



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 are normally assessed when considering a timber for an end use such as flooring.

Softwoods from West Coast North America

There are many species of softwood available from North America. In this Guide we are looking to address some of the timbers that are imported into Australia. In other Guides in this series we have already covered the two most prominent species – for information on Douglas Fir (Oregon) refer to Imported Timber Species Guide 3.1, and for information on Western Red Cedar refer to Imported Timber Species Guide 3.2.

Western Hemlock

Tsuga heterophylla

Other common name, Canada Pine and is also sold in Australia under the trading name Hem-Fir, which is a mixture of similar looking timbers where Hemlock is predominant.

A large softwood of the North American north west, from Alaska through British Columbia down into Washington and Idaho, being a very important commercial specie in Canada. The tree grows to an average height around 60 metres with diameters up to and sometimes exceeding 2 metres, being clear of branches for almost three-quarters of its length.

Timber Properties

- Density(average): 500kg m³ dry
- Durability: Class 4
- Strength Group: S6 green; SD6 dry
- Hardness Rating(average): 2.1kN green; 2.7kN dry

Hemlock is very easy to work except where small knots are present, it dries slowly with shrinkages rates between 2.5 to 5% and care is needed to avoid surface checking. The timber holds nails and screws well although pre-drilling is recommended at the ends to avoid splitting, it takes glues and all finishes well and is good for polishing.

The timber is straw coloured ranging through to a very pale brown with heartwood and sapwood not easily distinguished. It has a very fine even texture and normally straight grained, with growth rings fairly prominent, caused by the darker bands of latewood which can be reddish or purple coloured. It is usually non-resinous but having a lustrous sheen.

Being low in durability it is not recommended for external use, although in Canada it is sometimes used for joinery, cladding and panelling. In Australia it has mostly been used in construction sizes and grades as imported but is now attracting a growing following for interior joinery, blinds and shutters.

Amabilis Fir

Abies amabilis

Other common name Silver Fir and is only sold in Australia under the trading names of Hem-Fir or Canada Pine which is a mixture of similar looking timbers where Hemlock is predominate.

Amabilis Fir is a large softwood confined to the west coast regions, ranging from Alaska to Californian being very prominent in British Columbia, Vancouver Island and Washington. The tree can grow to heights up to 50 metres but more commonly is seen in mixed forests with Hemlock where it normally only reaches 30 metres with diameters around 500mm.

Timber Properties

- Density (average): 420kg m³ dry
- Durability: Class 4
- Strength Group: S7 green; SD6 dry
- Hardness Rating (average): 1.4kN green; 2.0kN dry

The timber works easily but has a tendency to tear when planed, dries well without much degrade, it holds nails, screws and glues well and is a good base for most finishes.

Amabilis Fir is similar to Spruce in appearance and also Hemlock with which it is usually mixed. The heartwood is pale brown in colour with prominent brown latewood bands and the sapwood is almost indistinguishable. The texture is medium and the grain generally straight.

In Australia, as in North America, it is normally used for light construction purposes when mixed with Hemlock. It would not be seen here as an individual species.

With the compliments of:



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Sitka Spruce

Picea sitchensis

A large softwood of the west coast, coastal regions only, ranging from northern Alaska to California, being prominent in British Columbia. The tree normally grows to a height of 60 metres with diameters up to 2 metres.

Timber Properties

- Density (average): 430kg m³ dry
- Durability: Class 4
- Strength Group: S7 green; SD6 dry
- Hardness Rating (average): 1.5kN green; 2.3kN dry

Sitka Spruce works very well and dries quickly with a shrinkage range between 2 to 4%. The timber takes nails and screws, glues satisfactorily and is a good base for most finishes.

The heartwood is creamy white to pale brown with a pinkish tinge and although the sapwood is more regularly creamy it is usually hard to distinguish. Texture is fine to medium with a very straight grain and non-resinous.

In the past Sitka Spruce was highly favoured for light aircraft construction, as now for boatbuilding, particularly for masts, spars and oars because of its high strength to weight ratio, musical instruments, fine joinery and craft applications. Small volumes are usually available in Australia.

Spruce-Pine-Fir

This is a grouping of timber which can contain up to eight species in any mix. The other North American species detailed in this Guide or the other Guides as listed are not usually included in Spruce-Pine-Fir.



Sitka Spruce. Photograph courtesy of The Government of British Columbia Tree Book.

The eight species normally included are:

Alpine Fir	<i>Abies lasiocarpa</i>
Balsam Fir	<i>Abies balsamea</i>
Jack Pine	<i>Pinus banksiana</i>
Lodgepole Pine	<i>Pinus contorta</i>
Black Spruce	<i>Picea mariana</i>
Engelmann Spruce	<i>Picea engelmannii</i>
Red Spruce	<i>Picea rubens</i>
White Spruce	<i>Picea glauca</i>

All of these species tend to be medium sized softwoods all growing in the colder regions of Canada with the Pines and Firs having a greater level of occurrence in the United States although the grouping of Spruce-Pine-Fir is normally considered to be the Canadian timbers. The average tree heights for these species are

between 18 to 30 metres with diameters ranging from 300 to 700 mm.

Timber Properties

- Density range (average): 360–500kg m³ dry
- Durability: Class 4
- Strength Group: SD7 dry
- Hardness Rating: not applicable

These timbers usually dry well with little degrade, are easily worked with hand tools and hold nails and screws satisfactorily.

The heartwood of most are similar in colour ranging from white to yellowish and pale brown with some latewood bands providing figure in some material. Sapwood of most species are also similar and usually hard to distinguish.

Spruce-Pine-Fir is only imported into Australia as light construction timber, mainly for house framework, and is generally used in pre-manufactured frames and trusses although there are no restrictions on its use for any non-durable application and it could be well used for furniture, joinery and other internal finishing applications.

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

- 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 info@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



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