Bracing

Skape PANELS

PLYWOOD BRACING INSTALLATION GUIDE

FEBRUARY 2026

Bracing

BRACING INSTALLATION GUIDE

ARAUCO PLYWOOD

Skape.

Skape's AraucoPly F8 Structural Plywood is produced and independently tested to comply with the Australian/New Zealand joint standard AS/NZS 2269 for structural plywood. This certification ensures the product delivers the level of structural performance required for use in New Zealand conditions. Structural plywood offers a consistently strong, reliable, and environmentally responsible building solution, providing essential bracing and support for timber-framed construction.

1.0 COMPLIANCE

1.1 PRODUCT INFORMATION

F8 Structural plywood is available in a range of nominal thicknesses and supplied in CD grade. Standard sheet sizes are typically offered in 2400mm or 2700mm lengths with a width of 1200mm.

It is available either untreated or with H3.2 preservative treatment to suit different building requirements.

1.2 STRUCTURE

F8 Structural plywood is manufactured in accordance with AS/NZS 2269 and is suitable for use as a structural panel within engineered building systems designed by qualified professionals. This includes applications where bracing performance is required for timber-framed walls subjected to wind and seismic loads. When used as specified, it supports compliance with the New Zealand Building Code (NZBC), particularly Clause B1 Structure, as well as the requirements of NZS 3604 Timber-Framed Buildings.

1.3 DURABILITY

Durability requirements should be determined and specified by the design professional or engineer to ensure the plywood meets the performance needs of a timber-based veneer product for its intended application. F8 Structural plywood is manufactured to comply with NZBC Clause B2 Durability.

When specified and installed in line with recognised design principles and good building practice—and treated to the appropriate levels outlined in NZS 3602—it forms part of the Acceptable Solution under NZBC B2/AS1.

F8 Structural plywood will continue to meet the relevant performance requirements of the New Zealand Building Code for 50 years (or any different timeframe required by the project's specifier), provided that the project-specific design conditions and detailing are correctly followed.

1.0 COMPLIANCE

1.4 PRESERVATIVE TREATMENT

F8 Structural plywood can be supplied as an envelope-treated panel using a water-based preservative carrier, available in either H3.2 CCA (Copper Chrome Arsenate) or H3.2 MCA (Micronized Copper Azole) in accordance with AS/NZS 1604.1:2021.

H3 preservative treatment, as defined in AS/NZS 1604, is intended for situations "outside, above ground, subject to periodic moderate wetting." Plywood manufactured to AS/NZS 2269 and used in interior dry environments—where it remains protected from moisture—does not require treatment. Where plywood is used in exterior applications or interior locations exposed to damp conditions, H3 preservative treatment is required.

1.5 CUT SHEETS

When H3-treated plywood sheets have their protective envelope disrupted—such as through cutting, drilling, or machining—a suitable remedial treatment must be applied to restore protection on all exposed surfaces. This typically involves re-coating cut edges with a brush-on timber preservative in accordance with the manufacturer's recommendations.

Failure to reinstate the preservative treatment may reduce the service life of the structural plywood and compromise its durability and intended performance.

1.6 RIGID AIR BARRIER

H3-treated F8 Structural plywood, with a minimum thickness of 7mm, may be specified as a rigid underlay in accordance with the E2 External Moisture Building Code Acceptable Solution (E2/AS1) Section 9.1.7.2. It is used as a plywood substrate together with a compatible flexible overlay that meets the performance requirements outlined in Table 23.

The plywood must be direct-fixed to timber framing and detailed appropriately by the project's designer or specifier to ensure compliance with the relevant clauses of the New Zealand Building Code.

2.0 DESIGN CONSIDERATIONS

2.1 SUSTAINABILITY

AraucoPly Structural Plywood is made from certified, sustainably managed plantation forests. Certified to strict CERTFOR forest management standards that are endorses by international non-profit group PEFC.

2.2 STORAGE AND HANDLING

F8 Structural plywood should be handled and stored carefully to prevent damage.

It is recommended that the plywood be stored under cover or in a sheltered, well-ventilated location, away from sources of heat, flames, or sparks. Sheets should be protected from weather exposure—including sun, rain, wind, and snow—and placed where they will not be subject to mechanical damage prior to installation.

For good practice, plywood should be stacked flat, raised off the ground, and supported on a minimum of three to four evenly spaced bearers. Insufficient support may lead to distortion or unwanted curvature in the panels.

2.3 MAINTENANCE

F8 Structural plywood generally does not require ongoing maintenance. However, if any damage occurs to the plywood panels, appropriate repair or replacement should be undertaken to maintain the structural integrity of the plywood when used as part of a bracing system.

2.4 PRE-INSTALLATION INSPECTION

Before installation, inspect all panels for any visible defects. F8 Structural plywood may display minor imperfections and natural characteristics typical of an engineered veneer-based timber product. If a coating system is to be applied, ensure the surface is clean, free of dust, dirt, and any loose wood fibres.

2.5 EXPOSURE TO THE ELEMENTS

F8 Structural plywood will generally retain its structural integrity when exposed to the elements for up to 90 days during the construction phase. While the panels will naturally weather over time, outdoor exposure may increase aesthetic issues such as face checking, which is limited to the outer veneer only. If surface appearance or finish quality is important, the plywood should be protected throughout construction.

BRACING SPECIFICATIONS: Skape offers a range of F8 Structural plywood products in 7mm, 9mm, and 12mm thicknesses for use in wall bracing systems designed to resist wind and earthquake loads in timber-framed buildings.

The Arauco 7mm, 9mm, and 12mm F8 Structural plywood panels have been tested and assessed for bracing performance using the P21 Wall Bracing Test method in accordance with NZS 3604:2011.

3.0 INSTALLATION

3.1 INSTALLATION REQUIREMENTS

AraucoPly F8 Structural plywood may be installed before the building is fully enclosed when supplied with H3.2 preservative treatment.

Untreated plywood should be protected from weather exposure wherever possible to prevent mould growth or surface weathering.

