including but not limited to:

- Suitability of the existing building.
- Structural framing requirements – (short and long term).
- Other materials likely to affect the product's performance.

If IBS PanelLine Brace is specified as an internal bracing element, use the bracing ratings set out in the table below. The bracing values are based on timber framed walls being lined with IBS PanelLine Brace on one face only.

3.3 Building Consent Documents

When applying for a building consent, include the following documents:

- IBS PanelLine Brace pass™ (Product Assurance Supplier Statements)
- IBS PanelLine Brace Design & Installation Guide
- IBS PanelLine Brace Care & Maintenance
- IBS PanelLine Brace Warranty

4. Information for Installers

4.1 Skills Required

IBS PanelLine Brace can be installed by a person with the appropriate skills and equipment, who has knowledge of the product and access to the relevant IBS technical information (see www.ibs.co.nz for details).

Where restricted building work (RBW) applies the installer must ensure that they are able to meet their obligations.

4.2 General Installation

Tools you will need

General carpentry and woodworking tools are all that you will need to install the panels. They can be cut with either a fine-tooth hand or power saw (we recommend using tungsten carbide blades) and cleaned up using a plane or sandpaper.

The panel edges can be easily hand-sanded with a flat block and 120-150-grit paper.

- Before you start make sure that the building is closed in and fully weathertight.
- Any fixings must be no closer than 10mm from the edge of each panel and no closer than 18mm from the end of each panel.
- Always leave to acclimatise in the room for 48 hours to achieve equilibrium moisture content.
- If you are installing in a high humidity area then increase the expansion gaps to allow for movement of the sheets.

Fittings you will need

When you are using 9mm IBS PanelLine Brace as a wall bracing element use the following fixings:

Bottom Plate Fixing: M12 bolt (anchor or screw) and 50 x 50 x 3mm washers, galvanised or stainless steel 25 x 0.9 strap or Gib HandiBrac.

Sheet Fixing

- 40 x 2.8mm hot-dipped galvanised flat-head clouts.
- 6g x 32mm, gold passivated countersunk, coarse-thread woodscrews.

When you are installing the 9mm IBS PanelLine Brace

as a non-structural finished wall lining use the following:

- 40 x 2.0mm jolt-head nails with panel adhesive
- Mechanical gun-driven pins with panel adhesive (recommended)
- 6g x 32mm, gold passivated countersunk, coarse-thread woodscrews

Pre-drilling pilot holes

If you are fixing the panels with screws, we recommend drilling 2.4mm pilot holes to prevent the prevent splitting the wood. Drill the holes approximately 2-3mm deeper than the screw depth. Do not overtighten screws as it will reduce their holding strength.

4.3 Installing as a bracing element

- IBS PanelLine Brace must be fixed vertically.
- Follow the hold-down systems as per figures 1-6.
- Nails or screws at 150mm centres around the perimeter of each sheet and 300mm centres on the middle studs. No need for nails or screws on the nogs or dwangs.
- Ensure the nails or screws are fixed on the centre point of the studs.

4.4 Installing as a wall or ceiling lining

- IBS PanelLine Brace may be fixed vertically or horizontally.
- Leave a 5mm gap at the end of each 'run' or wall
- If the wall length is more than 5 panels wide or 6m then leave an expansion joint of at least 3mm for each 6m length. This gap should be filled with a flexible sealant.
- You may nail or screw these sheets but for the best results we recommend panel adhesive and mechanical gun-driven pin method. This will mean that there is a little filling to be done prior to painting.

4.5 Lining timber framed walls

The panels must be supported by the timber framing. Use the table below for the required spacings:

Framework Support Centres		
Wall Lining		
Panel thickness (mm)	Stud centres (mm)	Nogging or dwang centres (mm)
9	400	1200
	450	1200
	600	800
Timber Joists		
Ceiling Lining		
Joint/truss centres (mm)		Nogging or dwang centres (mm)
450		800
600		600
900		480
1200		480

4.6 Lining masonry walls

Masonry walls must be sealed from external moisture.

