

DATA SHEET 2021



PINOS

DE VENEZUELA



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**WE HAVE IN STOCK ALL THIS PRODUCTS IN THIS
SPECIES OF WOOD:**

- ***CARIBBEAN PINE / PINUS CARIBAEA***
- ***BULLETWOOD / MANILKARA BIDENTATA***
- ***TEAK / TECTONA GRANDIS***
- ***CRABWOOD / CARAPA GUIANENSIS***
- ***SPANISH CEDAR / CEDRELA ODORATA***
- ***IPÉ / HANDROANTHUS SERRATIFOLIA***
- ***JATOBA / HYMENAEA COURBARIL***
- ***QUARUBARANA / ERISMA UNCINATUM***
- ***MAHOGANY WOOD / SWIETENIA MACROPHYLLA***
- ***PURPLEHEART / PELTOGYNE PURPUREA***
- ***MONKEYPOD / SAMANEA SAMAN***
- ***CANARYWOOD / CENTROLOBIUM PARAENSE***

CARIBBEAN PINE / PINUS CARIBAEA

- *Common Name(s): Caribbean Pine*
- *Scientific Name: Pinus caribaea*
- *Tree Size: 65-100 ft (20-30 m) tall, 2-3 ft (.6-1 m) trunk diameter*
- *Average Dried Weight: 39 lbs/ft³ (625 kg/m³)*
- *Specific Gravity (Basic, 12% MC): .51, .63*
- *Janka Hardness: 1,110 lbf (4,920 N)*
- *Modulus of Rupture: 13,340 lbf/in² (92.0 MPa)*
- *Elastic Modulus: 1,745,000 lbf/in² (12.03 GPa)*
- *Crushing Strength: 7,890 lbf/in² (54.4 MPa)*
- *Shrinkage: Radial: 6.3%, Tangential: 7.8%, Volumetric: 12.9%, T/R Ratio: 1.2*
- *Color/Appearance: Heartwood is reddish brown; sapwood is yellowish white and is distinct from the heartwood.*
- *Grain/Texture: Straight grained with a medium to coarse texture and a greasy feel.*
- *Endgrain: Large resin canals, numerous and evenly distributed, mostly solitary; earlywood to latewood transition abrupt, color contrast high; tracheid diameter medium-large.*
- *Rot Resistance: The heartwood is rated as moderately resistant to decay.*
- *Workability: Overall, Caribbean Pine works fairly well with most tools, though the resin can gum up tools and clog sandpaper. Caribbean Pine glues and finishes well.*



BULLETWOOD / MANILKARA BIDENTATA

- **Common Name(s):** *Bulletwood, Massaranduba*
- **Scientific Name:** *Manilkara bidentata*
- **Tree Size:** *100-150 ft (30-46 m) tall, 2-4 ft (.6-1.2 m) trunk diameter*
- **Average Dried Weight:** *67 lbs/ft³ (1,080 kg/m³)*
- **Specific Gravity (Basic, 12% MC):** *.85, 1.08*
- **Janka Hardness:** *3,130 lbf (13,920 N)*
- **Modulus of Rupture:** *27,870 lbf/in² (192.2 MPa)*
- **Elastic Modulus:** *3,344,000 lbf/in² (23.06 GPa)*
- **Crushing Strength:** *12,930 lbf/in² (89.2 MPa)*
- **Shrinkage:** *Radial: 6.7%, Tangential: 9.4%, Volumetric: 16.8%, T/R Ratio: 1.4*
- **Color/Appearance:** *Heartwood is a medium to dark reddish brown. Color tends to darken with age. Pale yellow sapwood is clearly differentiated from the heartwood, though not always sharply demarcated.*
- **Grain/Texture:** *Grain straight to interlocked or wavy. Fine uniform texture with low natural luster.*
- **Endgrain:** *Diffuse-porous; radial multiples of 2-5 common; medium to large pores, few; tyloses and mineral deposits common; parenchyma diffuse-in-aggregates, reticulate; narrow rays, spacing fairly close.*
- **Rot Resistance:** *Rated as very durable, with good resistance to most insect attack. Susceptible to marine borers.*
- **Workability:** *Despite its high density, Bulletwood generally produces good results with both hand and machine tools, though it does exhibit an above-average dulling effect on cutters. Responds well to steam-bending. Can pose challenges in gluing due to high density and oil content.*



