



Nyatoh (*Palaquium* spp)

Botanical Name:	<i>Palaquium</i> spp.
Other Common Names:	Nyatoh, Bitis, Nato, Nyatoh batu, Payerra spp, Pencil cedar, Red silkwood
Common Uses:	Boat building, Cabinetmaking, Decorative plywood, Decorative veneer, Domestic flooring, Fixtures, Furniture , Joinery, Light construction, Turnery, Balusters, Bedroom suites, Building construction, Building materials, Canoes, Chairs, Chests, Concealed parts (Furniture), Construction, Desks, Dining-room furniture, Dowell pins, Dowells, Drawer sides, Excelsior, Figured veneer, Fine furniture, Floor lamps, Flooring, Furniture components, Furniture squares or stock, Hatracks, Interior construction, Kitchen cabinets, Lifeboats, Living-room suites, Moldings, Office furniture, Parquet flooring, Plywood, Radio, stereo, TV cabinets, Rustic furniture, Shipbuilding, Stairworks, Stools, Stringers, Sub-flooring, Tables , Utility furniture, Veneer, Wardrobes
Region:	Oceania and S.E. Asia
Country:	Australia, Malaysia, Papua New Guinea, Solomon Islands

Numerical Values for: Palaquium spp.

<u>Category</u>	<u>Green</u>	<u>Dry</u>	<u>Unit</u>
Bending Strength		15600	psi
Crushing Strength (Perp.)		1085	psi
Max. Crushing Strength		8540	psi
Stiffness		2042	1000 psi
Hardness		1195	lbs
Shearing Strength		1200	psi
Specific Gravity	0.55		
Weight		39	lbs/cu.ft.

Tree & Wood Descriptions for: *Palaquium* spp.

Product Sources	Some material from this species is reported to be available from environmentally responsible or sustainably managed sources.
Tree Data	The trees are reported to attain a height of 100 feet (30 m) or more, with trunk diameter of up to 36 inches (90 cm). Boles are sometimes fluted.
Sapwood Color	The sapwood is not clearly demarcated from the heartwood and is described as yellowish to straw in color. Width is reported to be usually 1.5 to 3 inches (3.8 to 7.6 cm).
Heartwood Color	Heartwood color is reported to vary from pale pink to reddish brown or purple brown, sometimes with darker streaks.
Grain	The grain is straight to shallowly interlocked. The timber is reported to resemble Makore, (<i>Tieghemella heckellii</i>) in appearance, and has a moire or watered silk figure.
Texture	The texture is medium to coarse, and even.
Odor	Freshly milled wood is reported to have a slight unpleasant odor which is described as sour. There is no distinct taste.
Movement in Service	The material is reported to exhibit medium after manufacture.
Natural Durability	<p>The heartwood is moderately resistant to decay and could last between 10 and 15 years in contact with the ground without chemical protection. It is vulnerable to termite attack, and the sapwood is susceptible to attack by powder-post beetle.</p> <p>Resistance to Impregnation The sapwood is reported to be permeable but the heartwood is very resistant to preservative treatment.</p>
Toxic Constituents	Sawdust from some <i>Palaquium</i> timbers is reported to cause nose, skin, and throat irritation in some individuals.
Silica Content	Some <i>Palaquium</i> timbers are reported to be siliceous.
Strength Properties	Bending strength in the air-dry condition (about 12 percent moisture content) is high - comparable to Teak. Maximum crushing strength, or compression parallel

to grain in the air-dry condition, is in the very high range. It is stronger than Hard maple, White oak, or Teak. It is fairly hard, resisting wear, denting, and marring fairly well. The weight is high.

Comments

Palaquium and Payena are reported to be two separate but closely related genera, which are very similar in characteristics. They produce wood that are usually grouped in the Nyatoh or Bitis class. Nyatoh is a commercial grouping of species whose air-dry weights fall mostly between 38 and 45 lb/cu.ft or 610 and 720 kg/cu.m, but may be up to to 55 lb/cu.ft (880 kg/cu.m). They are often mixed and marketed with other light to medium-weight, red-colored timbers. Timbers in the Bitis class are described as heavier, and have weights greater than 55 lb/cu.ft (880 kg/cu.m). They are referred to as Nyatoh batu in Sabah (Malaysia).

Working Properties for: Palaquium spp.

Blunting Effect	Cutting edges may blunt severely, depending upon the amount of silica in the wood.
Cutting Resistance	Sawing properties are reported to vary with species, and silica content . There may also be some gum build-up on cutters.
Planing	Siliceous timbers in the genus are reported to be rather difficult to work in planing, moulding, boring, and other woodworking operations since they tend to dull and gum-up cutting tools rapidly. Non-siliceous species are reported to be relatively easy to work, and finish to yield a smooth surface.
Polishing	Non-siliceous Palaquium timbers are reported to polish well.
Response to Hand Tools	Response to hand tools is dependent upon amount of silica and gum in the wood.

Drying for: Palaquium spp.

Ease of Drying	The wood is reported to dry slowly and fairly easily. Shrinkage from Green to 12% MC Radial - 1.3 to 3.0% Tangential - 2.3 to 4.0%
Drying Defects	The timber may end-split and warp during drying.
Kiln Schedules	T6 - D2 (4/4); T3 - D1 (8/4) US Schedule E - United Kingdom

*Credits for information:
Woodworkersource.com*