

## Para angelim

Family. Fabaceae

Botanical Name(s).

*Hymenolobium elatum*

*Hymenolobium excelsum*

*Hymenolobium petraeum*

*Hymenolobium p.p.*

Continent. Latin America

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

### Description of logs

Diameter. From 70 to 120 cm

Thickness of sapwood. From 3 to 5 cm

Floats. No

Log durability. Moderate (treatment recommended)

### Description of wood

Colour reference. Orange - yellow

Sapwood. Not clearly demarcated

Texture. Coarse

Grain. Interlocked

Interlocked grain. Slight

Notes. Heartwood yellow brown becoming pinkish brown on exposure. Fairly important waxen patches more or less frequent.

### 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 <sup>1</sup>	0.80
Monnin hardness <sup>1</sup>	6.3
Coefficient of volumetric shrinkage	0.67 % per %
Total tangential shrinkage (St)	8.3 %
Total radial shrinkage (Sr)	4.9 %
Ratio St/Sr	1.7
Fibre saturation point	25 %
Thermal conductivity (λ)	0.26 W/(m.K)
Lower heating value	19,050 kJ/kg
Crushing strength <sup>1</sup>	67 MPa
Static bending strength <sup>1</sup>	119 MPa
Modulus of elasticity <sup>1</sup>	20,870 MPa

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



Quarter sawn



Flat sawn

## Natural durability and preservation

Resistance to fungi. Class 3 - moderately durable

Resistance to dry wood borers. Class S - susceptible (risk in all the wood)

Resistance to termites. Class S - susceptible

Treatability. Class 2 - moderately permeable

Use class ensured by natural durability.

Class 2 - inside or under cover (dampness possible)

Notes. Resistance to decay moderate to good according to the species.

## Requirement of a preservative treatment

Against dry wood borer. Requires appropriate preservative treatment

In case of temporary humidification. Requires appropriate preservative treatment

In case of permanent humidification. Use not recommended

## Drying

Drying rate. Rapid to normal

Risk of distorsion. Slight risk

Risk of casehardening. No known specific risk

Risk of checking. Slight risk

Risk of collapse. No known specific risk

Notes. A slower drying speed can avoid defects.

Suggested drying program.

Phases	Duration (H)	MC (%) probes	T (°C)	Rh (%)	UGL (%)
<b>Prewarm 1</b>		> 50	50	87	17.0
<b>Prewarm 2</b>	4	> 50	50	86	16.5
<b>Drying</b>		> 50	53	85	15.7
		50 - 40	53	82.0	14.6
		40 - 35	54	78.0	13.4
		35 - 30	55	77.0	12.9
		30 - 27	57	73.0	11.9
		27 - 24	58	68.0	10.7
		24 - 21	60	61.0	9.3
		21 - 18	62	52.0	7.9
		18 - 15	64	43.0	6.6
		15 - 12	65	39.0	6.0
		12 - 9	65	31.0	5.0
		9 - 6	65	28.0	4.5
<b>Conditioning</b>	8		58	(3)	(2)
<b>Cooling</b>	(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. Normal

**Sawteeth recommended.** Ordinary or alloy steel

**Cutting tools.** Ordinary

**Peeling.** Bad

**Slicing.** Good

**Notes.** Possible difficulties if the waxen patches are numerous. These patches remain visible after machining.

## Assembling

**Nailing and screwing.** Good but pre-boring necessary

**Notes.** Tends to end checks when nailing. High specific gravity: gluing must be especially performed in compliance with the code of practice.

## Commercial grading

**Appearance grading for sawn timbers.**

According to NHLA grading rules (2015) Possible grading: FAS, Select, Common 1, Common 2, Common 3 In French Guiana, the local name of this species is "Saint Martin Jaune". Grading is done according to local rules "Bois guyanais classés". Possible grading: choix 1, choix 2, choix 3, choix 4

**Visual grading for structural applications**

According to French standard NF B 52-001-1 (2018), strength class D40 can be provided by visual grading.

## 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
- Exterior panelling
- Flooring
- Heavy carpentry
- Indoor staircases
- Industrial or heavy flooring
- Interior joinery
- Interior panelling
- Moulding
- Sliced veneer

**Notes.** A careful sanding must be done to obtain a good finish.



Child's bedroom table - Kourou (French Guiana)

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### Main local names

Country	Local name
Brazil	Angelim amarelo
Brazil	Angelim da mata
Brazil	Angelim pedra
Brazil	Angelim rosa
Brazil	Mirarena
Brazil	Sapupira amarella
France (importated tropical timber)	Angelim
French Guiana	Saint martin gris
French Guiana	Saint martin jaune
Guyana	Koraroballi
Suriname	Makkakabes
Suriname	Saandoe