ENGINEERED WOOD PRODUCTS

PLYfloor®

PLYfloor Installation Guide

The natural solution for you.

CarterHoltHarvey
Woodproducts Australia

Trust PLYfloor

Trust PLYfloor® to be lightweight and easy to work with, kilo for kilo it's stronger than steel and it's available FSC® chain of custody certified. Trust that PLYfloor will not only do the job, but do it well. Perfect for residential flooring but ideally suited for commercial floors that carry heavy and concentrated loads.

Benefits

- Easy to use – lightweight and easy to handle on-site; plus no special tools required for installation
- Superior strength – higher stiffness, strength and span than most other substrate systems
- Product protected – available H2-S or H3 treated against fungal and termite attack and for use in external or wet areas
- Durable performance – proven to perform structurally for at least 50 years
- Product quality – Engineered Wood Products Association of Australasia 'Product Certified' for peace of mind
- Environmentally sustainable – available FSC 'Chain of Custody' certified upon request for Green Star credits

FSC www.fsc.org FSC® C018480
The mark of responsible forestry

TERMINATOR Protection System

Product and purpose

PLYfloor is a strong, durable pre-sanded panel available in a range of standard thicknesses from 15-25 mm and is ideally suited for use in residential and commercial floors. PLYfloor has machine grooved long edges with a plastic tongue to form a tongue and groove joint between sheets.

Identification

PLYfloor is manufactured and branded to comply with AS/NZS 2269: 2008, by Carter Holt Harvey.

PLYfloor carries the following branding:

- Manufacturers Name - Carter Holt Harvey
- The EWPAA 'Tested Structural Stamp' - The word structural
- Australian Standard AS/NZS 2269
- FL – Flooring, CD is face and back visual grade
- A-Bond – durable phenolic bond
- Stress grade F11
- Panel Construction Code ie 15-30-5
- Formaldehyde Emission class E0
- If preservative treated, branding as per AS1604.3 (eg 132 64 H3)
- Mill No

Compliance and standards

PLYfloor is manufactured under a third party audited quality control programme and is product certified by the Engineered Wood Products Association of Australasia (EWPAA) as compliant with AS/NZS2269 Plywood-Structural.

PRODUCT CERTIFIED paa ENGINEERED WOOD JAS-ANZ

For houses, PLYfloor is acceptable under Section 5 of AS1684.2: 2010. Table 2 on the following page contains floor loads for the typical applications as defined in AS1170.1: 2002. The plastic tongue has been tested and is suitable to support design concentrated live loads of 2.7 kN for 15 mm to 21 mm thick PLYfloor and 7.5 kN for 25 mm PLYfloor.

Subject to the limitations and conditions in this brochure, the design thickness and frame spacings for PLYfloor meet the requirements of the Building Code of Australia.

At the time of despatch of the plywood, the moisture content anywhere within a PLYfloor sheet when determined in accordance with AS/NZS 2098 is between 8-15%.

A better environmental choice

Carter Holt Harvey ensures that its wood is legally sourced from managed forests and offers FSC 'Chain of Custody' certified product upon request for Green Star points. PLYfloor achieves less than 0.3mg/l formaldehyde (equivalent to E0) emissions from the final product.

Treatment

PLYfloor is available H2-S or H3 treated to AS1604.3 for protection against rot, fungus and termites. Users should check to ensure all treated material is branded with treatment information, chemical supplier precautions are followed for health and safety and directions are followed to maintain envelope protection.

Rain wetting and construction time

Some materials used in floors will not withstand exposure to weather. Untreated plywood will withstand rain and exposure during normal construction periods. Some discolouration and minor checking of the surface can be expected if plywood is exposed for extended periods. For floors expected to be uncovered for long periods (greater than 3 months), H3 LOSP treated plywood can be used to reduce the risk of decay. Return the plywood to less than 18% moisture content before installing moisture sensitive materials. Where a high quality visual finish is required, PLYfloor should be protected with a cover or sealed.

In applications where the moisture content of wood may exceed 18% for prolonged periods, plywood must be treated as a minimum to the H3 hazard class to resist decay. This includes excessive ground dampness and plywood that may be subject to condensation. Appropriate building detailing and ventilation is essential.

Decks

PLYfloor is suitable for use in decks when fully protected from moisture exposure by a properly detailed and installed impervious water-proof membrane. In addition the plywood shall be preservative treated to a minimum H3 hazard class level to AS/NZS1604.3: 2010. PLYfloor is not recommended for use in permanently exposed verandahs or decks.

Wet area flooring

Floors in bathrooms, laundry spaces, kitchens and garages may be exposed to water occasionally. Use H3 LOSP treated plywood where the exposure is likely to be regular or uncontrolled. For rental accommodation, motels and commercial residential floors, H3 LOSP treated PLYfloor is recommended. Refer EWPAA Tongued and Grooved Residential Flooring brochure for guidance on installation detailing.

