Installation Guidance Manual for Interior Linings Plywood

bbi wood products



Endless possibilities.

1.0 | bbi Interior Plywood

bbi has an extensive range of Interior Plywood products where material costs and the desired wood-based aesthetics are important for a plywood panel in residential or commercial projects. The following information is a general guide for installation of bbi Interior Plywood Linings for non-structural applications that can be followed unless otherwise specified by a suitably qualified professional or engineers.

1.1 | Plywood Range

bbi provides a wide range and variety of plywood products suitable as a lining material for the interior spaces and internal envelopes. This includes the BlondeLine, RedLine plywood products, as well as the Brownwood, Meranti, V-Line, ValuePly, Arauco and Radiata Appearance Plywood range (subject to supply and availability).

1.2 | Structural Plywood

Structural plywood panels are manufactured in accordance with the AS/NZS 2269 Plywood Structural Standard and BS 1088 for Marine plywood. These standards ensure the conformity of the wood-based panel products that adhere to these standards for both structural integrity and durability.

1.3 | Non-Structural Plywood

Non-structural plywood panels are manufactured as an economic solution where the solid, natural, and desirable aesthetics of a wood-based product are important, without the need for structural performance or strength characteristics in a wood-based plywood panel.

1.4 | Durability

Durability must be detailed and specified by the specifier of the project, the design professional or engineers for the plywood to meet the requirements for a timber-based wood veneer product in buildings. Plywood is manufactured to adhere with the requirements of the New Zealand Building Code (NZBC) Clause B2 Durability.

When the plywood product is specified and used in accordance with good design and building practices, it will form part of the Acceptable Solution complying with the requirements of the NZBC (B2/AS1). Good detailing which avoids moisture and dust accumulation can assist in increasing the service life of the panels.

Interior lining plywood products will continue to contribute to the relevant performance requirements of the New Zealand Building Code as a non-structural interior lining, when installed and maintained with the following generic guidance information in this document or as part of specific design parameters for the project by the specifier.

1.5 | Untreated Plywood

Untreated plywood used in interior dry situations (protected from weather or dampness) does not need to be treated, for wall or ceiling linings as noted in NZS 3602.

Where situations for plywood are used for exterior or interior damp situations, plywood shall be H3 preservative treated.

The use of untreated plywood panels in internal damp applications is subject to specific design, and design consideration in respect of B2 Durability and E3 Internal Moisture of the NZBC clause with the plywood's intended use.

1.6 | Preservative Treatment

Interior plywood product is made available in nominal thicknesses and sizes with H3 envelope preservative treatment. The H3 plywood products are treated in solvent based H3.1 LOSP (Azole), or the water based preservative carrier H3.2 CCA (Copper Chrome Arsenic) or H3.2 MCA (Micronized Copper Azole) in accordance with NZS 1604.1:2021 preservative-treated wood-based products standard. H3 preservative treatment levels as noted in AS/NZS 1604 is suitable for "outside, above ground, subject to periodic moderate wetting".

Where the H3 preservative treated sheets have had its protective envelope broken by such actions as cutting, drilling or machining a suitable remedial treatment to repair the envelope shall be applied to cut surfaces. This may include retreatment of cut ends with a brush-on wood preservative according to the manufacturer's recommendations. **Failure to reinstate preservative treatment may affect the serviceable life of the plywood and impact on its durability and ability to perform as intended.**

At minimum, all fasteners used must be corrosion resistant to the appropriate treatment levels depending on the intended use and compatibility of materials in contact. H3 preservative treated plywood requires hot-dip galvanized fasteners or better.

1.7 | Dimensional Stability

All wood-based products absorb moisture from or give up moisture to the environment, until the wood product such as plywood reaches a moisture content in equilibrium with their surroundings. This results in swelling or shrinking of the wood.

Detailing and construction must allow for the natural expansion and contraction of plywood with the seasonal moisture cycling and conditions experienced during the panel's life. Panels will expand or shrink with changes in moisture content.

Specifiers must consider roof types and allow for cyclic temperate and thermal movement by providing adequate ventilation and minimizing the effects of moisture by using recommended panel joint spacing and adequate fastening.

