



SwitchBrace THE FREEDOM TO CHOOSE

The SwitchBrace™ Dual Plasterboard Bracing System

Provides New Zealanders with the freedom to choose either GIB® Plasterboard or Elephant Plasterboard® at the internal lining stage, without incurring any extra compliance costs.

Specifying SwitchBrace™ Systems at Bracing Design Stage

This will give your client the freedom to choose. Allowing them to consider more important and valued advantages such as quality, price or innovation. Without incurring extra design or engineering costs, amendment fees or time consuming paper work.

Combined Conservative System Performances

SwitchBrace™ identified and combined the most conservative bracing performance of each bracing system within the two plasterboard brands.

Building Officials will accept either brand at post-line stage because the most conservative performances were used in the bracing design.

SwitchBrace™ Numbering System

The SwitchBrace™ Dual Plasterboard Numbering System allows easy identification for designers, engineers, builders and building officials of which type of plasterboard is to be used within the two plasterboard brands.

Independently Appraised

The published bracing ratings have been obtained by identifying the most conservative performance values of either the Elephant QuickBrace® Systems or the GIB EzyBrace® Systems.

Both systems are independently Appraised and the SwitchBrace™ table of results show the most conservative performances of the two bracing systems.

SwitchBrace™ Software

The SwitchBrace software is a powerful tool that allows designers and engineers to calculate the demands and complete the bracing design in either kiloNewtons (kN) or Bracing units (Bu). A number of other enhanced features will further assist designers and engineers, to not only comply to the rules of NZS 3604:2011 but also assist in good design and construction.

For the SwitchBrace™ software visit www.switchbrace.co.nz or email info@switchbrace.co.nz to request a copy.

Compliance to NZS 3604:2011

SwitchBrace™ Bracing Systems and the SwitchBrace™ software are fully compliant with NZS 3604:2011.

Key Benefits

- Quality, Price and Innovation can be freely considered
- No Compliance issues
- Increased Competition
- Keeping down the cost to build a home
- Providing New Zealanders The Freedom to Choose

BRACING DESIGN & CALCULATING BRACING DEMAND

To calculate the Bracing Demand and assist in Bracing Design for a project consult any of the following publications;

- NZS3604:2011 Section 5
- Elephant QuickBrace® Systems Manual October 2012 Pages 3 to 9
- GIB EzyBrace® Systems Manual June 2011 Pages 4 to 11

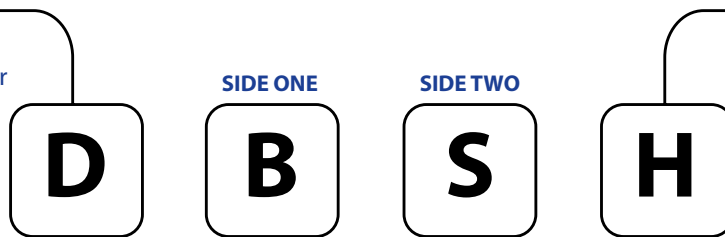
Note: Each publication describes the guidelines slightly differently, however they all will comply with the requirements of NZS3604:2011.

SwitchBrace™ Numbering System

D = Dual Plasterboard (GIB® or Elephant)

H = Panel Hold Downs Required
(example shown)

N = No Hold Downs

System Number
Example only

SIDE ONE

S = Elephant Standard-Plus or GIB® Standard

Z = Elephant Standard-Plus or GIB® Braceline®

B = Elephant Multiboard or GIB® Braceline®
(example shown)

SIDE TWO (Notation used for two sided systems only)

S = Elephant Standard-Plus or GIB® Standard
(example shown)

P = Plywood

SwitchBrace™ Systems Table

SwitchBrace™ Dual Plasterboard Systems						SWITCHABLE LINING REQUIREMENTS					
Wall Type	System Number	Min Length	BU'S/m Wind	BU'S/m EQ	Panel Hold Downs	Elephant Plasterboard® Linings	Corner Pattern	GIB® Plasterboard Linings	Corner Pattern		
Internal or External	Plasterboard on One Side					No			OR		
	DSN	0.40	50	55	Elephant Standard-Plus one side		Normal	GIB® Standard Plasterboard one side			
		0.80	60	60							
		1.20	70	60							
	DZH	0.40	85	80	Elephant Standard-Plus one side		Condensed	GIB Braceline® one side			
		1.20	110	90							
		1.80	120	90							
	DBH	0.40	90	100	Elephant Multiboard one side	GIB Braceline® one side					
		0.80	105	100							
		1.20	125	105							
Internal	Plasterboard on Both Sides					No			OR		
	DSSN	0.40	75	65	Elephant Standard-Plus both sides		Normal	GIB® Standard Plasterboard both sides			
		0.80	85	75							
		1.20	95	85							
	DZSH	0.40	100	115	Elephant Standard-Plus both sides			GIB Braceline® one side, GIB® Standard Plasterboard the other			
		0.80	130	130							
		1.20	150	145							
	DBSH	0.40	110	115	Elephant Multiboard one side, Elephant Standard-Plus the other	GIB Braceline® one side, GIB® Standard Plasterboard the other					
		0.80	130	130							
		1.20	150	145							
External	Plasterboard One Side, Plywood the Other					Yes			OR		
	DSPH	0.40	100	115	Elephant Standard-Plus one side, Plywood the other		Normal	GIB® Standard Plasterboard one side, Ecoply® Plywood the other			
		0.80	125	130							
		1.20	150	150							
	DZPH	0.40	105	120	Elephant Standard-Plus one side, Plywood the other			GIB Braceline® one side, Ecoply® Plywood the other			
		0.80	140	140							
		1.20	150	150							
	DBPH	0.40	115	125	Elephant Multiboard one side, Plywood the other	GIB Braceline® one side, Ecoply® Plywood the other					
		0.80	140	140							
		1.20	150	150							

Wall & Ceiling Construction Details

Framing

Framing is to comply to NZS 3604:2011 and must be a minimum of 70 x 45mm for internal walls and 90 x 35mm for external walls. Nogs or dwangs are not a requirement in order to achieve the bracing ratings published in this document.