3.2 TIMBER WALL FRAMING

When installed in timber-framed buildings, all framing members and dimensions must comply with NZS 3604, or be specifically designed in accordance with NZS 3603 (Timber Structures Standard) or AS/NZS 1170. Requirements include the use of verified kiln-dried structural timber with a minimum stress grade of SG8, a maximum moisture content of 18%, and preservative treatment in accordance with NZS 3602.

Nogs or dwangs are generally not required for F8 Structural plywood in bracing applications unless specified by the project designer, or where required by proprietary systems or particular cladding solutions.

Framing sizes and permitted wall heights must follow the stud and top-plate tables in NZS 3604 for both load-bearing and non-load-bearing walls.

3.3 ADJUSTMENTS OF BRACING ELEMENTS

For wall bracing elements longer than the tested length, the total bracing capacity may be calculated by multiplying the tested bracing rating per metre by the actual length of the element.

Adjustments for walls of different heights, or walls with sloping top plates, must be carried out using the methods provided in NZS 3604 Section 8.3.1.4.

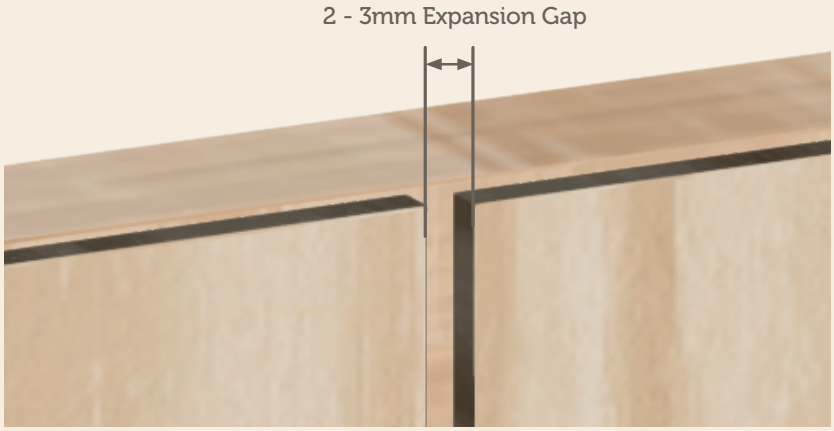
3.0 INSTALLATION

3.4 PLYWOOD SHEET LAYOUT

Plywood sheets must be installed vertically on the timber frame. Structural plywood provides its greatest strength when the face grain is oriented vertically or parallel to the direction of load transfer.

All vertical sheet joints must be fully supported by timber framing.

Allow a 2–3mm expansion gap between sheets when moisture-related movement may occur, as good practice.



3.5 FASTENERS

All fasteners must be corrosion-resistant and suitable for the treatment level and environmental exposure of the installation, in accordance with NZBC Clause B2 Durability and NZS 3604.

As a minimum, use full round-head (flat-head) 50 × 2.8mm hot-dip galvanised nails, or stainless-steel annular-grooved nails where required by design or environmental conditions such as sea-spray zones (Zone D) identified in NZS 3604.

Screws must not be used.

Do not overdrive fasteners; they must finish flush with the plywood veneer surface.

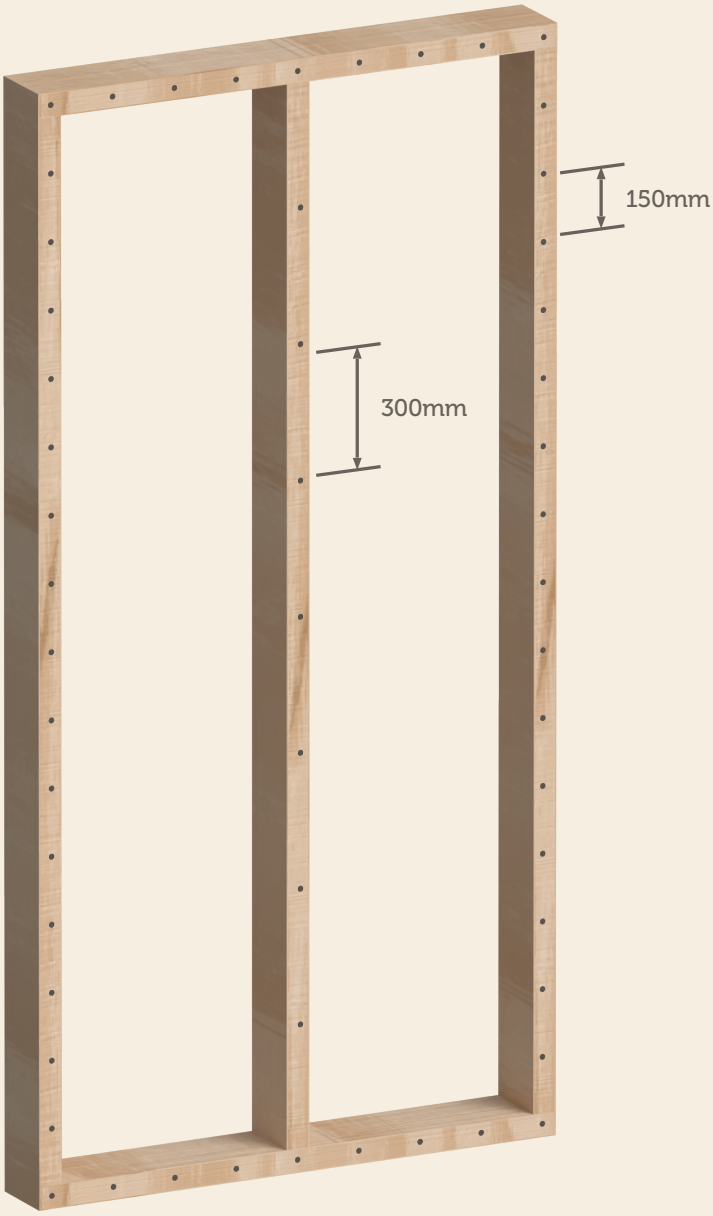
3.0 INSTALLATION

3.6 FASTENING AND FIXING PATTERN

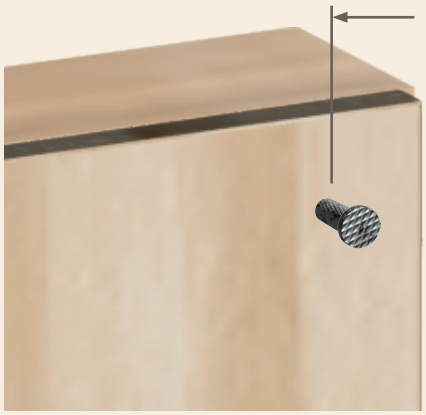
Sheet panels must be fixed from the top plate down to the bottom plate.

