

Red grandis

Family. Myrtaceae

Botanical Name(s).

Eucalyptus grandis

Continent. Latin America

CITES. This species is not listed in the CITES Appendices (Washington Convention 2023).

Notes. Native to Australia, this timber species has been planted in almost all tropical or sub-tropical regions. Today, woods imported in Europe mainly come from Latin America (Brazil, Uruguay).

Description of logs

Diameter. From 30 to 60 cm

Thickness of sapwood. From 2 to 4 cm

Floats. No

Log durability. Low (treatment necessary)

Description of wood

Colour reference. Red brown

Sapwood. Clearly demarcated

Texture. Coarse

Grain. Straight or interlocked

Interlocked grain. Slight

Notes. Pale pink to reddish brown wood.

Physics and mechanics

The properties indicated are for mature wood. These properties may vary significantly depending on the origin and growing conditions of the wood.

Property	Average value
Specific gravity ¹	0.60
Monnin hardness ¹	2.5
Coefficient of volumetric shrinkage	0.48 % per %
Total tangential shrinkage (St)	10.0 %
Total radial shrinkage (Sr)	5.8 %
Ratio St/Sr	1.7
Fibre saturation point	31 %
Thermal conductivity (λ)	0.22 W/(m.K)
Lower heating value	19,200 kJ/kg
Crushing strength ¹	59 MPa
Static bending strength ¹	103 MPa
Modulus of elasticity ¹	15,200 MPa

¹ At 12 % moisture content, with 1 MPa = 1 N/mm

Notes. Specific gravity can vary according to origin of wood, usually between 0.55 and 0.65.



Flat sawn



Quarter sawn

Natural durability and preservation

Resistance to fungi. Class 2 to class 4 - durable to poorly durable

Resistance to dry wood borers. Class D - durable (sapwood demarcated, risk limited to sapwood)

Resistance to termites. Class S - susceptible

Treatability. Class 3-4 - poorly or not permeable

Use class ensured by natural durability.

Class 2 (inside or under cover, dampness possible) to class 3 (not in ground contact, outside)

Notes. This species is listed in the European standard EN 350(2016). Part of Red Grandis commercialized today in the world comes from young plantations often constituted by woods with lower properties than the woods from natural forests or mature plantations. These juvenile woods especially present an incomplete duraminisation which explains their lower natural durability compared to the durability of more mature woods.

Requirement of a preservative treatment

Against dry wood borer. Does not require any preservative treatment

In case of temporary humidification. Requires appropriate preservative treatment

In case of permanent humidification. Use not recommended

Drying

Drying rate. Normal to slow

Risk of distorsion. High risk

Risk of casehardening. Yes

Risk of checking. High risk

Risk of collapse. Yes

Notes.

Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
Prewarm 1		> 50	40	86	17.0
Prewarm 2	4	> 50	43	85	16.5
Drying		> 50	45	83	15.7
		50 - 40	45	80.0	14.6
		40 - 35	45	77.0	13.8
		35 - 30	45	74.0	12.9
		30 - 27	47	69.0	11.5
		27 - 24	49	61.0	9.9
		24 - 21	50	52.0	8.4
		21 - 18	53	48.0	7.7
		18 - 15	56	41.0	6.6
		15 - 12	59	36.0	5.9
		12 - 9	61	30.0	5.0
		9 - 6	65	29.0	4.7
Conditioning	8		58	(3)	(2)
Cooling	(1)		Stop	(3)	(2)

(1)) Cooling: until the temperature inside the kiln no longer exceeds external temperature by more than 30 °C.

(2) UGL = final H% x 0,8 to 0,9.

(3) Subtract RH from the UGL determined in (2) and temperature, using the Hailwood-Horrobin equation.

Sawing and machining

Blunting effect. High

Sawteeth recommended. Stellite-tipped

Cutting tools. Tungsten carbide

Peeling. Good

Slicing. Not recommended or without interest

Notes. Like almost all Eucalyptus, this species develops growth stresses which create splits or distortion in the stocks during log sawing. Appropriated sawing techniques must be used: log sawing turning, symmetrical sawing, first sawing by the heart, production of short length stocks...

Assembling

Nailing and screwing. Good but pre-boring necessary

Commercial grading

Appearance grading for sawn timbers.

Different grading rules applied according to wood origin.

Visual grading for structural applications

No visual grading for structural applications.

Fire safety

Conventional French grading.

Thickness > 14 mm: M3 (moderately inflammable)

Thickness < 14 mm: M4 (easily inflammable)

Euroclasses grading. D-s2, d0

Default grading for solid wood, according to requirements of European standard EN 14081-1+A1 (August 2019). It concerns structural graded timber in vertical uses and ceiling with mean density upper 0.35 and thickness upper 22 mm.

End-uses

- Current furniture or furniture components
- Exterior joinery
- Flooring
- Glued laminated
- Interior joinery
- Interior panelling
- Light carpentry
- Pit props
- Poles
- Wood frame house



Hammock stand – Telêmaco Borba (Paraná, Brazil).

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Main local names

Country	Local name
Australia	Flooded gum
Australia	Kamarere
Australia	Rose gum
Belgium (importated tropical timber)	Red grandis
Brazil	Grandis
Brazil	Red grandis
France (importated tropical timber)	Eucalyptus grandis
France (importated tropical timber)	Grandis
France (importated tropical timber)	Red grandis
Germany (importated tropical timber)	Red grandis
Italia (importated tropical timber)	Red grandis
Spain (importated tropical timber)	Red grandis
United Kingdom (importated tropical timber)	Red grandis
Uruguay	Grandis
Uruguay	Red grandis