Fastening Bracing Elements to Floors

Switch-Brace™ System Number	Bottom Plate Fixing Requirements			Additional Requirements
	Concrete Floors		Timber Floors	Concrete or Timber
	External Walls	Internal Walls	External or Internal Walls	External or Internal
DSN	Fix as per NZS 3604:2011	Fix as per NZS 3604:2011. Alternatively see Note 1 below	Pairs of 100 x 3.75mm hand driven flat head nails or three 90 x 3.15mm power driven nails at 600mm centres all in accordance to NZS 3604:2011	None
DSSN	Not applicable			
DZSH	Not applicable	Fix as per NZS 3604:2011		Panel End Hold downs at each end of the bracing element.
DBSH				
DZH				
DBH				
DSPH	Fix as per NZS 3604:2011			
DZPH				
DBPH				

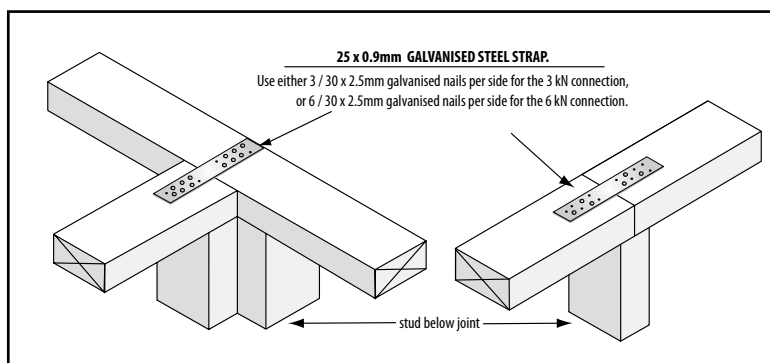
Note 1:

Min 75 x 3.8mm shot-fired fasteners with 16mm discs at 150mm & 300mm from end studs and thereafter at 600mm centres. Ensure a minimum penetration of 30mm into the concrete foundation.

Top Plate Connections

Top plate connections detailed on the right meet the requirements of NZS 3604:2011 clause 8.7.3 Joints in Plates. The joints must be over a stud or solid blocking.

A 6kN connection is required if any bracing element in the wall exceeds 100 bracing units. Otherwise a 3kN connection is adequate.



Panel End Hold down Details - Bracing Anchor Brackets

Either Pryda® Bracing Anchor or GIB HandiBrac® or any other proprietary panel end hold down bracket with a minimum performance of 15kN

Concrete Floors		Timber Floors	
M12 galvanised anchor bolt or proprietary equivalent with minimum characteristic strength of 15kN . Set no less than 75mm into the concrete		M12 x 150mm galvanised coach screw or proprietary equivalent with minimum characteristic strength of 15kN.	
External	Internal	External	Internal
Locate the bracket flush with the inside face of the framing in order to maximise concrete edge distance	Locate the bracket centrally on the bottom plate	Locate the bracing anchor bracket so that the coach screw is centred over the timber below.	Full depth solid blocking centrally positioned beneath the coach screw

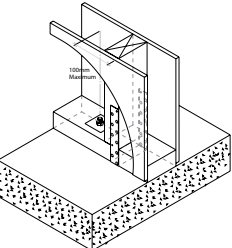
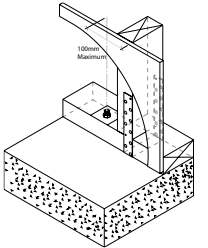
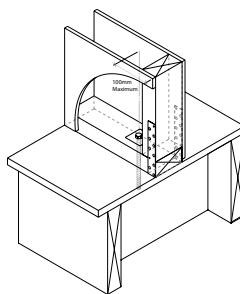
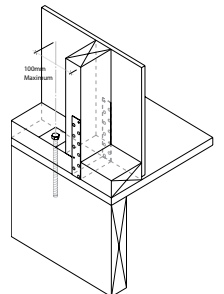
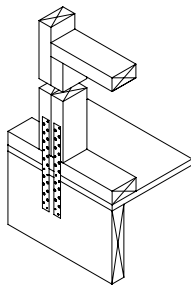
Panel End Hold down Details - Bracing Strap & Bolt Detail

Bracing Strap:

400 x 25 x 0.9mm galvanised strap passing under the bottom plate. Six 30 x 2.5mm galvanised flat head nails to each side of the stud and three 30 x 2.5mm galvanised flat head nails to each side of the bottom plate.

The bracing strap should be checked into the framing in order to make the substrate flush when receiving the plasterboard lining. Position it in such a way that the important corner fastenings of the bracing element are not affected by it. Keeping the strap to the edge of the end stud as shown below will ensure the important corner fastenings won't penetrate the bracing strap.

