

Characteristics of North American Lumber Species Typically Used for Decking

Characteristic ¹	Southern Yellow Pine	Western Red Cedar	Cypress	California Redwood
Heartwood decay resistance	Moderate ²	Good	Moderate ³	Moderate ⁴
Availability	Very Good	Good	Good	Limited
Price	Low	Moderate	Low/Moderate	High
Color when new	Honey/Gold	Amber/Sienna	Reddish/Honey	Reddish/Cream
Color weathered	Gray	Gray	Gray	Gray
Density ⁵ (lbs/ft ³)	35.6	22.4	31.4	24.5
Hardness ⁶ (lbf)	690	350	510	420
Impact bending ⁷ (inches)	30	17	25	15
Static bending ⁸				
Modulus of Rupture ⁹ (lbf/in ²)	12,800	7,500	10,600	7,900
Modulus of Elasticity ¹⁰ (x10 ⁶ psi)	1.79	1.11	1.44	1.10
Work to Maximum Load ¹¹ (in-lb/ft ³)	10.4	5.8	8.2	5.2
Max joist span ¹² (thickness x width)	24" (5/4 x 6)	16" (5/4 x 6)	16" (5/4 x 6)	24" (6/4 x 6)

1 For comparison, values for density, hardness, impact, and static bending are based upon lower strength young growth Cypress and Redwood, and Loblolly Pine, lowest in strength of the four commercial species of Southern Yellow Pine.

2 Southern Yellow Pine is commonly preservative treated for outdoor use, resulting in excellent resistance to decay.

3 Young growth cypress. Old growth cypress rated "good," but not widely available.

4 Young growth redwood. Old growth redwood rated "good," but not widely available.

5 Density (weight per unit of volume) is probably the single most important indicator of strength in wood, and may predict such characteristics as hardness and fastener holding power.

6 Hardness is an indicator of resistance to indentation. Value represents load required to embed a 0.444-in metal ball to one-half its diameter.

7 Reflects ability of member to absorb shock of impact. Value represents height of the drop of a 50 lb. hammer necessary to cause to cause rupture of the beam, or deflection of 6 inches or more.

8 Bending strength at less than 12% moisture content.

9 Maximum load carrying capacity of a member in bending.

10 Ability of member to recover from low-stress deformation after loads are removed.

11 Measure of the combined strength and toughness of member under bending stresses.

12 Perpendicular to joists.