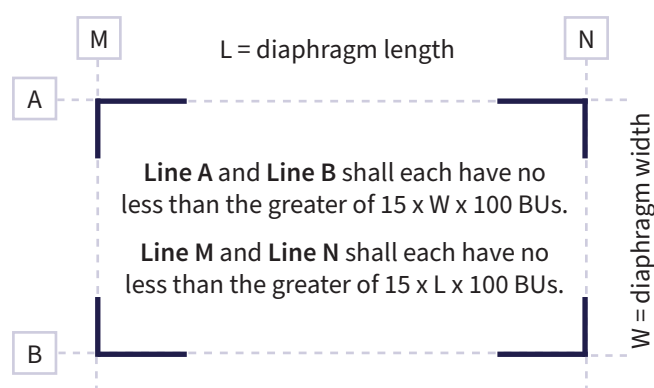
If you are installing the panels on masonry walls below ground, long term dampness may occur from construction moisture and hydrostatic pressure. As a result, we recommend you complete the following additional work:

- Install an effective damp proof course to the exterior of backfilled basement walls.
- Install a moisture barrier (ie. paint film) to the interior of basement walls. Overlay this with 40x25mm furring strips (battens). See the Framing Support table for spacing details. Leave 25mm end gaps around the furring strips to encourage air movement.
- Finally, fix a reflective insulation foil before you install the panels. We also recommend inserting small ventilation holes at the bottom of each panel, finished with facing plates.

4.7 Lining ceilings

Where large rooms have breaking lines that exceed 5.0m a ceiling diaphragm can be installed, provided no less than 100BU's exist in each wall.

If you are using the panels to install a ceiling diaphragm, it must be in accordance with NZS 3604, sec 5.6. Use the following panel spacings:



4.8 Installing a wall bracing system

Refer to your plans and specifications for the bracing element location and installation requirements.

The top plates of all bracing panels must be tied together at the joints with 3 kN and 6 kN top plate connectors using 25 x 0.9 mm galvanised mild steel strap, 3 nails each side of joint for 3kN and 6 nails each side of joint for 6kN.

Use the drawings on page 5 & 6 to select the required panel hold down installation method.

4.9 Panel Hold-Downs

The bottom plate in bracing system Type NP1 is fixed to the floor framing in accordance with NZS 3604: 2011 Table 8.19, which is either 2/100x3.75mm hand-driven nails or 3/90 x 3.15 mm power-driven nails, at maximum 600mm centres.

Type NP2 requires the use of end straps and a suitable hold-down anchor (see Figure 2) at each end of the bracing element. Alternatively, the GIB HandiBrac® may be used instead of straps, but a suitable hold-down anchor with a characteristic or design strength of 12kN (for timber floors) and 15kN (for concrete floors) is required. Within the length of the bracing element, intermediate fixings to the bottom plate are to be in accordance with NZS 3604.

4.10 IBS PanelLine V-Groove MDF Rating Table

Type	Minimum Length (mm)	Lining	Other Requirements	BU/m	
				W	EQ
NP1	600	9mm IBS PanelLine Bracing regular MDF one side	n/a	80	75
NP2	1200	9mm IBS PanelLine Bracing regular MDF one side	Panel hold-downs	150*	140*

