LUMBER BY SPECIES

August 2013

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RADIATA PINE

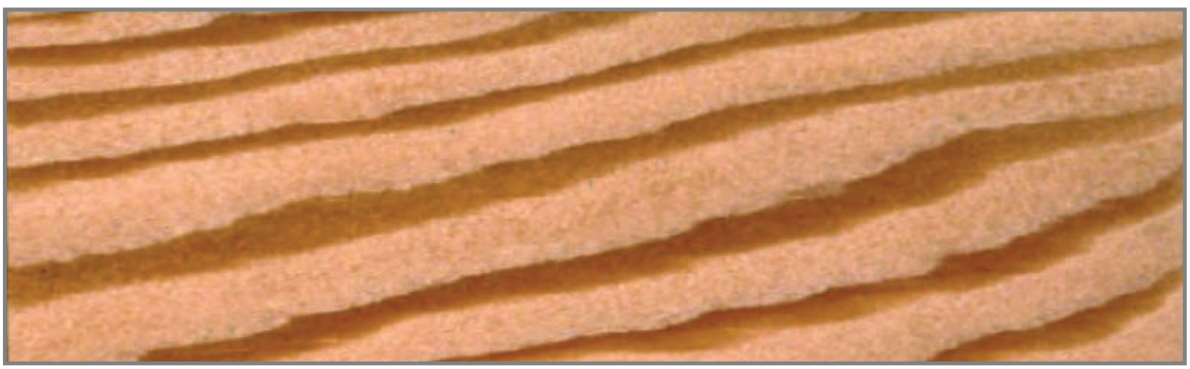
(Pinus Radiata)

Other Names:	NZ Pine, Monterey Pine
Country of Origin:	New Zealand, Australia
Density (Air Dry):	480kg/m3
Shrinkage:	Low to Moderate
Durability:	Non-durable
General Description:	Radiata pine is a versatile and readily available softwood timber, suitable for a wide variety of end-use applications. The heartwood of Radiata pine is an even light brown to chestnut brown in colour, the sapwood is creamy white. Radiata is unique in that it readily accepts chemical preservative treatments.
Working Properties:	Timber machines well. Is easily processed, dried and treated and will take staining and coating. Sands, glues and holds nails well.
Mechanical Properties:	Bending strength and stiffness qualities are low. Crushing strength and resistance to shock loads is medium. Not suitable for steam bending.
Main Uses:	Radiata pine is used for a wide range of applications and can be graded based on strength stiffness for construction, or by appearance for furniture and joinery uses.

DOUGLAS FIR

(Pseudotsuga Menziesii)

Other Names:	Oregon pine, Douglas spruce, Doug fir
Country of Origin:	Canada, United States of America, New Zealand
Density (Air Dry):	500kg/m3
Shrinkage:	Medium
Durability:	Moderately durable (Heartwood), Non-durable (Sapwood)
General Description:	Douglas-fir displays prominent growth-ring bands between the early wood and late wood. The heartwood is a pale-pinkish colour and the sapwood is near white. The low longitudinal shrinkage means that once dry, the timber tends to hold its shape.
Working Properties:	The uneven growth ring texture does require machining to be more exacting for appearance uses. Grain deviation around knots can result in chip-out when planing and raised grain can occur during dressing. Prone to splitting when nailing, and nails tend to follow the latewood band leading to nails deflecting from the intended nail direction.
Mechanical Properties:	Medium bending, crushing strength and stiffness. Poor for steam bending.
Main Uses:	Construction, panelling



WESTERN HEMLOCK

(Tsuga Heterophylla)

Other Names:	Hem Fir, West Coast Hemlock, Alaska Pine, Hemlock Spruce, Canada Pine
Country of Origin:	Canada, United States of America
Density (Air Dry):	500kg/m3
Shrinkage:	Medium
Durability:	Non-durable (Heartwood), Non-durable (Sapwood)
General Description:	Heartwood has a pale, cream colour with distinctive growth marks and a fairly even texture. This beautiful pale timber produces few knots and displays a uniform, attractive grain. Attractive, delicate, dark grey or black streaks may be apparent in the wood. There is little variation in colour between the heartwood and sapwood, and they are often indistinguishable from one another.
Working Properties:	The wood has an even grain and resists scraping, which makes it easy to machine. Western Hemlock timber works well with both hand and machine tools with little dulling of cutting edges. Timber of this species can be easily glued, stained, painted or varnished. Hold nails and screws well.
Mechanical Properties:	This timber has medium bending and crushing strength. Moderate for steam bending.
Main Uses:	Construction, joinery, panels.

