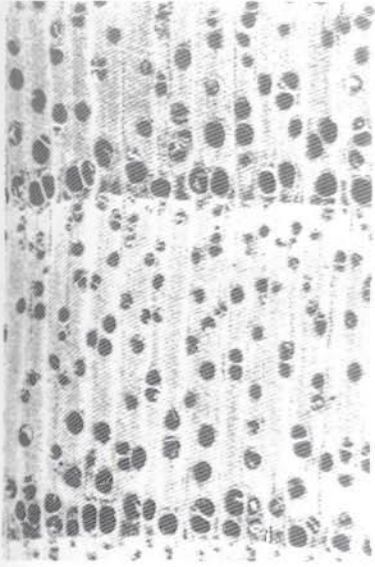
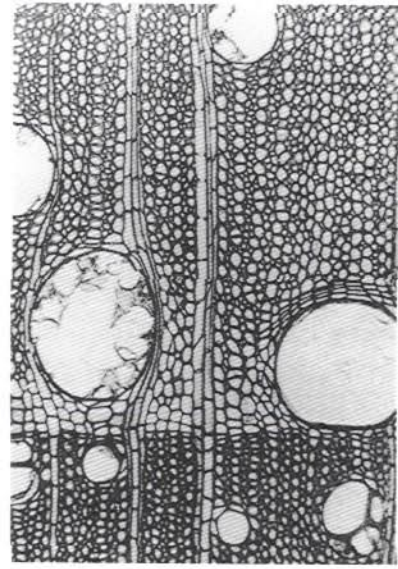


KYUN (TEAK)



Cross section ($\times 10$)



Cross section ($\times 50$)



Tectona grandis Linn. f.



KYUN (TEAK)

BOTANICAL NAME

- *Tectona grandis* Linn.f.

FAMILY

- Verbenaceae

VERNACULAR NAME

- Kyun (Myanmar), Giati (Vietnam) Maysak (Thailand), Teck (Laos), Jati, Tek (Indonesia) **Teak** (Standard). This is the only true teak

THE TREE

- A large tree attaining a height of 45 m (150 ft), a girth of 3-3.7 m (10-12 ft) and a clean bole of 25 m (80 ft) in favourable localities. A height of 30 m (100 ft), a girth of 2.4 m (8 ft) and a clean bole of 11 m (36 ft) is common. Older trees tend to be fluted and buttressed at the base. Found growing gregariously in mixed deciduous forests of the plains and lower hills throughout the country, generally below the 920 m (3000 ft) level.

WOOD PROPERTIES

Colour

- Dark golden-yellow, turning brown and dark brown with age. The colour and the markings of the wood vary considerably with localities. The best teak of Myanmar from Bago Yoma areas and forests in Upper Myanmar has a uniform golden colour, occasionally with darker lines. Teak from dry area is darker in colour, commonly with dark, broadly wavy streaks, giving the timber an extremely handsome appearance. The uniform, grey-brown coloured teak occurs in other areas of the country. Plantation teak closely resembles natural teak but may be lighter and more yellow in colour. Sapwood is white to pale yellowish brown, narrow to medium wide. The timber has a distinct oily feel, is - strongly and characteristically scented but without distinct taste. Luster dull.

Grain

- Normally straight, often wavy when grown in dry localities. Very coarse and uneven texture.

PHYSICAL PROPERTIES

Specific gravity

- 0.568 green and 0.586 air dry. Moderately heavy, 640 kg/m^3 (40 lb/ft^3) air dry and 880 kg/m^3 (55 lb/ft^3) green.

Strength

- Strong, moderately elastic and hard.

TEAK

Moisture content	Bending Strength	Mod. of Elasticity	Compression parallel to grain	Hardness (Radial)	Impact Max. drop
(%)	lb f/in ² (N/mm ²)	1000 lb f/in ² (N/mm ²)	lb f/in ² (N/mm ²)	lb (Kg)	inches (mm)
49.4 (49.4)	11460 (79)	1640 (11316)	5710 (39.4)	980 (445)	36 (914)
14.1 (14.1)	14465 (100)	1830 (12627)	8350 (57.6)	960 (436)	31 (787)

Movement

- Small and exceptionally steady. Shrinkage from green to oven dry is 1.5% radially and 2.5% tangentially.

STRUCTURE OF THE WOOD :

Growth rings

- Distinct and generally conspicuous with the naked eye, delimited by a lighter zone of large pores in the springwood followed by a darker zone of summerwood consisting of denser fibrous tissue and much smaller pores, frequently with undulate margins, often variable in width, and the individual rings not infrequently fluctuating greatly in diameter at different points throughout the circumference, 1-5 per cm.