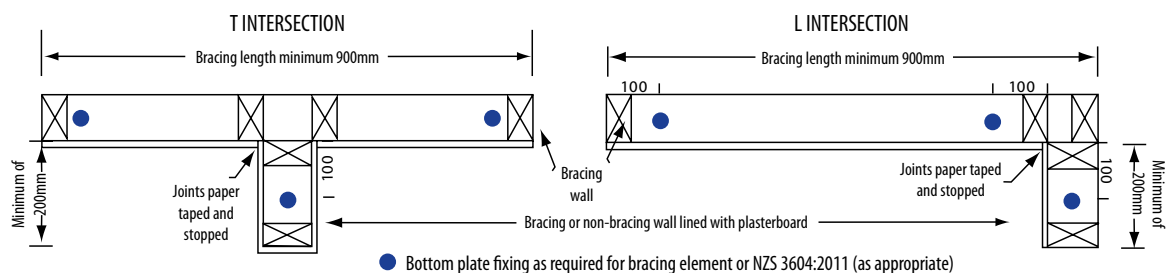
Extra thickness and/or corrosion protection may be required on exposed and unexposed sites as per requirements of NZS 3604:2011

<p>Concrete Floors</p> <p>M12 x 150mm galvanised bolt or proprietary equivalent with minimum characteristic strength of 15kN.</p> <p>Set no less than 75mm into the concrete</p> <p>Allow for a 3 x 50 x 50mm galvanised washer.</p>	<p>Internal</p>  <p>External</p> 	<p>Timber Floor: External - Option B</p> <p>Block up to the first nog to allow for double strapping using three 100 x 3.75mm nails. Two 300 x 25 x 0.9mm galvanised straps pass down onto the floor joist. Six 30 x 2.5mm galvanised flat head nails to each stud and the floor joist and three to the bottom plate</p>
<p>Timber Floors</p> <p>M12 x 150mm galvanised coach screw or proprietary equivalent with minimum characteristic strength of 15kN.</p> <p>Allow for a 3 x 50 x 50mm galvanised washer.</p>	<p>Internal</p>  <p>External (Option A)</p> 	<p>External (Option B)</p> 

Intersecting Walls

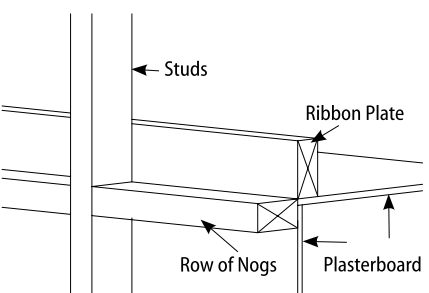
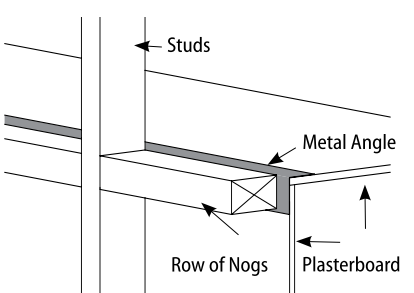
Provided the minimum wall lengths are complied with and walls are constructed as described in this manual, bracing elements may be interrupted by intersecting walls as detailed below. Fasteners layout at the corners and around the perimeter of the bracing elements are as per The Fastener Layout figures on page 8. Joints between sheets shall be paper taped and stopped in accordance with the relevant Plasterboard manufacturers installation manual or site guide. Panel end hold-downs must also comply except that the location of bottom plate anchors is modified for L and T intersections as defined below.

The minimum bracing element length is 900mm for both single and double sided systems.



Parapets, Gable End Walls or Dropped or Suspended Ceilings

Sheeting material used in bracing elements must connect to both the top and bottom plates. Where the top plate is not accessible, fixing to a row of nogs is not an acceptable solution. Detail below are two possible solutions.

<p>A continuous length of timber or ribbon plate, with the same minimum size as the bottom plate, fixed across the face of the studs just above the row of nogs and at the ceiling line.</p>  <p>Studs</p> <p>Ribbon Plate</p> <p>Row of Nogs</p> <p>Plasterboard</p>	<p>A metal angle of minimum of 50 x 50 x 0.55mm fixed to the row of nogs at the ceiling line. Use minimum 30 x 2.5mm FH galv nails at 300mm centres.</p>  <p>Studs</p> <p>Metal Angle</p> <p>Row of Nogs</p> <p>Plasterboard</p>
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Ceiling Diaphragms

Ceiling diaphragms are required to comply with Section 5.6 and 13.5 of NZS 3604:2011. Ceiling diaphragms are required when distances between bracing lines exceed 6m (when Dragon ties not used) or 7.5m if Dragon ties are used as per figure 8.1 in NZS 3604:2011.

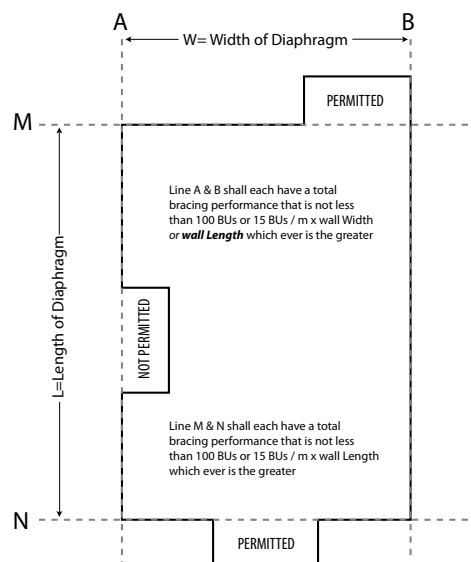
Ceiling diaphragms shall not exceed 12m in length and the length shall not exceed twice the width (both length and width being measured between supporting walls). The ceiling lining shall cover the entire area of the ceiling diaphragm.

