



SINGLE-LAYER POLE PHYSICAL & MECHANICAL PROPERTIES

Physical Properties (Imperial Units)	12" Diameter Pultruded Pole	14" Diameter Pultruded Pole	15" Diameter Pultruded Pole	17" Diameter Pultruded Pole
Outer Diameter (in)	12.18	13.76	15.49	17.27
Inner Diameter (in)	11.18	12.28	13.89	15.57
Wall Thickness (in)	0.50	0.75	0.80	0.85
Weight (lb/ft)	15.8	25.4	30.8	35.8
Density (lb/ft ³)	123.8	117.7	118.6	117.1
Cross Sectional Area (in ²)	18.3	30.6	36.9	43.8
Section Modulus (in ³)	51.4	94.5	129.0	171.6
Moment of Inertia (in ⁴)	313	650	936	1481
Radius of Gyration (in)	4.13	4.61	5.20	5.81
Poisson's Ratio	0.31	0.31	0.31	0.31
Fiber Weight Fraction	≥68%	≥68%	≥68%	≥68%
Coefficient of Thermal Expansion (in/in/°F)	2.70E-06	2.70E-06	2.70E-06	2.70E-06
UV Testing (>10,000 hrs) ¹	Passed	Passed	Passed	Passed
Water Absorption (%) ²	0.13	0.13	0.13	0.13
Mechanical Properties (Imperial Units)				
Modulus of Elasticity (psi) ³	4.54E+06	4.77E+06	4.79E+06	4.41E+06
Ultimate Moment Capacity (lb·ft) ³	140,910	375,056	481,014	593,463
Maximum Allowable Stress (lb/in ²) ³	24,148	50,876	50,341	43,970
Shear Modulus, G _{xy} (psi)	879,000	879,000	879,000	879,000
Pin-Bearing Strength Lengthwise (lbs) ⁴	15,940	25,828	45,340	44,648
Washer Pull-Through Strength (lbs) ⁴	10,488	16,746	18,884	19,132

1. Based on both Xenon Arc and QUV Testing

2. Determined per ASTM D570 (24 hours)

3. Determined per ASTM D1036

4. Testing conducted with utility grade 13/16" bolts and 3"x3" curved washers