

APITONG/KERUING



Family: DIPTEROCARPACEAE (angiosperm)
Scientific name(s): *Dipterocarpus spp.*
Commercial restriction: no commercial restriction

WOOD DESCRIPTION

Color: red brown
Sapwood: clearly demarcated
Texture: coarse
Grain: straight or interlocked
Interlocked Grain: slight
Note: Possible wind shakes. Heartwood light red to red brown or purplish red brown. Presence of resin.

LOG DESCRIPTION

Diameter: 27.6– 47.2 inches
Thickness of Sapwood: 2 – 2.8 inches
Floats: no
Log Durability: moderate (treatment recommended)

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*:	0.79	0.07
Janka Hardness (lbs):	1,390	
Volumetric Shrinkage:	0.54%	0.08%
Total Tangential Shrinkage (TS):	10%	1.2%
Total Radial Shrinkage (RS):	5.4%	0.8%
TS/RS Ratio:	1.9	
Fiber Saturation Point:	34%	
Stability:	Moderately stable to poorly stable	

MECHANICAL/ACOUSTIC

	<u>Mean</u>
Crushing Strength*:	9,427 lbf
Static Bending Strength*:	16,679 lbf
Modulus of Elasticity*:	2,409,076 lbf

Musical Quality Factor: 106.8 measured at 2575 Hz

**At 12% moisture content.*

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 – moderately 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 – poorly permeable
Use class ensured by natural durability:	class 2 – inside or under cover (dampness possible)
Species covering the use class 5:	no

Note: This species is listed in the European standard NF EN 350-2.

Several species are grouped under the name KERUING of the genus *Dipterocarpus* and the natural durability is variable from one species to another. It is thus recommended to restrict the use without preservative treatment for end-uses under class 2.

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: slow
Risk of Distortion: high risk
Risk of Casehardening: no
Risk of Checking: high risk
Risk of Collapse: no

Note: moisture content very variable especially for the most resinous species. Careful stacking and end coating are recommended.

Possible Drying Schedule: 5

M.C. (%)	Temperature (°F)		Air Humidity (%)
	Dry-Bulb	Wet-Bulb	
30	107.6	105.8	94
25	107.6	102.2	82
20	118.4	109.4	74
15	118.4	109.4	74

This schedule is given for information only and is applicable to thickness lower or equal to 1.5 in. It must be used in compliance with the code of practice. For thickness from 1.5 to 3 in, the air relative humidity should be increased by 5% at each step. For thickness over 3 in, 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: Variable silica content. Some species are very resinous and tend to clog tools. Occasional tearing on quarter sawn.

ASSEMBLING

Nailing / screwing: good
Gluing: correct
Note: Gluing must be done carefully: wood may be easily stained.

END-USES

Flooring
Vehicle or container flooring
Wood frame house
Interior/Exterior joinery
Exterior paneling
Ship building (planking and deck)
Veneer for back or face of plywood
Stairs (interior)
Heavy carpentry
Exterior joinery
Interior paneling
Bridges (parts not in contact with water or ground)
Veneer for interior of plywood

Boxes and crates

Note: Plywood for light woods. Resin and shakes may restrict end-uses. In Asia, this species is used for sleepers and poles with a treatment.

MAIN LOCAL NAMES

<u>Country</u>	<u>Local Name</u>
Andaman	Gurjun
India	Gurjun
Indonesia	Keruing, Keroeing
Malaysia (islands)	Keruing Beras, Keruing Bajak
Myanmar	Yang
Vietnam	Dau
France	Keruing
Thailand	Yang
Germany	Yang
Philippines	Apitong

Works Cited:

CIRAD'S *Biomass, Wood, Energy, Bioproducts Research Unit (BioWooEB)*
Meier, E. (2015), Wood, United States of America