Ceiling Diaphragm Systems

- C1:** Not steeper than 15 degrees and not longer than 7.5m
C2: Not steeper than 25 degrees and not longer than 12m
 or Not steeper than 45 degrees and not longer than 7.5m

Dual Plasterboard Lining Requirement:

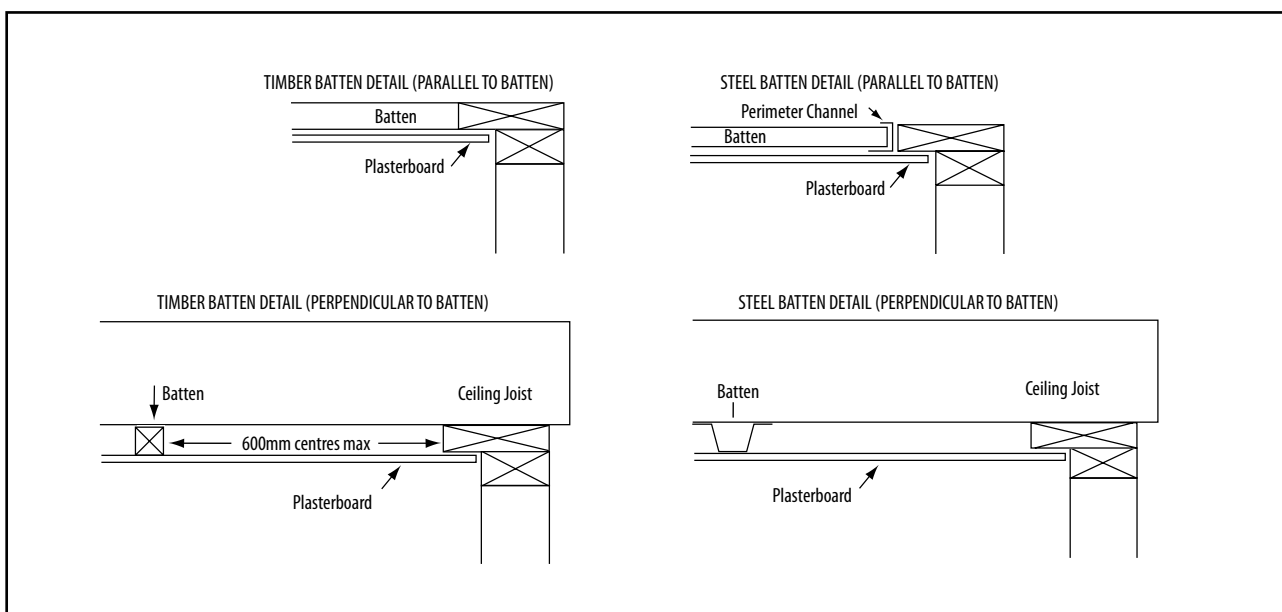
Either minimum 10mm Elephant Standard-Plus Plasterboard
 or minimum 10mm GIB® Standard Plasterboard.



Framing members:

Ceiling battens shall be spaced at maximum;

- 500mm centres for 10mm GIB® Plasterboard.
- 600mm centres for 10mm Elephant Plasterboard or 13mm GIB® or Elephant Plasterboard.



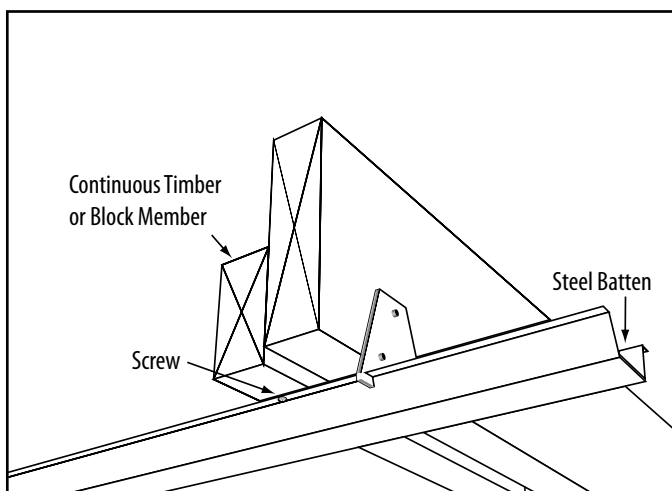
Timber or Steel Battens

Timber battens: Must be fixed according to NZS 3604:2011.

Steel battens: Minimum 0.55 BMT thickness with flanges not less than 8mm in order to allow the direct screwing using 2/32mm x 8g wafer head self tapping screws to the ceiling framing members. If a clip system is used then a solid timber block or continuous timber member must be fixed to the framing member.

A steel perimeter channel or metal angle is required to receive the ends of the steel battens.

The linings must be fastened to solid continuous timber member at the perimeter of the ceiling diaphragms. This is achieved with either at 140mm double top plate or by fixing continuous timber member to the original top plate using fixing requirements for built up members and nailed together according to NZS 3604:2011 clause 2.4.4.7



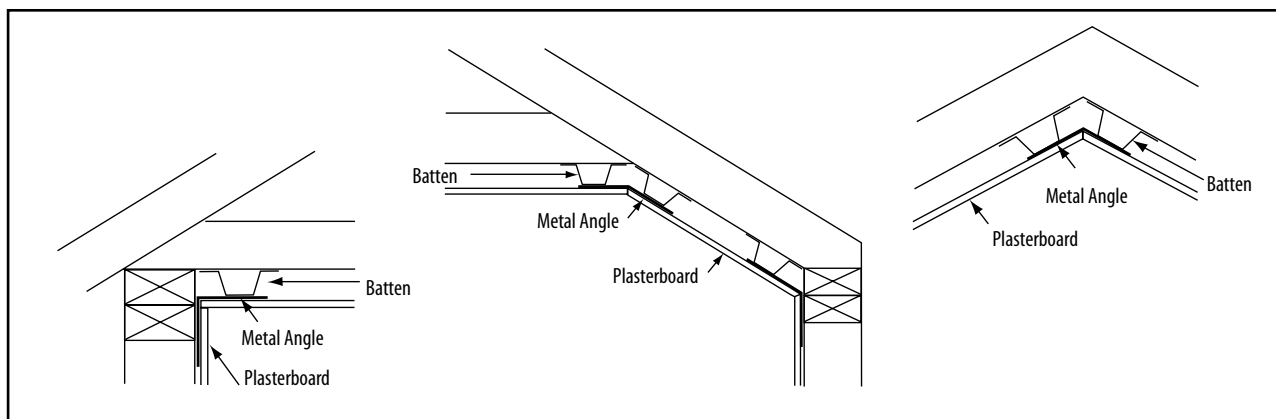
Ceiling Diaphragms continued

Coved Ceilings

Ceilings diaphragms with more than one gradient are allowable, by using metal folded angles with a minimum gauge of 0.55 BMT at the junctions.

