



ecoply®

Grooved
LINING

ECOPLY® GROOVED LINING INFORMATION GUIDE

MAY 2024



Information contained within is specific to Ecoply® structural plywood products and must not be used with any other plywood products, no matter how similar they may appear.

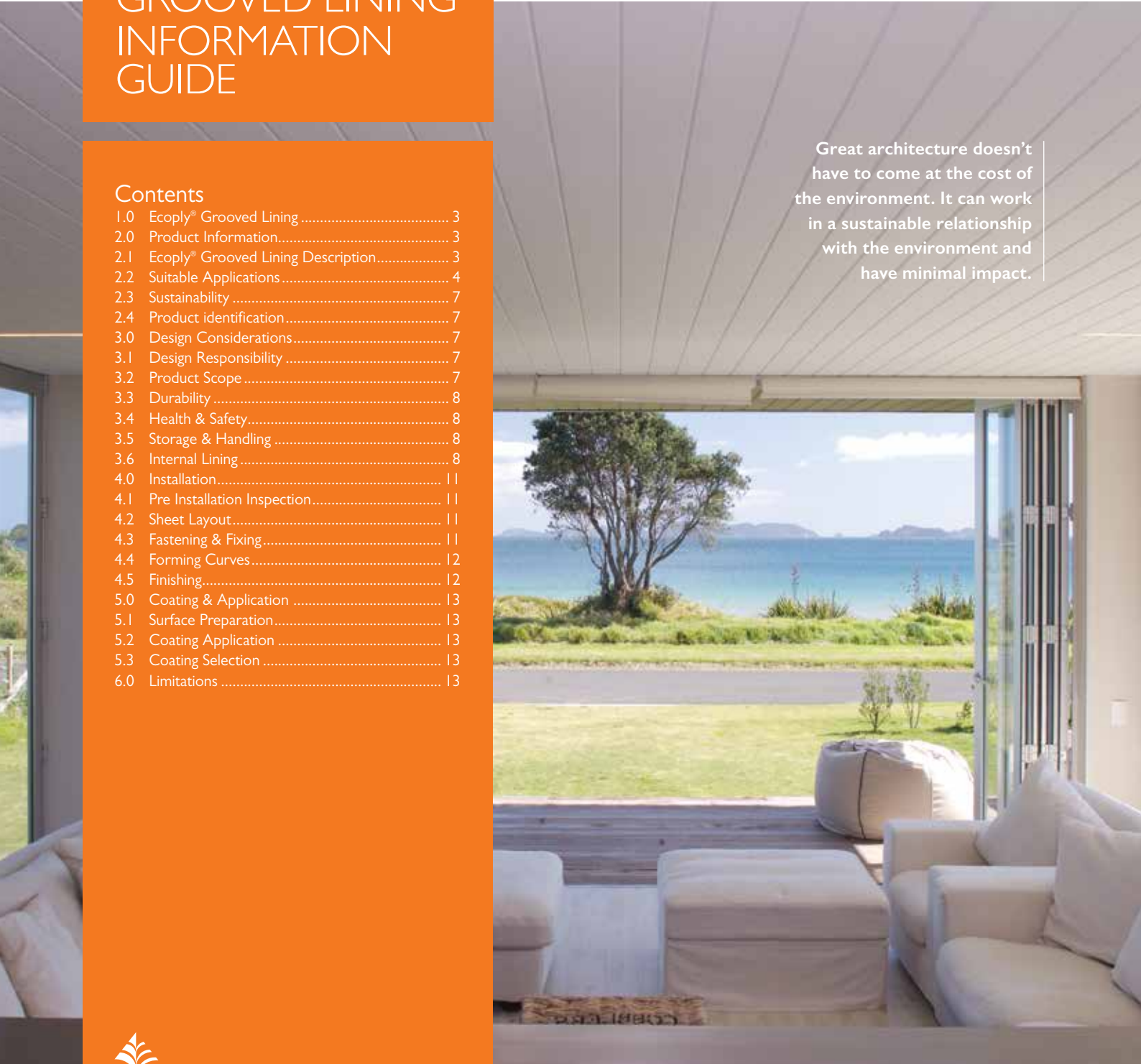


ECOPLY® GROOVED LINING INFORMATION GUIDE

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Great architecture doesn't have to come at the cost of the environment. It can work in a sustainable relationship with the environment and have minimal impact.



1.0 ECOPLY® GROOVED LINING

Manufactured in New Zealand by Carter Holt Harvey Plywood Limited (CHH Plywood), Ecoply® Grooved lining is an untreated plywood panel suitable for internal use as wall and ceiling linings. Appearance grade with a solid sanded surface and a V-groove profile.

