



## Pinus virginiana Mill.

### Family: Pinaceae

### Virginia 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 *virginiana* means ‘of Virginia’. Virginia pine is one of the southern pines.

**Other Common Names:** Alligator pine, bastard pine, black pine, cedar pine, hickory pine, jack pine, Jersey pine, New Jersey pine, North Carolina pine, oldfield pine, pin chetif, pin de Virginie, pin de virginie, pin pauvre, pino virginiano, poor pine, poverty pine, river pine, scrub pine, short shucks, short shucks, shortleaf pine, shortleaved, shortschat pine, shortschat pine, shortshucks, spruce, spruce pine, Virginia pine, virginia tall, Virginia-tall, Virginische pijn, virginische pijn.

**Distribution:** Virginia pine is native to southeastern New York (Long Island) and New Jersey, west to Pennsylvania, central Ohio and southern Indiana, south to western Kentucky, western Tennessee and Northeastern Mississippi, and east to central Alabama, northern Georgia, northern South Carolina and Virginia.

**The Tree:** Virginia pine trees reach heights of 80 feet, with diameters of 2 feet. A record was measured at 114 feet tall with a 32 inch diameter.

**General Wood Characteristics:** The sapwood of Virginia pine is yellowish, while the heartwood is orange to brown. The wood is light, soft, brittle, coarse grained and often knotty.

#### Mechanical Properties (2-inch standard)

|       | Specific gravity | MOE<br>x10 <sup>6</sup> lbf/in <sup>2</sup> | MOR<br>lbf/in <sup>2</sup> | Compression                     |                                      | WML <sup>a</sup><br>in-lbf/in <sup>3</sup> | Hardness<br>lbf | Shear<br>lbf/in <sup>2</sup> |
|-------|------------------|---|----------------------------|---------------------------------|--------------------------------------|--|-----------------|------------------------------|
|       |                  |   |                            | Parallel<br>lbf/in <sup>2</sup> | Perpendicular<br>lbf/in <sup>2</sup> |  |                 |                              |
| Green | 0.45             | 1.22  | 7300                       | 3420                            | 390                                  | 10.9                                       | 540             | 890                          |
| Dry   | 0.52             | 1.52  | 13000                      | 6710                            | 910                                  | 13.7                                       | 740             | 1350                         |

<sup>a</sup>WML = Work to maximum load.  
Reference (56, 192).

#### Drying and Shrinkage

| Type of shrinkage | Percentage of shrinkage<br>(green to final moisture content) |       |        |
|-------------------|--|-------|--------|
|                   | 0% MC  | 6% MC | 20% MC |
| Tangential        | 7.2  | NA    | NA     |
| Radial            | 4.2  | NA    | NA     |

|                   |      |    |    |
|-------------------|------|----|----|
| Volumetric        | 11.9 | NA | NA |
| References: (56). |      |    |    |

**Kiln Drying Schedules<sup>a</sup>**

Conventional temperature/moisture content-controlled schedules<sup>a</sup>

| Condition       | 4/4, 5/4 stock | 6/4 stock | 8/4 stock | 10/4 stock | 12/4 stock | British schedule 4/4 stock |
|-----------------|----------------|-----------|-----------|------------|------------|----------------------------|
| Standard        | T13-C6         | T12-C5    | T12-C5    | T10-C4     | T10-C4     | L                          |
| Highest Quality | 279            | 279       | 279       | T10-C4     | T10-C4     | NA                         |

<sup>a</sup>Reference (28, 92, 185).

Conventional temperature/time-controlled schedules<sup>a</sup>

| Condition | Lower grades   |           |           | Upper grades   |           |           |                  |
|-----------|----------------|-----------|-----------|----------------|-----------|-----------|------------------|
|           | 4/4, 5/4 stock | 6/4 stock | 8/4 stock | 4/4, 5/4 stock | 6/4 stock | 8/4 stock | 12/4, 16/4 stock |
| Standard  | 281            | NA        | 282       | 281            | NA        | 282       | 284              |

<sup>a</sup>References (28, 92 185).

High temperature<sup>a</sup>

| Condition | 4/4, 5/4 stock | 6/4 stock | 8/4 stock | Other products                                |
|-----------|----------------|-----------|-----------|---|
| Standard  | 401/402        | NA        | NA        | 2 by 4's 403<br>2 by 10's 403<br>4 by 4's 404 |

<sup>a</sup>References (28, 92, 185).

**Working Properties:** No information available at this time for Virginia pine. Southern pine is difficult to work with hand tools. It ranks high in nail holding capacity, but there may be difficulty in gluing.

**Durability:** The wood is rated as slightly or nonresistant to heartwood decay.

**Preservation:** The sapwood is permeable, while the heartwood is moderately resistant to preservative treatment.

**Uses:** Pulp, firewood, rough construction. The trees are sometimes used for Christmas trees.

**Toxicity:** In general, working with pine wood may cause dermatitis, allergic bronchial asthma or rhinitis in some individuals (6,10&15).

Additional Reading and References Cited (in parentheses)

1. Boone, R. S.; Kozlik, C. J.; Bois, P. J., and Wengert, E. M. Dry kiln schedules for commercial woods - temperate and tropical. Madison, WI: USDA Forest Service, FPL-GTR-57; 1988.
2. Carter, K. K. and Snow, Jr. A. G. *Pinus virginiana* Mill. Virginia 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. 513-519.
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. Gaby, L. I. The southern pines, an American wood. Washington, DC, USA: USDA Forest Service, FS-256; 1985.
6. Hausen, B. M. Woods injurious to human health. A manual. New York, NY: Walter de Gruyter; 1981.
7. Henderson, F. Y. A handbook of softwoods. London: HMSO; 1977.
8. Koch, P. Utilization of the southern pines. I. The raw material. II. Processing. Washington, DC, USA.: USDA Forest Service, Ag. Handbook No. 420.; 1972.
9. Little, jr. E. L. Checklist of United States trees (native and naturalized). Washington, DC: USGPO, USDA Forest Service, Ag. Handbook No. 541; 1979.
10. Mitchell, J. and Rook, A. Botanical dermatology: plants and plant products injurious to the skin. Vancouver, BC: Greenglass Ltd.; 1979.
11. Simpson, W. T. Dry kiln operator's manual. Madison, WI: USDA Forest Service, FPL Ag. Handbook No. 188; 1991.
12. Sternitzke, H. S. and Nelson, T. C. The southern pines of the United States. Economic Botany. 1970; 24(2):142-150.
13. Summitt, R. and Sliker, A. CRC handbook of materials science. Vol. 4. Boca Raton, FL: CRC Press, Inc.; 1980.
14. USDA. Wood handbook: wood as an engineering material. Madison, WI: USDA Forest Service, FPL Ag. Handbook No. 72; 1974.
15. Woods, B. and Calnan, C. D. Toxic woods. British Journal of Dermatology. 1976; 95(13):1-97.