



WindStrand® H EPW17

High-Performance Reinforcements

High Performance Roving for Wind Turbine Blade Applications

PRODUCT DESCRIPTION

WindStrand® H roving is part of a new generation of High-Performance Reinforcements enabling significantly stronger, stiffer and lighter composite parts than traditional E-glass reinforcements.

Owens Corning High-Performance Reinforcements *WindStrand® H* are made from a boron-free glass formulation that meets R-Glass standards ISO 2078, ASTM C162 & DIN B1259-1. The glass formulation is designed for excellent mechanical properties (tensile strength and modulus) and offers significantly better thermal and corrosion resistance properties than E-glass.



USAGE AND PERFORMANCE

WindStrand® H roving consists of continuous high-performance glass filaments gathered in a single-end roving without mechanical twist and treated with specifically developed sizings for weaving & knitting, prepreg and infusion processes typically used in the Wind Turbine blade manufacturing industry. These rovings are characterized by a low level of catenary, excellent processing and handling characteristics: low fuzz, low static, complete run-out and fast wet-out.



PRODUCT APPLICATION

WindStrand® H EPW17 roving has been specifically developed for composite wind turbine blade applications offering substantial design benefits in epoxy resin systems including significantly increased stiffness, better strength and excellent fatigue properties. These benefits help designers achieve superior performances in blade deflection and wind resistance.

FEATURES AND PRODUCT BENEFITS

- Up to 15% Stiffer and to 20% Stronger glass versus conventional E-Glass
- Enables blade manufacturers to reduce blade weight by up to 10%
- Enables up to 6% longer blades with no increase in weight
- Almost 10 times longer resistance to cyclic loadings versus conventional E-glass
- Improves sustainability for long life structures.
- Improved reliability and lower maintenance cost.
- Multi-process compatible
- For use on standard weaving looms as well as multi-axial knitting machines
- Excellent processing
- Very low fuzz properties which equate to low clean-up and high machines efficiencies

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PRODUCT AVAILABILITY

Filament Diameter (µm)	Tex
16 µm	300
17 µm	600, 1200, 2400
24 µm	2400

MECHANICAL PROPERTIES

Typical Composite Unidirectional Properties Epoxy resin – Fiber Volume Fraction = 60%	Unit	Standard	WindStrand [®] H EPW17
Tensile strength 0°	MPa	ISO 527-5	1260
Tensile modulus 0°	GPa	ISO 527-5	52.5
Compressive strength 0°	MPa	ISO 14126	680
Compressive modulus 0°	MPa	ISO 14126	50.4
Tensile strength +/-45°	MPa	ASTM D5083	81
Flexural strength 90°	MPa	ISO 14125	90
Tensile strength fatigue at 10 ⁶ cycles	MPa	ISO 13003	550

PACKAGING

Rovings are available in a single-end internal-pull package. Each pallet weighed about 1 ton. Pallets are stretch wrapped for load stability. All doffs are wrapped with Tack-Pak or shrinkable film for protection during transport. Full doffs are available in 18 kg (40 lb.) weights and they can be packaged in bulk or Creel-Pak format. More information is available in the Customer Acceptance Standards.

STORAGE

Unless otherwise specified, it is recommended to store glass fibre products in a cool, dry area. The packaging is not waterproof. Be sure to protect the product from the weather and other sources of water. The glass fibre products must remain in their original packaging material until the point of usage. If these conditions are maintained, the glass fibre product should not undergo significant changes when stored for one year. Beyond one year after delivery, the product might evolve, specifically if stored outside the recommended conditions.

Best storage conditions are temperatures between 22°C and 23°C, and humidity between 60% and 65%.

The product should be stored in the workshop, within its original packaging, 48 hours prior to its utilization.

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