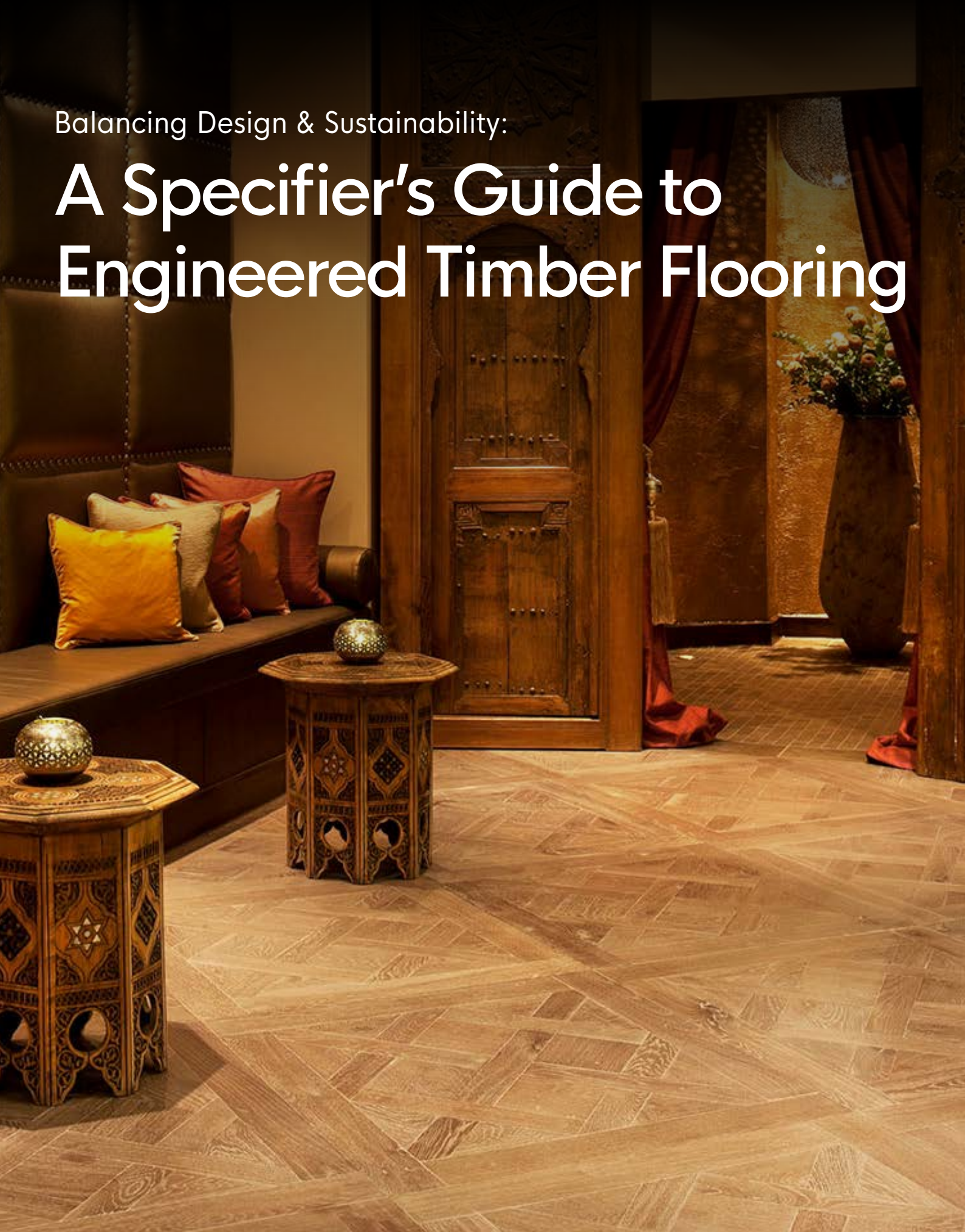


Balancing Design & Sustainability:

A Specifier's Guide to Engineered Timber Flooring



Introduction

As the architecture and design industry sharpens its focus on sustainability, professionals around the world are pursuing sustainable alternatives to conventional materials. Amongst such alternatives is engineered timber, a flooring solution that offers environmental benefits without sacrificing design flexibility and performance. The qualities of warmth, durability and elegance which designers and specifiers seek in wooden flooring are present in the expanding range of engineered timber floor products that are beginning to enter the market.