Fasten sheet edges and ends at 150mm centres, and fasten within the sheet (intermediate studs or supports) at 300mm centres.

Fasteners must be located at least three fastener diameters, or 7mm, from the sheet edge.



Mechanical fasteners must be at least 3 fastener diameters or 7mm from the edge of the sheet.



3.0 INSTALLATION

3.7 FRAME CONNECTIONS

Bottom plates must be fixed in accordance with the requirements of NZS 3604, unless otherwise detailed by specific engineering design.

Install GIB HandiBrac hold-down connections at each end of the bracing element, following the manufacturer's specifications and installation guidelines.

3.8 JOINING OF PANELS FOR WALL HEIGHTS ABOVE 2.4M

AraucoPly sheets must be fully supported by timber framing and fixed continuously from the top plate to the bottom plate. Where wall heights exceed the maximum sheet length, a part sheet (minimum 300mm high) may be installed above a full sheet, joined on a single row of common nogs or dwangs. Each sheet must be nailed off independently following the standard fixing and fastening pattern around the perimeter and intermediate studs.

3.9 PREVENTION OF FIRE OCCURRING

Separation or protection must be provided to bbi® F8 Structural plywood from heat sources such as stoves, heaters, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 to C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

4.0 BRACING RATINGS

4.1 BRACING RATINGS

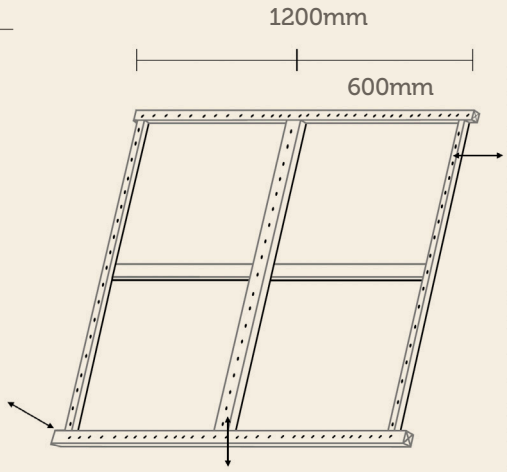
In accordance to AS/NZS 2269, our Structural Square-edge and Bracing is rated F8 which includes testing for parallel and perpendicular bending, stiffness, tensile, shear and compression strength. The following table shows bracing ratings according to P21 racking test.

Bracing ratings for araucoply certified structural ply and cladding products.

TYPE	MIN WALL LENGTH	PLYWOOD THICKNESS	MAX STUD SPACING	WIND		EARTHQUAKE	
	mm	mm	mm	BU/m	kN	BU/m	kN
AP1	1,200	6.5	600	130	6.5	132	6.6
AP2	1,200	7.0	600	142	7.1	144	7.2
AP3	1,200	12 Grooved	600	123	6.2	132	6.6

Notes: 20 bracing units = 1 kN.
* As limited by the serviceability load capacity.
** As limited by the ultimate load capacity.

4.2 BRACING TEST



Test Notes

- Walls were constructed using 90x45 MSG8 studs (600 centres), plates and nogs.
- For 6.5mm and 7mm the plywood was fixed with 50x2.8 galvanised clouts at 150mm centres around the perimeter and at 300mm centres in the middle.
- For the 12mm Plywood 50x2.8mm Annular Grooved Stainless steel fixings were used at the same centres as above.
- Straps of 25x0.9mm around the bottom plate at each outside stud and extended a minimum of 150mm past the top of the bottom plate were used with at least 6 timber bracket galvanised 30x3.15mm FH nails on each side of the plate giving 6kN on each side of the stud.
- Tested on a concrete floor with 2 M12 hold down bolts and 50x50x3 galvanised washers on each.
- Tested by Scion, New Zealand April 2011.

Bracing

BRACING INSTALLATION GUIDE

IPL PLYWOOD

Skape.

Skape's IPL F8 and F11 Structural Plywood is manufactured to meet the Australian/New Zealand joint standard AS/NZS 2269 for structural plywood. This certification guarantees the product delivers the structural performance required for New Zealand building conditions.

IPL's structural ply is a safe, dependable choice for bracing and structural support in timber-framed construction. Engineered to handle earthquakes, high winds, and the tough realities of New Zealand's environment, it provides strength and reliability you can count on.

1.0 COMPLIANCE

1.1 PRODUCT INFORMATION

F8 and F11 (19mm only) Structural plywood is available in a range of nominal thicknesses and supplied in AD, SS, SD, SC, and CD grade. Standard sheet sizes are typically offered in 2400mm or 2700mm lengths with a width of 1200mm. It is available either untreated or with H3.2 preservative treatment to suit different building requirements.

1.2 COMPLIANCE WITH STANDARDS

IPL Plywood is manufactured in accordance with AS/NZ 2269. All sheets have IPL construction details/NZ standard/plant number and name on rear of sheets.

The Engineered Wood Products Association of Australasia (EWPAA) audits our production processes to ensure we meet the requirements of the product Standard. This third party audited, process based, quality assurance scheme meets the requirements of an ISO Type 5 system for production certificate. The EWPAA is an accredited body to JAS - ANZ under registration No. Z1460695AB.

