JARRAH

Family: MYRTACEAE (angiosperm)

Scientific name(s): Eucalyptus marginata

Commercial restriction: no commercial restriction

Note: JARRAH presently commercialized does not come anymore from primary forests; it only comes from regrowth forests (Australia) or plantations (in particular South Africa).

WOOD DESCRIPTION

Color: red brown

Sapwood: clearly demarcated

Texture: medium

Grain: straight or interlocked

Interlocked grain: slight

Note: Narrow sapwood.
Wood red brown to dark brown, sometimes interlocked, wavy or curly.

LOG DESCRIPTION

Diameter: from 60 to 120 cm

Thickness of sapwood: from 3 to 6 cm

Floats: no

Log durability: good

PHYSICAL PROPERTIES

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

	Mean	Std dev.
Specific gravity *:	0,82	
Monnin hardness *:	9,3	
Coeff. of volumetric shrinkage:	0,54 %	
Total tangential shrinkage (TS):	10,5 %	
Total radial shrinkage (RS):	6,4 %	
TS/RS ratio:	1,6	
Fiber saturation point:	34 %	

Stability: moderately stable to poorly stable

Note: Physical and mechanical properties of JARRAH hardly vary according to trees age and growth conditions.

MECHANICAL AND ACOUSTIC PROPERTIES

	Mean	Std dev.
Crushing strength *:	81 MPa	
Static bending strength *:	101 MPa	
Modulus of elasticity *:	20090 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 1 - very durable

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

Termites (according to E.N. standards): class M - moderately durable

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

Use class ensured by natural durability: class 4 - in ground or fresh water contact

Species covering the use class 5: No

Note: This species is listed in the European standard NF EN 350-2.
According to the European standard NF EN 335, performance length might be modified by the intensity of end-use exposition.
The resistance to termites varies from "moderately durable" to "durable".

REQUIREMENT OF A PRESERVATIVE TREATMENT

Against dry wood borer attacks: does not require any preservative treatment

In case of risk of temporary humidification: does not require any preservative treatment

In case of risk of permanent humidification: does not require any preservative treatment

DRYING

Drying rate: slow
Risk of distortion: high risk
Risk of casehardening: no
Risk of checking: high risk
Risk of collapse: yes
Note: Drying must be done very slowly (surface drying). Dehumidification drying is recommended.

Possible drying schedule: 1

	Temperature (°C)		
M.C. (%)	dry-bulb	wet-bulb	Air humidity (%)
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: fairly high
Sawteeth recommended: stellite-tipped
Cutting tools: tungsten carbide
Peeling: not recommended or without interest
Slicing: not recommended or without interest
Note: Requires power. Difficulties in presence of irregular grain. It is recommended to reduce the cutting angle to 15° to avoid tearing.

ASSEMBLING

Nailing / screwing: good but pre-boring necessary
Gluing: correct

COMMERCIAL GRADING

Appearance grading for sawn timbers: According to MGR grading rules (2009)
Possible grading: Prime, Select, Standard, Serviceable, Utility

FIRE SAFETY

Conventional French grading: Thickness > 14 mm : M.3 (moderately inflammable)
Thickness < 14 mm : M.4 (easily inflammable)

