



### Nyatoh (*Palaquium philippense*)

<b>Botanical Name:</b>	<i>Palaquium philippense</i>
<b>Other Common Names:</b>	Nyatoh, Bitis, Belian, Blam, Mayang, Kerit
<b>Common Uses:</b>	Beams, Bedroom suites, Building construction, Building materials, Cabin construction, Cabinetmaking, Chairs, Chests, Concealed parts (Furniture), Concrete formwork, Construction, Core Stock, Decks, Decorative plywood, Decorative veneer, Desks, Dining-room furniture, Dowell pins, Dowells, Drawer sides, Excelsior, Exterior trim & siding, Exterior uses, Factory construction, Figured veneer, Fine furniture, Floor lamps, Form work, Foundation posts, Framing, Furniture , Furniture components, Furniture squares or stock, Hatracks, Heavy construction, Interior construction, Interior trim, Joinery, Joists, Kitchen cabinets, Light construction, Living-room suites, Millwork, Office furniture, Plain veneer, Plywood, Porch columns, Radio, stereo, TV cabinets, Rough construction, Rustic furniture, Shingles, Stools, Structural plywood, Tables , Utility furniture, Utility plywood, Veneer, Wardrobes
<b>Region:</b>	Oceania and S.E. Asia
<b>Country:</b>	Malaysia, Papua New Guinea, Philippines

## Numerical Values for: *Palaquium philippense*

<u>Category</u>	<u>Green</u>	<u>Dry</u>	<u>Unit</u>
Bending Strength	7808		psi
Crushing Strength (Perp.)	548		psi
Max. Crushing Strength	3612		psi
Static Bending (FSPL)	4274		psi
Stiffness	1183		1000 psi
Work to Maximum Load	3372		in-lbs/in <sup>3</sup>
Shearing Strength		910	Psi
Specific Gravity	0.45		
Density (Air-dry)		39	lbs/cu.ft

## Tree & Wood Descriptions for: *Palaquium philippense*

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 heckelii</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 movement in service.
Natural Durability	Heartwood has moderate natural rot resistance and could last between 10 and 15 years in contact without the ground. It is vulnerable to termite attack and the sapwood is reported to be susceptible to attack by powder-post beetle  Resistance to Impregnation The sapwood is reported to be permeable but the heartwood is very resistant to preservative treatment.
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	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. The wood is high in density.

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 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 philippense**

Cutting Resistance	Sawing properties are reported to vary with species. Some Palaquium timbers contain silica, which makes them very abrasive and very difficult to saw with ordinary saws. There may also be some gum build-up on cutters.
Blunting Effect	Cutting edges may blunt severely, depending upon the amount of silica in the wood.
Planing	Some Palaquium species are siliceous and gummy. They 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. Non-siliceous and non-gummy wood tend to work easier with hand tools.

### **Drying for: Palaquium philippense**

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*