Heated floors

The Type A (Marine Grade) glue bond and solid wood veneer in PLYfloor will withstand floor heating systems. Tight moisture content control during construction is recommended to avoid shrinkage problems in both framing and plywood.

Technical details

PLYfloor product range

Table 1

Product Identification Code	Nominal Thickness (mm)	Grade	Length (mm)	Width (mm)	Coverage per Sheet m^2	Sheets per Pack	Weight per Sheet Approx kg
15-30-5	15 mm	CD	2400	1200	2.88	35	24
			2700	1200	3.24	35	27
17-24-7	17 mm	CD	2400	1200	2.88	32	26
			2700	1200	3.24	32	30
19-30-7	19 mm	CD	2400	1200	2.88	28	30
			2700	1200	3.24	28	34
21-30-7	21 mm	CD	2400	1200	2.88	25	33
			2700	1200	3.24	25	38
25-30-9	25 mm	CD	2400	1200	2.88	20	39
			2700	1200	3.24	20	44

All thicknesses are suitable for domestic or commercial flooring applications.

Floor joist spacings

Table 2

Australian Loading Code Description AS 1170:2002	House and Residential Bedrooms	Dining , Communal, Assembly, Classrooms	Institutional Assembly	Public Assembly, Corridors, Stages, Kitchens, Laundries, File Rooms	Offices, Retail Sales, General Storage, Libraries	Drill Rooms, Halls, Cold Storage
Plywood thickness	**Maximum Joist centres (mm), plywood continuous over a minimum of two spans, face grain across joists. Adjust actual spacings to suit 2400 or 2700 mm sheet length.**					
15	400	300				
17	450	400	300			
19	600	450	400	300		
21	675	600	450	450	300	
25		675	600	600	400	300
Maximum Basic Distributed Live load (kPa)	2.0	4.0	5.0	7.5	5.0	5.0
Maximum Concentrated Live Load (kN)	1.8	2.7	3.6	4.5	7.0	9.0

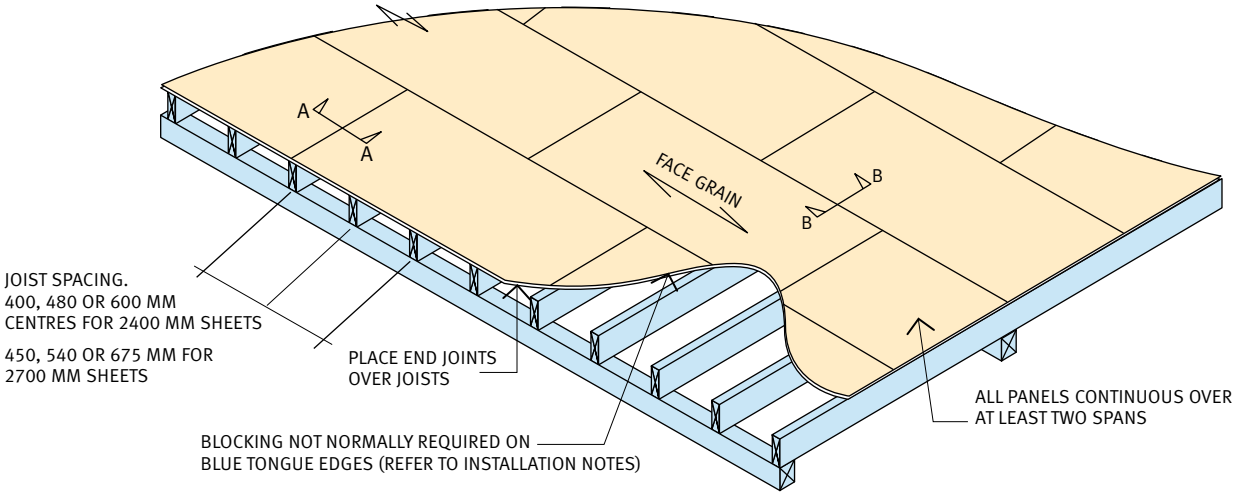
Design Basis:

1. Design in accordance with AS 1720.1-2010 Timber Structures Part 1: Design Methods.
2. Loads distributed on an effective panel width in accordance with EWPAA Method.
3. Spacings determined to meet a Deflection Limit of Span / 200 (EWPAA Method).

