



MECHANICAL PROPERTIES REFERENCE SHEET

(For additional information, please refer to GeoDeck's ICC-ES Report No. ESR-1369)

PROPERTY	TEST METHOD	VALUE
Modulus of Rupture (Flexural Strength) Ambient 125°F -20°F	ASTM D6109	2,782 psi 1,902 psi 4,041 psi
Modulus of Elasticity (Flexural) Ambient Ambient 125°F -20°F	ASTM D6109	363,000 psi 406,000 psi 181,000 psi 620,000 psi
Compression (a)	ASTM D6108	3,495 psi (board) 5,340 psi (panel) 6,270 psi (rib)
Self- Ignition Temperature	ASTM D1929	806°F
Flame Spread Index	ASTM E84	100
Smoke Developed Index	ASTM E84	165
Water Absorption	ASTM D1037	1.0% (at 24 hr. immersion) 3.7% (at 30 days immersion) <i>24% for pressure treated lumber after 24 hr. immersion</i>
Moisture Expansion		24 hr - 0.01% (sidewise) 7 day - 0.095% (sidewise) 40 day - length - less than 0.05% 40 day - width - 0.5% 40 day - depth - 2.5%
Moisture Content (brushed surface)	ASTM D1037	0.6%
Thermal Expansion / Contraction	ASTM E228	3.58 x 10 ⁻⁵ /F
Freeze-Thaw Resistance Flexure Flexural Strength Flexural Modulus	ASTM D6109	2,556 psi 287,000 psi
Flexure at 21-Day Water Soak Flexural Strength Flexural Modulus	ASTM D6109	2,744 psi 367,000 psi
Fungus Resistance (soil block cultures)	ASTM D1413	White rot – zero effect Brown rot – zero effect
Termite Resistance	ASTM D3345	No attack (Block ratings 10)
Density (Specific Gravity)	ASTM D1037	1.20 g/cm ³
Tensile Strength	ASTM D143	1,660 psi
Tensile Modulus	ASTM D143	403,000 psi (rib) 421,000 psi (panel)

PROPERTY	TEST METHOD	VALUE
Shear Strength	ASTM D905	1,223 psi
Static Coefficient of Friction Dry, Leather	ASTM D2047	0.51 / 0.55
Static Coefficient of Friction Wet, Leather	ASTM D2047	0.85 – 0.90 / did not slip
Nail Withdrawal (8d, 2 ½ Primeguard Stainless Spiral Thread Deck Nail, driven through the hollow portion of the board)	ASTM D1761	23.6 lbs.
Direct Nail Pull-Through Test (8d, 2 ½ Primeguard Stainless Spiral Thread Deck Nail, driven through the hollow portion of the board)	ASTM D1037	255 lbs.
Lateral Resistance / Slip Ultimate load Load at 0.3" (Main member: 2x6 Treated Southern Pine; Side Member: GeoDeck Composite Deck Board (8d, 2 ½ Primeguard Stainless Spiral Thread Deck Nail, driven through the hollow portion of the board)	ASTM D1761	291 lbs. 284 lbs.
Abrasion Resistance (brushed surface)	ASTM D4060	3.02 g/1000 cycles
Hardness	ASTM D143	678 lbs. (flange) 298 lbs. (web)
Puncture Resistance	ASTM D3763 (modified)	592 lbs.
Stair Tread Flexure	ASTM D6109	Passes (300 lbs. at mid-span ICC requirement, with deflection no more than L/180)
Creep Recovery	ICC Requirement	84% (at 156 lbs. load, 16" span) 94% (at 246 lbs. load, 20" span)
Weight (5/4 x 6 in.)		1.80 lbs. /ft.
Weathering	ASTM G155	Mahogany, Cedar and Driftwood – negligible fading after 6,000 hrs at 102 min / 18 min cycle regime (UV and UV / water spray)
Effect of weathering on flexural strength (on modulus of rupture)	ASTM G155 ASTM D6109	Negligible
Effect of maximum water absorption on flexural strength	ASTM D6109	Negligible (see above)
Effect of triple freeze-thaw cycles on flexural strength	ASTM D6109	Negligible (see above)

(a) Parallel to length. An average figure for all three decking profiles (S4S 2x6; Tongue & Groove 2x6, S4S 2x8)