

# Right Place, Right Timber

The Importance of Choosing Fit-For-Purpose Timber Flooring





# Introduction

Timber remains one the most sought after flooring materials in Australia. According to Forest & Wood Products Australia, timber flooring represents approximately 25% of the flooring market.<sup>1</sup> In line with its popularity, the choice of timber flooring products has grown – from traditional solid timber floors to pre-finished, engineered wood options, and not to mention the wide range of species available.

With so many options on the market, the key question for designers and specifiers – “Is the product fit for purpose?” – can be easily overlooked. More than purely aesthetics, timber flooring specification must account for a wide range of requirements. Timber flooring must deliver the premium look and feel it is synonymous for, without compromising performance, functionality or durability. Everything from installation type to the type of finishing used on its surface will impact how a timber floor will perform, and whether it will satisfy the client’s needs and expectations.

Designers, who have an expert grasp of aesthetics, however may not be experts in the technical aspects of timber flooring. Some timber products will simply not be suitable for the client’s requirements, or will perform poorly in specific site conditions. To ensure the correct timber product is selected, it is wise to engage with product experts who understand the intricate details of timber flooring specification.

In this whitepaper, we look at specifying “fit-for-purpose” timber flooring and the risks of poorly-selected flooring. We also consider the range of factors that affect product performance and the design considerations that must be carefully balanced to deliver a high performing and beautiful timber floor.

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**IMAGES** This page features Amagansett Modular Residence, East Hampton, New York. Architect: MB Architecture  
Photographer: Matthew Carbone. Product Used: HW3622 Blanco. Front cover features a private Home, Palm Beach.  
Builder: Customconstruction Photographer: Simon Whitbread. Product Used: HW3636 Amazon Wide Plank



DEFINING “FIT-FOR-PURPOSE”

In simple terms, the flooring product should have the aesthetic, functional and performance properties to do the job it is designed to do. However, before this can be assessed, we need to answer the key question: fit for what purpose?

The specific application context is a primary design consideration for timber flooring. A residential home has different priorities than rentals, offices or commercial spaces. Knowing the intentions of the client is imperative, both in the short and long term, including how the space will function over time. Environmental conditions, including humidity and temperature ranges, and sunlight exposure

levels, are also key factors that must be accounted for. For example, the use of air conditioning can alter the conditions of the installation site when it is actually in use, and thus impact the performance of the timber floor.

The individual needs, preferences and expectations of each owner will vary. A functional floor may not be enough if the owner is set on achieving a certain aesthetic (and vice versa). The ease of cleaning and maintenance of a timber floor, and how this will impact the owner in terms of costs and effort, will often determine the likelihood of the floor retaining its performance and aesthetics over time.



Project: Aston Martin Showroom Product: HW963 Arena timber flooring



Project: Wharf St Brisbane, Office. Designer: Archway. Product: HW16002 Pallido Herringbone

GETTING IT WRONG

The Risks of Poor Timber Flooring Specification

Without the guidance of product experts, incorrect products may be specified leading to unhappy clients when products do not perform as expected, or unexpected costs for maintenance or repair. For example, one of the most important aspects of selecting the right timber floor is the product’s moisture content. Wood is a hygroscopic material that absorbs and releases water vapour, so it naturally expands and contracts as humidity rises and falls.<sup>2</sup> Dimensional stability refers to the amount in which a timber will expand and contract from these environmental changes.<sup>3</sup>

There are several potential consequences if the stability and moisture profile of the wood is not appropriate for the site conditions. If humidity levels are too high, the timber floorboards will expand across the grain and swell, warp and buckle. If humidity levels are too low, the timber will risk warping and cracking as it loses moisture. Specialty product knowledge is required to know how different types of timber products will perform in a range of conditions and climates.

Timber floorboards are used for a wide variety of

applications, from commercial applications with high levels of traffic to residential homes with relatively low levels of traffic but with the presence of children, pets and moving furniture. Choosing the right timber floor to match how the space will be used is important to ensuring the floor has a long lifespan.

Designers and specifiers may rely on a floor’s hardness (Janka) rating to determine whether the floor can withstand the expected levels of traffic and wear and tear. However, note that Janka only measures denting resistance but not scratching resistance or dimensional stability. While the specified floor may be resistant to impact damage, its aesthetics and performance may be compromised if the wrong finishing is applied or if the timber experiences movement due to temperature or humidity changes. This leads to cost of repairs and maintenance that exceed client expectations, resulting in dissatisfaction, and an unattractive or unsafe floor.

Overlooking performance requirements for slip resistance and acoustic performance can also reduce safety and occupant comfort. In some cases, failing to specify a product that meets such requirements can lead to financial and/or legal liabilities.



## SELECTING FIT-FOR-PURPOSE TIMBER

Selecting the right timber for the intended application is not as simple as evaluating aesthetics and top-level functionality. There is a misconception that timber flooring products are like-for-like. Factors such as how environmental conditions impact product performance can be overlooked due to a lack of knowledge or inexperience, or a reliance on inaccurate or outdated product information.

Understanding the finer details of different timber flooring products, as well as installation types, differences in lacquers and oils, glues and other flooring components, is critical when specifying flooring that is suited to the client's lifestyle and the intended function of the space. Consulting with a product expert can fill knowledge gaps and help mitigate the risk of an unsatisfactory product being specified.

### Product Considerations

**Species.** Different species of wood exhibit different characteristics in terms of colour, hardness, grading and moisture content. There are even variations within species, so a surface-level knowledge of the performance characteristics of different species is not sufficient. Some species are ideal for flooring applications and also suitable for walls, stairs, ceilings and joinery, which can be confirmed with a timber product expert.