TEAK / TECTONA GRANDIS

Common Name(s): Teak, Burmese Teak

Scientific Name: Tectona grandis

Tree Size: 100-130 ft (30-40 m) tall, 3-5 ft (1-1.5 m) trunk diameter

Average Dried Weight: 41 lbs/ft³ (655 kg/m³)

Specific Gravity (Basic, 12% MC): .55, .66

Janka Hardness: 1,070 lbf (4,740 N)

Modulus of Rupture: 14,080 lbf/in² (97.1 MPa)

Elastic Modulus: 1,781,000 lbf/in² (12.28 GPa)

Crushing Strength: 7,940 lbf/in² (54.8 MPa)

Shrinkage: Radial: 2.6%, Tangential: 5.3%, Volumetric: 7.2%, T/R Ratio: 2.0

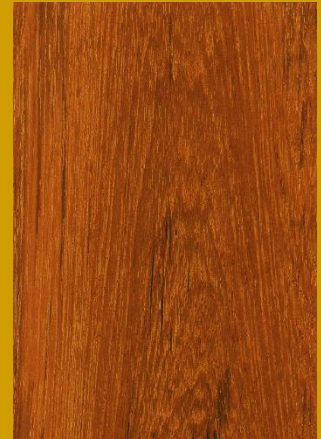
Color/Appearance: Heartwood tends to be a golden or medium brown, with color darkening with age.

Grain/Texture: Grain is straight, though it can occasionally be wavy or interlocked. Coarse, uneven texture and moderate to low natural luster. Raw, unfinished wood surfaces have a slightly oily or greasy feel due to natural oils.

Endgrain: Ring-porous or semi-ring-porous; large to very large solitary earlywood pores, medium to large latewood pores, few; solitary and in radial multiples of 2-3; tyloses and other heartwood deposits (light-colored) common; medium rays visible without lens, spacing normal; parenchyma vasicentric, and banded (marginal), with bands sometimes wide enough to enclose entire earlywood pores.

Rot Resistance: Teak has been considered by many to be the gold standard for decay resistance, and its heartwood is rated as very durable. Teak is also resistant to termites, though it is only moderately resistant to marine borers and powder post beetles.

Workability: Easy to work in nearly all regards, with the only caveat being that Teak contains a high level of silica (up to 1.4%) which has a pronounced blunting effect on cutting edges. Despite its natural oils, Teak usually glues and finishes well, though in some instances it may be necessary to wipe the surface of the wood with a solvent prior to gluing/finishing to reduce the natural oils on the surface of the wood.



CRABWOOD / CARAPA GUIANENSIS

Common Name(s): Andiroba, Crabwood

Scientific Name: Carapa spp. (Carapa guianensis, etc.)

Tree Size: 80-100 ft (25-30 m) tall, 2-3 ft (.6-1.0 m) trunk diameter

Average Dried Weight: 41 lbs/ft³ (660 kg/m³)

Specific Gravity (Basic, 12% MC): .56, .66

Janka Hardness: 1,220 lbf (5,430 N)

Modulus of Rupture: 15,580 lbf/in² (107.4 MPa)

Elastic Modulus: 1,965,000 lbf/in² (13.55 GPa)

Crushing Strength: 8,220 lbf/in² (56.7 MPa)



Shrinkage: Radial: 3.1%, Tangential: 7.6%, Volumetric: 10.4%, T/R Ratio: 2.5

Color/Appearance: Heartwood tends to be a pale reddish brown, darkening with age to a medium to dark brown. Sapwood is a lighter pink or pale brown, not always demarcated from heartwood. Quartersawn surfaces exhibit a ribbon-like appearance similar to Sapele.

Grain/Texture: Andiroba has a uniform, fine to medium texture with a medium natural luster and a straight grain, though the grain is sometimes wavy or interlocked.

Endgrain: Diffuse-porous; medium pores in no specific arrangement; solitary and radial multiples of 2-3; mineral deposits occasionally present; growth rings distinct due to marginal parenchyma; rays visible without lens; parenchyma vasicentric and banded. Can be confused with genuine mahogany, but andiroba tends to have darker, more reddish brown colored marginal parenchyma bands.

