technology transfer fact sheet



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Pinus clausa (Chapm. Ex Englem.) Vasey ex Sarg. Family: Pinaceae Sand Pine

The genus *Pinus* is composed of about 100 species native to temperate and tropical regions of the world. Wood of pine can be separated microscopically into the white, red and yellow pine groups. The word *pinus* is the classical Latin name. The word *clausa* means "closed", referring to the cones being closed for several years before releasing seeds (in some populations of this species).

Other Common Names: Alabama pijn, Alabama pine, Alabama tall, Florida spruce pine, northern sand pine, oldfield pine, pin d'Alabama, pino de Alabama, pino di Alabama, sand pine, scrub pine, southern sand pine, spruce pine, upland spruce pine.

Distribution: Sand pine is native to northeastern to southern Florida and in northwestern Florida and extreme southern Alabama.

The Tree: Sand pine trees can reach heights of 80 feet, with diameters of 2 feet. The record tree in Florida is 103 feet tall, with a diameter of 2 feet. Most trees are small and shrubby, growing to only 15-20 feet.

General Wood Characteristics: As sand pine is normally a small shrubby tree, no general information about the wood is available at this time.

| | Compression | | | | | | | | |
|--|------------------|---|----------------------------|---------------------------------|--------------------------------------|--|-----------------|------------------------------|--|
| | Specific gravity | MOE x10 ⁶ lbf/in ² | MOR lbf/in ² | Parallel lbf/in ² | Perpendicular lbf/in ² | WML ^a in-lbf/in ³ | Hardness lbf | Shear lbf/in ² | |
| Green | 0.46 | 1.02 | 7500 | 3440 | 450 | 9.6 | 480 | 1140 | |
| Dry | 0.51 | 1.41 | 11600 | 6920 | 840 | 9.6 | 730 | 1100 | |
| ^a WML = Work to maximum load. Reference (56, 153). | | | | | | | | | |

Mechanical Properties (2-inch standard)

Drying and Shrinkage

| | Percentage of shrinkage (green to final moisture content) | | | | | | |
|--------------------|--|-------|--------|--|--|--|--|
| Type of shrinkage | 0% MC | 6% MC | 20% MC | | | | |
| Tangential | 7.3 | NA | NA | | | | |
| Radial | 3.9 | NA | NA | | | | |
| Volumetric | 10.0 | NA | NA | | | | |
| References: (153). | | | | | | | |

Kiln drying schedules: No information available at this time.

Working Properties: No information available at this time.

Durability: No information available at this time.

Preservation: No information available at this time.

Uses: Used locally for sand retention and as a fuel wood.

Toxicity: In general, working with pine wood may cause dermatitis, allergic bronchial asthma or rhinitis in some individuals (5, 8 & 10).

Additional Reading and References Cited (in parentheses)

1. Brendemuehl, R. H. *Pinus clausa* (Chapm. ex Engelm.) Vasey ex Sarg. Sand Pine. in: Burns, R. M. and Honkala, B. H., tech. coords. Silvics of North America. Volume 1, Conifers. Washington, DC: USDA Forest Service; 1990; pp. 294-301.

2. Cooper, R. W.; Schopmeyer, C. S., and McGregor, W. H. D. Sand pine regeneration on the Ocala National Forest. Washington, DC, USA: USDA Forest Service, Production Research Report No. 30; 1959.

3. Dallimore, W.; Jackson, A. B., and Harrison, S. G. A handbook of Coniferae and Ginkgoaceae. London, UK: Edward Arnold Ltd.; 1966.

4. Elias, T. S. The complete trees of North America, field guide and natural history. New York, NY: van Nostrand Reinhold Co.; 1980.5. Hausen, B. M. Woods injurious to human health. A manual. New York, NY: Walter de Gruyter; 1981.

6. Little, Jr. E. L. Checklist of United States Trees (Native and Naturalized). Washington, D.C.: U.S. Government Printing Office, USDA, Forest Service, Agriculture Handbook No. 541; 1979.

7. Markwardt, L. J. and Wilson, T. R. C. Strength and related properties of woods grown in the United States. Washington, DC: USGPO, USDA Forest Service, Tech. Bull. No. 479; 1935.

8. Mitchell, J. and Rook, A. Botanical dermatology: plants and plant products injurious to the skin. Vancouver, BC: Greenglass Ltd.; 1979.

9. USDA. Wood handbook: wood as an engineering material. Madison, WI: USDA Forest Service, FPL Ag. Handbook No. 72; 1974. 10. Woods, B. and Calnan, C. D. Toxic woods. British Journal of Dermatology. 1976; 95(13):1-97.