2.0 | Care and Maintenance

2.1 | Storage and Handling

Plywood products should be handled and stored with care to avoid damage.

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

Plywood should be stacked flat, clear of ground and be supported at minimum on three to four evenly spaced supports as good practice. Failure to support the plywood panels prior to use may result in distortion and induce undesirable curves in the plywood.

2.2 | Maintenance

Interior linings plywood products generally will not normally require maintenance unless aesthetic appearances are important to maintain. If damage occurs to the plywood panels, repair or replacement should be carried out to ensure the integrity of the plywood.

Mould and mildew grows in conditions where there are combinations of temperature, ample moisture, low-air flow, humidity and mould spores. Prevention is the best solution in most circumstances, as mould can be prevalent when conditions have been met and the surface has not been cleaned.

Should a coating system be utilised for the final finish, the coating should be maintained in accordance with the coating manufacturer's instructions and their maintenance requirements.

2.3 | Surface Checking

Surface checking or face checking is a natural characteristic of an engineered wood-based product when exposed to its environment. Surface checking is where there is lengthwise separation of the surface grain which can appear during the cycling of the panel where the plywood gains and loses moisture.

Surface checking can be exacerbated with coating systems where darker colours are utilised or when plywood is left directly exposed to the sunlight when compared against lighter colours or shaded areas within the building space. Face checking is not a defect and does not affect the structural integrity or durability of the plywood product where it is confined to the face veneer.

When the first signs of surface checking occur, this is a good time to consider coating or recoating the plywood with a high-quality coating system applied by paint brush by working the coating into the wood fibres. If left uncoated, and exposed to the sun, the long-term aesthetics of the panel may be reduced.



3.0 | Installation

bbi has a provided the following general installation information for plywood utilised as a non-structural wood-based panel in the interior or internal environment for residential or commercial buildings.

3.1 | Pre-Installation Inspection

Prior to installation, examine and inspect the plywood panels for any visual defects. It is the specifier's responsibility to ensure the plywood panels meet the aesthetic requirements for the individual project. Interior plywood panels may be subject to minor imperfections and natural characteristics that is associated with engineered veneer-based wood products. Ensure the surface is free from dirt and loose wood fibres.

Interior plywood products may require additional finishing and preparation prior to installation and coating to achieve the desired finish and aesthetic appearance.

3.2 | Installation & Skill Requirements

Untreated plywood sheets must only be installed once the building has been fully enclosed, and the moisture content of the supporting timber framing does not exceed 18% moisture content.

At minimum, building work must be carried out by a suitably qualified, competent and experienced professional tradesperson conversant with plywood or by persons who may have basic experience with plywood, and able to use the relevant tools and equipment.

For wall bracing or structural plywood applications, please refer to our PlyBrace or BraceTek installation guides for further information and reference for specification of wood-based engineered products.

3.3 | Health and Safety

Always take necessary steps to ensure your safety, and the safety of others. Refer to WorkSafe for further guidance on health and safety - https://www.worksafe.govt.nz/

- Wear protective safety glasses or non-fogging googles when working with plywood.
- P1 or P2 face respirator should be worn when there is a potential to be exposed to wood dust.
- Control wood dust when machining, cutting or drilling plywood panels with the use of mechanical extraction or natural ventilation.
- Work gloves should be worn when handling plywood to avoid skin irritation and prevent splinters.
- Wash hands and any skin contact areas with mild soap and water.

3.4 | Working Best Practise

When handling and installing plywood panels, always use safe and best working practices. No special tools or equipment are required when working and cutting the plywood.

Cutting Sheets – Making Cuts to Plywood

- Plywood can be cut using any circular-saw or hand-saw tool. For the cleanest cuts use a fine tooth saw blade.
- Use a firm, flat solid surface or sawhorse when cutting plywood sheets.
- When using a saw, it is recommended to clamp a straight edge as a guide or a suitable track long enough for the saw tool to run along or with the dimension of the panel. Run the saw implement along the straight edge or track to make a precision cut.