Rot Resistance: Andiroba is considered moderately durable to very durable regarding decay resistance, though it can be susceptible to insect attack. Weathering characteristics are similar to Honduran Mahogany.

Workability: Overall Andiroba is easy to work with both hand and machine tools. Sometimes pieces with interlocked grain will experience tearout during surfacing operations. Andiroba also has a moderate blunting effect on tool cutters. Andiroba has an increased risk of warping and other drying defects, partially because of its high T/R ratio (2.5). Andiroba glues, finishes, and turns well.

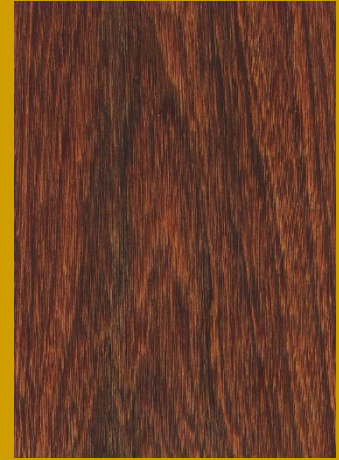
SPANISH CEDAR / CEDRELA ODORATA

- **Common Name(s):** Spanish Cedar, Cedro
- **Scientific Name:** *Cedrela odorata*
- **Tree Size:** 65-100 ft (20-30 m) tall, 3-5 ft (1-1.5 m) trunk diameter
- **Average Dried Weight:** 29 lbs/ft³ (470 kg/m³)
- **Specific Gravity (Basic, 12% MC):** .38, .47
- **Janka Hardness:** 600 lbf (2,670 N)
- **Modulus of Rupture:** 10,260 lbf/in² (70.8 MPa)
- **Elastic Modulus:** 1,323,000 lbf/in² (9.12 GPa)
- **Crushing Strength:** 5,860 lbf/in² (40.4 MPa)
- **Shrinkage:** Radial: 4.1%, Tangential: 6.2%, Volumetric: 10.2%, T/R Ratio: 1.5
- **Color/Appearance:** Heartwood is a relatively uniform light pinkish to reddish brown; colors tend to darken with age. Random pockets of gum and natural oils are commonly present. Grain patterning and figure tends to be somewhat bland.
- **Grain/Texture:** Grain is straight or shallowly interlocked. Medium texture and moderate natural luster.
- **Rot Resistance:** Spanish Cedar ranges from durable to moderately durable regarding decay resistance, and is also resistant to termite attack; the wood is also reported to have excellent weathering characteristics. Older, slower-growing trees from the wild tend to produce wood that is more durable than wood from younger, plantation-grown trees.
- **Workability:** Spanish Cedar is easy to work with both hand and machine tools. However, due to its low density and softness, Spanish Cedar tends to leave fuzzy surfaces if not machined with sharp cutters; extra sanding up to finer grits may be required to obtain a smooth wood surface. Also, natural gum pockets can remain wet and may ooze out onto the surrounding surface, which can clog and gum up saw blades, and make finishing the wood a challenge.



IPÉ / HANDROANTHUS SERRATIFOLIA

- **Common Name(s):** Ipe, Brazilian Walnut, Lapacho
- **Scientific Name:** *Handroanthus Serratifolia*. (formerly placed in the *Tabebuia* genus)
- **Tree Size:** 100-130 ft (30-40 m) tall, 2-4 ft (.6-1.2 m) trunk diameter
- **Average Dried Weight:** 69 lbs/ft³ (1,100 kg/m³)
- **Specific Gravity (Basic, 12% MC):** .91, 1.10
- **Janka Hardness:** 3,510 lbf (15,620 N)
- **Modulus of Rupture:** 25,660 lbf/in² (177.0 MPa)
- **Elastic Modulus:** 3,200,000 lbf/in² (22.07 GPa)
- **Crushing Strength:** 13,600 lbf/in² (93.8 MPa)
- **Shrinkage:** Radial: 5.9%, Tangential: 7.2%, Volumetric: 12.4%, T/R Ratio: 1.2
- **Color/Appearance:** Heartwood can vary in color from reddish brown, to a more yellowish olive brown or darker blackish brown; sometimes with contrasting darker brown/black stripes. In certain species, there are powdery yellow deposits within the wood. Ipe can be difficult to distinguish visually from Cumaru, another dense South American timber, though Ipe tends to be darker, and lacks the subtle yet characteristic vanilla/cinnamon scent while being worked.
- **Grain/Texture:** Has a fine to medium texture, with the grain varying from straight to irregular or interlocked. Moderate natural luster.
- **Rot Resistance:** Rated as very durable; excellent insect resistance, though some species are susceptible to marine borers. Superb weathering characteristics. (Ipe was used for the boardwalk along the beach of New York City's Coney Island, and was said to have lasted 25 years before it needed to be replaced: an amazing lifespan given the amount of traffic and environmental stresses put upon the wood.)
- **Workability:** Overall, Ipe is a difficult wood to work, being extremely hard and dense, with high cutting resistance during sawing. Ipe also has a pronounced blunting effect on cutting edges. The wood generally planes smoothly, but the grain can tearout on interlocked areas. Also, Ipe can be difficult to glue properly, and surface preparation prior to gluing is recommended. Straight-grained wood turns well, though the natural powdery yellow deposits can sometimes interfere with polishing or finishing the wood.



