

PENTARCH FORESTRY



KILN DRIED FLOORING

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WHAT YOU SHOULD KNOW

Timber is a natural 'living' product

Timber is a hygroscopic material – that means it is capable of absorbing and expelling moisture in response to local conditions. For this reason, solid timber flooring may need to be acclimatised to its new local environment prior to installation.

Various conditions such as heaters, air conditioning, direct sunlight, lack of adequate ventilation, or high/low relative humidity can affect the moisture content (MC) of the floor causing it to expand or contract. Therefore it is important to allow time for the timber to adapt to these conditions.

Installation methods for Pentarch Forestry's kiln dried hardwood timber flooring products should allow for expansion and contraction of the timber that will occur as seasons and environments change. See Acclimatisation section or further information.

Ordering timber flooring

Before ordering timber take note of the following recommendations.

- Become acquainted with the variations in colour which occur naturally in the selected timber species.
- Ask an industry association such as ATFA or a skilled installer to determine the moisture content at which the timber should be installed. Decide whether this moisture content will be reached through acclimatisation.
- Check that other building operations will be sufficiently advanced to allow acclimatisation and installation.
- Ensure that site temperature and humidity will not have large fluctuations or that these will be controlled.
- Consider window coverings to screen the floor from heat and direct sunlight.
- Have the air conditioning and heating ready to operate.
- Ensure that concrete slabs and subfloors are sufficiently dry and moisture tested in accordance with AS 1884-1985. The use of a concrete moisture meter is recommended.

Transport timber flooring with care

Pentarch Forestry kiln dried hardwood timber products are carefully packed for protection during transportation. This protection will not be adequate to protect the timber from prolonged exposure to weather or from damage due to incorrect handling.

During transportation no other material should be placed on top of the timber products. Suitable protective packaging should be used for all edges and faces to protect the timber during transport from normal handling, holding down straps and weather. Care should be taken to ensure that face and edge protection is used when lifting with any kind of crane and that slings are properly positioned.

Check the timber upon delivery

It is important to examine the timber on delivery and advise suppliers immediately of any inconsistencies with the order or concerns about quality.

Once the delivery has been made it is the purchaser's responsibility to ensure that the material remains in the condition it was delivered.

- If there are any issues before or during the laying of a Pentarch Forestry product, stop and do not continue laying. Contact Pentarch Forestry immediately on **1800 818 317** or email **timberspec@pentarch.com.au** for further advice.

Correct site storage

Avoid storage in builder's sheds or under plastic covers exposed to direct sun as these limit air circulation and expose the timber to extremely high temperatures. Any protective cover should not trap condensation. During any storage, check the material regularly to avoid the build-up of condensation. Pentarch Premier Solid Overlay Flooring is delivered in bundles that are strapped. It is recommended to keep the bundles strapped until just before laying.

Special conditions require special care

Where extreme fluctuations in temperature or humidity will occur after installation, greater allowance should be made for expansion and contraction of the timber. In such circumstances, exercise particular care in installation of the timber and the control of the environmental conditions. Circumstances that require particular care in installation include the following:

- Air conditioned or heated rooms.
- Heated floors.
- Rooms with large glass areas in windows and doors – particularly if unprotected.
- Rooms affected by poorly ventilated and drained subfloors, damp concrete slabs and the leakage of water from wet areas.
- Building sites prior to lock up stage, or where wet trades have not finished and their work has not dried.
- Where doors and windows are locked or left open in a manner which results in a different temperature or humidity than during occupation.
- Where installation is scheduled for periods of protracted rain or unusually high or low humidity.

Please note that evaporative cooling systems should not be used where timber flooring is installed. Intermittent use of these systems will result in large fluctuations in humidity. This may result in deterioration of the timber floor through exposure to repeated wet/dry cycles, and an increased potential for checking or splitting.



Acclimatisation

Pentarch Forestry's kiln dried hardwood timber flooring products are dried to 9%–14% moisture content as per the Australian Standard AS 2796.

This range may affect the successful installation of the timber specifically where conditions are drier, such as inland areas or air conditioned buildings, or where conditions are humid, such as in coastal areas or elevated regions. Flooring may then need to be acclimatised on site.

