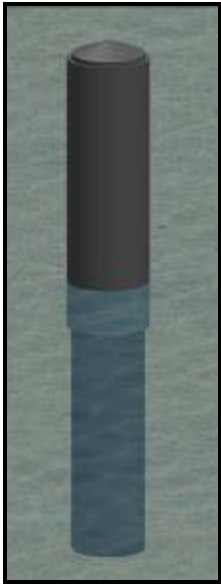


# SUPERPILE

## Engineering Specifications



SUPERPILE is a high performance pultruded profile designed to take excessive compression and transverse loads. The pultruded profile is manufactured with a polyurethane matrix for superior impact and abrasion resistance. SUPERPILE is ideal for:

- House foundation pilings
- Navy style bulkheads
- Docks pilings
- Fender piling
- Bearing piles
- Navigation markers
- Mooring piles

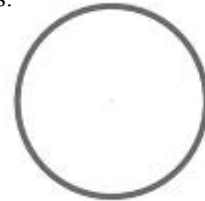
SUPERPILE is available with or without a high density polyurethane (HDPE) sleeve. The HDPE sleeve functions as a highly abrasion resistant protective layer that protects the pile in high impact situations and high abrasive dynamic load applications.



**Part# TU455**  
12" x 3/8" wall  
(305mm x 9.5mm)



**Part# TU450**  
12" x 1/2" wall  
(305mm x 12.7mm)



**Part# TU460**  
16" x 1/2" wall  
(406mm x 12.7mm)

### Mechanical and Physical Properties

	12" x 3/8" (305mm x 9.5mm)	12" x 1/2" (305mm x 12.7mm)	16" x 1/2" (406mm x 12.7mm)
<b>Mechanical Properties</b>			
Flexural strength (full section) psi (Mpa)	52,000 (358)	72,000 (496)	58,000 (400)
Axial Compression Strength psi (Mpa)	52,000 (358)	72,000 (496)	58,000 (400)
Modulus of Elasticity psi (Gpa)	5.26E6 (36.3)	6.6E6 (45.5)	5.75E6 (39.6)
Allowable Moment Kip-ft (kN·m)	83.6 (113)	151 (205)	223.5 (303)
Ultimate Hole Bearing Strength Lengthwise psi (Mpa)			
5/8" dia. Bolt	25,000 (172)	25,000 (172)	25,000 (172)
3/4" dia. Bolt	23,000 (159)	23,000 (159)	23,000 (159)
<i>Note: Allowable Bending Moment FS=2</i>			
<b>Physical Properties</b>			
Moment of Inertia in <sup>4</sup> (mm <sup>4</sup> )	232 (9.64E7)	299 (1.24E8)	732 (3.04E8)
Section Modulus in <sup>3</sup> (mm <sup>3</sup> )	38.6 (6.32E5)	49.8 (8.16E6)	91.5 (1.50E6)
Radius of Gyration in (mm)	4.11 (104.4)	4.07 (103.4)	5.48 (139.2)
Weight lbs/ft (N/m)	11.8 (172.7)	15.6 (227.7)	21.0 (306.5)
Coefficient of Thermal Expansion Lengthwise	5.0 <sup>-6</sup> in/in/°F	5.0 <sup>-6</sup> in/in/°F	5.0 <sup>-6</sup> in/in/°F
Water Absorption	<.25%	<.25%	<.25%
Fiber Volume Fraction	≥ 50%	≥ 50%	≥ 50%
Cross Sectional Area in <sup>2</sup> (mm <sup>2</sup> )	13.7 (8,800)	18.1 (11,700)	24.3 (15,700)
Surface Area ft <sup>2</sup> (m <sup>2</sup> /m)	3.1 (0.96)	3.1 (0.96)	4.2 (1.28)

**Resin:** Resin shall be a low VOC two component polyol/isocyanate polyurethane. The minimum resin content shall be 47% by volume and shall not contain fillers.

**Reinforcements:** The reinforcement shall be E or Ncr glass providing reinforcement in the lengthwise, transverse and bias directions. The profile shall contain 38% by volume of reinforcements in the lengthwise direction and 14% minimum in the transverse directions. The outermost layer of the composite pile shall be encompassed with 10 mil polyester veil, providing a resin rich UV protective layer.



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