

Purple Heart

(Peltogyne spp)



Common Names:

Purpleheart, Amarante, Amaranth, Guarabá, Koroboreli, Morado, Nazareno, Palo morado, Pau roxo, Pelo morado, Purperhard, Saka, Sakavalli, Tananeo, Violetwood



Mechanical Values

Category	Green	Dry	Units
Weight		55	lbs/cu.ft.
Density (air-dry)		52	lbs/cu.ft.
Specific Gravity	0.67	0.77	
Hardness		1860	lbs
Stiffness	2000	2270	1000 psi
Bending Strength	13690	19220	psi
Shearing Strength		2220	psi
Max. Crushing Strength	7020	10320	psi
Work to Maximum Load	12	16	in-lbs/in ³
Radial Shrinkage (G->OD)		3	%
Tangential Shrink. (G->OD)		6	%
Volumetric Shrink (G->OD)		10	%

Environmental Profile

The environmental profile of this species within its natural habitat has not been officially assessed.

Distribution

The commercial name Purpleheart is reported to refer to timber produced by about 20 species, including *P. porphyrocardia*, which grow in Central America and tropical South America, from Mexico to southern Brazil. They are reported to be most common in the Amazon basin, and are also found in Colombia, Guyana, Surinam, and Venezuela.

Product Sources

It is not known at present whether some material from this species is available from sustainably managed, salvaged, recycled, or other environmentally responsible sources. The International Tropical Timber Organization (ITTO) reports that timber production from this species is regular. The material is exported at a low but regular rate. Supplies are reported to be ample, but the wood is fairly expensive. It is reported to cost more than mahogany but less than teak. Although it has not found wide demand, Purpleheart is reported to be available on the US market in both the lumber and veneer forms.

Tree Data

Mature Purpleheart trees are usually tall and attain a height of about 100 to 150 feet (30 to 45 m), and a diameter of up to 48 inches (120 cm), usually between 18 and 36 inches (45 and 90 cm). Working the wood with dull cutting tools may cause gum exudation.

Sapwood Color

The sapwood is creamy white or off-white in color, and is very distinct from the heartwood. The color has also been described as pinkish cinnamon with light brown streaks, and is usually about 2 to 4 inches (5 to 10 cm) wide.

Heartwood Color

The heartwood is initially dull brown, but it rapidly changes to a bright, vibrant purple. Prolonged exposure darkens the wood to a dark-purplish brown or dark brown, but the original color can be restored by recutting the wood. Color variation between boards is reported to be moderate to high. Presence of minerals in some boards may cause uneven coloration and steaming is reported to affect the color. *Peltogyne* timbers are reported to vary widely in color between, and probably within, species. Treatment against the effects of ultra-violet rays has been suggested to maintain the original color of the wood. A treatment with Armorall, the car finish product, under lacquer is reported to hold the color well.

Grain

The grain is typically straight, sometimes wavy, roey, or irregular.

Texture

The wood has a medium to fine texture. The wood exhibits a medium to high luster.

Odor

There is no characteristic odor or taste.

Ease of Drying

Drying properties are reported to vary. Difficulty in air-drying varies from easy to moderately difficult, and drying rate ranges from slow to fairly rapid. Moisture extraction from center of thicker stock is reported to be rather difficult.

Drying Defects

Degrade from warping and splitting is reported to be slight.

Movement in Service

The wood is reported to be dimensionally stable, and shows only small movement after manufacture.

T/R Ratio

2 - This indicator is more meaningful if it is used together with other drying information and actual shrinkage data in the tangential and radial directions. (Refer to the Numerical Values window).

Natural Durability

Peltogyne heartwood is rated as highly resistant to attack by decay fungi, very resistant to dry-wood termite attack, and slightly resistant to attack by marine borers. The wood is also reported to be resistant to chemicals such as acids.

Resistance to Impregnation

The heartwood is reported to be extremely resistant to impregnation but the sapwood is treatable.

Blunting

Cutting tools may be gummed up if they are not very sharp. Blunting is rated as moderate to severe.

Resistance to Cutting

Peltogyne timbers are reported to be moderately difficult to saw. Tools usually require frequent sharpening. Slow feed rates and specially tipped cutters are suggested.

Planning

Peltogyne timbers are reported to be moderately difficult to work in most machining operations including planing, turning, boring, and moulding. They respond rather poorly to ordinary tools, and working with dull cutters may cause the wood to heat up and exude resin which can considerably increase machining difficulty. Slower feed rates and specially tipped cutters, or sharp, high-speed steel knives are suggested. A reduced cutting angle of 15 degrees has also been recommended, especially when planing and moulding material with interlocked or wavy grain.

Gluing

The material is reported to be easy to glue.

Nailing

The wood requires to be pre-bored, but nail-holding capabilities are reported to be good.

Sanding

The material is reported to be fairly difficult to sand.

Polishing

Polishing properties are reported to be rather good.

Staining

The material is reported to take finishes rather well. There is a tendency for some finishes to bleed, but reports indicate that water-based finishes hold color better. The use of spirit finishes are reported to remove the purple coloring in the wood.

Steam Bending

The wood steam bends fairly well.

Response to Hand Tools

Response to hand tools is reported to be only fair.

Strength Properties

The strength properties of timber produced by species in the genus are reported to be between those of European beech (*Fagus sylvatica*) and Greenheart (*Ocotea rodiaei*). Bending strength in the air-dry condition is very high, and crushing strength is exceptionally high. It is hard, and does not mar or dent easily. It is also very heavy and very dense.