

DURABILITY OF MEYER TIMBER® ENGINEERED WOOD PRODUCTS INCLUDING LVL, I-JOIST AND GLULAM.

Untreated Engineered Wood Products (EWP) are suitable for use as structural members in protected, dry environments. They can also be impregnated with chemicals to increase their durability against various hazards. The hazard levels as defined in AS/NZS 1604 (and AS1684) are shown in Table 1 below.

TABLE 1

Hazard Class	Exposure	Specific Service Conditions	Biological Hazard
H1	Inside, above ground	Protected from weather, well ventilated and protected from termites	Lyctid Borers
H2 (H2-S) South of Tropic of Capricorn	Inside, above ground	Protected from wetting. Nil Leaching	Borers and Termites
H2 (H2) Australia wide			
H3	Outside, above ground	Subject to periodic moderate wetting and leaching	Moderate decay, borers and termites
H4	Outside, in ground	Subject to severe wetting and leaching	Severe decay, borers and termites
H5	Outside in ground contact or in fresh water	Subject to extreme wetting and/or where critical use requires a higher degree of reliability	Very severe decay, borers and termites
H6	Marine waters	Subject to prolonged immersion in sea water	Marine wood borers and decay

Although EWP's can be preservative treated to most Hazard classes, the common treatment levels are **H2-S**, **H2**, and **H3**. General requirements for these are shown below. For any other treatment requirements please contact Meyer Timber directly to discuss the specific application.

Hazard Class	Important Information
H2-S Termites Borers	<ul style="list-style-type: none"> • Treated for use South of the Tropic of Capricorn • Use only in dry, weather protected environments • No need to re-treat cuts, holes or notches for LVL and I-joist
H2 Termites Borers	<ul style="list-style-type: none"> • Suitable for use Australia wide • Use only in dry, weather protected environments • Re-treating of cuts, holes and notches required for all EWP's • Consult MSDS for handling and disposal precautions
H3 Moderate Decay Termites Borers	<ul style="list-style-type: none"> • For use in weather exposed environments • Re-treatment of cuts, holes and notches required for all EWP's • Install to prevent moisture retention: <ul style="list-style-type: none"> - Capping top and end of beams - Painting - Allow ventilation around joint interfaces • Consult MSDS for handling and disposal precautions • Ensure timber is not subject to prolonged high moisture levels • Regular inspection highly recommended

Hazard Class H3

H3 Hazard Class is available for increased durability in above ground weather exposed applications. AS1684 Appendix C notes that external timbers are not regarded as weather exposed if they are covered by a roof projection at 30° to the vertical as shown in **Figure 1** and they are well detailed and maintained. Note that the hazard class rating system is very general in nature and there may be instances which warrant additional treatment for suitable performance. Each location should be assessed by a suitably qualified person.

Timber members in weather exposed applications have a number of different influences on them. Cyclic wetting and drying causes the timber to swell and shrink which can result in surface checking and discolouration.

Consistent high moisture content creates an ideal environment for fungi to grow, resulting in decay of the timber; H3 hazard class does not allow for this but rather for periodic, moderate wetting only.

I-JOIST

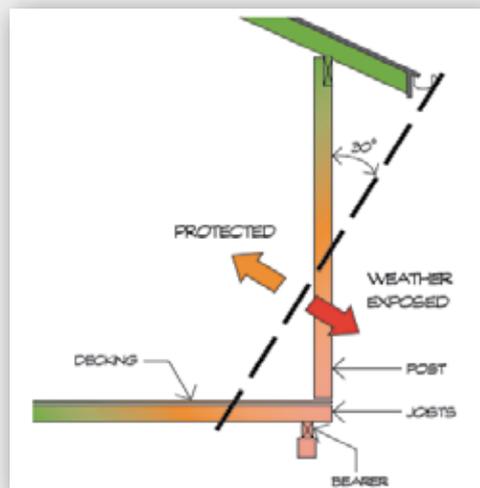
I-JOISTS are not recommended for weather exposed applications even with preservative treatment. The top of the bottom flange of meYJOIST is difficult to protect; moisture will pond on this surface and be retained by accumulated dirt. These factors increase the susceptibility of meYJOIST to degrade and decay from weather exposure even if preservative treated.

LVL and GLULAM

Where other EWP's are used for weather exposed applications preservative treatment to H3 in accordance with AS1604.4 is a minimum requirement. **A critical step in the process involves applying preservative treatment to re-seal the product following any cutting, drilling or machining.** In addition, the installation and maintenance of the timber should be so as to exclude trapped moisture by either preventing moisture ingress or allowing the moisture to escape. **This is especially applicable when the consequence of any potential failure is increased, such as on elevated decks.** Detailing and installation practices can include:

- Providing a capping to the top of deck bearers and joists.
- Painting to prevent moisture ingress into the timber.
- End grain protection through capping, splay cuts or similar. End grain of timber absorbs more moisture and therefore requires particular attention.
- Detailing joint interfaces to prevent moisture being retained or trapped.
- Regular on-going inspections.

FIGURE 1: WEATHER EXPOSED



FAQ

Is the adhesive used to make EWP's affected by wetting?

No, the adhesive is fully waterproof and will be unaffected by moisture if the bond has been correctly made.

If I follow the guidelines will maintenance still be needed?

Inspection once or twice a year is recommended. The best time to inspect is after rain so that effectiveness of moisture barriers can be assessed. Be alert for any signs of decay. If found replace any affected members and also remedy the installation to prevent decay occurring in future.

What type of paint is recommended?

There are many different types of coating products, all of which are likely to be beneficial. Acrylic paints are preferred as they allow excess moisture to escape and are easy to apply and maintain. Good quality paint/stain products in light colours tend to reduce the impact of heat and ultraviolet rays. Refer to individual paint manufacturers for further guidance.

Where can I get more info?

In addition to Appendix C (Durability) - AS 1684.2 Residential timber framed construction, the below links give you useful information.

- Durability Information:
 - http://www.hyne.com.au/documents/Feature%20Documents/TQ_25_Outdoor-Timber-Performance_final.pdf
 - <https://www.woodsolutions.com.au/articles/timber-service-life-design-guide-5>
 - https://www.fwpa.com.au/images/marketaccess/PRO8_1062_Research_Report_Treated_Engineered.pdf
 - <https://fbvl.com.au/assets/Uploads/d7b0c90f16/CHH-Woodproducts-LVL-Designing-for-Durability-Technical-Note-March-2015.pdf>
- MSDS and Durability Warranties:
 - <https://www.lonzawoodprotection.com/apac/tanalised-durable-treated-timber/>
 - <http://kopperspc.com.au/products/preservative-systems.html>
 - <https://fishertimberpreservation.com.au/>
- Meyer Timber® Factsheets:
 - http://meyertimber.com.au/wp-content/uploads/2014_Apr_FactSheet_DurabilityDetailing.pdf
 - http://meyertimber.com.au/wp-content/uploads/2013_Dec_FactSheet_Moisture.pdf
 - <http://meyertimber.com.au/resources/factsheets/treatment-for-application/>