2.0 PRODUCT INFORMATION

2.1 ECOPLY® GROOVED LINING DESCRIPTION

Ecoply Grooved Lining is manufactured from radiata pine wood veneers. The veneers are placed at right angles to each other for maximum strength and stability then bonded together with synthetic phenolic (PF) resin to form a strong and permanent Type A bond.

Refer Table 1 for surface finish and Table 2 for the Grooved Lining size and profile.

For plywood used as an exterior cladding, refer to the current Shadowclad Specification & Installation Guides which can be downloaded from www.chhply.co.nz/librarytools

Table 1 Surface Finish

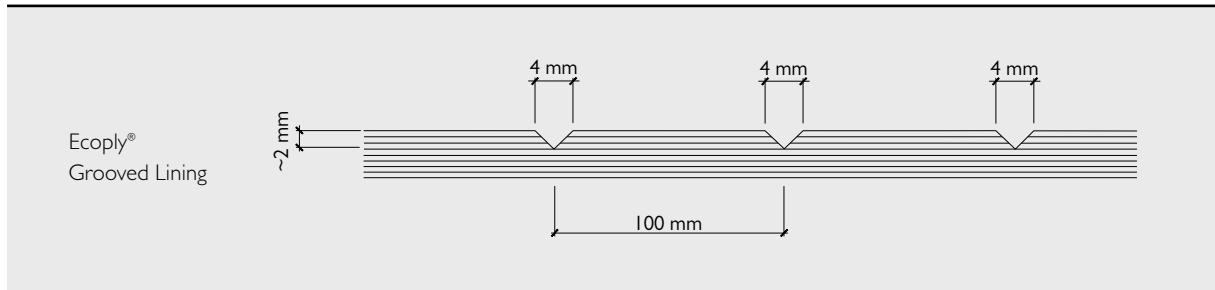


The information contained in this document is current as at May 2024. It is your responsibility to ensure you have the most up to date information available. The information contained in this publication relates specifically to Ecoply® structural plywood products manufactured by CHH Plywood and must not be used with any other plywood manufacturer's product no matter how similar they may appear. Alternative plywood products can differ in a number of ways which may not be immediately obvious and substituting them for Ecoply structural plywood products is not appropriate, and could in extreme cases lead to premature failure and/or buildings which do not meet the requirements of the NZBC.

Table 2 EcoPLY® Grooved Lining

Surface Finish	Appearance grade with a solid sanded v-grooved surface
Sheet Length	2400 and 2700mm
Width (Overall)	1200mm
Width (Effective)	1200mm
Cover/Width Tolerance	+/- 1mm
Nominal Thickness	12mm
Weight (kg/m²)	6.6
R-Value (m² °C/W)	0.104
Groove Profile	4mm wide, 2mm deep at 100mm centres
Edge Profile	Tongue and Groove
Treatment Available	Untreated
Proposed Use	Internal dry applications as per NZS 3602

EcoPLY® Grooved Lining Profiles and Dimensions



2.2 SUITABLE APPLICATIONS

EcoPLY Grooved Lining (untreated and uncoated) is suitable where NZS 3602 - Timber and Wood Based Products for use in Building allows the use of untreated plywood. **Untreated EcoPLY is designed for internal dry applications only.** Wet areas such as bathrooms, laundries and kitchens are subject to specific design and compliance with E3 internal moisture.

Applications Include:

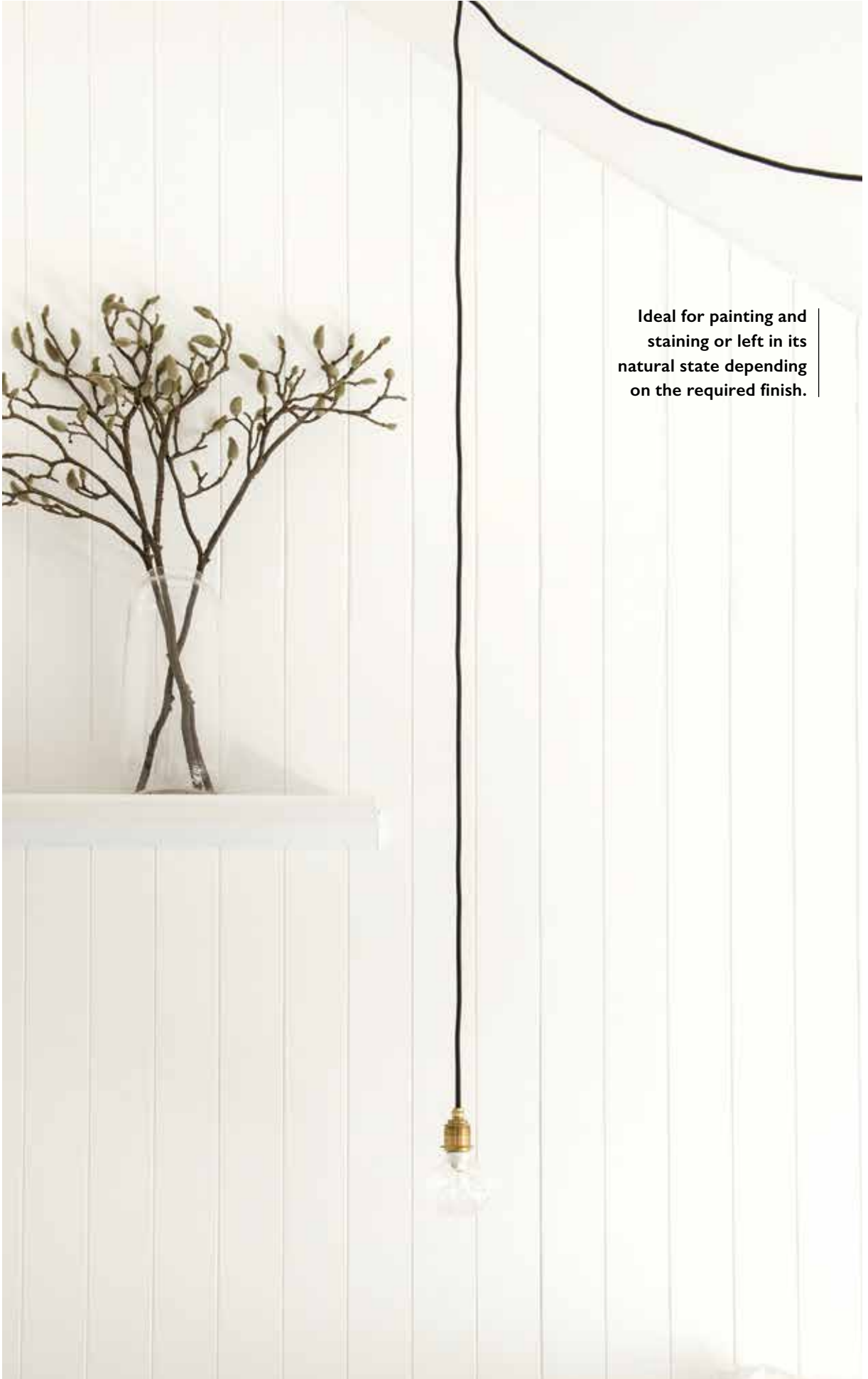
- Interior wall and ceiling linings.
- Feature walls and partitions.
- Back lining to exposed rafters.
- Commercial interiors and shop fitouts.

Advantages

- Decorative real wood panelling.
- Tough and impact resistant.
- Strong, providing stiffness and rigidity.
- Only requires standard carpentry tools.
- Lightweight, easy to work and finish.
- Ability to create slight curves.
- Water resistant glue bond.



Appearance grade with
a solid sanded surface and
a V-groove profile.



Ideal for painting and staining or left in its natural state depending on the required finish.

2.3 SUSTAINABILITY

Sustainability

Carter Holt Harvey's commitment to the environment is fundamental to its business. From the use of plantation forests to promoting policies minimizing waste and emissions, CHH is proud of the sustainable base for its products.

CHH Plywood uses waste handling procedures to optimise recovery and manage the creation of arisings. This starts with the use of only radiata pine sourced from sustainably managed renewable plantation and includes the application of optimisation algorithms for veneer peeling to enhance finished goods recovery.

CHH Plywood has been actively involved in the development of markets for the use of downgraded arising product for use in industrial applications including packaging whilst peeler cores are often reprocessed for use as bearers. All waste product derived is assessed for downstream applications including bark for landscaping, boiler fuel and/or sold for use in wood fibre products.

Formaldehyde Emissions for CHH Plywood products are measured as being less than 0.5 mg/L, classed as E0.

Environmental Product Declaration (EPD)

The CHH Plywood Environmental Product Declaration (EPD) is a demonstration of the continual focus and commitment to sustainability, through a science driven, independently verifiable process with standard methodology across all products.

