

Durable timber decking

Janet Sycamore of the Timber Decking and Cladding Association looks at specifying decking that will stand the test of time

Timber decking is experiencing a revival, with manufacturers and suppliers reporting increased sales. While a more buoyant economy has no doubt played a part, this popularity can be also attributed to the scope and flexibility that timber offers, making it suitable for all manner of decking situations and styles, from traditional to contemporary, low to high level, from back yard to roof top.

At the heart of the Timber Decking and Cladding Association (TDCA) is a mission to help ensure that all decking installations conform to appropriate standards. It is calling out to all those involved in or thinking of installing decking to consult their online resources before embarking on any project. Moreover its members subscribe to the DeckMark® accreditation scheme developed with the help of BM TRADA to underpin a positive approach to quality. In addition to decking timbers, the scheme also covers fixings and coatings, the quality of which is equally important in ensuring good performance.



Ipe hardwood decking provides a contemporary feel to the garden. Ipe is categorised with Class 1 natural durability. Photo: Silva Timber

Specifying for durability

Durability of timber, whether inherent in the species or improved with a wood preservative or modification process, is commonly misunderstood by specifiers. What are the options available and how can suitable material be sourced?

There are several key details to be aware of:

- Natural durability classes relate to heartwood only. Heartwood comes from the central core of the tree while the sapwood is from the periphery or the outer section of the tree. The sapwood of all species is non durable and should either be enhanced by suitable means or excluded altogether.
- Durability can be improved by pressure impregnation with preservative or by wood modification techniques. It's worth noting that pressure treatment is not always possible; for example many species are difficult to treat, so treatability must also be a consideration.
- Desired service life options from British standards are 15, 30 and 60 years and these assume good design and maintenance.

There is a useful reference table (Table 3) in BS 8417:2011+A1:2014 *Preservation of wood. Code of practice*, which gives guidance on the desired service lives for timber with heartwood of a given durability classification as derived from BS EN 350-2:1994 *Durability of wood and wood-based products. Natural durability of solid wood. Guide to natural durability and treatability of selected wood species of importance in Europe*. The following table extracts the information relative to decking components.

Desired service life for untreated heartwood species used for decking

Component	Use class	Natural durability class whose heartwood can be used without treatment		
		Desired service life (years)		
		15	30	60
Deck boards and deck joists not in contact with soil or ground	3	3	2	1
Ground contact timbers	4	2*	1	1**

* Some timbers of natural durability class 3 can achieve 15 years

** Selected timbers of natural durability class 1 can be expected to achieve 60 years' desired service life

Selecting product types

Today your decking material choice is far greater than it used to be but decisions are likely to be driven by the look you want to achieve and budget. The term 'timber' or 'wood' covers a multitude of different species and types, creating product subsets with differing attributes and properties. You should bear this in mind and research the properties of the products you intend to work with. Also check that the timber is sustainably sourced with certification by chain of custody schemes – particularly tropical hardwoods.

Product types for outdoor use:

- **Pressure-treated softwood** – the TDCA stresses the importance of obtaining evidence of treatment which includes confirmation of the standard of treatment and the conferred desired service life. Timber that is treated to a 15-year desired service life specification is the easiest to source; longer service life material tends to be available to order. For example, Tanalised® timber.
- **Naturally durable softwoods** such as western red cedar.
- **Naturally durable hardwoods** – suitable species include ipé, yellow balau and massaranduba. Prices vary but they are generally more expensive than softwoods.
- **Thermally modified woods** such as Thermowood® and Thermory®. These are heat treated to change the structure of abundantly available, sustainably sourced plantation-grown species, making them more durable and stable. The result is an attractive and durable product that can be used outdoors. Heat-treated softwoods and hardwoods such as ash are now available.
- **Chemically modified woods** – this concept is not dissimilar to heat treatment in that the modification process improves its properties and produces material that can match or exceed the durability, stability and beauty of hardwoods. For example, Accoya®.
- **Artificial wood**, such as wood plastic composites – these combine wood flour and plastic to produce a material that aims to mimic wood.



A cosy, secluded deck. Photo: Richard Burbidge



A multi-level waterside deck. Photo: Timber Decking and Cladding Association

Whatever deck board you choose, it is more than likely that the substructure will be made from pressure-treated softwood, as this is the most cost effective approach. It is equally important to ensure that this part of the deck is also designed for durability so that the whole structure will provide good, long-term performance.

Make certain that all posts and joists that are going to be in contact with the ground have been treated to a ground contact specification – use class 4. Anything above ground is use class 3. Some manufacturers are encouraging use class 4 joists. A use class 4 joist used above the ground will meet a 30-year desired service life specification. The TDCA highly commends these developments which are in the interests of achieving good quality constructions and keep industry standards high.



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Supporting services

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for this related publication:

- *Timber decking*, 2nd edition, TRADA Technology, 2006