Holes & Penetrations – Making Holes and Penetrations to Plywood

- Mark the centre of the hole or the penetration on the panel
- Pre-drill a pilot hole as a guide.
- Cut or drill the hole to the appropriate diameter with a hole saw fitted to a drill
- Where holes are irregular or larger than the appropriate diameter hole saw, drill a series of smaller holes around the perimeter of the hole, and then cut using a jig-saw tool or a smaller fine-tooth saw to remove the waste piece from the panel.

3.5 | Plywood Sheet Layout

Plywood sheets are strongest in the vertical orientation or parallel to the grain of the plywood panels (the long side of the panel).

For the application of plywood in interior walls and as a ceiling lining, maximum framing centres should be no more than 600mm.

- Avoid single spans between framing supports.
- Plywood sheets with square edges must be supported around the perimeter and through the body of the panel.
- Where there is a shiplap, do not fasten through the top shiplap as this will reduce natural expansion with the plywood panel.
- Allow for a 2 – 3mm expansion gap between sheets where there is risk of moisture / dimensional change.
- Closer supporting member spacing would be recommended when considering high impact areas such as gymnasiums.

Plywood sheets that do not have adequate framing support may distort with the environment or changes in humidity, particularly with seasonal changes. It is essential that plywood sheets are supported by framing members and appropriate fastening.

3.6 | Fasteners and Adhesives

Non-bracing plywood panels can be fastened to walls or ceilings with a combination of fasteners and adhesives. This includes the use of nails, screws, panel pins, brads and construction glues or adhesives. This will be dependent on the level of features and design aesthetics wanting to be achieved with the plywood, including detailing with the concealment of fasteners behind battens, or with decorative fasteners and the use of roseheads.

Note that it is recommended to seek advice from the glue or adhesive manufacturers for recommendations on installation methods for construction adhesive suitable for the walls or ceilings when using non-structural plywood panels.

3.7 | Fastening and Fixing Pattern

Plywood panels are recommended to be fasten at minimum, around the edges and ends of the sheet (perimeter) 150mm centres, and within the panel (body of sheet) at 300mm centres on the intermediate stud/supports with nails or screws unless otherwise specified.

- Mechanical fasteners must be at least 3 fastener diameters or 7mm from the edge of the sheet.
- Minimum fastener size: Nails 50 x 2.8mm or Screws 8g x 40mm.
- Daubs or continual bead of adhesive will need to be applied in accordance with the recommended installation guidance from the adhesive manufacturer for plywood in applications as wall or ceiling linings.

3.8 | Preparation Prior to Coating

Ensure the surface is free from dirt, mould and wood fibre prior to the application of a coating system. Plywood panels are subject to the natural characteristics of an engineered wood-based product and may require further additional preparation with extra sanding or filling to achieve the desired aesthetics. It is important to check the plywood prior to any coatings, as the appearances may vary between panels, which can be subject to localised surface roughness, raised grain or discolouration.

3.9 | Protective Coating Selection and Application

The coating selection, application and maintenance is the responsibility of the specifier or owner to ensure the desired appearance and compatibility of the coating system is suitable for the intended application. Always refer to the coating manufacturers specification prior to application.

For the best protection, apply three coats of a high quality, protective flexible coating by brush, to all the visible surfaces, including the sheet edges of the plywood panels. This ensures there is an adequate film build and coating to the surface of the plywood.

It is recommended to seek advice from the manufacturer of the coating system for guidance on the suitability of their product applied to the plywood panels, and the application of the coatings including maintenance requirements of the coating system.

3.10 | Prevention of Fire Occurring

Separation or protection must be provided to bbi® 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 | References

NZS 3602:2003 Timber and Wood-based Products for Use in Building

NZS 3604:2011 Timber-framed buildings

NZS 3640:2003 Chemical Preservation of Round and Sawn Timber

AS/NZS 1604.1:2021 Preservative-treated wood-based products

AS/NZS 2269.0:2012 Plywood – Structural

BS 1088:2018 Marine plywood – Requirements

New Zealand Building Code

- B1 Structure
- B2 Durability
- E3 Internal Moisture

WorkSafe – Mahi Haumaru Aotearoa – Health and Safety



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