SPiRe®+ Panel

Description

SPiRe®+ Panel is a patent-pending unique high-strength high-modulus Fiber Reinforced Polymer (FRP) panel constructed with glass roving, woven cloth, and mat, impregnated with Vinyl Ester resins. The panel is smooth on one face and has protruding T profiles on the other face. That face is also grit coated for improved bonding to concrete. The T profiles lock into the concrete and the entire panel (flat plate and T profiles) act as reinforcing elements for the new wall.

The 3-ft (914 mm) wide panels get connected along their long edges with a sealant to create a stiff, strong and impervious stay-in-place form in front of the deteriorated seawall or bulkhead. The annular space between the SPiRe®+ panels and the host structure can be filled with a variety of QuakeWrap® fill materials, including non-shrink grouts, epoxy grouts, resins, and concrete. The panel is equivalent to No. 5 Gr. 60 Steel rebars at a spacing of 2.5 in.

Uses

- Strengthening of corroded seawalls and bulkheads
- Corrosion Protection of Seawall, Sheet Piles, and Bulkheads
- Extending seawall height for protection against flooding in coastal and river front communities
- Structural rehabilitation of decks in ports and piers
- Strengthening of beams in bridges and buildings
- Repair of corroded breakwaters
- Stay in Place form
- Protect areas of high corrosion
- Applicable to all materials: concrete, steel and timber

Advantages

- Non-Corrosive
- T profiles secure the panel to the concrete or grout
- T profiles serve as reinforcing elements, eliminating the need for rebars in most applications
- Manufactured with textured face suitable for secondary bonding
- Rigid FRP Panel
- High impact resistance
- Compatible with PileMedic® Grouts
- Compatible with PileMedic® Spacer and Port systems
- Compatible with QuakeWrap® Resins and wet lay-up systems

Application

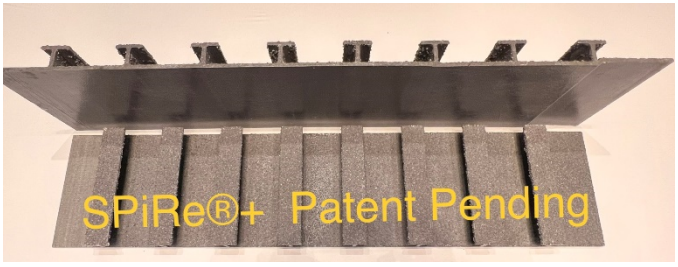
For installation instruction, refer to SPiRe® specification. Panels can be cut to appropriate length using tile saw products to reduce any dust on site. Angle grinders with metal cut-off wheel can also be used to cut the product. Safety precautions must be taken while cutting the product.

Limitations

Design calculations must be provided and certified by a licensed professional engineer.

Packaging

SPiRe®+ panels come in flat 3-ft wide sheets. Standard lengths are 6 to 20 ft in 2-ft increments (1.84 to 6.10 m in 610 mm increments). The panels can be cut to shorter lengths in the field. Longer panels are available on special orders.



The Infrastructure Innovators

QuakeWrap.com

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QuakeWrap, Inc. warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current technical data sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. QUAKEWRAP, INC. SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES.

SPiRe®+ Panel

Shelf Life & Storage

SPiRe®+ panels have unlimited shelf life when stored properly. Store in dry place at 30°-120° F (0°-50° C).

First Aid

Appropriate Personal Protective Equipment (PPE) should be worn at all times when handling product.

Caution

SPiRe®+ Panels are non-reactive. They do not require a Safety Data Sheet (SDS). However, caution must be used when handling since fine dust may be present on the surface. Gloves and safety glasses are recommended to protect against skin and eye irritation.

Care must also be taken when cutting the laminates to protect against airborne dust generated by the cutting procedure. Use of an appropriate, properly fitted NIOSH approved respirator is recommended.

Panel Data

Data:	U.S. Customary	S.I. Units
Color	Translucent, Grey. Other colors can be special ordered.	
Resin System	Vinyl Ester	
Properties:		
Wall Thickness	0.20 in.	5 mm
Width	36 in.	914 mm
Depth	1.5 in.	38 mm
Length	6, 8, 10, 12, 14, 16, 18, and 20 ft (1.83, 2.44, 3.05, 3.66, 4.27, 4.88, 5.49, and 6.10 m). Longer panels are available on special order.	
Cross Sectional Area	11.27 in^2	7269 mm^2
Centroid from Back Face	0.40 in.	12.4 mm
Moment of Inertia	5.96 in^4	2.48x10^6 mm^4
Weight (in Air)	3.57 lb/ft^2	17.42 kg/m^2
Weight (Submerged in Water)	1.61 lb/ft^2	7.86 kg/m^2
Tensile Strength (Long. Dir.)	43,000 psi	300 MPa
Tensile Modulus (Long. Dir.)	4.0 x 10^6 psi	28 GPa
Tensile Strength (Trans. Dir.)	7,200 psi	50 MPa
Tensile Modulus (Trans. Dir.)	1.7 x 10^6 psi	12 GPa
Equivalency to Steel Rebars	No. 6 Gr. 60 @ 3.5 in. o.c.	15mm, 400MPa @ 65mm o.c.
Barcol Hardness (ASTM D2583)	50 min	50 min
Water Absorption (ASTM D570)	0.8% max	0.8% max

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