JATOBA / HYMENAEA COURBARIL

- **Common Name(s):** *Jatoba, Brazilian Cherry*
- **Scientific Name:** *Hymenaea courbaril*
- **Tree Size:** *100-130 ft (30-40 m) tall, 2-4 ft (.6-1.2 m) trunk diameter*
- **Average Dried Weight:** *57 lbs/ft³ (910 kg/m³)*
- **Specific Gravity (Basic, 12% MC):** *.77, .91*
- **Janka Hardness:** *2,690 lbf (11,950 N)*
- **Modulus of Rupture:** *22,510 lbf/in² (155.2 MPa)*
- **Elastic Modulus:** *2,745,000 lbf/in² (18.93 GPa)*
- **Crushing Strength:** *11,780 lbf/in² (81.2 MPa)*
- **Shrinkage:** *Radial: 4.2%, Tangential: 8.0%, Volumetric: 12.1%, T/R Ratio: 1.9*
- **Color/Appearance:** *Heartwood varies from a light orangish brown to a darker reddish brown, sometimes with contrasting darker grayish brown streaks. Color tends to darken upon exposure to light. Sapwood is a light grayish yellow, clearly demarcated from the heartwood.*
- **Grain/Texture:** *Grain is typically interlocked, with a medium to coarse texture. Good natural luster.*
- **Endgrain:** *Diffuse-porous; large pores, very few; solitary and radial multiples of 2-3; mineral deposits (dark brown) occasionally present; parenchyma vasicentric, aliform (lozenge or winged), confluent, and marginal; narrow to medium rays, normal spacing.*
- **Rot Resistance:** *Jatoba is rated as being very durable in regards to rot resistance, and is also resistant to termites and most other insects. (Though it has been reported to be susceptible to attack from marine borers.)*
- **Workability:** *Jatoba is considered difficult to work with on account of its density and hardness, and has a moderate blunting effect on tool cutters. Jatoba also tends to be difficult to plane without tearout due to its interlocking grain. However, Jatoba glues, stains, turns, and finishes well. Responds well to steam-bending.*



QUARUBARANA / ERISMA UNCINATUM

- **Common Name:** Quarubarana , Mureillo , Aurora.
- **Scientific Name:** *Erisma uncinatum*
- **Density at 12% CH:** 0.60 gr / cm³
- **Basic density:** 0.46 median
- **Total radial shrinkage:** 3.36%
- **Total shrinkage, tangential:** 8.87%
- **T / R rate** 2.63 stable wood
- **Mechanical Properties: (12% CH)**
- **Breaking stress in static bending:** 649 kg / cm²
- **Modulus of elasticity in static flexion:** 99.075 kg / cm²
- **Breaking force in parallel compression:** 348 kg / cm²
- **Lateral hardness:** 327 kg
- **General Characteristics of the Tree:** Height up to 30 m, medium crown, tall, straight and cylindrical trunk
- **General Characteristics of the Wood:** Wide and differentiated sapwood, greyish white color, light pink brown to purplish brown heartwood, coarse grain straight grain.
- **Workability:** Drying without major risks; risks of deformation and slight cracking, easy sawing, slightly abrasive wood, good gluing, good surface finish is achieved.
- **Preservation and Natural Durability:** Total and uniform absorption in pressure treatment, low resistance to decay; poor resistance to termite attack and good to dry wood fungi and insects.
- **Uses and Applications:** Doors and windows. Door frames, Moldings, Panels, Joinery, Furniture, Drawers, Turning



