

Family: MYRTACEAE (angiosperm)

Scientific name(s): Eucalyptus grandis

Commercial restriction: no commercial restriction

Note: Coming from Australia, EUCALYPTUS GRANDIS has been planted in almost all tropical or sub-tropical areas of the world. Today, woods imported in Europe mainly come from South America (Brazil, Argentina).

WOOD DESCRIPTION

Color: red brown
Sapwood: clearly demarcated
Texture: coarse
Grain: straight or interlocked
Interlocked grain: slight
Note: Pale pink to reddish brown wood.

LOG DESCRIPTION

Diameter: from 30 to 60 cm
Thickness of sapwood: from 2 to 4 cm
Floats: no
Log durability: low (must be treated)

PHYSICAL PROPERTIES

Physical and mechanical properties are based on mature heartwood specimens. These properties can vary greatly depending on origin and growth conditions.

	<u>Mean</u>	<u>Std dev.</u>
Specific gravity *:	0,65	0,07
Monnin hardness *:	2,5	0,6
Coeff. of volumetric shrinkage:	0,48 %	0,06 %
Total tangential shrinkage (TS):	10,0 %	1,8 %
Total radial shrinkage (RS):	5,8 %	0,9 %
TS/RS ratio:	1,7	
Fiber saturation point:	31 %	

Stability: moderately stable to poorly stable

MECHANICAL AND ACOUSTIC PROPERTIES

	<u>Mean</u>	<u>Std dev.</u>
Crushing strength *:	59 MPa	7 MPa
Static bending strength *:	103 MPa	11 MPa
Modulus of elasticity *:	15200 MPa	1900 MPa

(*: at 12% moisture content, with 1 MPa = 1 N/mm²)

NATURAL DURABILITY AND TREATABILITY

Fungi and termite resistance refers to end-uses under temperate climate. Except for special comments on sapwood, natural durability is based on mature heartwood. Sapwood must always be considered as non-durable against wood degrading agents.

E.N. = Euro Norm

Funghi (according to E.N. standards): class 3-4 - moderately to poorly durable

Dry wood borers: durable - sapwood demarcated (risk limited to sapwood)

Termites (according to E.N. standards): class S - susceptible

Treatability (according to E.N. standards): class 3-4 - poorly or not permeable

Use class ensured by natural durability: class 2 - inside or under cover (dampness possible)

Species covering the use class 5: No

Note: Part of EUCALYPTUS GRANDIS commercialized today in the world comes from young plantations often constituted by woods with lower properties than the woods from natural forests. 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 attacks: does not require any preservative treatment

In case of risk of temporary humidification: requires appropriate preservative treatment

In case of risk of permanent humidification: use not recommended

DRYING

Drying rate: normal to slow

Risk of distortion: high risk

Risk of casehardening: yes

Risk of checking: high risk

Risk of collapse: yes

Possible drying schedule: 1

M.C. (%)	Temperature (°C)		Air humidity (%)
	dry-bulb	wet-bulb	
Green	40	37	82
40	44	38	68
30	44	36	59
20	46	36	52
15	49	37	46

This schedule is given for information only and is applicable to thickness lower or equal to 38 mm.

It must be used in compliance with the code of practice.

For thickness from 38 to 75 mm, the air relative humidity should be increased by 5 % at each step.

For thickness over 75 mm, a 10 % increase should be considered.

SAWING AND MACHINING

Blunting effect: high

Sawteeth recommended: stellite-tipped

Cutting tools: tungsten carbide

Peeling: good

Slicing: not recommended or without interest

Note: 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, symetrical sawing, first sawing by the heart, production of short length stocks...

ASSEMBLING

Nailing / screwing: good but pre-boring necessary

Gluing: correct (for interior only)

COMMERCIAL GRADING

Appearance grading for sawn timbers: Grading depending on the source

FIRE SAFETY

Conventional French grading: Thickness > 14 mm : M.3 (moderately inflammable)

Thickness < 14 mm : M.4 (easily inflammable)

Euroclasses grading: D s2 d0

Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

END-USES

Flooring

Interior panelling

Glued laminated

Wood frame house

Pit props

Interior joinery

Current furniture or furniture components

Light carpentry

Poles

Note: In Brazil, an important part of the production of EUCALYPTUS GRANDIS is transformed in charcoal and used by the iron and steel industry.

MAIN LOCAL NAMES

<u>Country</u>	<u>Local name</u>	<u>Country</u>	<u>Local name</u>
Australia	FLOODED GUM	Australia	ROSE GUM
France	GRANDIS		

