

Wood-Composite & PVC Deck Physical and Mechanical Properties

<u>Test</u>	<u>Method</u>	<u>Result *</u>
Specific Gravity (HDPE)	ASTM D 792	1.11
Screw & Nailability		
Nail Withdrawal 6 penny (lb) (HDPE)	ASTM D 1761	120
Nail Withdrawal 6 penny (lb) (PVC)	ASTM D 1761	312
Spiral Shank 8 penny (lb) (HDPE)	ASTM D 1761	385
Ring Shank 6 penny (lb) (HDPE)	ASTM D 1761	516
Screw Withdrawal #6 (lb) (HDPE)	ASTM D 1761	1,207
Screw Withdrawal #8 (lb) (PVC)	ASTM D 1761	937
Modulus of Elasticity (psi) (HDPE)	ASTM D 6190	477,019
Modulus of Elasticity (psi) (PVC)	ASTM D 6190	175,800
Modulus of Rupture (psi) (HDPE)	ASTM D 6190	4,737
Modulus of Rupture (psi) (PVC)	ASTM D 6190	3,965
Linear Coefficient of		
Expansion x 10 ⁻⁵ (in/in/F°) (HDPE)	ASTM D 696	1.51-1.58
Expansion x 10 ⁻⁵ (in/in/F°) (PVC)	ASTM D 696	2.76
Coefficient of Static Friction (Dry/Wet) (CoE)		
Fibron: Dry/Wet: 90 degree (ave)	ASTM D 2394	0.80/1.19
Tropics: Dry/Wet: new (ave)	ASTM D 2394	0.49/0.68
Tropics: Dry/Wet: naturally weathered (ave)	ASTM D 2394	0.71/0.76
Horizon: Dry/Wet: (ave)	ASTM D 2394	0.58/0.52
ODF: Dry/Wet: (ave)	ASTM D 2394	0.70/0.65
Deflection Loads Allowed/Actual (HDPE)		
Max Design Load Deflection	ASTM D 7032	0.090"
Recovery of at least 75% (HDPE &PVC)	ASTM D 7032	meets or exceeds
Recovery of at least 75% (HDPE & PVC)	ASTM D 7032	meets or exceeds
Creep Relaxation (HDPE & PVC)	ASTM D 7032	meets or exceeds
Fire & Smoke		
Fibron: Flame Spread Index (FSI)	ASTM E 84	75 **
Horizon: Flame Spread Index (FSI)	ASTM E 84	70
ODF (PVC): Flame Spread Index (FSI)	ASTM E 84	20
Smoke Density Index (SDI) (HDPE)	ASTM E 84	350
Office of State Fire Marshal, Cal Fire 7A		
Fibron (HDPE)	SFM 12-7A-4 Part A	passes
ODF (PVC)	SFM 12-7A-4 Part A	passes
ODF (PVC)	SFM 12-7A-4 Part B, Brand B	passes
Termite Resistance Rating		
ODF (PVC)	ASTM D 3345	10
Fungus Decay Resistance		
ODF (PVC)	ASTM D 1413	no decay
Fibron, Horizon (HDPE)	ASTM D 1413	no decay

* See ICC-ES AC174 Code Compliance Research Report (CCRR)-0108 and CCRR-0152.

** See: <http://osfm.fire.ca.gov/strucfireengineer/pdf/bml/wuiproducts.pdf>