Use 32mm x 6g course thread drywall screws when fixing to timber battens and use 32mm x 8g drywall self tapping screws or similar when fixing to metal battens.

The plasterboard is fixed to these folded metal angles at 75mm or 100mm or 150mm centres depending on conditions detailed below. Use 25mm x 6g drywall self tapping screws.



Minimum sheet size requirements:

Minimum sheet size shall be 900mm wide by 1800mm long. Sheets between 600mm wide and 900mm wide can be used provided they are back blocked with adjacent sheets.

Openings in Ceiling Diaphragms:

Openings are allowable and must be within the middle third of the diaphragms length and width and no opening dimension shall be greater than the ceiling diaphragm width. Fix sheets at 150mm centres minimum to opening trimmers. Refer to Openings in Bracing Elements on page 8.

Fasteners:

Timber battens & Timber perimeters:

32mm x 6g High thread Drywall screws (Fortress® or GIB®Grabber®)

Steel battens and Steel perimeter:

25mm x 6g self tapping screws.

Fastening Centres:

The corner pattern fastening centres are as follows;

Place fasteners 50mm, 50mm, 50mm, 75mm, 75mm from all corners of the diaphragm.

For ceiling diaphragms not steeper than 15 degrees and not longer than 7.5m

Place fasteners at maximum 150mm centres to the boundary members and around the perimeter of the diaphragm as per ceiling diaphragm pattern **C1** on the right.

For ceiling diaphragms that are:

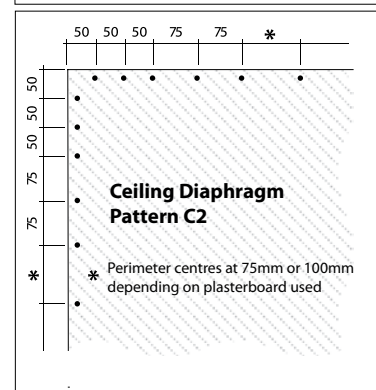
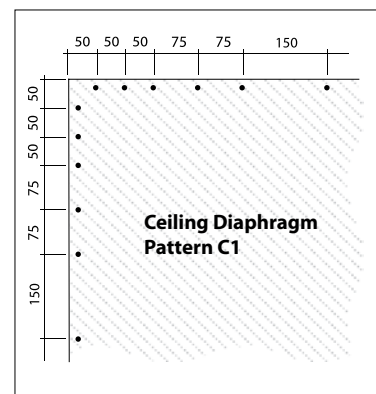
- either not steeper than 25 degrees and not longer than 12.0m**
- or not steeper than 45 degrees and not longer than 7.5m**

Elephant Plasterboard: Fasteners at maximum 75mm centres to the boundary members and around the perimeter of the diaphragm as per ceiling diaphragm pattern **C2** on the right.

GIB® Plasterboard: Fasteners at maximum 100mm centres to the boundary members and around the perimeter of the diaphragm as per ceiling diaphragm pattern **C2** on the right.

Fix all fasteners at no less than 12mm from paper bound sheet edges and 18mm from sheet ends or cut edges.

Fastening requirements within the ceiling diaphragm are conventional. All in accordance with the relevant Plasterboard manufacturers installation manual or site guides.



Jointing:

All joints shall be paper tape reinforced and stopped. Sheet end butt joints should be between the battens and back blocked. All in accordance with the relevant Plasterboard manufacturers installation manual or site guides.

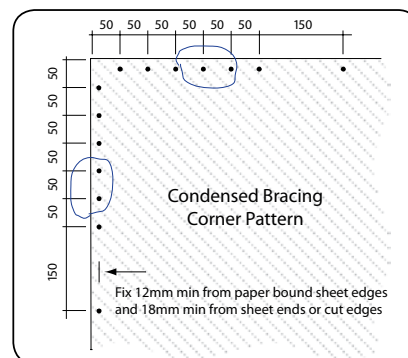
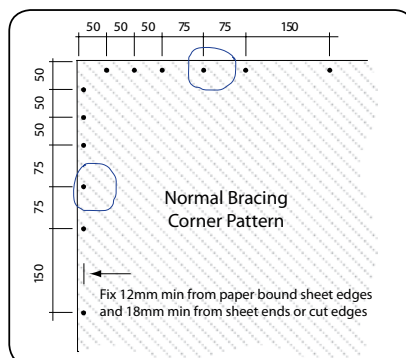
Wall Bracing Construction Details

Fastening the Plasterboard Linings

Elephant or GIB® Plasterboard designated as a bracing element must be constructed with specified fasteners and fastener patterns. Specialised panel end hold downs may also be required as they are essential for obtaining the bracing unit ratings. The corner detail for plasterboard bracing elements require specific increased fastening. See figures on right.

Fastener Layout

Refer to figures labelled Normal or Condensed Bracing Corner Patterns. Place all fasteners 12mm from paper bound sheet edges and 18mm from sheet ends or cut edges. Fastening the middle of the bracing element is as per the recommended screw and glue methods. Refer to Plasterboard manufacturers Installation Manual.



Minimum Sheet Size

Minimum sheet width can be 300mm provided that the joints form over solid framing or the sheet is back blocked. All joints must be paper taped and stopped.