KWILA

(Intsia Bijuga, Instia Palembanica))

Other Names:	Merbau, Vesi, Ipil
Country of Origin:	Indonesia, Papua New Guinea, Solomon Islands, Fiji
Density (Air Dry):	870kg/m3
Shrinkage:	Low
Durability:	Very durable
General Description:	Kwila heartwood is yellow-brown to dark red-brown in colour. Sapwood is yellow in colour. Grain is slightly interlocked and texture is moderately course. Timber is non-siliceous, sometimes lustrous. Timber bleeds when wetted producing a dark stain.
Working Properties:	Timber machines well but will blunt tools severely. Timber must be pre-drilled to avoid splitting. Holds fasteners well. Will take coatings but oily patches can affect the finish.
Mechanical Properties:	Bending strength, crushing strength and stiffness qualities are high. Resistance to shock loads is medium. Not suitable for steam bending.
Main Uses:	Decking, flooring, internal and external joinery, Heavy construction timber.

VITEX

(Vitex Cofassus)

Other Names:	New Guinea Teak, Vasa
Country of Origin:	Papua New Guinea, Solomon Islands
Density (Air Dry):	800kg/m3
Shrinkage:	Low
Durability:	Durable
General Description:	Vitex is a durable hardwood with a pale yellowish to creamy-grey appearance. Texture is fine and slightly lustrous with an even grain. When freshly cut the timber has a leathery odour and the timber is slightly greasy to the touch.
Working Properties:	Timber is sawn without difficulty. Planes and machines well and cuts across the grain easily. Bends and holds nails well (no pre-drilling required). Good finishes achievable.
Mechanical Properties:	Vitex is a dense hardwood with above average crushing and bending strength. Medium stiffness and resistance to shock loads.
Main Uses:	Used primarily in outdoor applications such as decking, exterior joinery, board walks. Occasionally substituted for Teak in boat building. Can be used for flooring if timber is kiln dried.

KAURI

(Agathis Vitensis)

Other Names:	Fiji Kauri, Dakua Makadre
Country of Origin:	Fiji
Density (Air Dry):	540kg/m3
Shrinkage:	Medium
Durability:	Non-durable
General Description:	Fijian Kauri is a revered as a high grade softwood. The heartwood is pale cream to golden brown in colour, with lustre. Texture is fine and the grain mainly straight with flecks visible on radial faces. The timber has excellent woodworking properties and a degree of stability.
Working Properties:	The timber is easy to saw and machine. Turning properties are excellent and the timber can be drilled cleanly with little chipping. Planed surfaces are very smooth.
Mechanical Properties:	Fijian kauri has a high stiffness and crushing strength, medium resistance to shock loads and high bending strength. It is a moderately fissile timber.
Main Uses:	Used primarily in indoor applications, furniture, cabinet making, turnery, carving and boat building.

YAKA

(Dacrydium Nidulum)

Other Names:	Fiji Rimu
Country of Origin:	Fiji
Density (Air Dry):	620kg/m3
Shrinkage:	Low
Durability:	Durable
General Description:	Yaka timber is brown to red-brown with great colour variation and dark streaking. The texture is fine and the grain is usually straight but sometimes wavy. Yaka is a relative of the New Zealand Rimu and looks like heart Rimu with a more distinctive colour variation.
Working Properties:	Seasoned material saws and machines easily but slight to moderate chipping is not unusual. With sufficient care, good machined surfaces can be produced. Smooth turned surfaces are easily obtained and drilled holes are of average quality.
Mechanical Properties:	Yaka is moderately tough and hard with a medium crushing strength and low stiffness.
Main Uses:	A decorative timber used in furniture and cabinetmaking, flooring, joinery, mouldings and panelling.

SALUSALU

(Decussocarpus Vitensis)

Other Names:	Dakua Salusalu
Country of Origin:	Fiji
Density (Air Dry):	440kg/m3
Shrinkage:	Low
Durability:	Non-durable
General Description:	The colour of Salusalu ranges from pale brown to golden orange-brown and has a fine even texture. Often regarded as a substitute for sap Rimu.
Working Properties:	Salusalu has fine texture and low density and therefore easy to work. Chipping out may occur and nail holding capacity is relatively low.
Mechanical Properties:	Salusalu is a low density, weak timber with below average bending and crushing strengths.
Main Uses:	Suitable for interior finishing, mouldings, window frames and sashes, window sills, internal doors, furniture, cabinets, panelling and other decorative end uses.

CALOPHYLLUM

(Callophullum Spp)

Other Names:	Damanu, Koilo, Bintangor
Country of Origin:	Fiji, Papua New Guinea, Solomon Islands, Malaysian Peninsula
Density (Air Dry):	610kg/m3
Shrinkage:	Medium
Durability:	Moderately durable
General Description:	Heartwood is light reddish-brown. Texture is intermediate to course and the grain is generally interlocked. Parenchyma bands sometimes produce figure on some timber faces.
Working Properties:	Generally the timber works well. The timber saws well in a dry state occasionally showing fibrous surfaces. Planed surfaces may show some chipping in regions of reversed grain.
Mechanical Properties:	Calophyllum mechanical properties can vary however is generally considered a tough timber with medium bending and crushing strengths.
Main Uses:	Suitable for interior finishing, joinery, furniture and flooring, mouldings, architraves, door and window jambs.