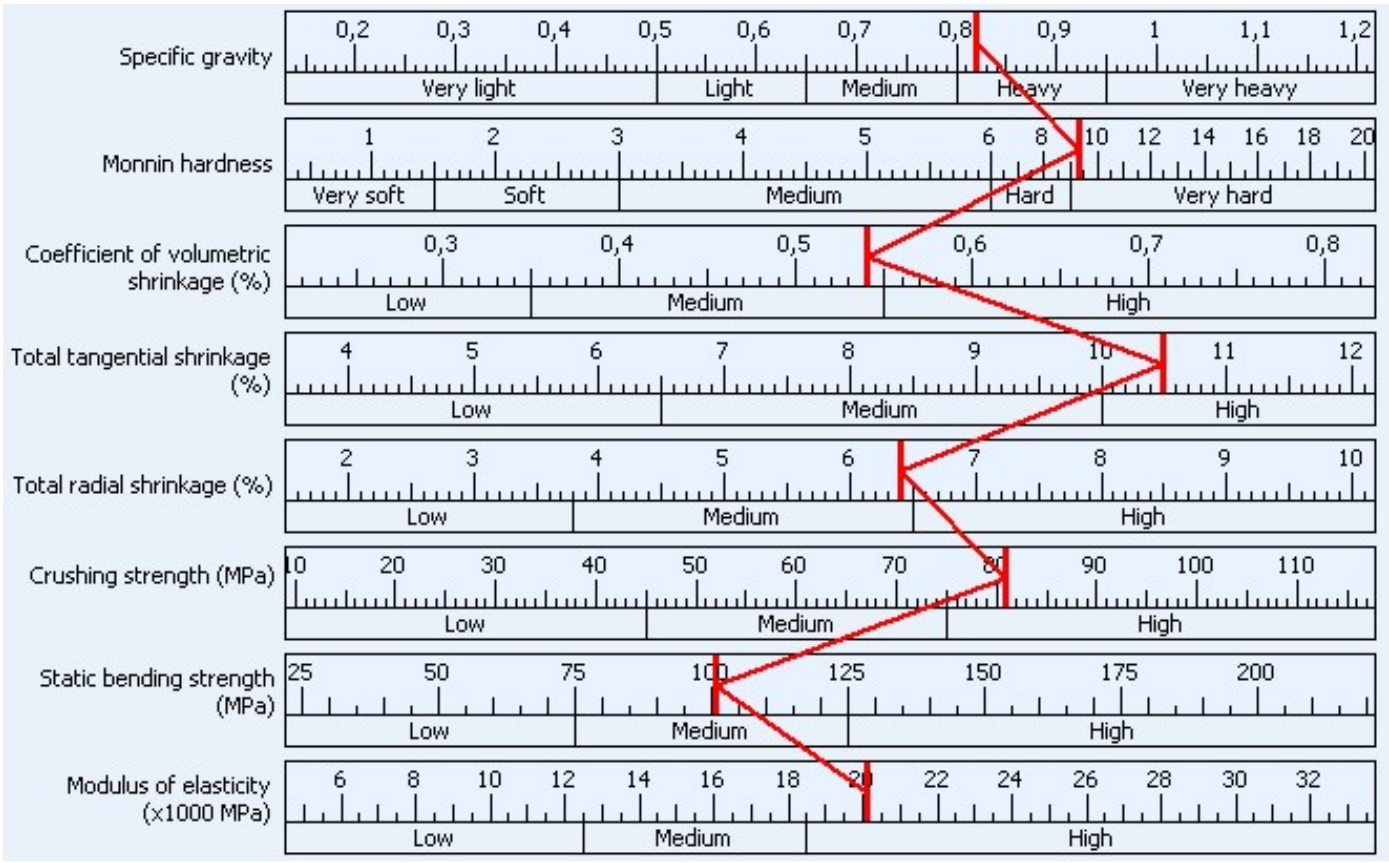
Euroclasses grading: D s2 d0
Default grading for solid wood, according to requirements of European standard EN 14081-1 annex C (April 2009). It concerns structural graded timber in vertical uses with mean density upper 0.35 and thickness upper 22 mm.

