



Australia relies upon many species of imported timber in both structural and architectural applications. These timbers offer a range of properties and aesthetic qualities which lend themselves to a variety of applications such as heavy construction and domestic decking all the way through to fine joinery and craft.

This brochure covers a small range of timbers some more readily available than others in the Australian market place. Each is described along with normal applications and the most commonly needed Timber Properties including durability and hardness, which is normally assessed when considering a timber for use as a product such as flooring.

## Balau

### Shorea spp ( heavy varieties )

Other common names Selangan Batu, Bangkirai, Yellow Balau and Alan.

There are many different subspecies of Shorea grouped here, the most common being: albida, glauca, laevifolia and laevis. These species are very common throughout Malaysia and Indonesia with some in the Philippines, all being large hardwoods growing within a range of 30 to 60 metres high.

#### Timber Properties

- Density (average):  
1000 kg m<sup>3</sup> green; 900 kg m<sup>3</sup> dry
- Durability: Class 2
- Strength Group: S2 green; SD3 dry
- Hardness Rating (average)  
(Provisional): 8.0 kN green;  
9.0 kN dry

The timber is dense but contains little silica and is therefore relatively easy to work although some adjustment to saws

and machine knives may be required on long runs if a good surface finish is required. The timber of all species are very similar with the heartwood yellow brown, reddish brown and sometimes purplish brown and will darken with age. The sapwood is usually very distinct being much lighter usually pale yellow.

The texture is fine to medium and even with the grain wavy and interlocked. Shrinkage rates are medium to low and all species are considered to be lyctid borer susceptible.

Balau has been widely used in South East Asia as a heavy construction timber as well as window joinery, boat building, beer and wine casks and in some cases veneer. In Australia the timber has been regularly used for domestic decking and flooring, stair manufacture and window and door sills.

**NOTE:** Another group of Shorea spp. called Red Balau are sometimes offered as an alternative, these timber are slightly



Balau. Photo courtesy of the Malaysian Timber Council

lighter in Density and of lower durability and should therefore be avoided for exposed external applications. Heartwood is usually a deep red-brown with the sapwood much lighter and easy to distinguish.

## Belian

### Eusideroxylon zwageri

Although other common names such as Tambulian, Billian and Boelian are used in the areas of occurrence these names are not known in Australia.

Belian is a medium sized hardwood native to South-East Asia from the island areas of Malaysia throughout Indonesia and the Philippines, growing predominately in low-lying alluvial flats and occasionally in adjoining low mountainous areas, growing to an average height about 35 metres.

Although not previously common in Australia it has in recent years become readily available, particularly as decking, because of its high durability rating and its low or almost nonexistent level of leaching.

#### Timber Properties

- Density (average):  
1300 kg m<sup>3</sup> green; 1040 kg m<sup>3</sup> dry
- Durability: Class 1
- Strength Group: S1 green; SD1 dry
- Hardness Rating(average):  
13.0 kN green; 13.0 kN dry

The timber is very dense but easy to work, however even though there is little silica present some build up may occur on saws and machining knives.

The heartwood is yellowish brown to reddish brown when freshly sawn but darkens on exposure to a dark or chocolate brown with time and the sapwood is easily defined being a pale to

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light yellowy brown. The grain is usually straight and the texture moderately fine and even. By comparison to most Australian Eucalypt hardwoods it has a very low shrinkage rate and is not susceptible to lyctid borer attack.

In Asia and Europe it is commonly used for heavy engineering purposes such as wharf and bridge building, marine piles and boat building as well as flooring and outdoor furniture. In Australia it is only regularly available as domestic decking although it is likely to emerge as flooring because of its technical suitability.

## Merbau

### **Intsia bijuga (palembanica)**

Other common names: Kwila and Ipil

Merbau is a large hardwood native to South-East Asia from the Malaysian mainland through the islands to New Guinea and as far east as Fiji and the Solomon Islands with some occurrence in northern Australia. The trees occur from the sea level through to low mountainous areas and grow to an average height of about 40 metres.

Under its various names the timber is widely available in Australia and is highly regarded for a broad range of applications

### Timber Properties

- Density (average):  
1200 kg m<sup>3</sup> green  
850 kg m<sup>3</sup> dry
- Durability: Class 2
- Strength Group: S2 green; SD3 dry
- Hardness Rating(average):  
7.6 kN green; 8.6 kN dry

Although very dense the timber works fairly well, dresses and turns to a smooth surface however the rather greasy characteristic of the wood tends to clog saws and planer blades easily.

The heartwood is orange-brown to brown or dark red-brown while the sapwood is

usually pale yellow, very easy to distinguish and is susceptible to lyctid borer attack. The texture is moderately coarse but even, with an interlocked grain and highly visible vessels containing a yellow substance as well as the presence of growth rings. The timber has a very low shrinkage rate, 1.5 to 2.5 %, and dries with very little degrade.

In Asia it is used regularly for furniture, panelling, boat building and veneers whilst in Australia it is imported for flooring, joinery, predominately staircase and handrail material, and is highly prized as decking and more recently it has gained prominence as a species that can be used for all building application in Bushfire Prone Areas.

## Northern Box

### **Tristania spp**

Other common names used are Pelawan, Malabayabas and Northern Red.

The two main Tristanian spp obovate and decorticate are both very similar hence the market grouping and are common in the island states of Malaysia, Indonesia and the northern parts of the Philippines, with the trees being medium sized and only growing to an average height of 25 metres.

### Timber Properties

- Density (average):  
1150 kg m<sup>3</sup> green; 1000 kg m<sup>3</sup> dry
- Durability: Class 1/2
- Strength Group: S1/2 green; SD2 dry
- Hardness Rating (average)  
(Provisional): 11.0 kN green;  
11.0 kN dry

The timber is very dense, hard and strong and rather difficult to work. The presence of silica blunts saws and machine knives and makes it very difficult to nail and therefore pre-drilling is recommended.

The heartwood ranges from pale pinkish brown to a dark red-brown and will continue to darken with age, with sapwood yellow to light brownish pink and easily defined. The texture is fine with grain wavy, often irregular and interlocked, shrinkage rates are medium to low and the sapwood is not susceptible to lyctid borer attack.

Because of its high strength and durability it is commonly used in South East Asia for bridge and wharf building and it is thought to be resistant to marine borers and therefore regularly used as marine piles. The timber has not until recently been widely seen in Australia but it is now being sold as flooring because of its similarity to Brush Box. Other uses such as external decking and cladding would seem appropriate.

**NOTE:** Another group of heavy hardwoods emerging in the Australian market for domestic decking is *Hopea* spp. These timbers often called Heavy *Hopea*, *Giam* or sometimes just *Hopea* are excellent for this application. The timber is Durability Class 1/2, Strength Group S1 and not lyctid susceptible. Heartwood colour varies from dark tan-brown to dark brown with sapwood yellowish to pale brown sometimes with a greenish tinge.

### Further Reading

This is one Guide in a series of Imported Timber Species Guides numbered 3.1 to 3.9, the complete series is available from your local Timber Advisory Service or by downloading from the Technical Bulletin section of [www.timber.net.au](http://www.timber.net.au)

- Wood in Australia – Keith R Bootle published by McGraw-Hill Book Company.
- Selecting Timber – a publication of BRANZ.

For further information on this brochure, contact the Timber Advisory Service on free call 1800 044 529 or email [showroom@tdansw.asn.au](mailto:showroom@tdansw.asn.au) Level 6, 525 Elizabeth Street, Surry Hills NSW 2010. General Information on the use of timber can also be found at the web page [www.timber.net.au](http://www.timber.net.au)



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