1.2 STRUCTURE

Framing constructed in accordance with NZS 3604:2011 meets the requirements of the New Zealand Building Code. Studs can be spaced up to 600 mm centres, and while dwangs are not essential for achieving effective bracing, they can still be installed if desired.

IPL Structural Ply is manufactured to AS/NZS 2269:2012 and is suitable for earthquake and wind bracing design in timber-framed buildings, in line with NZS 3603 and AS/NZS 1170. Its performance has been independently verified through EWPAA testing, confirming it as a reliable structural bracing solution.

1.0 COMPLIANCE

1.3 DURABILITY

As IPL Structural Ply is an integral part of the building structure, it must be durable in each application i.e. have at least 50 years durability rating. In interior dry applications (i.e. 18% moisture content or less) untreated IPL Structural Ply is acceptable for use.

However, in applications where IPL Structural Ply may be subject to wetting, dampness or condensation (basically where the moisture content may exceed 18% for prolonged periods), IPL Structural Ply must be preservative treated to at least H3.2 hazard rating and fixed with non-corrosive fasteners (i.e. stainless steel or silicone bronze).

1.4 PRESERVATIVE TREATMENT

F8 and F11 Structural plywood can be supplied as an H3.1-treated panel using white-spirits (organic)-based preservatives containing fungicides and insecticides, in accordance with NZS 3640:2003. This treatment is classified as a cladding-class, above-ground protection level for non-structural exterior applications, where the plywood is protected by paint, stain, or other approved coating systems.

H3 preservative treatment, as defined in AS/NZS 1604, is intended for situations "outside, above ground, subject to periodic moderate wetting." Plywood manufactured to AS/NZS 2269 and used in interior dry environments—where it remains protected from moisture—does not require treatment. Where plywood is used in exterior applications or interior locations exposed to damp conditions, H3 preservative treatment is required.

1.5 CUT SHEETS

When H3-treated plywood sheets have their protective envelope disrupted—such as through cutting, drilling, or machining—a suitable remedial treatment must be applied to restore protection on all exposed surfaces. This typically involves re-coating cut edges with a brush-on timber preservative in accordance with the manufacturer's recommendations.

Failure to reinstate the preservative treatment may reduce the service life of the structural plywood and compromise its durability and intended performance.

1.6 RIGID AIR BARRIER

H3-treated F8 Structural plywood, with a minimum thickness of 7mm, may be specified as a rigid underlay in accordance with the E2 External Moisture Building Code Acceptable Solution (E2/AS1) Section 9.1.7.2. It is used as a plywood substrate together with a compatible flexible overlay that meets the performance requirements outlined in Table 23.

The plywood must be direct-fixed to timber framing and detailed appropriately by the project's designer or specifier to ensure compliance with the relevant clauses of the New Zealand Building Code.

2.0 DESIGN CONSIDERATIONS

2.1 SUSTAINABILITY

IPL Structural Plywood is made from certified, sustainably managed plantation forests. Guaranteed quality via EWPAA Product Certification Scheme.

2.2 STORAGE AND HANDLING

F8 and F11 Structural plywood should be handled and stored carefully to prevent damage.

It is recommended that the plywood be stored under cover or in a sheltered, well-ventilated location, away from sources of heat, flames, or sparks. Sheets should be protected from weather exposure—including sun, rain, wind, and snow—and placed where they will not be subject to mechanical damage prior to installation.

For good practice, plywood should be stacked flat, raised off the ground, and supported on a minimum of three to four evenly spaced bearers. Insufficient support may lead to distortion or unwanted curvature in the panels.

2.3 MAINTENANCE

F8 and F11 Structural plywood generally does not require ongoing maintenance. However, if any damage occurs to the plywood panels, appropriate repair or replacement should be undertaken to maintain the structural integrity of the plywood when used as part of a bracing system.

2.4 PRE-INSTALLATION INSPECTION

Before installation, inspect all panels for any visible defects. F8 and F11 Structural plywood may display minor imperfections and natural characteristics typical of an engineered veneer-based timber product. If a coating system is to be applied, ensure the surface is clean, free of dust, dirt, and any loose wood fibres.

2.5 EXPOSURE TO THE ELEMENTS

IPL Plywood will withstand rain exposure for at least 3 months. The possible wetting may cause slight buckling of panels but generally, after drying, there is close to full recovery and structural values will be retained.

BRACING SPECIFICATIONS: Skape offers a range of F8 and F11 (19mm only) Structural plywood products in 7mm, 9mm, and 12mm thicknesses for use in wall bracing systems designed to resist wind and earthquake loads in timber-framed buildings.

The IPL 7mm, 9mm, and 12mm F8 Structural plywood panels have been tested and assessed for bracing performance using the P21 Wall Bracing Test method in accordance with NZS 3604:2011.

3.0 INSTALLATION

3.1 INSTALLATION REQUIREMENTS

IPL Plywood F8 and F11 Structural plywood may be installed before the building is fully enclosed when supplied with H3.2 preservative treatment.

Untreated plywood should be protected from weather exposure wherever possible to prevent mould growth or surface weathering.

3.2 TIMBER WALL FRAMING

When installed in timber-framed buildings, all framing members and dimensions must comply with NZS 3604, or be specifically designed in accordance with NZS 3603 (Timber Structures Standard) or AS/NZS 1170. Requirements include the use of verified kiln-dried structural timber with a minimum stress grade of SG8, a maximum moisture content of 18%, and preservative treatment in accordance with NZS 3602.

Nogs or dwangs are generally not required for F8 Structural plywood in bracing applications unless specified by the project designer, or where required by proprietary systems or particular cladding solutions.

Framing sizes and permitted wall heights must follow the stud and top-plate tables in NZS 3604 for both load-bearing and non-load-bearing walls.

3.3 ADJUSTMENTS OF BRACING ELEMENTS

For wall bracing elements longer than the tested length, the total bracing capacity may be calculated by multiplying the tested bracing rating per metre by the actual length of the element.