Appealing to both a green conscience and design sensibility, engineered timber floors combine the look and feel of solid hardwood floors with the performance and versatility of contemporary construction materials. They are a sustainable,

high quality and durable real wood alternative to solid timber.

As with any market, there is a wide scope of engineered timber floor products currently available, and as such the performance capabilities and lifespans of the products vary greatly. In Australia, the industry is beset with stringent code and regulatory supervision, and it is therefore critically important that products comply with a number of complex standards. This whitepaper navigates the key considerations when specifying engineered timber flooring to ensure that the product is compliant with all relevant standards, is high performing and delivers on design requirements.

THE DIFFERENCE BETWEEN 'NON-CONFORMING' AND 'NON-COMPLIANT'

Products that are non-conforming, non-compliant, or in some instances both, are unsuitable for use in the Australian industry. Understanding the difference between the two terms is of the utmost importance to specifiers and designers.

Non-conforming products do not meet Australian regulatory standards; they are unfit for purpose, are counterfeit, or are of an unacceptable quality. Often they are accompanied by false or misleading claims. Meanwhile, non-compliant products fall short of contractual or regulatory requirements such as those set forth in the National Construction Code (NCC). Put simply, non-compliant products are the wrong product for the job. The Australian Building Codes Board (ABCB) explains an instance in which a product is both non-conforming and non-compliant as follows:

"A building product that is labelled or described as being non-combustible but which is combustible is non-conforming. A building product which is combustible and described as such, but is used in a situation where a non-combustible product as required under the NCC is not fit for purpose and is non-complying."



"Products that are non-conforming, non-compliant, or in some instances both, are unsuitable for use in the Australian industry. Understanding the difference between the two terms is of the utmost importance to specifiers and designers."

KEY CONSIDERATIONS

Quality

Quality is important when specifying any product, but as flooring is underfoot it is particularly critical that the product is durable and capable of withstanding the wear and tear of everyday life. Three key components of engineered timber flooring are its materials, construction and glue.

Materials

It is important to ensure that the top layer and substrate of wood that constitutes the engineered product is of a high quality. Although engineered timber flooring is much more stable than solid wood flooring, it is important to ensure that the backboard of the cross-laminated product is durable to avoid cupping or bowing.

Construction

Designers and specifiers must be mindful that even high quality materials are quickly undermined by poor construction. The products' craftsmanship and integrity is the major determinant of its performance; finding products that have been well cut, glued and sanded will improve their longevity in terms of both aesthetics and function.

Glue

Delimitation, or the separation of wood layers within the timber flooring, is caused by low-quality glue and uneven application. In this event, the product is jeopardised by both a low-quality material and poor construction. Suppliers with an established reputation and transparent manufacturing processes tend to have the most reliable construction quality and are most likely to provide a high-quality product.

Finishes

A range of different finishes including – but not limited to – oiled or lacquered finishes are applied to engineered timber flooring to enhance the performance of the product in terms of its compliance to the BCA, longevity, and low maintenance.

Acoustic Performance

Wood is often used as a building material because of its acoustic absorption quality. As housing becomes ever more dense, the ability to absorb sound becomes more important. Specification F5.4 of the BCA tackles this problem directly and places a cap on the level of noise produced by hard wood flooring and states that noise transition must not exceed ($L_{n,w} + C_I = 62\text{db}$). Many manufacturers provide certification that demonstrates that the product in question meets this requirement.

