

SEASHIELD™ GFRP 2000HD FASTENER

Glass Fiber Reinforced Polymer Fastener

Description

SeaShield GFRP 2000HD Fasteners are fabricated from glass fiber reinforced polymers. They are formulated to maintain their mechanical properties in the marine environment. They are comprised of a threaded rod, a capped nut and an open nut.

Uses

- The proprietary fastener to secure the SeaShield Series 2000HD Outercovers during application and service life.

Features

- Does not rust
- Suitable for use in immersed, tidal, splash and atmospheric zones
- Nuts are $\frac{3}{4}$ in. (19.05 mm) across flats and $1\frac{3}{16}$ in. (30 mm) in length
- Threaded Rods are 8 in. (203 mm) in length ± 0.2 in. (± 5 mm)

Application

Once the SeaShield Series 2000HD outercovers have been secured around the pile and the holes in the bar have been aligned, the SeaShield GFRP 2000HD Fasteners shall be fitted into the holes and tightened with the nuts using a $\frac{3}{4}$ in. (19.05 mm) deep impact socket. The SeaShield GFRP 2000HD Fasteners shall be tensioned to a torque specification of 40 to 80 in.lb. (4.5 to 9.0 N/m). The threshold for damage is lower with the SeaShield GFRP 2000HD Fasteners than with steel fasteners. Do not over-torque, as over-torquing can damage the fastener. The torquing limits shall be strictly observed.

Storage

SeaShield GFRP 2000HD Fasteners shall be kept away from contamination such as dust and dirt. All fasteners shall be stored in their original packaging, in a cool dry place out of direct sunlight between 41°F and 105°F (5°C and 40°C).



TECHNICAL DATA SHEET

Tech Data

Properties	Imperial	Metric
Rod Tensile Strength at Break (ASTM D7205)	130,534 psi	900 MPa
Rod Elongation at Break (ASTM D7205)	1.5%	1.5%
Rod Stress at 0.2% Permanent Strain	17,405 psi	120 MPa
Fastener Water Absorption	< 2%	< 2%
Breaking Torque ^a (Internal Method)	25.8 ft/lb	35 N/m ^b
Installation Torque Range ^a (Internal Method)	40 in.lb and 80 in.lb	4.5 N/m - 9.0 N/m
Fastener Tensile Force at Break (Internal Method) ^c	15,084 psi	104 MPa
Fastener Tensile Force at Break after UV Exposure ^d (Internal Method) ^c	14,939 psi	103 MPa

a - When used as a component of the SeaShield Series 2000HD System

b - Average value within 95% confidence interval. (Minimum value based on distribution 5th percentile)

c - 0.47 in/min (12mm/min) rate of extension. Custom clamping device. 0.5 in (14mm) diameter holes

d - UV exposure according to ISO 4892-3 Method A, 1000 Hours



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