

AMERICA'S BEST-KEPT SECRET

Red oak – a warm and distinctive performer

We continue our series profiling important commercial timber species available in Australasia.

“In flooring, its distinctive grain pattern is less likely to show wear and tear than many other species used today.”

There is much discussion about the origins of the name American red oak. Some say it is because the leaves turn red in the autumn, others contend that there is a reddish tinge to the otherwise dominant brown. William A. Lincoln* says it ranges from “biscuit coloured to pink”.

Whatever, red oak is well suited to a whole range of applications from flooring to furniture and cabinets; and every type of joinery from doors to decorative panels.

White oak is the leading US hardwood imported into Australia – probably because importers have, in the past, been unable to interest furniture makers and interior joinery manufacturers in what is now regarded as one of the world's most sustainable of all temperate hardwoods.

American red oak is a true *Quercus* – mainly *Quercus rubra* (Northern red oak) and *Quercus falcata* (Southern red oak) but there are many others subspecies such as Spanish oak, cherrybark oak and shumard oak. They all exhibit much the same technical and working properties but, as with most US hardwoods, can vary in colour and grain from region to

region. Red oak is native only to North America, although it has mainly been planted as an urban or garden tree outside America.

There is a relatively large percentage of heartwood in red oak, particularly in northern-grown material. So, as usual when specifying American hardwoods, it is best to find out about your source, especially if reduced sapwood and physical properties are more important than aesthetics. Most Australian specialist hardwood importers know the different characteristics according to provenance.

Red oak represents about 35% of the total American hardwood forest – hence its sustained promotion by the American Hardwood Export Council (AHEC), now active in Australia at exhibitions like DesignEx.

The wood is particularly easy to slice and peel for veneer and plywood, and is readily available. As a result it is widely used for doors and panelling, where its individual character offers decorative options for interiors to designers and architects. The tree grows large and tall, giving much better specifications than most other types of oak.



American red oak seed is resistant to fire and is often a pioneer species after others have been destroyed. In Pennsylvania after devastating natural fires in the early 1900s, it was red oak that grew back to regenerate the forest naturally.

The RPA 2000 Assessment shows that between 1953 and 2007, the volume of US hardwood growing stock more than doubled from 5210 million m³ to 11,326 million m³. US Forest Service forecasts indicate that further increases of 15 to 20% are expected through to 2030. Projections of hardwood growth and removals nationwide indicate growth will continue to exceed removals through to 2050.

Red oak has been cut continuously for widespread use since European settlers first arrived and yet it increases its growing volume by sound management and natural

regeneration – always a true measure of sustainability.

Lincoln says American red oak displays medium bending properties and very good bending with steam. It has “high crushing strength” and is mostly straight grained.

The species is classified as non-durable although the sapwood is permeable and easily treated with preservative. Heartwood is moderately easy to treat, which means the oak is more receptive to fire-retardant chemicals than many other hardwood species.

For example, the heartwood treatability designations given in EN 350-2, TRADA – the UK technical organisation – lists American red oak as being Class 1, easy to treat. This better permeability leads to a greater uptake and retention of chemicals necessary to achieve the Class 0 fire rating demanded by UK/

EU Building Regulations for internal linings used in escape routes and circulation areas in public buildings.

The harder wood needs pre-boring for nails, but it machines well and glues and stains to a fine finish. Its decorative properties derive from strong grain patterns and generally warm colour. The hardness of red oak makes it ideal for flooring, and with its distinctive grain pattern it is less likely to show wear and tear than many other species used today.

*World Woods in Colour, William A. Lincoln, ISBN 0 85442 028 2.

(This Species Profile was compiled with the expert assistance of the American Hardwood Export Council. For information about the full range of sustainable American hardwood lumber and veneer species, go to: www.ahec-seasia.org)

Average Weight (12% M.C.):	a) 707 kg/m ³	b) 707 kg/m ³
Average Volumetric Shrinkage:	10.8% (Green to 6% M.C.)	
Modulus of Elasticity:	a) 12,549 MPa	b) 15,721 MPa
Hardness:	a) 5,738 N	b) 6,583 N
	a) <i>Quercus rubra</i> Northern	b) <i>Quercus falcata</i> Southern

LEFT

Riva stool – demonstrating red oak's grain patterns and generally warm colour (Photo: AHEC)

RIGHT

Hardness and distinctive grain are strong flooring attributes (Photo: AHEC)