MAHOGANY WOOD / SWIETENIA MACROPHYLLA

- **Common Name(s):** Honduran Mahogany, Honduras Mahogany, Caoba
- **Scientific Name:** *Swietenia macrophylla*
- **Tree Size:** 150-200 ft (46-60 m) tall, 3-6 ft (1-2 m) trunk diameter
- **Average Dried Weight:** 37 lbs/ft³ (590 kg/m³)
- **Specific Gravity (Basic, 12% MC):** .52, .59
- **Janka Hardness:** 900 lbf (4,020 N)
- **Modulus of Rupture:** 11,710 lbf/in² (80.8 MPa)
- **Elastic Modulus:** 1,458,000 lbf/in² (10.06 GPa)
- **Crushing Strength:** 6,760 lbf/in² (46.6 MPa)
- **Shrinkage:** Radial: 2.9%, Tangential: 4.3%, Volumetric: 7.5%, T/R Ratio: 1.5
- **Color/Appearance:** Heartwood color can vary a fair amount with Honduran Mahogany, from a pale pinkish brown, to a darker reddish brown. Color tends to darken with age. Mahogany also exhibits an optical phenomenon known as chatoyancy. (See video below.)
- **Grain/Texture:** Grain can be straight, interlocked, irregular or wavy. Texture is medium and uniform, with moderate natural luster.
- **Endgrain:** Diffuse-porous; large pores in no specific arrangement; solitary and radial multiples of 2-3; mineral deposits occasionally present; growth rings distinct due to marginal parenchyma; rays barely visible without lens; parenchyma banded (marginal), paratracheal parenchyma vasicentric.
- **Rot Resistance:** Varies from moderately durable to very durable depending on density and growing conditions of the tree. (Older growth trees tend to produce darker, heavier, and more durable lumber than plantation-grown stock.) Resistant to termites, but vulnerable to other insects.
- **Workability:** Typically, very easy to work with tools: machines well. (With exception to sections with figured grain, which can tearout or chip during machining.) Slight dulling of cutters can occur. Sands very easily. Turns, glues, stains, and finishes well.



PURPLEHEART / PELTOGYNE PURPUREA

- **Common Name(s):** Purpleheart, Amaranth, Zapatero.
- **Scientific Name:** *Peltogyne Purpurea*.
- **Tree Size:** 100-170 ft (30-50 m) tall, 3-5 ft (1-1.5 m) trunk diameter
- **Average Dried Weight:** 56 lbs/ft³ (905 kg/m³)
- **Specific Gravity (Basic, 12% MC):** .76, .90
- **Janka Hardness:** 2,520 lbf (11,190 N)
- **Modulus of Rupture:** 22,000 lbf/in² (151.7 MPa)
- **Elastic Modulus:** 2,937,000 lbf/in² (20.26 GPa)
- **Crushing Strength:** 12,140 lbf/in² (83.7 MPa)
- **Shrinkage:** Radial: 3.8%, Tangential: 6.4%, Volumetric: 10.6%, T/R Ratio: 1.7
- **Color/Appearance:** When freshly cut the heartwood of Purpleheart is a dull grayish/purplish brown. Upon exposure the wood becomes a deeper eggplant purple. With further age and exposure to UV light, the wood becomes a dark brown with a hint of purple.
- **Grain/Texture:** The grain is usually straight, but can also be wavy or irregular. Has a medium texture with good natural luster.
- **Rot Resistance:** Purpleheart is rated as being very durable, and resists both decay and most insect attacks, though it has been reported to be susceptible to attack from marine borers.
- **Workability:** Working with Purpleheart can present some unique challenges: if the wood is heated with dull tools, or if cutter speeds are too high, Purpleheart will exude a gummy resin that can clog tools and complicate the machining process. Depending on the grain orientation, can be difficult to plane without tearout. Purpleheart also has a moderate dulling effect on cutter