Environment, Social and Governance (ESG)

Carter Holt Harvey has developed a new Environment, Social and Governance (ESG) reporting programme. The company has focused on setting out what its stakeholders have identified as material ESG issues, how it manages, or plans to manage those issues, and key environmental indicators. In the future, Carter Holt Harvey will celebrate its ESG achievements and acknowledge those areas where it needs to improve, keeping on a path of steady improvement that will further strengthen Carter Holt Harvey in the years to come.

FSC® and Sustainability Accreditations

CHH Plywood sources logs from sustainably managed plantation forests, and has the Forest Stewardship Council® (FSC®) Chain of Custody certification (FSC® C012019). This measure provides a formal assurance that gives CHH Plywood's customers confidence about its sustainability credentials. CHH Plywood's products can be supplied with a FSC certificate on request.

DECLARE LABEL

The CHH Plywood range of untreated products have been issued Declare labels and determined to be Red List Free through the International Living Future Institute, and as such the untreated range can be used in Living Building Challenge.

To view and download certificates and documents related to Sustainability please visit www.chhply.co.nz/sustainability

2.4 PRODUCT IDENTIFICATION

Every sheet of Ecoply plywood is branded in accordance with AS/NZS 2269 Plywood - Structural. The Ecoply interior plywood panels are also branded as UNTREATED - FOR INTERNAL USE ONLY.

ECOPLY GROOVED LINING STRUCTURAL
A BOND EO AS/NZS 2269.0:2012
PAT 12/12/2023 12:23:45 CHH.COM



3.0 DESIGN CONSIDERATIONS

3.1 DESIGN RESPONSIBILITY

Design responsibility lies with the building owner and the professionals that they engage. The specifier for the project must ensure that the details in the specification for their individual projects are appropriate for the intended application. The specifier must also ensure that additional detailing is provided

for specific design or any areas that fall outside the scope and specifications of this literature.

Good detailing which avoids moisture or dust accumulation on the sheet surface can help increase durability and aesthetics.

3.2 PRODUCT SCOPE

Untreated plywood must only be used in dry internal spaces for wall and ceiling linings where NZS 3602 allows the use of untreated plywood. Wet areas such as bathrooms,

laundries and kitchens are subject to specific design and compliance with B2 durability and E3 internal moisture.

3.3 DURABILITY

The durability level applicable to plywood manufactured by CHH Plywood is dependent upon the application. Detailing and installation methods need careful consideration to satisfy the requirements of the NZBC.

50 Year Durability

Untreated plywood used in dry, interior situations as defined by NZS 3602 will meet the requirements for 50 year minimum durability if coated or uncoated.

3.4 HEALTH & SAFETY

Untreated plywood must be installed and used as per the Safety Data Sheet (SDS) which can be downloaded from www.chhply.co.nz.

Always wear safety glasses or non-fogging goggles when cutting plywood panels.

If wood dust exposures are not controlled when machining (sawing, routing, planing, drilling etc.) a class P1 or P2 replaceable filter or disposable face piece respirator should be worn. Wear comfortable work gloves to avoid skin irritation and the risk of splinters. Wash hands with mild soap and water after handling panels.

3.5 STORAGE & HANDLING

Ecoply Grooved Lining Panels must be:

- Kept dry, stored under cover.
- Handled and stacked with care to avoid damage.
- Stacked flat; clear of the ground, on at least three evenly spaced bearers.
- Stored in well-ventilated areas away from sources of heat, flames or sparks.
- To minimise dimension movements, allow panel to equilibrate in the final environmental conditions before installation.

3.6 INTERNAL LINING

Internal Wall Linings & Ceilings

- Skirtings, dado mouldings, furniture trim, bookshelves, cornices and other trim can be used to hide mechanical fasteners.
- Deep skirting and cornices can be used to extend the effective length of shorter sheets in longer applications.
- Unsupported plywood sheets may distort with environmental changes or when coated, particularly if the coating is applied to one side only. Where on going sheet flatness is critical, plywood sheets must be supported by framing.

Ceiling Linings and Moisture Management

Good ventilation and the avoidance of moisture are important design considerations when using Ecoply Grooved Lining panels. If incorrectly detailed, temperature and moisture movement within roof spaces can cause distortion in plywood linings and/or framing members. Designers must consider roofing type, ventilation, seasonal conditions, and the intended use of the building when detailing designs to allow for thermal movement through cyclic temperature and both internal and external environmental changes.

To assist in managing the risk of panel size change due to changes in moisture levels and cyclic temperature changes expansion gap between sheets should be applied – refer Section 4.3 Fastening and Fixing.