Adjustments for walls of different heights, or walls with sloping top plates, must be carried out using the methods provided in NZS 3604 Section 8.3.1.4.

3.0 INSTALLATION

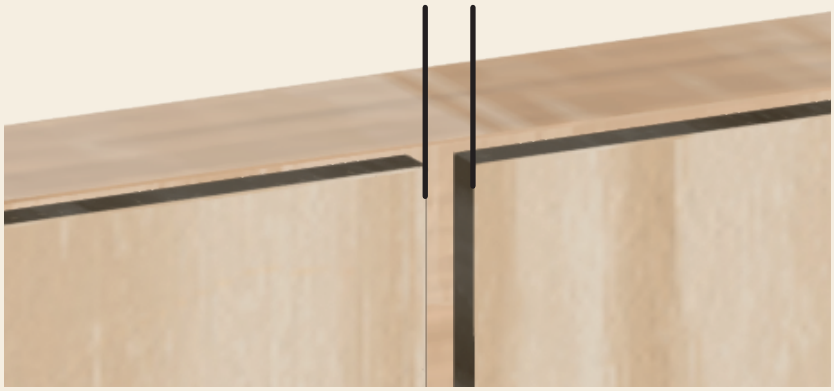
3.4 PLYWOOD SHEET LAYOUT

Plywood sheets must be installed vertically on the timber frame. Structural plywood provides its greatest strength when the face grain is oriented vertically or parallel to the direction of load transfer.

All vertical sheet joints must be fully supported by timber framing.

Allow a 2–3mm expansion gap between sheets when moisture-related movement may occur, as good practice.

2 - 3mm Expansion Gap



3.5 FASTENERS

The minimum fastener requirement in NewZealand is 50mm x 2.8mm dia hot dip galvanised structural clouts.

Treated IPL Structural Ply must be fixed with non corrosive fasteners — a minimum of 50mm x 2.8mm dia stainless steel annular grooved flat head nails or hot dipped galvanised.

Screws must not be used.

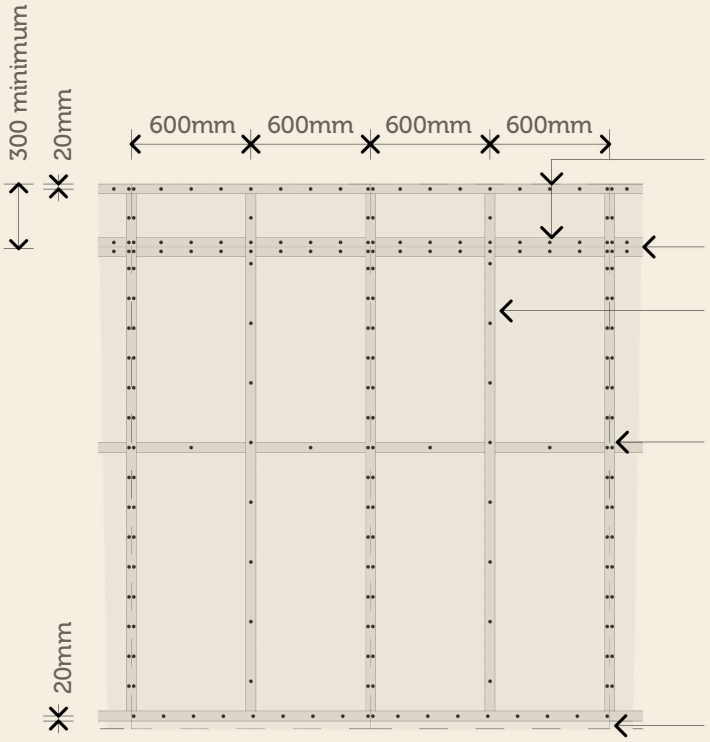
Do not overdrive fasteners; they must finish flush with the plywood veneer surface.

3.6 FRAME CONNECTIONS

Refer to GIB HandiBrac®installation instructions for correct installation of galvanised steel angle brackets and bolt types to be used for concrete and timber floors. Please note that IPL Structural Ply is not to be installed in contact with the ground.

3.0 INSTALLATION

3.7 HORIZONTAL SHEET JOINTS



Nails at 150mm centres to top plate and horizontal sheet join over common dwang.

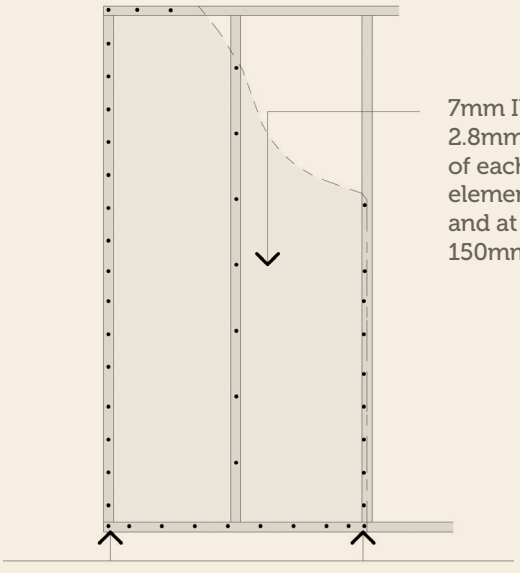
Common dwang 90x45mm on edge at sheet join.

Nails at 300mm centres to intermediate studs and dwang except in Extra High wind zones where 150mm centres to intermediate studs is required.

Centres Nails at 150mm centres to all sides of sheet perimeter.

Finish flush with lower edge of bottom plate.