**Quality.** The quality of the timber product is of the utmost importance, especially as it pertains to durability, longevity and the ability to withstand everyday wear and tear. Across the industry, the Janka rating, which measures hardness or indentation resistance, is often used as the determining factor for "quality", but there is no single value that encapsulates the quality of the floor. Quality is also relative – specific types of timber flooring products perform differently depending on site conditions.

High quality materials can be undermined by poor construction. The top layer of the floor should be sufficiently durable, but the backboard should also be resistant to cupping and bowing. Low quality glue or uneven application may lead to delamination where the wood layers in the timber floor separate. Low quality finishes can impact the surface appearance, especially over time or when exposed to sunlight.

**Installation Type.** The owner's intentions and how the space will be used can determine which installation type is better suited to the application. If the priority is for longevity (such as for residential applications), then a glue-down option is preferable. Spaces that may undergo semi-regular renovations, such as rental units, offices, and commercial spaces, will benefit from having a floating floor that is easily repaired and replaced as required. However, it is a careful balancing act; floating floors are known to be noisy unless installed correctly. An acoustic underlay may need to be specified so that the floor complies with an acoustic engineer's specifications.

**Finishes.** As with the different types of timber flooring, surface finishes such as lacquers and oils are not like-for-like. Wood floor lacquer results in a plastic film over the surface to protect the timber while enhancing the natural grain and colour. Oils deliver a more traditional finish, but may require additional maintenance over the service life of the floor, especially in high traffic areas.

To determine what is best suited for any given application, multiple considerations are at play. This includes the finish type, the number of coats required, and the application process. All of these factors impact durability, and some products will be better suited to higher traffic than low traffic areas. Different finishes will also impact the slip resistance provided by the floor, a specific level of which is required by accessibility and safety legislation for certain applications.

**Underfloor Heating.** There are also timber products that are suitable over underfloor heating, but in most cases conditions apply. Expert knowledge is needed to guide a specifier to the correct product for this scenario and to ensure that the environmental conditions, the floor itself and the heating system will be compatible.

**Acoustic Performance.** Given the impact of acoustic comfort on occupant health and wellbeing, acoustic performance has become a high priority in residential (especially dense apartment living) and commercial spaces. The hardness of the wood and installation type contribute to acoustic performance. An appropriate underlay material can be specified to optimise acoustic performance as required.

**Maintenance.** Durability, lasting appearance and minimal care are the ideal combination for most applications, but striking a balance is difficult without in-depth product knowledge. Surface treatment can also impact maintenance requirements as some treatments need regular maintenance and refinishing. Choosing a product that the owner is more likely to maintain properly will increase its longevity.

**Sustainability.** Clients are becoming increasingly concerned with minimising their environmental impact. This extends to product specification and the provenance of building materials. When specifying timber products, an in-depth knowledge of environmental certification schemes enables a sustainable, eco-friendly product to be chosen. Certified timber products will generally indicate that the material has been sourced from a sustainably-managed forest and has minimal environmental impact over its life cycle. Notable certification schemes include:

- Forest Stewardship Council (FSC® certified);
- Good Environmental Choice Australia (GECA – Australia's only independent, not-for-profit, multi-sector sustainability and environmental certification program);
- Cradle to Cradle Certified®; and
- Program for the Endorsement of Forest Certification (PEFC™).

## ADDING VALUE TO FLOORING

### Partnering with Havwoods, Experts in Timber Flooring

As designers and specifiers, it is not necessary to know all the information about every product on the market because experts in their own fields such as Havwoods Timber Flooring can provide assistance. Havwood's breadth of knowledge and experience extends over 45+ years, allowing the company to inform industry professionals of the best product for each application.

Unlike companies who have not operated long in Australia, Havwoods understands how timber flooring performs in the volatile Australian climate. Havwoods staff often come from within the built environment industry and all undergo rigorous and continuous training to ensure their knowledge is relevant and up-to-date. This includes deep knowledge of the types of flooring products and their different performance and aesthetic characteristics, and how the install environment impacts product performance, a consideration often not checked by suppliers prior to specification.

Staff are equipped with the skills to fully understand the requirements and choose the appropriate product to meet the fit-for-purpose and budget criteria. This is supplemented by in-depth knowledge of the latest products and manufacturing trends. By partnering with experts such as Havwoods, you can be assured that the right product is specified, preventing call-outs for products that do not perform as expected due to incorrect application or installation.

Havwoods ensures all products have clear and adequate datasheets, install guides, cleaning and maintenance guides, slip ratings and other product information available. The company also conducts CPD point accredited presentations in which specifiers can gain further understanding of timber flooring products, considerations and correct applications.

### About Havwoods

With close to 50 years' experience in sourcing the very finest engineered timber flooring and cladding, our passion for ensuring you receive high quality wood products that are both fit-for-purpose and fit-for budget has made us leading suppliers for residential, commercial, high-volume retail and hospitality projects across Australia and around the world.

With more than 180 products sourced from around the world, and every resource made available to assist with the selection, purchase, and installation of your floor, Havwoods is committed to driving innovation, outstanding product performance and superior customer service.

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Project: Wharf St Brisbane, Office. Designer: Archway. Product: HW16002 Pallido Herringbone

## References

- <sup>1</sup> Forest & Wood Products Australia. "Timber Flooring Systems market research." FWPA.  
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- <sup>3</sup> Ibid.

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