For further guidance on roof space ventilation please see:

- BRANZ Bulletin 531: Designing For Thermal And Moisture Movement.
- BRANZ Bulletin 610: Preventing Moisture Problems In Timber Framed Skillion Roofs.
- BRANZ Bulletin 630: Roof Space Ventilation.



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4.0 INSTALLATION

4.1 PRE INSTALLATION INSPECTION

- Refer to section 3.5 for Storage & Handling information.
- Prior to installation, inspect panels for visual defects. Responsibility lies with the installer to ensure individual panels meet the aesthetic requirements of the specific project. CHH Plywood will not be responsible for installation or removal costs where aesthetically unacceptable panels have been installed.
- EcoPLY® Grooved Lining may include minor imperfections associated with veneer based wood products.
- EcoPLY Grooved Lining are subject to natural characteristics of timber. EcoPLY may contain filler and require additional preparation prior to coating application to achieve the desired aesthetic requirements.

4.2 SHEET LAYOUT

- Maximum framing centres are shown in table 3 below.
- Avoid single spans between framing supports.
- For all square edge sheets, products must be supported at sheet edges.
- Where face grain runs across framing, products with a tongue and groove edge profile do not need support unless specified.
- Closer spacings are recommended for high impact areas.

Table 3: Maximum Frame Spacings

Application	Sheet Orientation	Maximum frame centres (mm)
Internal Walls	Fixed vertically, max stud spacing without nogs or dwangs	600
Internal Walls	Fixed horizontally, maximum stud facing	600
Internal Ceilings	Face grain across framing, under or over frame	600

Note: Unsupported plywood sheets may distort with seasonal changes or when coated particularly if the coating is applied to one side only. Where on going sheet flatness is critical plywood sheets must be supported by framing.

4.3 FASTENING & FIXING

- Where there is risk of panel size change due to changes in moisture levels allow a 2 to 3mm expansion gap between sheets.
- Where nailing or screwing use only flathead nails or screws, with or without construction adhesives.
- Fasteners must be at least 3 fastener diameters or 7mm from the edge of the sheet.
- For tongue and groove products fasten 15mm from tongue and groove edges.

General Fixing Techniques Include:

- Nailing (including panel pins) pins/brads, screw and gluing.
- Use of scotia/dado & skirting to hide joints and fixings.
- Battens and rafters to hide joints.
- Creating design features of mechanical fasteners (such as use of rosehead fasteners).
- Negative detailing between panel edges.

Standard fixing pattern: unless otherwise specified fasten edges and ends of sheets at 150mm centres, and within the panel at no more than 300mm centres. Do not overdrive power driven nails.

EcoPLY panels can be installed by using a variety of fastening and fixing methods depending on the degree of fastener concealment desired.

Fixing for Internal Non Bracing Walls & Ceilings:

Nails: Use 40mm panel pins/brads 150mm centres at sheet edges and 300mm centres on intermediate supports. Daubs of a MS Polymer adhesive such as the Soudal® Soudaseal 240FC at 300mm centres is recommended on all framing members.

Where back nailing over rafters use galvanised flat head nails 40 x 2.5mm.

Screws: Use 8g x 40mm screws and adhesive as per nail specifications.

Adhesives Only (Not Suitable for Ceiling Applications)

Panels may be fixed with a bead of MS Polymer based adhesive such as the Soudal® Soudaseal 240FC on all frame supports through the application of Ø 7mm continuous beads. Sheets must be supported by applying pressure during the adhesive curing process in accordance with the adhesive manufacturer specifications or with mechanical fasteners such as nails, panel pins/brads or screws at 300mm centres on all supporting framing.

Soudal® Adhesive Only Wall System

Soudal® has developed an installation method for Interior plywood when used for internal wall linings (not suitable for use in ceiling, applications).

The system uses a two stage process utilising Soudal® Soudaseal 240 FC and Gator double sided tape 2mm. The Gator tape provides initial fixing support for panels and ensuring that a 2mm thickness of the adhesive is maintained, while a permanent bond is established using Soudal® Soudaseal 240FC.

When installed according to Soudal® technical specifications this system can eliminate the need for mechanical fasteners and/or bracing support during the adhesive curing process.

For specifications and technical support regarding the system contact Soudal® on 0800 832 7732 or visit www.Soudal.co.nz.