The plasterboard can be fixed horizontally.

All butt joints should be either fitted over nogs or studs and fastened at 200mm centres or back-blocked. All joints must be paper taped and stopped. Refer to the relevant Plasterboard manufacturers installation manual or site guide.

Horizontal Fixing

Bracing systems may be fixed horizontally. The specialised corner and perimeter bracing pattern need only to be placed over the length and width of the bracing element. Fastening in the field of the bracing element is as per the recommended glue and screw method.

Note- Care should be taken during the installation of the plasterboard, as often the studs that require the special mechanical fixing pattern are in the field of the sheet. It is important to insure that the adhesives are not placed on or near the studs that require these special perimeter fasteners as this can be a cause of screw popping.

Wet Areas

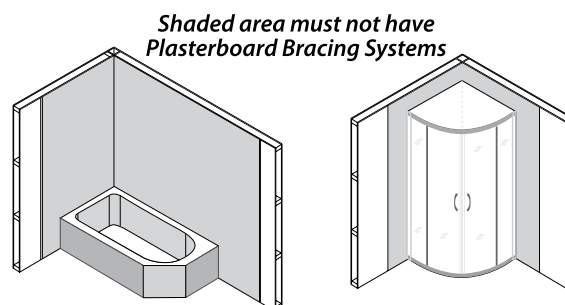
Do not place bracing elements in areas such as behind showers and baths. Placing bracing elements in water splash areas is acceptable provided that these areas are maintained impervious for the life of the building. Bracing elements require a 50 year durability.

Allowable Substitutions

Elephant Aquaboard can be substituted for Elephant Standard-Plus.
Elephant Aquaboard can be substituted for Elephant Multiboard.

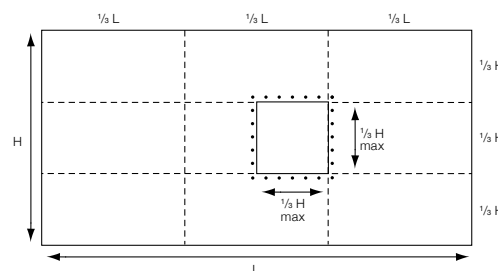
GIB Aqualine® can be substituted for GIB® Standard Plasterboard.
GIB Aqualine® can be substituted for GIB Braceline® provided that the element is 900mm or longer and the perimeter screw pattern is reduced to 100mm centres

Ensure that all other relevant bracing system requirements including the important corner patterns are met.



Openings in Bracing Elements

Large openings can only be placed in the middle 1/3 of the bracing element. Neither the opening height nor length can be more than 1/3 of the bracing element height. Fix the wall linings around the opening trimmers at 150mm centres. Smaller openings of 90 x 90mm or less are allowable but cannot be placed closer than 90mm from the edge of the bracing element.



Plywood

For systems DSPH, DZPH and DBPH plywood is required. This can be Grade D-D 7mm construction plywood at a minimum. The plywood must be manufactured as per Australian/New Zealand Standard AS/NZS 2269:2004. The nailing pattern is at 150mm centres around the perimeter of the bracing element or each plywood sheet, whichever is the lesser width, using 50 x 2.8mm Flat head galvanised or stainless steel nails. Sheet edges must be supported by framing or blocking. The corner pattern fastening is conventional and there is no need for the specialised corner patterns as is required on the plasterboard side of the brace.

PLASTERBOARD ON ONE SIDE

SwitchBrace™ Dual Plasterboard Systems						SWITCHABLE LINING REQUIREMENTS				
Wall Type	System Number	Min Length	BU'S/m Wind	BU'S/m EQ	Panel Hold Downs	Elephant Plasterboard® Linings	Corner Pattern	OR	GIB® Plasterboard Linings	Corner Pattern
Internal or External	Plasterboard on One Side									
	DSN	0.40	50	55	No	Elephant Standard-Plus one side	Normal	OR	GIB® Standard Plasterboard one side	Normal
		0.80	60	60						
		1.20	70	60						
	DZH	0.40	85	80	Yes	Elephant Standard-Plus one side	Condensed	OR	GIB Braceline® one side	
		1.20	110	90						
		1.80	120	90						
	DBH	0.40	90	100		Elephant Multiboard one side		OR	GIB Braceline® one side	
		0.80	105	100						
		1.20	125	105						

FRAMING

Framing heights and dimensions to comply with NZS 3604:2011 and must be a minimum of 70 x 45mm for internal walls and 90 x 35mm for external walls. Nogs and Dwargs are not a requirement in order to achieve the bracing ratings in this document.

Refer to relevant sections and clauses of

NZBC B1: Structure; AS1 Clause 3 Timber -NZS 3604

NZBC B2: Durability; AS1 Clause 3.2 Timber -NZS 3602

FASTENING BRACING ELEMENTS TO FLOOR

Timber Floor:

Fastening within the bracing element must be done in accordance with NZS 3604:2011. i.e. Either pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres.

For DZH and DBH: Use the panel hold downs at each end of the bracing element.

Concrete Floors:

External or Internal walls: Within the bracing element fix the bottom plate as per NZS 3604:2011.

For DSN: On Internal Walls alternatively use 75 x 3.8mm shot-fired fasteners with 16mm discs at 150mm & 300mm from end studs and thereafter at 600mm centres. Ensure a minimum penetration of 30mm into the concrete foundation.

For DZH and DBH: Use the panel hold downs at each end of the bracing element.

WALL LINING (As per Specified System Above)

One layer of Plasterboard lining type as per specified system above to ONE side of frame.

