

Mengkulang



INTRODUCTION

The Standard Malaysian Name for the light timber of *Heritiera* spp. (Sterculiaceae). Vernacular names applied include *mengkulang* (Peninsular Malaysia) with various epithets, *jambu keluang* (Melaka), *kembang* (Sabah), *melabu* (Sarawak) and *melima* (Peninsular Malaysia). Major species of the timber include *H. albiflora*, *H. aurea*, *H. borneensis*, *H. globosa*, *H. javanica*, *H. simplicifolia* and *H. sumatrana*. The sapwood is usually lighter in colour than the heartwood and not always sharply defined from the heartwood, which is red, red-brown to dark red-brown.

Also known as Red or brown tulip oak (Australia); Bey samlek and Don chem (Cambodia); Mengkulang (Brunei); Sundri (India); Mengkulang, Palapi and Teraling (Indonesia); Hao (Laos); Kanazo (Myanmar); Lumbayao (Philippines); Chum-praek and Chumprak (Thailand); and Huynh (Vietnam).

DENSITY

The timber is a Medium Hardwood with a density of 625-895 kg/m³ air dry.

NATURAL DURABILITY

This timber is not durable if used in contact with the ground as it is very susceptible to damage by termites and is liable to fungal infestation. It is however, perfectly satisfactory for use in reasonably dry, well ventilated positions that are free from termite attacks. Test sticks treated by the full cell process with an average absorption of 119 kg/m³ (7.4 lb/ft³) was found to be serviceable after 13 years.

PRESERVATIVE TREATMENT

It is not a difficult timber to treat with preservatives and is classified as "average".

TEXTURE

Texture is slightly to moderately coarse but even, with straight to shallowly interlocked grain.

STRENGTH PROPERTIES

The timber falls into Strength Group B (Engku, 1988b) or SG 5 (MS 544:Part 2:2001).

Strength Properties of Mengkulang

Species	Test Condition	Modulus of Elasticity(MPa)	Modulus of Rupture(MPa)	Compression parallel to grain (MPa)	Compression perpendicular to grain (MPa)	Shear strength (MPa)
<i>H. javanica</i>	Green	10,600	68	31.8	4.21	9.9
	Air dry	-	-	-	-	-
<i>H. simplicifolia</i>	Green	13,700	75	37.8	3.86	8.2
	Air dry	15,990	91	52.1	5.38	10.8

MACHINING PROPERTIES

It is difficult to saw and is slightly difficult to plane. However, a smooth finish can be produced.

Machining Properties of Mengkulang

Species	Test Condition	Sawing		Planing		Boring		Turning	
		Rip-sawing	Cross Cutting	Ease of planing	Quality of finish	Ease of boring	Quality of finish	Ease of turning	Quality of finish
<i>H. javanica</i>	Green	difficult	difficult	slightly difficult	smooth	slightly difficult	rough	-	-
	Air dry	difficult	difficult	slightly difficult	smooth	difficult	moderately smooth	easy	slightly rough
<i>H. simplicifolia</i>	Green	slightly difficult	slightly difficult	easy	smooth	slightly difficult	moderately smooth	-	-
	Air dry	difficult	difficult	easy	smooth	difficult	moderately smooth	easy	slightly rough

NAILING PROPERTY

Nailing property is rated as good.

AIR DRYING

The timber seasons fairly rapidly with slight cupping, end-checking and surface-checking as the main defects. 13 mm thick boards take 2 months to air dry, while 38 mm thick boards take 3 months.

KILN-DRYING

Kiln Schedule D is recommended. 25 mm thick boards take approximately 7 days to kiln-dry.

Kiln Schedule D

Moisture Content (%)	Temperature (Dry Bulb)		Temperature (Wet Bulb)		Relative Humidity (%) (approx.)
	◈ F	◈ C	◈ F	◈ C	
Green	105	40.5	101	38.0	85
60	105	40.5	99	37.0	80
40	105	40.5	96	35.5	70
35	110	43.5	97	36.0	60
30	115	46.0	97	36.0	50
25	125	51.5	101	38.0	40
20	140	60.0	105	40.5	30
15	150	65.5	112	44.5	30

SHRINKAGE

Shrinkage is high. Radial shrinkage averages 1.5% while tangential shrinkage averages 3.4%.

DEFECTS

The logs are generally free from defects.

USES

The timber is suitable for medium construction, decorative works, superior joinery, cabinet making, interior finishing, panelling, mouldings, general planking, furniture, plywood, flooring, decking, staircase (angle block, rough bracket, baluster, balustrade, carriage, handrail, riser, stringer, tread, bullnose, round end and winder), vehicle bodies (framework, floor boards and planking), ship and boat building (keels, keelsons, framework and general planking), railway sleepers, piling, cooling tower (structural members), door and window frames and sills, posts, beams, joists, rafters, telegraphic and power transmission posts and cross arms, glulam works, pencil and pallets (heavy duty and permanent type).