MONKEYPOD / SAMANEA SAMAN

- *Common Name(s): Monkeypod, Monkey Pod, Raintree*
- *Scientific Name: Albizia saman (syn. Samanea saman, Pithecellobium saman)*
- *Tree Size: 100-125 ft (30-38 m) tall, 3-4 ft (1-1.2 m) trunk diameter*
- *Average Dried Weight: 38 lbs/ft³ (600 kg/m³)*
- *Specific Gravity (Basic, 12% MC): .48, .60*
- *Janka Hardness: 900 lbf (4,010 N)*
- *Modulus of Rupture: 9,530 lbf/in² (65.7 MPa)*
- *Elastic Modulus: 1,149,000 lbf/in² (7.92 GPa)*
- *Crushing Strength: 5,790 lbf/in² (39.9 MPa)*
- *Shrinkage: Radial: 2.0%, Tangential: 3.4%, Volumetric: 6.0%, T/R Ratio: 1.7*
- *Color/Appearance: Color tends to be a golden to dark brown, sometimes with darker streaks. Sapwood is usually thin and yellow/white, clearly demarcated from the heartwood. Monkeypod is sometimes seen with highly figured curly or wild grain patterns.*
- *Grain/Texture: Grain is usually straight, but can also be interlocked or wavy. Texture is medium to coarse, with medium to large open pores and a moderate natural luster.*
- *Endgrain: Diffuse-porous; large to very large pores in no specific arrangement, very few to few; solitary and radial multiples of 2-3; heartwood deposits occasionally present; narrow rays usually not visible without lens, normal spacing; parenchyma vasicentric, lozenge, and confluent.*
- *Rot Resistance: Rated as durable to very durable regarding decay resistance, Monkeypod is also resistant to most insect attacks.*
- *Workability: Monkeypod is generally easy to work with both hand and machine tools, though any interlocked grain may result in fuzzy or torn grain during planing operations. Glues and finishes well.*



CANARYWOOD / CENTROLOBIUM PARAENSE

- **Common Name(s):** Canarywood, Canary
- **Scientific Name:** *Centrolobium* spp.
- **Tree Size:** 65-100 ft (20-30 m) tall, 2-3 ft (.6-1.0 m) trunk diameter
- **Average Dried Weight:** 52 lbs/ft³ (830 kg/m³)
- **Specific Gravity (Basic, 12% MC):** .65, .83
- **Janka Hardness:** 1,520 lbf (6,750 N)
- **Modulus of Rupture:** 19,080 lbf/in² (131.6 MPa)
- **Elastic Modulus:** 2,164,000 lbf/in² (14.93 GPa)
- **Crushing Strength:** 9,750 lbf/in² (67.2 MPa)
- **Shrinkage:** Radial: 2.4%, Tangential: 5.6%, Volumetric: 8.4%, T/R Ratio: 2.3
- **Color/Appearance:** Heartwood color can vary a fair amount, from a pale yellow-orange to a darker reddish brown, usually with darker streaks throughout. Pale yellow sapwood is sharply demarcated from heartwood. Color tends to darken and homogenize with age: see the article [Preventing Color Changes in Exotic Woods](#) for more information.
- **Grain/Texture:** Grain is typically straight, but can be irregular or wild on some pieces. Uniform fine to medium texture with good natural luster.
- **Endgrain:** Diffuse-porous; large pores in no specific arrangement, few; solitary and radial multiples of 2-3; mineral/gum deposits occasionally present; growth rings indistinct; rays not visible without lens; parenchyma varies depending on species: can be vasicentric, aliform, and confluent.
- **Rot Resistance:** Rated as very durable in regard to decay resistance, as well as being resistant to termite and marine borer attack.
- **Workability:** Easy to work with both hand and machine tools, though some tearout can occur during planing on pieces with wild or irregular grain. Good dimensional stability. Turns, glues and finishes well.



CONTACTS:

Ing. Mauro rodriguez **Diego Rodriguez**
WHATSAPP: +584145625394 **WHATSAPP: +584141597350**
CEO Pinos de Venezuela. **COO-CIT Pinos de Venezuela.**

EMAIL: PINOSDEVENEZUELA@GMAIL.COM

WEB: WWW.PINOSDEVENEZUELA.COM