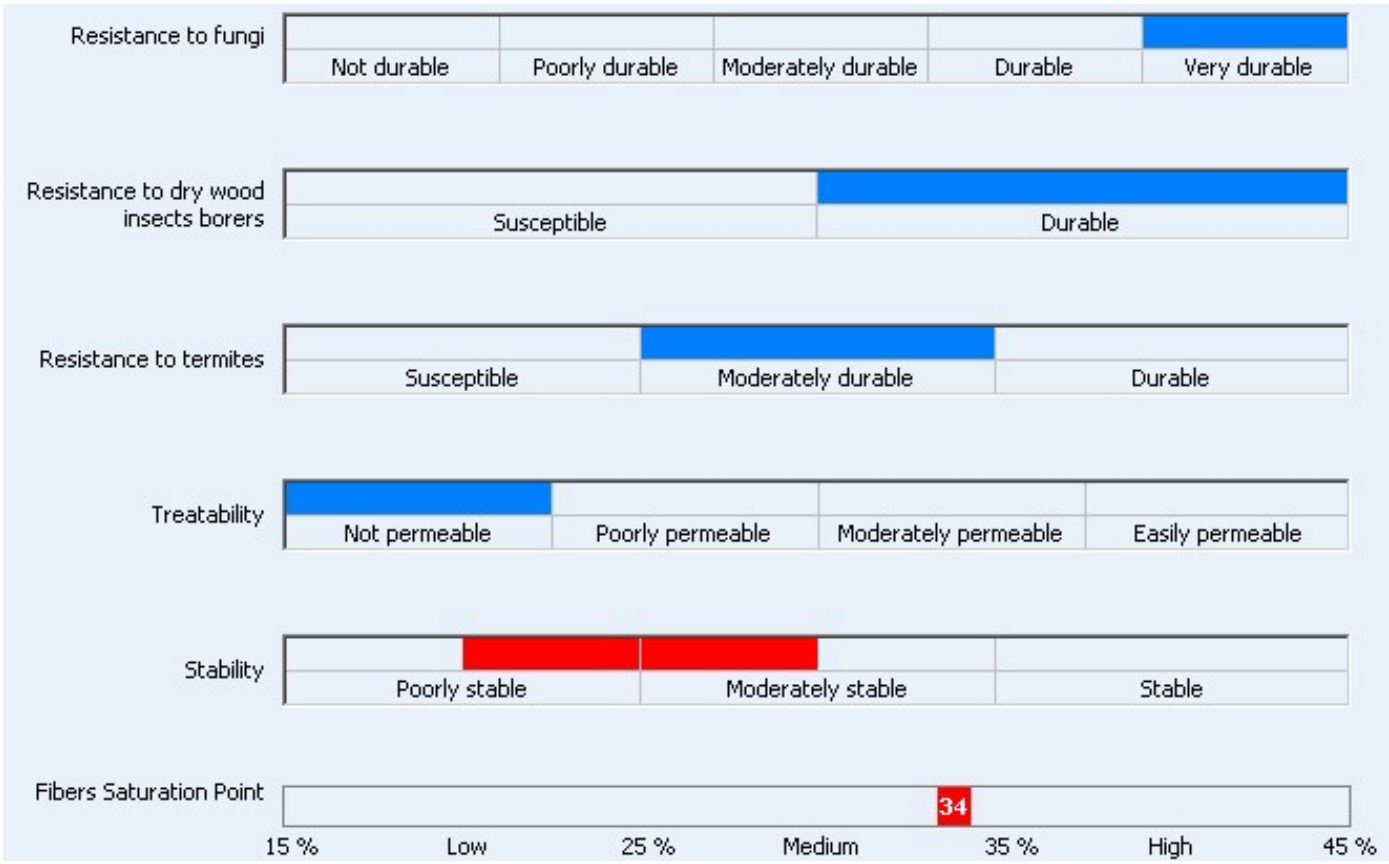
END-USES

Hydraulic works (fresh water)
Poles
Industrial or heavy flooring
Vehicle or container flooring
Glued laminated
Exterior panelling
Ship building (planking and deck)
Moulding
Sleepers
Bridges (parts in contact with water or ground)
Flooring
Heavy carpentry
Interior panelling
Bridges (parts not in contact with water or ground)
Stairs (inside)
Cabinetwork (high class furniture)

MAIN LOCAL NAMES

Country	Local name	Country	Local name
Australia	JARRAH		


Specific gravity
0,2 0,3 0,4 0,5 0,6 0,7 0,8 0,9 1 1,1 1,2
Very light
Light
Medium
Heavy
Very heavy
Monnin hardness
1 2 3 4 5 6 8 10 12 14 16 18 20
Very soft
Soft
Medium
Hard
Very hard
Coefficient of volumetric shrinkage (%)
0,3 0,4 0,5 0,6 0,7 0,8
Low
Medium
High
Total tangential shrinkage (%)
4 5 6 7 8 9 10 11 12
Low
Medium
High
Total radial shrinkage (%)
2 3 4 5 6 7 8 9 10
Low
Medium
High
Crushing strength (MPa)
10 20 30 40 50 60 70 80 90 100 110
Low
Medium
High
Static bending strength (MPa)
25 50 75 100 125 150 175 200
Low
Medium
High
Modulus of elasticity (x1000 MPa)
6 8 10 12 14 16 18 20 22 24 26 28 30 32
Low
Medium
High


Resistance to fungi
Not durable
Poorly durable
Moderately durable
Durable
Very durable
Resistance to dry wood insects borers
Susceptible
Durable
Resistance to termites
Susceptible
Moderately durable
Durable
Treatability
Not permeable
Poorly permeable
Moderately permeable
Easily permeable
Stability
Poorly stable
Moderately stable
Stable
Fibers Saturation Point
34
15 %
Low
25 %
Medium
35 %
High
45 %