The Plasterboard sheets can be fixed vertically or horizontally. Use full height or full length sheets when fixing vertically or horizontally where possible. All sheet end butt joints must be fixed over solid timber framing and fastened at 200mm centres. Alternatively the sheet end butt joints may be back blocked. A minimum width of 300mm applies for part sheets of plasterboard being used in bracing elements. Sheets shall be touch fitted.

FIXING OF PLASTERBOARD LININGS

Fastening: (Corners and Perimeters of the bracing element)

32mm x 6g High thread Drywall screws (Fortress® or GIB®Grabber®)

Fastening Centres: (Corners and Perimeters of the bracing element)

Corner Pattern: Refer to table above and relevant bracing corner patterns on the right.

Perimeter Pattern: Place fasteners at 150mm centres around perimeter of bracing element.

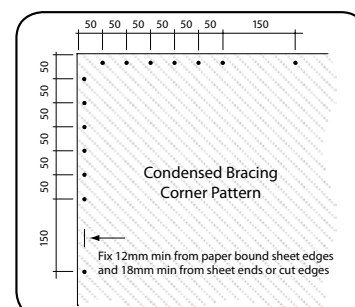
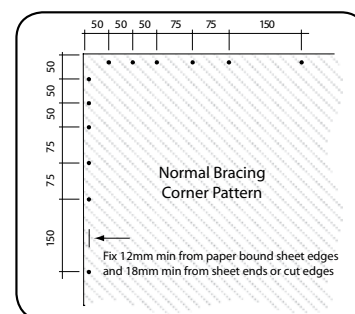
Place all fasteners 12mm from paper bound sheet edges and 18mm from sheet ends or cut edges.

Fasteners and Fastening Centres in the Field of the bracing element

For vertically fixed sheets place fasteners at 300mm centres to the intermediate sheet joints. For Horizontally fixed sheets place fasteners at the sheet edge that crosses the studs. Place daubs of Drywall adhesives at 300mm centres to intermediate studs. Take extra care to ensure that screws or clouts are not placed closer than 200mm from any daubs of adhesive.

JOINTING

All fasteners stopped and all sheet joints reinforced with paper jointing tape. All in accordance with the relevant Plasterboard manufacturers installation manual or site guides.



PLASTERBOARD ON BOTH SIDES

SwitchBrace™ Dual Plasterboard Systems					
Wall Type	System Number	Min Length	BU'S/m Wind	BU'S/m EQ	Panel Hold Downs
Internal	Plasterboard on Both Sides				
	DSSN	0.40	75	65	No
		0.80	85	75	
		1.20	95	85	
	DZSH	0.40	100	115	Yes
		0.80	130	130	
		1.20	150	145	
	DBSH	0.40	110	115	
		0.80	130	130	
		1.20	150	145	

SWITCHABLE LINING REQUIREMENTS				
Elephant Plasterboard® Linings	Corner Pattern	OR	GIB® Plasterboard Linings	Corner Pattern
Elephant Standard-Plus both sides	Normal	OR	GIB®Standard Plasterboard both sides	Normal
Elephant Standard-Plus both sides		OR	GIB Braceline® one side, GIB®Standard Plasterboard the other	
Elephant Multiboard one side, Elephant Standard-Plus the other		OR	GIB Braceline® one side, GIB®Standard Plasterboard the other	

FRAMING

Framing heights and dimensions to comply with NZS 3604:2011 and must be a minimum of 70 x 45mm for internal walls and 90 x 35mm for external walls. Nogs and Dwargs are not a requirement in order to achieve the bracing ratings in this document.

Refer to relevant sections and clauses of

NZBC B1: Structure; AS1 Clause 3 Timber -NZS 3604

NZBC B2: Durability; AS1 Clause 3.2 Timber -NZS 3602

FASTENING BRACING ELEMENTS TO FLOOR

Timber Floor:

Fastening within the bracing element must be done in accordance with NZS 3604:2011. i.e. Either pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15mm power driven nails at 600mm centres.

For DZSH and DBSH: Use the panel hold downs at each end of the bracing element.

Concrete Floors:

Within the bracing element fix the bottom plate as per NZS 3604:2011.

For the DSSN: For Internal Walls alternatively use 75 x 3.8mm shot-fired fasteners with 16mm discs at 150mm & 300mm from end studs and thereafter at 600mm centres. Ensure a minimum penetration of 30mm into the concrete foundation

For the DZSH and DBSH: Use the panel hold downs at each end of the bracing element.

WALL LINING (As per Specified System Above)

One layer of Plasterboard lining type as per specified system above to EACH side of frame.

The Plasterboard sheets can be fixed vertically or horizontally. Use full height or full length sheets when fixing vertically or horizontally where possible. All sheet end butt joints must be fixed over solid timber framing and fastened at 200mm centres. Alternatively the sheet end butt joints may be back blocked. A minimum width of 300mm applies for part sheets of plasterboard being used in bracing elements. Sheets shall be touch fitted.

FIXING OF PLASTERBOARD LININGS

Fasteners: (Corners and Perimeters of the bracing element)

32mm x 6g High thread Drywall screws (Fortress® or GIB®Grabber®)

Fastening Centres (Corners and Perimeters of the bracing element)

Corner Pattern: Refer to table above and relevant bracing corner patterns on the right.

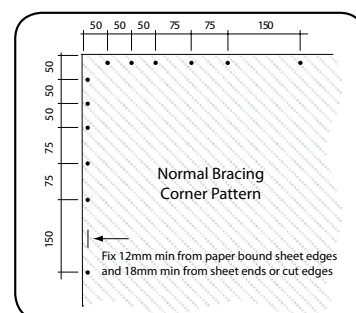
Perimeter Pattern: Place fasteners at 150mm centres around perimeter of bracing element. Place all fasteners 12mm from paper bound sheet edges and 18mm from sheet ends or cut edges.