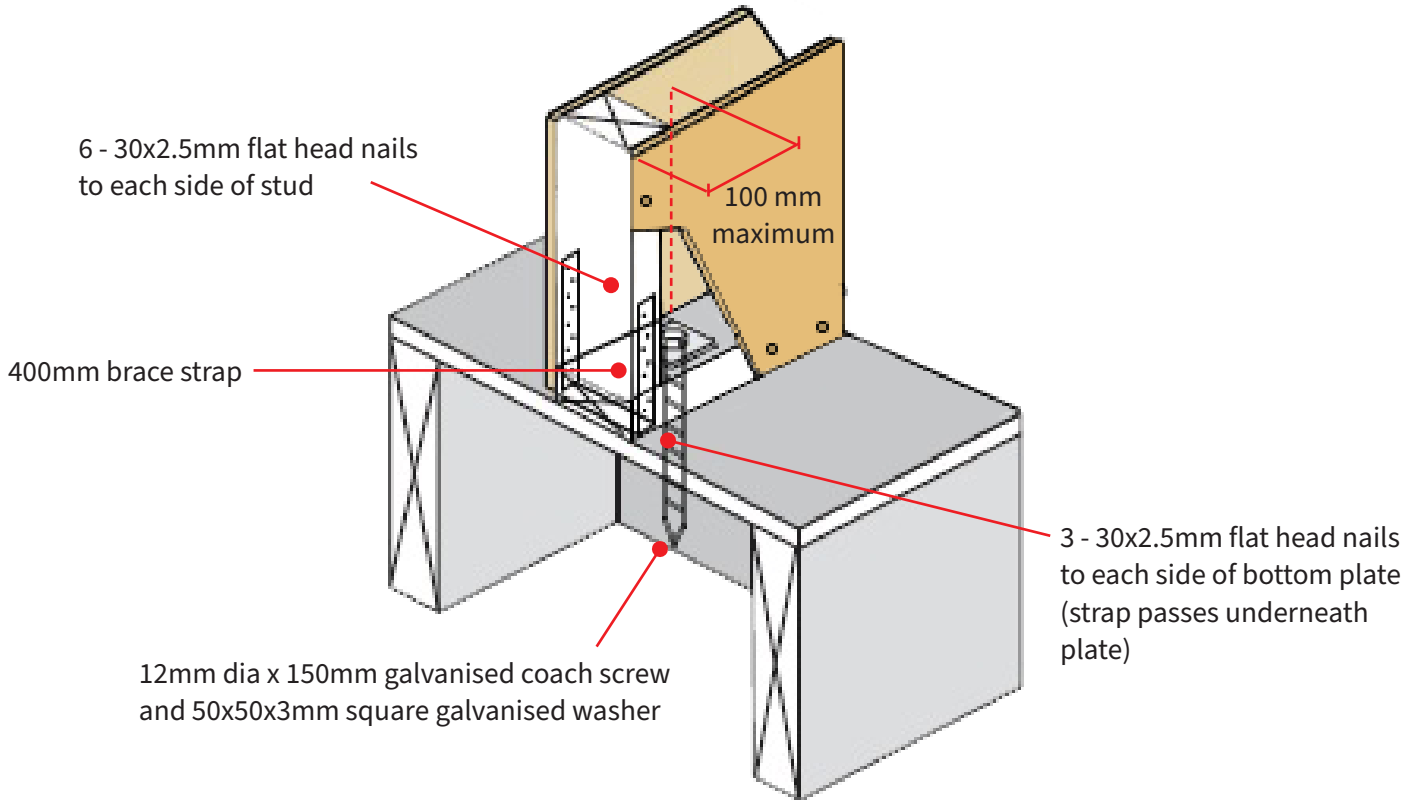
NOTES: * Timber floors - A limit of 120BU/m applies to NZS 3604:2011 timber floors.

For wall heights greater than 2.4m, the bracing rating is calculated by multiplying the appropriate values shown in the above table by a factor $f=2.4/H$ where H is the wall height in metres. Walls lower than 2.4m shall be rated as if they were 2.4m.

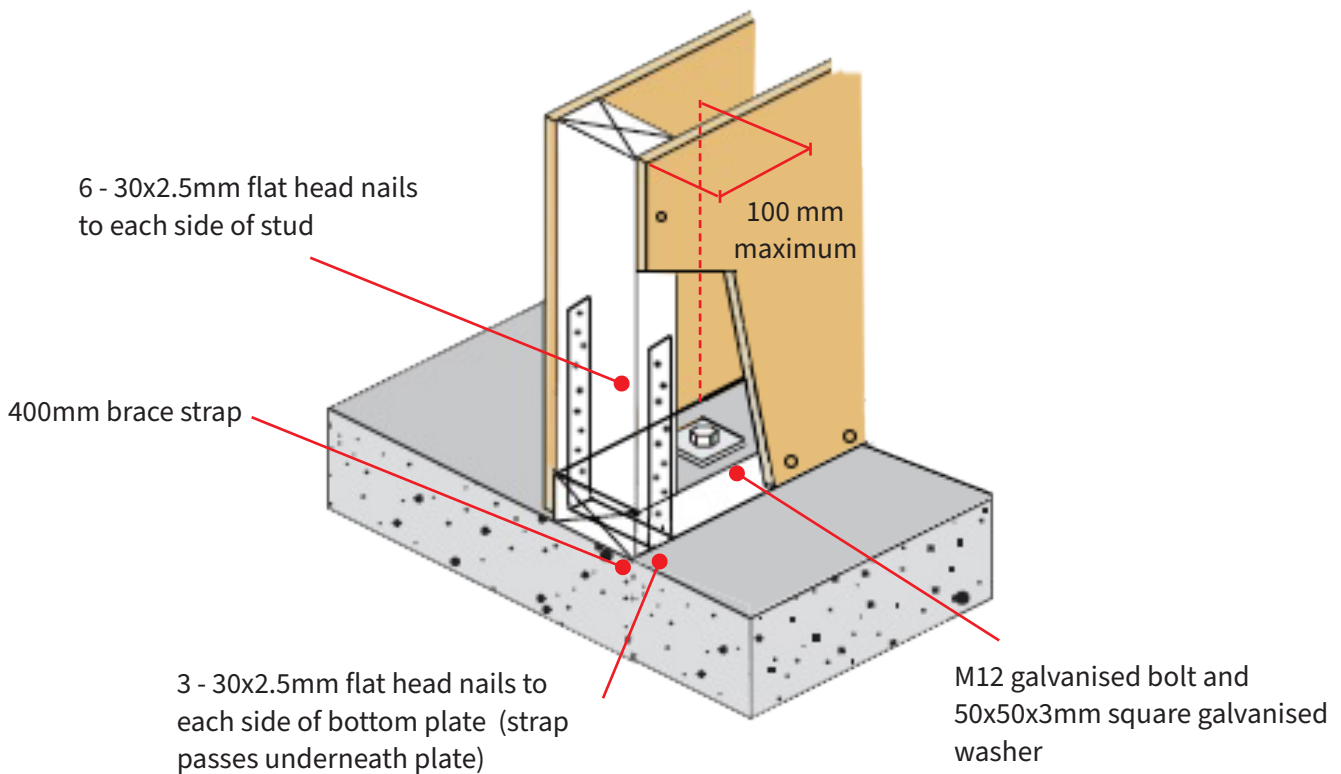
Braced wall elements longer than those given in the above table, shall have their bracing capacity determined by multiplying the bracing rating given in the above table by the length of the wall. The end studs of the bracing element must be provided with hold-down details as required in the above table.