3.7 STANDARD NAILING PATTERN

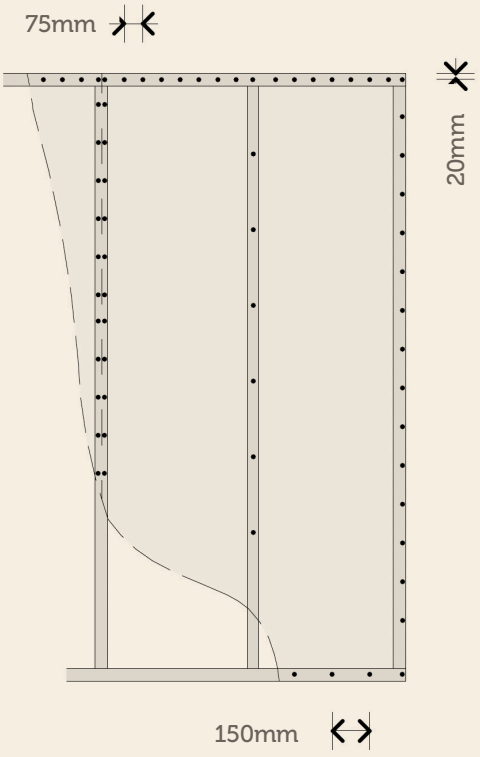


7mm IPL Structural Plywood fixed with 50 x 2.8mm nails at 150mm centres to perimeter of each sheet or part sheet within the bracing element at no less than 7mm from sheet edge and at 300mm centres to intermediate studs or 150mm centres in Extra High wind zones.

GIB Handibrac Hold downs installed as per manufacturers details

3.0 INSTALLATION

3.8 TOP PLATE HOLD-DOWNS CONNECTIONS USING IPL STRUCTURAL PLYWOOD



If this nailing pattern is used, sufficient top plate hold down capacity is achieved which eliminates the requirement for Z-nails to comply with type B fixing or 4.7kN uplift capacity as listed on table 8.18, NZS 3604

3.9 IPL BRACING VALUES

TYPE	LINING	MIN LENGTH (MM)	WIND (BUS/M)	EARTHQUAKE (BUS/M)
IPL1	7mm Bracing Ply™ one side	400	85	95
	7mm Bracing Ply™ one side	600	105	105
	7mm Bracing Ply™ one side	1200	130	125
IPL2	7mm Bracing Ply™ both sides	400	110	130*
	7mm Bracing Ply™ both sides	600	140*	150*

Above P21 testing conducted on behalf of IPL by BRANZ
*Bracing panels must not exceed 120 BU/m when used on timber framed floor as per NZ3604:2011 Section 5.4.2

4.0 BRACING RATINGS

4.1 IPL BRACING VALUES

TYPE	LINING	MIN LENGTH (MM)	WIND (BUS/M)	EARTHQUAKE (BUS/M)
IPL1	7mm Bracing Ply™ one side	400	85	95
	7mm Bracing Ply™ one side	600	105	105
	7mm Bracing Ply™ one side	1200	130	125
IPL2	7mm Bracing Ply™ both sides	400	110	130*
	7mm Bracing Ply™ both sides	600	140*	150*

Above P21 testing conducted on behalf of IPL by BRANZ
*Bracing panels must not exceed 120 BU/m when used on timber framed floor as per NZ3604:2011 Section 5.4.2

Bracing

Skape. PANELS

BRACING INSTALLATION GUIDE

AMBERLINE & SILVERLINE

Postal address: Skape Panels Limited,
34 Leonard Road, Mt Wellington, Auckland 1060.
www.skape.co.nz | sales@skape.co.nz

Amberline & Silverline

Skape's Silverline & Amberline plywood products, as an alternative solution to the NZ Building Code and Standards, have been tested using the BRANZ P21 test method in accordance with NZS3604:2011 to demonstrate resistance to earthquake and wind loads on light timber-framed buildings.

When specified and installed in accordance with this installation manual and the relevant technical literature, Skape's Silverline & Amberline plywood products have demonstrated appropriate bracing resistance through independent testing by Scion Research New Zealand for wall bracing requirements under NZS3604:2011, and will contribute to providing bracing resistance for light timber-framed buildings subjected to wind or seismic forces.

1.0 COMPLIANCE

1.1 PRODUCT INFORMATION

Skape Silverline plywood is manufactured using Birch–Poplar core veneers and is available untreated in nominal thicknesses of 9 mm or 12 mm, supplied in 2400 × 1200 mm panels.

Skape Amberline plywood is manufactured using Poplar core veneers and is also available untreated in nominal thicknesses of 9 mm or 12 mm, supplied in 2400 × 1200 mm panels.

Both plywood products are commonly used as decorative interior linings where the natural aesthetics of wood-veneer materials are desired, providing a high-visual finish.

1.2 BUILDING COMPLIANCE

Skape Silverline and Amberline plywood products may be used as bracing elements within structural timber wall framing systems that comply with the New Zealand Building Code.

It is the designer's responsibility to ensure that Skape Silverline and Amberline plywood products are suitable for use as wall bracing elements in their design, subject to specific structural framing requirements, critical structural design inputs for wall-bracing calculations, appropriate treatment levels, site-specific wind zones, and any other project-specific design parameters.

Skape Silverline and Amberline plywood products must be used in dry, internal, protected locations within thermally insulated buildings that meet moisture-content and quality-control requirements (heated, intermittently heated, or unheated) as outlined in NZS3602 Section 110, Table 1E, and Section 205. The panels must not be used in saunas or steam rooms and must not be exposed to temperatures of 50°C or higher for prolonged periods.

1.0 COMPLIANCE

1.3 DURABILITY

Skape Silverline and Amberline plywood products must be used within the thermal envelope of a building and only in internal dry environments. The plywood panels must not be installed in areas exposed to liquid water splash, damp conditions, or high humidity. Installed plywood wall linings must either remain visible or be located in areas that are easily accessible for inspection. They must not be used in spaces such as bathrooms, toilets, laundries, or kitchens.

Skape Silverline and Amberline plywood panels, including their fixings, have a serviceable life of at least 50 years. The long-term durability of the system depends on the panels remaining dry during service and receiving appropriate maintenance.

2.0 DESIGN CONSIDERATIONS

2.1 STORAGE AND HANDLING

Skape Silverline and Amberline plywood products should be handled and stored with care to prevent damage.