There is no singular moisture content (MC) that is appropriate for all installations. The usual method of bringing kiln dried structural solid strip timber flooring to the appropriate MC for installation at a particular site is by acclimatising it to the conditions of that site. Successful acclimatisation relies on the temperature, humidity and site conditions in the period of acclimatisation being sufficiently similar to those that will prevail during occupation.

Periods of wet weather or extremely high or low humidity may prevent effective acclimatisation.

Where timber is to be installed in air conditioned or heated rooms the air conditioning or heating must be in operation during the period of acclimatisation. If this is not done, subsequent operation of the heating or air conditioning may lead to shrinkage and cupping of timbers.

Timber should be taken from its pack and sorted in the room in which it is to be installed, at least 200mm above the ground, to allow a free flow of air to all faces of the timber.

Premier Solid Overlay Flooring and parquetry may be acclimatised after the installation process has been completed. The flooring is left unsanded until its moisture content is equal to the 'Relative Humidity' in the environment. This may take 7–14 days.

Acclimatisation should continue until the installer verifies, by use of a moisture meter, that the timber has come to an 'equilibrium moisture content' appropriate for installation.

For further references on acclimatisation consult the relevant Australian Standard.

Tips on flooring installation

- Use qualified professional timber flooring installers, sanders and finishers.
- Installation should take place once the building is at lockup stage with all wet trades complete.
- Avoid floor finishes and fixing methods which may bond the edges of boards together preventing the usual expansion and contraction of the timber. If a polyurethane floor finish is proposed, check its suitability with the manufacturer and the installer.
- Do not use the platform method of construction as exposure of a fixed floor to the external environment will cause damage.
- A minimum 12mm expansion gap at all perimeter walls and obstructions is recommended. For domestic floors over 6m wide, an intermediate expansion joint is required. A 1.5mm gap every metre or a 6mm cork joint every 6m should be included.
- Refer to the Timber Flooring and Decking Installation Guide from Pentarch Forestry for detailed installation instructions.
- Refer to the Pentarch Forestry Care and Maintenance Brochure for further details on how to care for hardwood timber flooring.
- Refer to the relevant Australian Standards and installation specifications. This brochure is not intended to replace such documents and does not provide comprehensive advice.



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Adequate ventilation is critical

Subfloor ventilation is one of the most significant design factors contributing to a timber floor's performance. Excessive humidity in the subfloor area may be caused by either a lack of sufficient cross-ventilation or from damp soil conditions due to inadequate drainage. Drainage must be improved if there is any indication of persistent dampness.

The Building Code of Australia (BCA) requires that suitable provisions be made for subfloor ventilation and lists various methods to achieve it. Check with your local building authority for advice in regard to local site conditions and any subfloor ventilation requirements additional to the BCA provisions.

Sanding and finishing

There are many different types of finishes ranging from oils through to waterbased polyurethanes. Choose the best finish to suit functional and aesthetic requirements. At all times it is important that the manufacturer's instructions are followed carefully.

Do not use a product that will bond several boards together. This can create unsightly gaps as the boards will expand and contract in groups, creating large gaps every 4 to 6 boards. Always check the suitability with the finishing product manufacturer.

Pentarch Forestry recommends the use of a qualified professional sander and finisher to complete this stage of the job. In a direct stick application allow a minimum of 72 hours after completing the fixing of the floor before sanding, to allow the glue to set.

For further information and copies of publications mentioned in this document, visit <http://www.pentarch.com.au/flooring.html>

Safe work practices

- All standards set by Safe Work Australia must be followed when installing a timber floor. The following work practices should be used when working with timber.
- Work areas must be clean. Sawing, sanding and routing equipment should be fitted with dust extractors. Dust levels should be below standards set by Work Safety Australia for wood dust.
- When machining timber respiratory protection, gloves, clothing, hearing and eye protection should be worn.
- After handling timber, wash skin thoroughly with mild soap and regularly wash clothing.
- Before handling, storing, or using kiln dried timber, it is essential that you read the Pentarch Forestry brochure 'Kiln dried flooring what you should know'.
- When using adhesives, coatings and other VOCs ensure that manufacturer's recommendations are followed.



Promoting sustainable forest management

Note: Variations within a timber species are normal, therefore photographs, samples and displays can only be indicative of colour and should not be used for final selection. It is normal for natural timber products to react to changes in atmospheric and environmental conditions such as humidity and temperature.

<http://www.pentarch.com.au/flooring.html>

National free call **1800 818 317**

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