5. System Figures

Timber Floors - Internal Walls - GIB HandiBrac® - End Straps



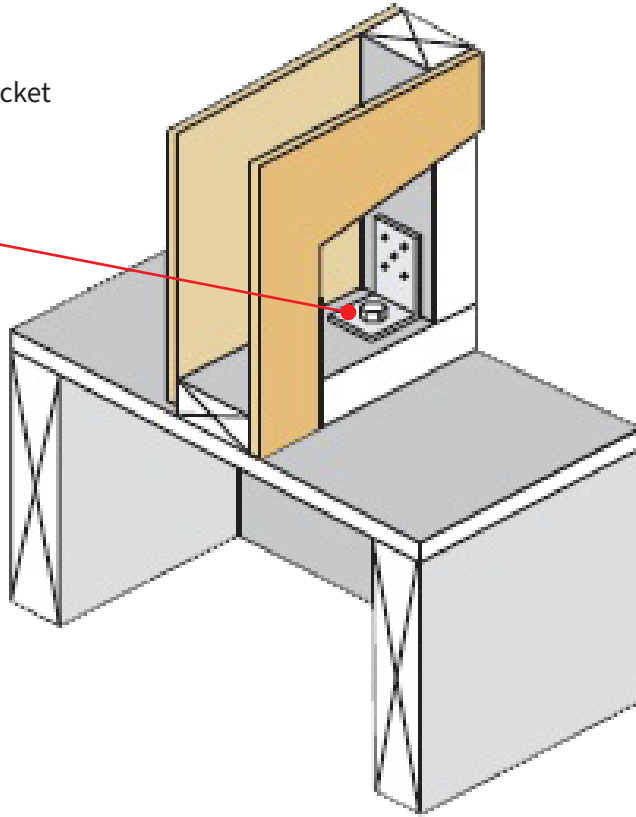
Concrete Floors - Internal Walls - GIB HandiBrac® - End Straps



Timber Floors - Internal Walls - GIB HandiBrac®

Locate the GIB HandiBrac® bracket centrally on the stud

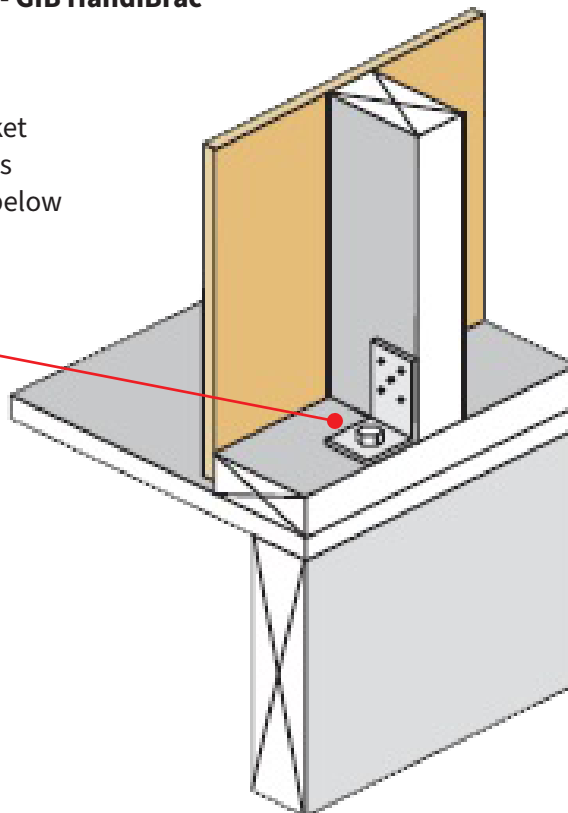
GIB HandiBrac® bracket



Timber Floors - External Walls - GIB HandiBrac®

Locate the GIB HandiBrac® bracket flush such that the coach screw is centred over the joist or bearer below