Installation

PLYfloor flooring layout

Detail 1



Framing

- Select joist spacings to match PLYfloor thickness and loading conditions from Table 2.
- Ensure top edges of joists are properly aligned.
- Use designIT® software, available free from Carter Holt Harvey, to simply and quickly specify bearers and floor joists in kiln dry LASERframe® structural timber, hySPAN® Structural LVL or hyJOIST® Engineered I-Joists. Also available TERMINATOR® termite protected.
- Blocking within the body of the floor is not required to support tongue and grooved edges.
- Blocking (nogs) may be required to:
  - Block all edges of standard 'square edge' ECOply structural plywood.
  - Block if the floor is being used as a diaphragm for lateral wind and earthquake resistance with fixings to transfer shear across the joints. In this case, details should be specified on drawings.
  - Use blocking 'on the flat' to provide gaps where air flow is needed for ventilation.

Sheet layout

Refer to Detail 1.

- Place face grain at right angles to the supports.
- Sheets must be continuous over at least two spans (three framing members).
- Lay the sheets in a staggered pattern.
- Allow a 2 to 3 mm expansion gap between sheets for square edges and 1 mm for tongue and grooved edges.
- Butt tongue and groove panels at the tongues because the machined edges can accommodate the movement. Allow expansion gap at the ends.
- Panels should be pushed together lightly by hand, cramping is not recommended.
- Allow 5 mm clearance inside confining structure such as concrete or brick walls adjacent to the floor.
- Allow clearance for ventilation as required.

Floor insulation

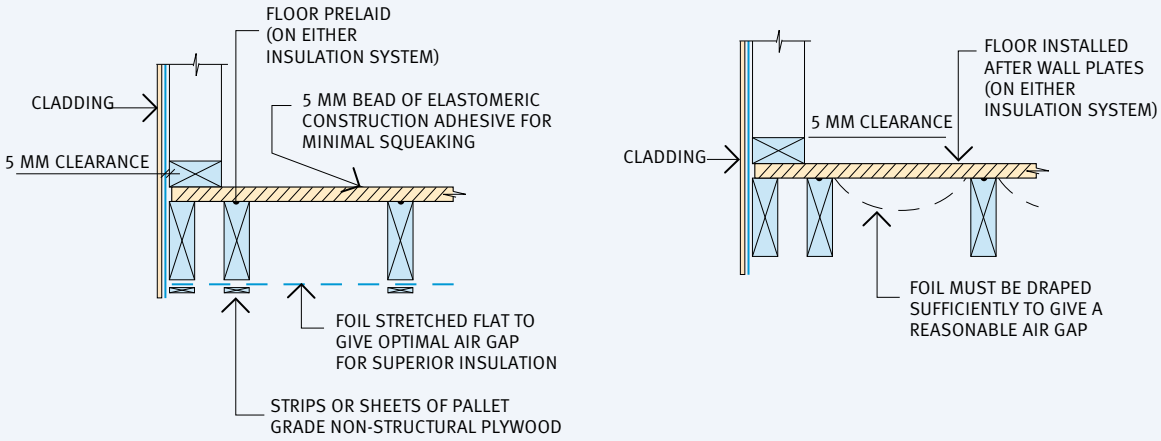
For ground floors requiring insulation foil, draped foil prevents the use of adhesive, and increases the quantity of foil required to achieve insulation performance. In practice, gaps provided by the draped foil are often inadequate. The best performing solution is to either use R-PLYfloor with insulation pre-glued to the underside of the flooring sheet, or glue-nail the floor to increase stiffness and minimise squeaking, and stretch the foil flat under the joists. Use timber sheets or strips of a low grade of non-structural plywood (7 mm pallet grade) to fix the foil to the underside of the floor. Alternatively, use foil backed panels under the floor or a different type of insulation such as fibreglass.

To calculate the insulation properties of R-PLYfloor when installed, refer to the Carter Holt Harvey R-Value floor calculator online. Download the R-Value calculator now:

chhwoodproducts.com.au/r-flor-calculator

PLYfloor and insulation options

Detail 2



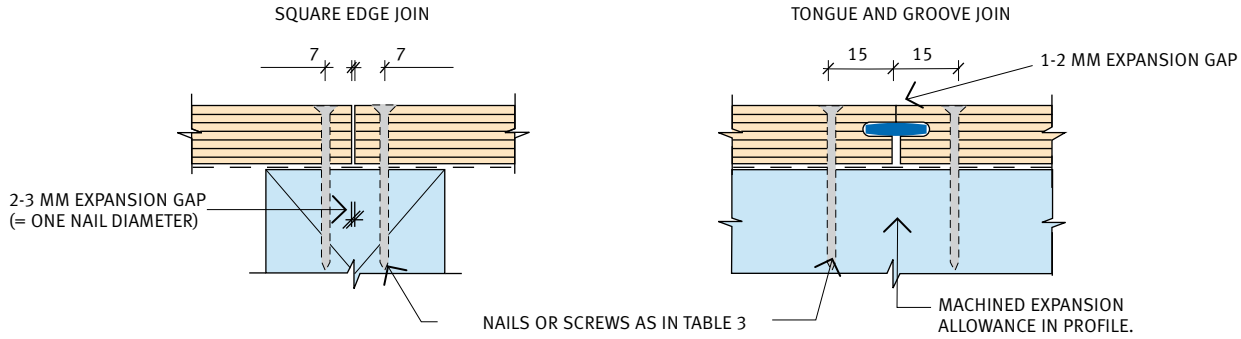
Minimum fastener specification

Table 4

	Timber framing		Screws in steel framing	
Plywood thickness	**Nails (length, diameter)**	**Screws (gauge, root diameter, length)**	**Steel thickness approx. 1.15 mm**	**Steel thickness 2.8 mm and over**
12 and 15 mm	50 x 2.8 mm	No 8g x 40	10-16 45	10-16 45
17 mm	60 x 2.8 mm	No 10g x 40	10-16 45	14-20 45
19 to 21 mm	60 x 2.8 mm	No 10g x 45	10-16 45	14-20 45
25 mm	75 x 3.15 mm	No 10g x 50	10-16 45	14-20 45

Fastening PLYfloor

Detail 3



Fixing of sheets

PLYfloor may be fixed to different types of framing with nails or screws or a combination of fasteners and elastomeric adhesive.

- Do not over-drive gun-nails or screws.
- Fix at least 7 mm or 3 fastener diameters from the sheet edges or behind tongues.
- Fix no more than 15 mm from sheet edges.
- Space fasteners at 150 mm centres on all edges, and 300 mm centres in the body of the sheet.
- Fasteners should be corrosion resistant to a level appropriate to the end use, life expectancy and expected exposure to moisture during construction and service.

Galvanised fasteners are the minimum recommendation and are normally satisfactory in dry wood.

Where plywood or framing may become damp or is H3 treated, use stainless steel (316) or silicon bronze flathead nails or countersunk screws to avoid corrosion in unpainted sheets for maximum durability. Follow the recommendations of the fastener manufacturer.

Fixing to timber

- Galvanised nails or annular grooved nails have better holding power than plain shank nails of the same diameter.
- Ring shank nails or annular grooved nails or screws are recommended for additional holding power.
- Stainless steel nails must be annular grooved.
- Flush drive nails and apply floor sealant before coating holes with suitable putty.

Fixing to steel

- Fix directly to roll formed steel (up to 2 mm thick) with self drilling, self tapping screws. If plywood gets damp and expands, screws in thicker steel may break. Keep plywood dry or use larger screws, or:
- Bolt or screw battens to the steel and apply plywood as above for timber.

Adhesives

Elastomeric (construction) adhesives should be used with nails to minimise floor squeaking.

- Use a bead of structural elastomeric adhesive in accordance with the manufacturer's instructions.
- Apply pressure using the standard nail pattern.

Finishing

Paints and coatings should be applied following the manufacturer's instructions. Avoid heavy sanding that may remove the critically important structural face veneer. For floor coverings and roofing, adhesives must be compatible with LOSP treatment salts in H3 treated panels. Compatibility can often be improved by lightly washing, scrubbing and drying the plywood surface prior to fixing.

Storage and handling

- Keep dry.
- Store under cover (avoid tight cover and potential condensation).
- Handle and stack with care to avoid damage.
- Stack flat clear of ground on at least three evenly spaced bearers.

Ventilation

Sub-floor areas must be ventilated in accordance with the relevant clause of the Building Code of Australia. Use H3 treated PLYfloor where moisture levels in sub-floor regions are high.

Material Safety Data Sheets

Material Safety Data Sheets (MSDS) are available from the website or call for technical support on ☎1800 808 131.

Trust our plywood

Forward thinking

Our timber products are a better environmental choice for building. They're natural, renewable and sustainable.

As Australia's leading timber and engineered wood products supplier, Carter Holt Harvey is committed to conserving the natural environment and actively protecting Australia's flora and fauna.

Carter Holt Harvey ensures that all timber is legally sourced from sustainably managed forests. Production uses natural resources efficiently and actively minimises waste.

Plywood Mill upgrade

Our Myrtleford facility has been redeveloped to be a 'world-class' plywood mill. By utilising state of the art technology, this upgraded mill ensures our plywood business is competitive and sustainable into the future. The facility is now more energy efficient, produces less emissions, and has lower water usage and better air quality. And ultimately provides better, more sustainable products.

Save time and money with better support

Fast technical support ☎1800 808 131

For quick, clear product answers, our technical support phone line **1800 808 131** links you to our expanded, engineering support team. Our experienced support team can assist with enquiries ranging from sizing and design to installation advice.

It's fast, easy and it's free.

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Technical Support

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