4.4 FORMING CURVES

- Ecoply® Grooved Lining can be curved for applications such as ceilings and feature walls. Table 5 provides guidance for the minimum recommended radii.
- Shaped top and bottom plates or noggs can be jigsaw cut from 17, 19, 21 or 25mm thick Ecoply.
- Fix covering plywood over the framework.
- Attach the outer edges with tack nails or clamps first to develop the curve and then fix sheets from the centre out.
- For load bearing curves check capability using a structural designer.
- Use recommended fastener size as detailed in Table 4 at 150mm centres on all frames. Longer fasteners, ring shank or annular grooved nails will provide improved resistance to tension. Adhesives alone are not normally recommended in tension applications.

Table 4: Fasteners Ecoply®

Minimum nail size in timber framing	60 x 2.8mm
Screw size in timber framing	8g x 40mm
1.15mm steel framing¹	10-24-404
Screw size in 2.80mm steel framing¹	10-16-404

¹ Self tapping, self counter-sinking screw

Table 5: Bending Radii for Ecoply® Products

Recommended minimum bending radii for Ecoply® products	
Along face (m)	3.6
Across face (m)	2.4

4.5 FINISHING

Punch nails before finishing and apply a first coat (clear, primer or sealer) before filling punched holes to minimise dryout or staining. High quality paints, stains or clear finishes are recommended for Ecoply plywood. Tinted clear finishes can provide a full range of architectural options that show the warmth of wood while reducing yellowing and other ultraviolet effects. The use of high gloss finishes and paints tend to highlight naturally occurring and manufacturing characteristics of plywood such as change in grain and beat marks from the sanding.

Matt finishes and paints are recommended to provide a natural timber finish.

Ecoply Grooved Lining panels are wood based and respond to changes in humidity. Avoid using inflexible coatings (such as epoxies) that may check on movement of the wood. For ceilings or similar applications it is an advantage to prefinish panels prior to installation. Always refer to the coating manufacturer's specifications for best practice.

Face Checking

Face checks are lengthwise separations of wood fibres in the face veneer of the plywood. They result from the normal swelling and shrinking of wood as it gains and loses moisture which is exacerbated by darker colours. This will be more pronounced where sheets are exposed to direct sunlight compared with more shade areas inside the building. It is important to realise that these checks are superficial, being confined to the face veneer. They do not alter the structural integrity of the plywood in any way. If you are the specifier, it is important to discuss these issues with your client before finalising colour choice. If checking occurs, repaint with a good quality, 100% acrylic paint suitable for internal applications in accordance with the manufacturer's instructions, thoroughly working paint into the face checks with a paint brush.

Clear Coatings & Uncoated Ecoply®

If Ecoply Grooved Lining is left uncoated or is clear coated in high sun exposure areas of the building the long term aesthetics of the board may be reduced.

5.0 COATING & APPLICATION

5.1 SURFACE PREPARATION

Refer to section 3.5 Storage and Handling. Ecoply® plywood is manufactured and stored in dry conditions at CHH Plywood manufacturing facilities. It is the applicator's responsibility to ensure the surface is dry and free from dust and mould prior to coating.

Ecoply Grooved Lining panels are subject to natural characteristics of timber. Ecoply may contain filler and require additional preparation prior to coating application to achieve the desired aesthetic requirements.

5.2 COATING APPLICATION

Coatings for Ecoply products should be applied by brush ensuring adequate coating film build is achieved. For detailed advice on surface preparation, coating, product suitability and general coating practice always refer to the coating manufacturer prior to application.

5.3 COATING SELECTION

The selection, application and maintenance of coatings is the responsibility of building owners and the professionals that they engage. For advice on specific coating products and their suitability for use on plywood always refer to the coating manufacturer's specifications.

The following coating information should be treated as a generic guide to coating systems typically used with Ecoply interior lining products. The selection, application and maintenance of coatings is the responsibility of building owners and the professionals that they engage.

It is important to note regardless of the internal lining selected there will always be a level of coating maintenance required to ensure the lining material is sufficiently coated and maintains the desired appearance.

Paints & Film Forming Stains

Three coats (1 undercoat, 2 top coats) of a good quality, 100% acrylic paint system with a light reflectance value (LRV) of 50% or greater (i.e. light colours) which is regularly maintained will provide the highest level of protection and durability for Ecoply and is likely to require the least amount of coating maintenance over the life of the interior lining.

Dark colours (LRV of below 50%) may still be used, however they are likely to increase heat and stress on the panel surface increasing the level of coating maintenance required to maintain an acceptable visual appearance.

Some film forming stains (i.e. coatings with the consistency of paint but with an appearance similar to penetrating stains) may offer similar protection qualities to paints however advice and assurance should be sought from the coating manufacturer as to their suitability for use with Ecoply Grooved Lining prior to application.