It is recommended that the plywood be stored under cover or shelter, in a well-ventilated area away from sources of heat, flames, or sparks. The panels should be protected from weather elements such as sun, rain, wind, or snow, and placed where they will not be exposed to mechanical damage prior to installation.

Plywood should be stacked flat, clear of the ground, and supported—at minimum—on three to four evenly spaced supports as good practice. Insufficient support may lead to distortion or cause undesirable curvature in the plywood panels.

2.2 PROTECTIVE FINISH COATING

All visible surfaces, including the sheet edges, must be finished with three coats of a quality polyurethane or with a paint system consisting of one primer coat and two topcoats, applied in accordance with the coating manufacturer's specifications.

2.3 MAINTENANCE

Skape Silverline and Amberline plywood products will not normally require maintenance. However, if damage occurs to the structural plywood panels, repair or replacement must be carried out to ensure the integrity of the plywood when used as a bracing element.

2.4 PRE-INSTALLATION INSPECTION

Before installation, examine and inspect the panels for any visual defects or damage. Silverline and Amberline plywood panels may display minor imperfections and natural characteristics typical of engineered veneer-based wood products. Ensure that all surfaces are free from dirt and loose wood fibre.

3.0 INSTALLATION

3.1 INSTALLATION REQUIREMENTS

Skape Silverline and Amberline plywood sheets must only be installed once the building is fully enclosed and the moisture content of the supporting timber framing does not exceed 18%.

3.2 TIMBER WALL FRAMING

When installed in timber buildings, framing and member sizes must comply with NZS3604 (or be specifically designed in accordance with NZS3603 Timber Structures Standard or AS/NZS 1170). This includes the use of verified kiln-dried structural stress-grade timber, with:

- a minimum grade of SG8,
- a maximum moisture content of 18%, and
- treatment levels that meet NZS3602: Timber and Wood-based Products for Use in Building.

Nogs or dwangs are not required for F8 Structural Plywood used in bracing applications, unless specified by the project designer or required by specific design elements such as proprietary products or cladding systems.

Framing dimensions and wall heights are determined using the NZS3604 stud and top-plate tables for both load-bearing and non-load-bearing walls.

3.3 ADJUSTMENTS OF BRACING ELEMENTS

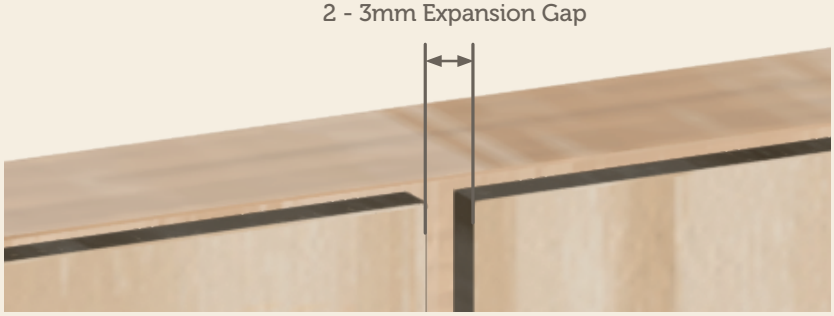
For wall bracing elements longer than those tested, bracing capacity must be calculated by multiplying the tested bracing rating per metre by the actual length of the bracing element.

Adjustments to bracing capacity for walls of differing heights, or walls with sloping top plates, must follow the methodologies outlined in NZS3604 Section 8.3.1.4.

3.4 PLYWOOD SHEET LAYOUT

Skape Silverline and Amberline sheets must be installed vertically to the timber framing. Structural plywood achieves maximum strength when oriented vertically or parallel to the grain of the plywood panels.All vertical joints must be fully supported by timber framing.

Allow a 2–3 mm expansion gap between sheets where moisture or dimensional change is likely.