Vessels

- Very variable in size (Wood ring-porous), partially or wholly occluded with tyloses, occasionally with white deposits consisting largely of calcium phosphate and sometimes, especially the smaller vessels, with deposits of yellowish or reddish-brown gum ; springwood vessels extremely large to very large, the orifices appearing as pin-picks with the naked eye, inserted in a belt of porous tissue, solitary or in radial rows of 2-3 (mostly 2) or 2 frequently contiguous in the tangential plane forming a springwood zone 1-3 (mostly 1) vessels, wide, generally with contiguous rays on one and frequently on both sides ; on the radial surface the springwood zones appear as lighter, more porous, parallel bands which alternate with darker zones of denser fibrous tissue ; springwood vessel segments annular (broader than long), truncate or abruptly short-tailed at the ends, transition from the spring-wood to the summerwood vessels gradual (in the wide rings) to more or less abrupt (in the narrow rings) ; summerwood vessels medium-sized to small ; cells stretched to conform to the vessel wall ;

Fibres

- Non-libriform, coarse, strongly angled in the transverse section and not aligned in radial rows or inconspicuously so occasionally contiguous to the vessels, smaller and somewhat thicker-walled toward the outer margin of the ring, non-gelatinous, septate, with long tapering ends ; interfibre pits numerous, confined to the radial walls, simple, with short, slit-like, steeply oblique orifice ; fibre lumina in the heartwood

often with yellowish or reddish-brown infiltration which is usually restricted to a thin parietal layer ; in the very small, solitary and in radial rows of 2-5 (mostly 2), not united by parenchyma ; occasionally the smaller summerwood vessels in the outer part of the ring are accompanied by vessel-tracheids ; inter-vessel pits numerous, orbicular to oval, with wide border and short lenticular orifice, frequently confluent ; pits leading to contiguous rays numerous to each ray cell, orbicular to oval, with medium wide semi-border and rounded (punctate) orifice ; tyloses fairly abundant in the heartwood, partially occluding or occasionally completely occluding the vessels, small, globose, thin-walled, pale yellowish or reddish-brown ; white deposits consisting largely of calcium phosphate occasionally present, partially or wholly occluding some vessel segments ; yellowish or reddish-brown gummy deposits sometimes present.

Parenchyma

- Paratracheal, paratracheal-zonate, and metatracheal, in cambiform rows of 2-8 (frequently 4) units or, where contiguous to the vessels, often of more than 8 units along the grain ; (a) paratracheal parenchyma relatively sparse, confined to the immediate vicinity of the vessels and vessel groups forming a 1-several (mostly 1) seriate sheath which is interrupted by rays and not infrequently by fibres contiguous to the sapwood, the lumina are empty or occasionally contain traces of yellowish infiltration and sometimes simple starch grains.

(b) paratracheal-zonate parenchyma confined to the early springwood forming a ragged 2-20 (mostly 2-10) seriate band of porous tissue in which the first row of springwood vessels is partially or wholly imbedded ; cells of 'b' parenchyma in radial rows, angular and not appreciably flattened in the tangential plane ; (c) metatracheal parenchyma extremely sparse, restricted to occasional cells in the fibrous tracts ; cells angular ; intercellular spaces numerous in the 'b' parenchyma ; yellowish- or reddish-brown, gummy infiltration fairly abundant in the heartwood ; pale yellowish infiltration and starch grains occasionally present in the sapwood ; crystals wanting.

Rays

- Distinct with the naked eye, medium-fine, separated by 4-18 fibres, frequently contiguous to the vessels, lighter than the background forming a fairly conspicuous, open, silvery fleck on the radial surface, 1-5 seriate, somewhat hetero-geneous ; pits leading to contiguous vessels numerous to each ray cell, orbicular to oval, with medium-wide semi-border and rounded (punctate) orifice ; yellowish or reddish-brown gummy infiltration fairly abundant in the ray tissue in the heartwood ; pale yellowish infiltration and starch grains occasionally present in the sapwood ; crystals wanting.

SEASONING

- Should be stacked in open piles under cover with good air circulation. Dries quickly without much deterioration. Kiln seasons easily and degrade is slight. Liable to change colour, but becomes uniform within a reasonable time.

TEAK

WORKING PROPERTIES

- Saws easily and works with moderate ease by hand and machine tools. Excellent surface can be obtained. Takes nails and screws fairly well, but brittle. Glues satisfactorily. Peels well on rotary machine and makes excellent plywood. Slices nicely for ornamental plywood. Turns and carves finely with little hand finishing.

POLISHING AND STAINING

- Varnishes and polishes effectively. Filling before polishing is recommended

DURABILITY AND PRESERVATION

- One of the most naturally durable timbers of the world. Practically impervious to insect and white ants but not immune to marine borers. High in resistance to acid and fire. Lasts well in contact with or under water and lasts indefinitely under cover. Extremely resistant to preservative treatments.

USES

- Outstanding in a wide range of uses on account of its durability, strength, moderate weight, ease of working, stability and attractive appearance. Widely used in ship building, for decking, launches, boats, deck houses and weather doors. Makes excellent furniture, carvings and interior fittings for ships, offices and public buildings. In house construction makes fine doors, frames, windows, window frames, staircases, floors, panelling, cupboards and fittings. Widely used for gates, fencing, verandahs, garden furniture and exterior joinery. Makes a good floor with high resistance to wear, especially for moderate traffic in public buildings. Used for scrubbing towers and fume ducts in chemical plants as it is resistant to chemicals. Can be used in heavy construction, like bridges. Makes high grade veneer and plywood. One of the best all-round timbers of the world.