Penetrating Stains

Penetrating stains show the natural texture and character of timber and are widely used on Ecoply. Due to their translucency, penetrating stains are likely to require additional coating maintenance during the panel's life to maintain an acceptable visual appearance. CHH Plywood does not recommend the use of linseed oil based coating which have the potential to promote mould growth in this product.

6.0 LIMITATIONS

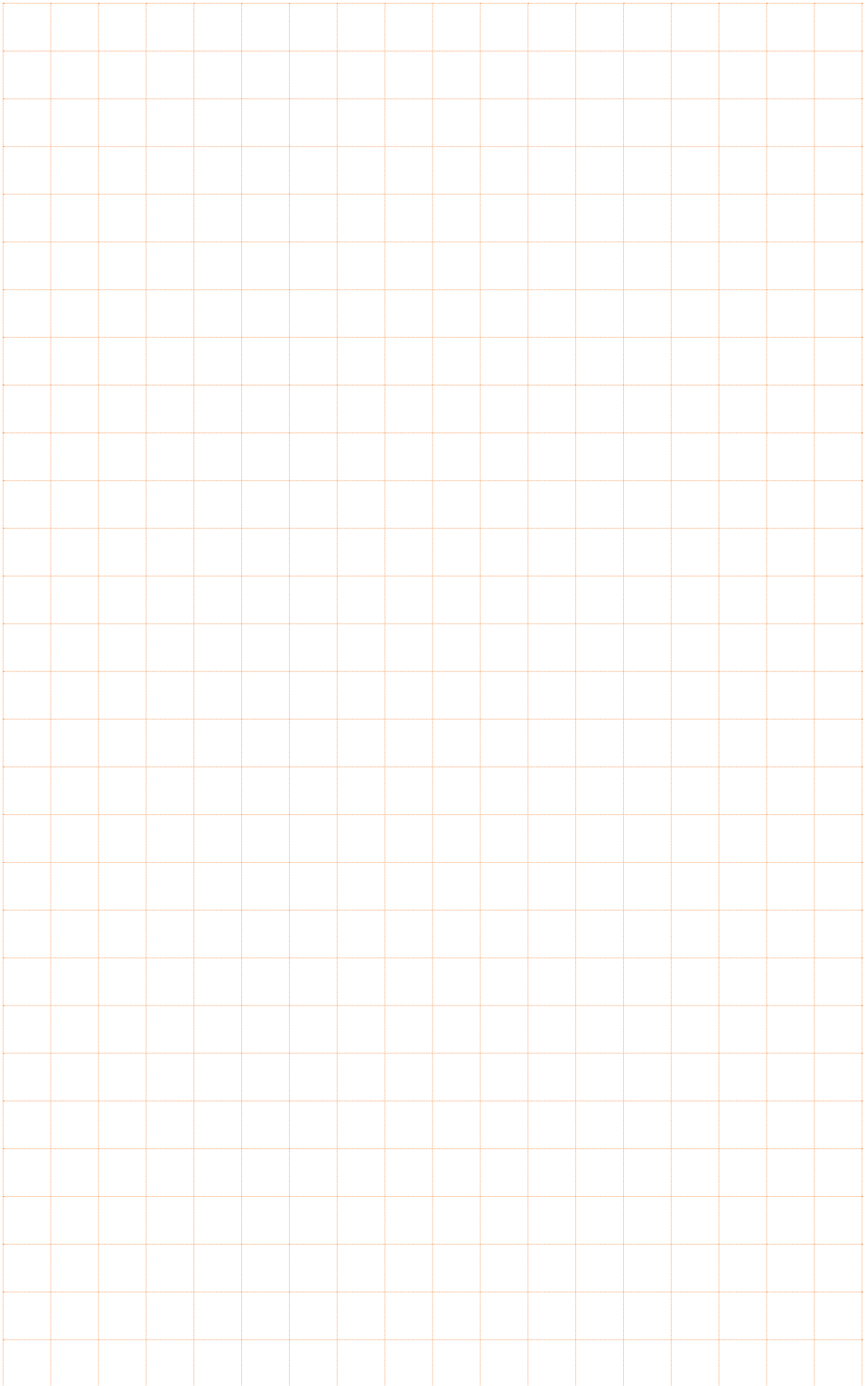
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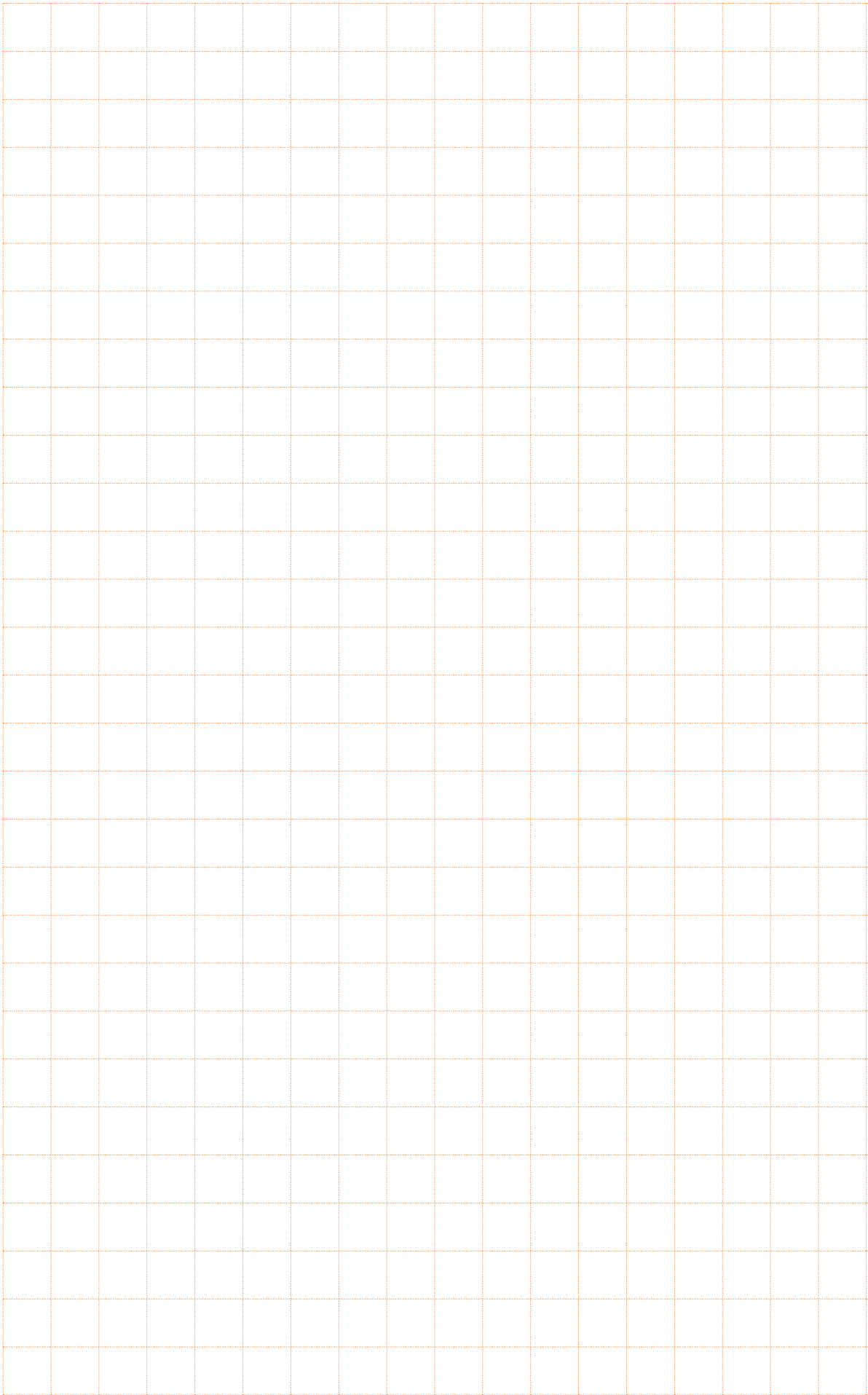
All photographic images are intended to provide a general impression only and should not be relied upon as an accurate example of Ecoply plywood products installed in accordance with this document or the NZBC compliance documents.

This publication replaces all previous CHH Plywood design information and literature relating to plywood suitable for use in interior applications. CHH Plywood reserves the right to change the information contained in this document without prior notice.

It is your responsibility to ensure that you have the most up to date information available, including at the time of applying for a building consent. You can call toll free on 0800 326 759 or visit www.chhply.co.nz to obtain current information.

CHH Plywood has used all reasonable endeavours to ensure the accuracy and reliability of the information contained in this document. However, to the maximum extent permitted by law, CHH Plywood assumes no responsibility or liability for any inaccuracies, omissions or errors in this information nor for any actions taken in reliance on this information.







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