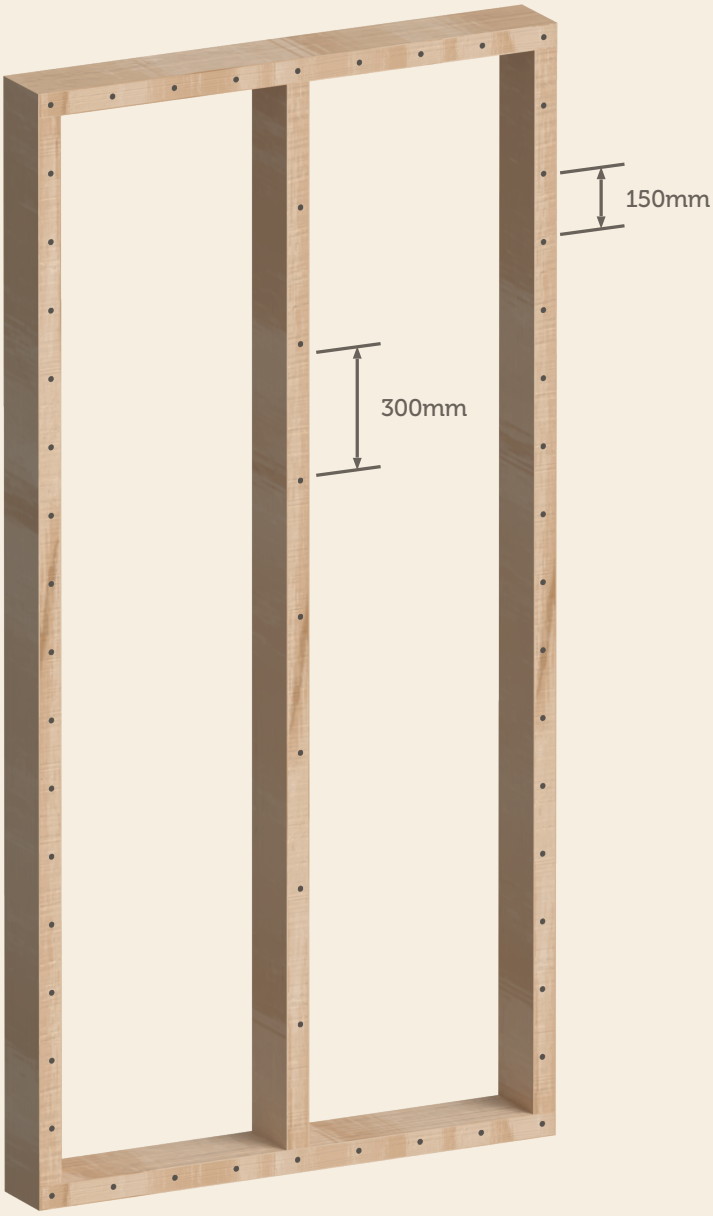
3.0 INSTALLATION

3.6 FASTENING AND FIXING PATTERN

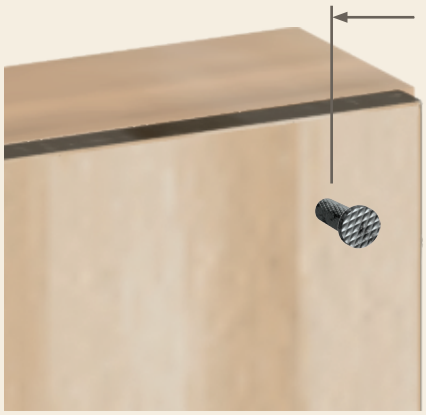
Sheet panels must be fixed from the top plate down to the bottom plate.

Fasten sheet edges and ends at 150mm centres, and fasten within the sheet (intermediate studs or supports) at 300mm centres.

Fasteners must be located at least three fastener diameters, or 7mm, from the sheet edge.



Mechanical fasteners must be at least 3 fastener diameters or 7mm from the edge of the sheet.



3.0 INSTALLATION

3.6 FASTENING AND FIXING PATTERN

Sheet panels must be fixed from the top plate down to the bottom plate.

Fasten sheet edges and ends at 150mm centres, and fasten within the sheet (intermediate studs or supports) at 300mm centres.

Fasteners must be located at least three fastener diameters, or 7mm, from the sheet edge.

3.7 FASTENERS

All fasteners used must be corrosion resistant to the appropriate treatment level depending on the intended use, compatibility of materials in contact and the durability time frames as stipulated in NZBC Clause B2 Durability and NZS3604.

At minimum, full round head (flat head) 50 x 2.8mm hot dip galvanized fasteners or stainless steel (annular grooved) where determined by design must be used. Screws not permitted. Do not overdrive fasteners, finish flush with veneer surface.

3.8 FRAME CONNECTIONS

Bottom plates are to be fixed in accordance with the requirements of NZS 3604 or unless specified by specific engineering design.

Use GIB HandiBrac hold down connections at each end of the bracing element in accordance with the manufacturer's specifications and installation guidance.

3.9 JOINING OF PANELS FOR WALL HEIGHTS ABOVE 2.4M

Skape Silverline and Amberline plywood sheets must be fully supported by timber framing and fixed from the top plate to the bottom plate.

For wall heights exceeding the standard sheet length, a part sheet (minimum 300 mm in height) may be installed above a full sheet. The sheets may be joined over a single row of common nogs or dwangs, with each sheet independently nailed off in accordance with the standard fastening and fixing pattern for both perimeter and intermediate studs.

3.0 INSTALLATION

3.10 PROTECTIVE COATING SELECTION AND APPLICATION

Protective coating must be applied to all visible surfaces, including sheet edges. These surfaces must be finished with three coats of a quality polyurethane, or a paint system consisting of one primer coat and two topcoats, applied according to the coating manufacturer's specifications.

The selection, application, and maintenance of the coating system are the responsibility of the specifier or owner, ensuring that the selected coating achieves the desired appearance and is compatible with the intended use. It is recommended to seek guidance from the coating system manufacturer regarding:

- suitability of their product on plywood substrates,
- correct application procedures, and
- maintenance requirements.

3.11 PREVENTION OF FIRE OCCURRING

Separation or protection must be provided to bbi® F8 Structural plywood from heat sources such as stoves, heaters, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 to C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

4.0 BRACING RATINGS

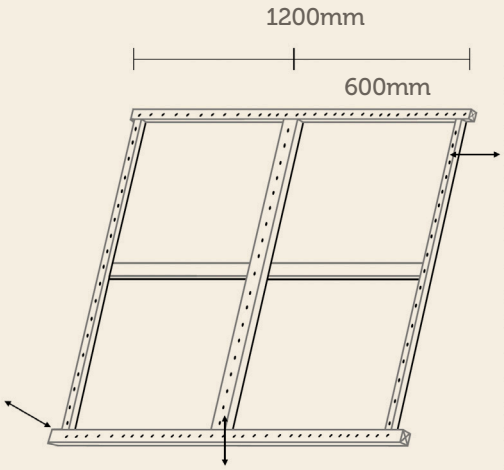
4.1 BRACING RATINGS

The Amberline, Silverline range of plywood has been P21 Brace Tested by Scion, New Zealand and have been manufactured and tested in accordance with NZS3604:2011. The Amberline and Silverline range is resistant to earthquake and wind loads on timber framed buildings.

Thickness (mm)	9mm	12mm
Min Wall Length (mm)	1200	1200
Max Stud Spacing (mm)	600	600
Wind BU/m	109	114
Earthquake BU/m	109	114

Notes: 20 bracing units = 1kN.
* As limited by the serviceability load capacity.
** As limited by the ultimate load capacity.

4.2 BRACING TEST



Test Notes

- Walls were constructed using 90x45 MSG8 studs (600 centres), plates and nogs.
- Straps of 25x0.9mm around the bottom plate at each outside stud and extended a minimum of 150mm past the top of the bottom plate were used with at least 6 timber bracket galvanised 30x3.15mm FH nails on each side of the plate giving 6kN on each side of the stud.
- Tested on a concrete floor with 2 M12 hold down bolts and 50x50x3 galvanised washers on each.
- Tested by Scion, New Zealand, April 2011.