TAUN

(Pometia Pinnata)

Other Names:	Malugai, Kasai, Sibu, Ako Dawa, Tava, Matoa, Akwa, Pometia
Country of Origin:	Philippines, Papua New Guinea, Solomon Islands, Western Samoa
Density (Air Dry):	700kg/m3
Shrinkage:	Medium
Durability:	Moderately durable
General Description:	Taun heartwood varies in colour from pink to reddish-brown, darkening with age. Sapwood is a pale, pinkish buff, not always visually distinct from the true wood. The grain of Taun timber is straight, with occasional interlocking, and of moderately coarse texture.
Working Properties:	The timber saws and turns easily with only a moderate blunting effect on cutting edges. It is readily bored and holds nails and screws well, can be satisfactorily bonded using standard gluing procedures, takes paints and stains well, and can be polished to a smooth, high finish.
Mechanical Properties:	Taun is considered a tough timber with high bending and crushing strengths.
Main Uses:	Suitable for general construction, lining, panelling, joinery, cabinetwork, outdoor furniture, carving, turnery and veneers.

TEAK

(Tectona Grandis)

Other Names:	Jati, Kyun, Sagwan, Mai Sak, Giati, Teca
Country of Origin:	Indonesia, Myannmar, Thailand
Density (Air Dry):	700kg/m3
Shrinkage:	Low
Durability:	Very durable
General Description:	The heartwood of Teak is typically golden brown in colour, although grey and red tinges are not uncommon. The sapwood, a pale yellow, is visually distinct. Due to Teak's high degree of ring porosity, longitudinal streaks and an uneven grain texture, ranging from coarse to smooth, are commonly present.
Working Properties:	Teak is usually relatively easy to work but silica can be present and this will necessitate frequent sharpening of tools. It peels easily and nails satisfactorily but gluing sometimes presents difficulties because of the oily nature of the wood. Good resistance to acids. Not corrosive to metal fixings.
Mechanical Properties:	High bending and crushing strengths. Unsuitable for steam bending
Main Uses:	Perhaps best know for boat building however suitable for all other applications.

BIG-LEAF MAHOGANY

(Swietenia Macropylla)

Other Names:	Malugai, Kasai, Sibu, Ako Dawa, Tava, Matoa, Akwa, Pometia
Country of Origin:	Philippines, Papua New Guinea, Solomon Islands, Western Samoa
Density (Air Dry):	570kg/m3
Shrinkage:	Low
Durability:	Moderately durable
General Description:	Mahogany heartwood varies in colour from pale pink to yellow, darkening with age. Sapwood is a pale, pinkish buff, not always visually distinct from the true wood. The grain of Taun timber is straight, with occasional interlocking, and of moderately coarse texture.
Working Properties:	The timber saws and turns easily . Some furry surface may be experienced on sawn however very smooth surfaces are achieved through the planer. Mahogany can be bonded using standard gluing procedures, takes paints and stains well, and can be polished to a smooth, high finish.
Mechanical Properties:	Mahogany is consider moderately tough timber with moderate bending and crushing strengths.
Main Uses:	Suitable for lining, panelling, joinery, cabinetwork, furniture, carving, decking.

REDWOOD

(Sequoia Sempervirens)

Other Names:	California Redwood, Coastal Redwood, Sequoia
Country of Origin:	USA
Density (Air Dry):	450kg/m3
Shrinkage:	Low
Durability:	Very durable
General Description:	Redwood heartwood is pale to dark reddish brown and the sapwood narrow and creamy. Texture is fine and usually even because there is little difference between the early wood and the late. The grain is straight and the wood is not resinous.
Working Properties:	Redwood works easily with both hand and machine tools, with little dulling effect on tools. It planes well, provided the cutters are sharp, but it splinters easily when working on the end grain. It holds nails well, and paints and finishes satisfactorily. It also stains well, but glues best with alkaline adhesives.
Mechanical Properties:	Redwood is considered a soft timber with moderate bending and crushing strengths.
Main Uses:	Redwood is highly sought after for decorative purposes, such as for panelling and cladding, high durability to weather and insects makes it a natural choice for external joinery, outdoor furniture.

WESTERN RED CEDAR

(Thuja Plicata)

Other Names:	Red Cedar
Country of Origin:	Canada, United States of America
Density (Air Dry):	370kg/m3
Shrinkage:	Very low
Durability:	Very durable
General Description:	Western Red Cedar heartwood shows variations in colour when fresh from dark brown to pink colour, maturing to a reddish-brown and, in time to silver-grey when weathered. The sapwood is a paler colour. Straight grained and rather course texture.
Working Properties:	Very easy to work with good finishes achievable. Pre-boring is not required and takes nails and screws well. Gluing properties are very good. Stains well and polishes to a good finish.
Mechanical Properties:	Cedar has a very low shrinkage factor and is superior to all other coniferous woods in its resistance to warping, twisting and checking.
Main Uses:	Cladding, Shingles and shakes, furniture, joinery, panelling, decking.