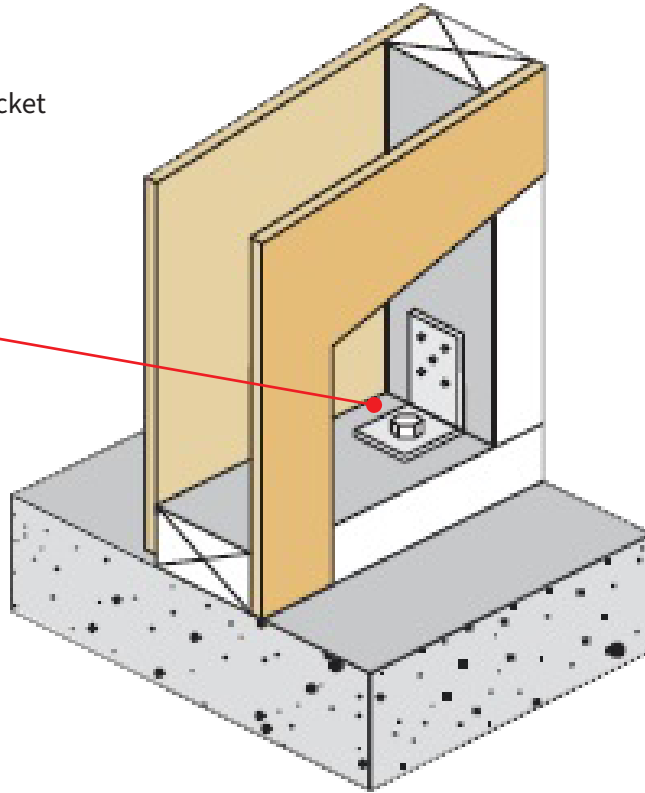
GIB HandiBrac® bracket



Concrete Floors - Internal Walls - GIB HandiBrac®

Locate the GIB HandiBrac® bracket centrally on the stud

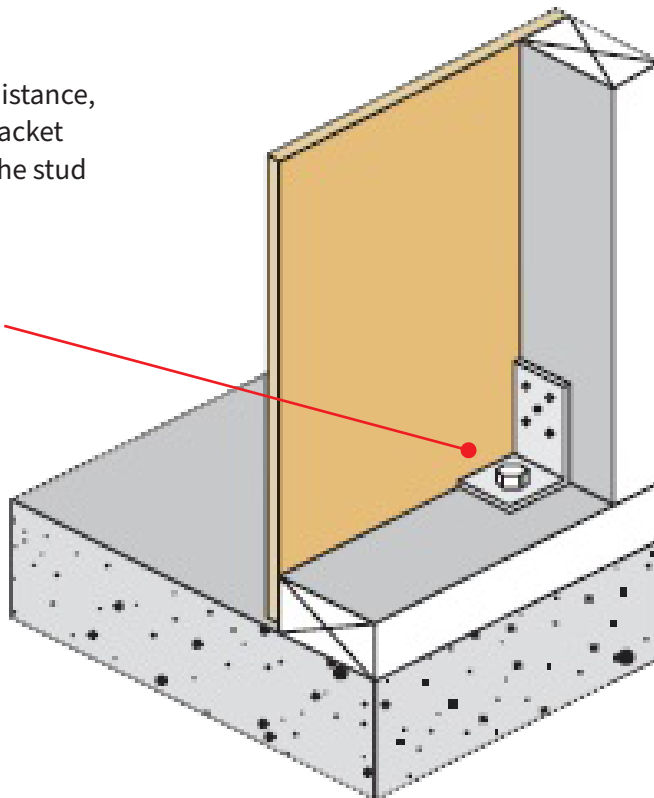
GIB HandiBrac® bracket



Concrete Floors - External Walls - GIB HandiBrac®

To maximise concrete edge distance, locate the GIB HandiBrac® bracket flush with the inside face of the stud

GIB HandiBrac® bracket



Notes:



Scan the QR code to view
all MDF V-Groove PanelLine
Brace documents.



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