Fasteners and Fastening Centres in the Field of the bracing element.

For vertically fixed sheets place fasteners at 300mm centres to the intermediate sheet joints. For Horizontally fixed sheets place fasteners at the sheet edge that crosses the studs. Place daubs of Drywall adhesives at 300mm centres to intermediate studs. Take extra care to ensure that screws or clouts are not placed closer than 200mm from any daubs of adhesive.

JOINTING

All fasteners stopped and all sheet joints reinforced with paper jointing tape. All in accordance with the relevant Plasterboard manufacturers installation manual or site guides.



PLASTERBOARD ONE SIDE, PLYWOOD THE OTHER

SwitchBrace™ Dual Plasterboard Systems						SWITCHABLE LINING REQUIREMENTS				
Wall Type	System Number	Min Length	BU'S/m Wind	BU'S/m EQ	Panel Hold Downs	Elephant Plasterboard® Linings	Corner Pattern	OR	GIB® Plasterboard Linings	Corner Pattern
External	Plasterboard One Side, Plywood the Other									
	DSPH	0.40	100	115	Yes	Elephant Standard-Plus one side, Plywood the other	Normal	OR	GIB® Standard Plasterboard one side, Ecoply® Plywood the other	Normal
		0.80	130	135						
		1.20	150	150						
	DZPH	0.40	105	120		Elephant Standard-Plus one side, Plywood the other		OR	GIB Braceline® one side, Ecoply® Plywood the other	
		0.80	140	140						
		1.20	150	150						
	DBPH	0.40	115	125		Elephant Multiboard one side, Plywood the other		OR	GIB Braceline® one side, Ecoply® Plywood the other	
		0.80	140	140						
		1.20	150	150						

FRAMING

Framing heights and dimensions to comply with NZS 3604:2011 and must be a minimum of 70 x 45mm for internal walls and 90 x 35 mm for external walls. Nogs and Dwargs are not a requirement in order to achieve the bracing ratings in this document.

Refer to relevant sections and clauses of

NZBC B1: Structure; AS1 Clause 3 Timber -NZS 3604

NZBC B2: Durability; AS1 Clause 3.2 Timber -NZS 3602

FASTENING BRACING ELEMENTS TO FLOOR

Timber Floor:

Fastening within the bracing element must be done in accordance with NZS 3604:2011. i.e. Either pairs of 100 x 3.75mm hand driven nails or three 90 x 3.15 power driven nails at 600mm centres.

For DSPH, DZPH and DBPH: Use the panel hold downs at each end of the bracing element.

Concrete Floors:

Within the bracing element fix the bottom plate as per NZS 3604:2011.

For DSPH, DZPH and DBPH: Use the panel hold downs at each end of the bracing element

WALL LINING (As per Specified System Above)

One layer of Plasterboard lining type as per specified system above to one side of frame.

One layer of 7mm D-D Plywood as per specified system above to other side of frame

The Plasterboard sheets can be fixed vertically or horizontally. Use full height or full length sheets when fixing vertically or horizontally where possible. All sheet end butt joints must be fixed over solid timber framing and fastened at 200mm centres. Alternatively the sheet end butt joints may be back blocked. A minimum width of 300mm applies for part sheets of plasterboard being used in bracing elements. Plywood sheets must be fixed vertically with edges supported by framing or blocking. Sheets shall be touch fitted.

FIXING OF PLASTERBOARD LININGS

Fasteners: (Corners and Perimeters of the bracing element)

32mm x 6g High thread Drywall screws (Fortress® or GIB® Grabber®)

Fastening Centres: (Corners and Perimeters of the bracing element)

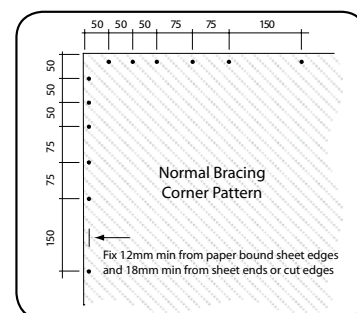
Corner Pattern: Refer to table above and relevant bracing corner pattern on the right.

Perimeter Pattern: Place fasteners at 150mm centres around perimeter of bracing element.

Place all fasteners 12mm from paper bound sheet edges and 18mm from sheet ends or cut edges.

Fasteners and Fastening Centres in the Field of the bracing element

For vertically fixed sheets place fasteners at 300mm centres to the intermediate sheet joints. For horizontally fixed sheets place fasteners at the sheet edge that crosses the studs. Place daubs of Drywall adhesives at 300mm centres to intermediate studs. Take extra care to ensure that screws or clouts are not placed closer than 200mm from any daubs of adhesive.



FIXING OF PLYWOOD LININGS

Fasteners: (Corners and Perimeters of the bracing element)

50 x 2.8mm Flat head Galvanized or Stainless Steel Nails.

Fix at 150mm centres around perimeter of the bracing element and the perimeter of each sheet.

Fix at 300mm centres to intermediate studs that are not at the end of a bracing element.

The corner pattern fastening is conventional and there is no need for the specialized corner pattern as is required on the plasterboard side of the brace.

JOINTING

All fasteners stopped and all sheet joints reinforced with paper jointing tape. All in accordance with the relevant Plasterboard manufacturers installation manual or site guides.



The Freedom

The absence of undue restrictions and an opportunity to exercise one's rights and powers. Freedom of thought promotes invention, innovation and discovery. Free press, free movement, free speech, free will, freedom of action, freedom to choose.

to Choose

The free right or privilege of choosing: to exercise one's options. The opportunity to shop around. Exercise ones discretion or to state a preference. The ability to use SwitchBrace™.

SwitchBrace™

For more information

www.switchbrace.co.nz

Email info@switchbrace.co.nz

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