

RenewWrap™ ESR GF875

Unidirectional E-Glass Fiber Reinforcing Fabric



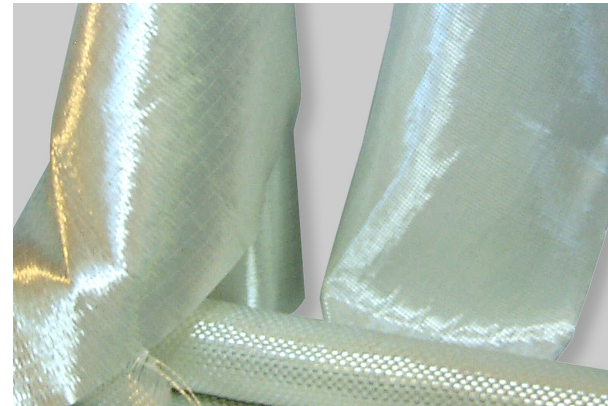
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RenewWrap™ ESR GF875 is a dry, unidirectional reinforcing fabric, made with high strength E-glass fibers. RenewWrap ESR GF875 fabrics, along with RenewWrap ESR Saturant are used to strengthen or retrofit existing concrete and masonry structures.

Benefits

- Lightweight, flexible, high-strength fabric can be wrapped around and externally bonded to structural elements
- Easy to impregnate using wet or dry lay-up methods
- Non-corrosive

Limitations

- Design calculations shall be made and sealed by a licensed, independent engineer knowledgeable with the design of FRP strengthening systems. E-glass fabrics are intended for applications where additional protection or light confinement is required. E-glass is typically not suitable for projects requiring strengthening. For these applications, consider using one of the RenewWrap™ carbon fiber systems.
- Ambient temperature cure wet lay-up FRP strengthening systems are not suitable for applications requiring substantial strengthening and a structural fire rating. For these applications, consider using the **FireStrong™ FRP Strengthening System**.

Typical Uses

Recommended for:

- Additional protection from environmental conditions
- Confinement of repaired elements
- Insulation barrier between exposed steel and carbon fiber
- Seismic retrofit and strengthening of masonry elements

Packaging

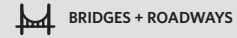
- Available in 25 in. (635 mm) or 50 in. (1270 mm) widths and 256 ft. (45.7 m) long rolls suspended in boxes.
- Yield equals 533 ft²/roll (49.5 m²) for 25 in. (635 mm) wide
- 1066 ft²/roll (99.0 m²) for 50 in. (1270 mm) wide.

Caution

RenewWrap E-glass fabrics are non-reactive. Wear appropriate PPE and use caution when handling since fine carbon dust may be present on surface of fabric. SDS are available and should be consulted for additional information.

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Typical Fabric and Fiber Properties¹

PROPERTY	VALUE
Fiber Type	E-Glass
Color	White
Fabric Construction	Unidirectional
Fiber Tensile Strength	500 ksi (3450 MPa)
Fiber Tensile Modulus	11,700 ksi (80 GPa)
Fiber Rupture Strain	4.0%
Fabric Areal Weight ²	26 oz./yd ² (875 gsm)

NOTES:

1. Fiber properties are typical values of the fibers used in the manufacture of the reinforcing fabrics. They are based on proprietary test methods employed by the supplier of the carbon fibers. Fiber properties shall not be used for design. They are reported here to provide the designer with a general understanding of the grade of fibers used in the reinforcing fabrics.
2. Reported value represents the minimum fabric areal weight.

Physical Properties

PROPERTY	VALUE	METHOD
Nominal Thickness ¹	0.043 in. (1.1 mm)	
Glass Transition Temperature	140 °F (60 °C)	ASTM E1640

Mechanical Properties

PROPERTY	VALUE	METHOD
Tensile Strength	80 ksi (550 MPa)	ASTM D3039
Tensile Modulus of Elasticity ²	4 Msi (27.6 GPa)	ASTM D3039
Elongation at Break	2.2%	ASTM D3039
Tensile Strength/Unit Width	3.44 kip in./ply (0.60 kN/mm/ply)	ASTM D7565
Tensile Modulus/ Unit Width	172 kip/in./ply (30.2 kN/mm/ply)	ASTM D7565

NOTES:

1. The reported thickness is based on measurements made on panels prepared in the laboratory. Based on experience the typical thickness of a single ply (fibers + saturant), impregnated with **RenewWrap™ ESR Saturant** is approximately 0.06-0.08 inch depending on how the fabric is impregnated in the field. Actual thicknesses measured in the field may vary slightly. As with any FRP strengthening system, the strength/unit width and modulus/unit width should be used for design and for field QC purposes.
2. Modulus of elasticity and unit stiffness are reported as average values in accordance with ACI 440.2R and shall be used for design. They shall not be used for accepting/rejecting results of field QC test results.
3. Test samples are conditioned for 48 hours at 140 °F (60 °C). Tg values based on long term curing at room temperature conditions. Higher Tg values may be obtained by post-curing. Contact ClockSpring|NRI for more information.

Before using any ClockSpring|NRI product, the user must review the most recent version of the product's technical data sheet, material safety data sheet and other applicable documents, available at www.cs-nri.com or by calling 281-590-8491. ClockSpring|NRI is a licensed trademark of NCF industries, Inc.

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