Slip Resistance

While there are currently no slip-resistant requirements for expanses of floor, the flooring of pedestrian ramps, stair treads, and landings must comply with specifications D2.10, D2.13 and D2.14 of the BCA. As with acoustic performance, request certification from the manufacturer as evidence of compliance and seek further advice from the building supervisor if need be.

Fire Requirements

Recent disastrous and high profile building fires mean that fire requirements and compliance are at the forefront of regulatory and building industry minds. It is of utmost importance that floors comply with the BCA fire hazard properties in C1.10a. Further to this, manufacturers should be able to provide a specimen test report that demonstrates compliance with AS ISO 9238-1, which is the fire test for the determination of the burning behaviour of floorings. As with other finishes, be sure to request certification of compliance from the manufacturer.

Maintenance

Lasting appearance and minimal care requirements is the ideal combination for a flooring product. Unlike conventional surface treatments, which require considerable maintenance expenditure in periodic re-oiling of the lamella (top layer of hardwood in the engineered timber), many engineered timber flooring products have a finish which does not require re-oiling. Any spills or light scratches can be easily wiped up or buffed out.



SUSTAINABILITY AND HEALTH

In an industry rife with marketable 'greenwashing', manufacturers are likely to overstate the sustainable performance of their product. As with the compliance certificates of the finishes, there are a number of independent bodies that regulate claims of sustainability. When looking for products that are sincerely sustainable, be mindful that these critical third parties can supply certification: Forest Stewardship Council (FSC®), Good Environmental Choice Australia (Australia's only independent, not-for-profit, multi-sector sustainability and environmental certification program) and Program for the Endorsement of Forest Certification (PEFC™).

These three certifications in particular indicate that the timber has been sustainably sourced. Some engineered timber flooring products contain recycled content, while others contain material that can be recycled at the end of the product's useful life. For a product to achieve low VOC (volatile organic compounds) emissions it must be free of toxic materials and contribute to a healthy indoor air environment. Engineered timber flooring does not trap dust, dirt, pollen, pet hair or other allergens, and so does not exacerbate allergies or asthma.

"Lasting appearance and minimal care requirements is the ideal combination for a flooring product."



HAWWOODS

Havwoods products are underpinned by a strong sustainability focus and boast a quality which is second to none, making them a favoured choice of specifiers and architects for commercial, residential, and hospitality projects alike. The company's focus on the production of wooden products allows their expert team to offer over 165 variations of wood flooring, the majority of which can also be used effectively for cladding and joinery.

The standard of Havwoods products - both in their material and craftsmanship - is unmatched. Birch or ply backing board matches the quality of the top layer of wood, which prevents cupping or bowing. The structural integrity of these materials combined with expert craftsmanship ensures that the boards do not delaminate with age and use. Additionally, Havwood's lacquered engineered timber flooring products are impregnated with lacquers, which help to avoid delimitation: the lacquer penetrates through all layers of the board to secure glued bonds and achieve a high level of durability. The use of superior materials in the composition, and not just the finish, of the flooring is a testament to Havwoods' expertise and focus on quality.

The click joint or tongue and groove profiles are constructed with the precision of expertise craftsmanship for ease of installation. Finishes on Havwoods wooden flooring - such as the impregnated lacquers - bolster reliable and streamlined installation. The incorporation of an innovative UV oil finish does not require a final coat after installation, which increases the speed of installation and reduces labour costs while ensuring the longevity of the product. Furthermore, the UV oil is particularly suitable to the Australian climate as it locks in the depth and tone of the timber finishes leaving the product looking crisper for longer.

Havwoods engineered timber flooring solutions are rewarding for specifiers and designers alike as they comply with all the relevant BCA requirements and can provide certification for acoustic performance, slip resistance and fire requirements. Their easily specifiable wood products do not compromise on sustainability, and their catalogue - which presents over 165 products from around the world - includes ranges certified by FSC®, GECA and PEFC™.



References

- ¹ Australian Building Codes Board, 2015. Submission to Senate Economics Review Committee Inquiry into Non-Conforming Building Products. Australian Building Codes Board page 40.