

ERS™300

Medium Viscosity Epoxy Resin Saturant



Building
&
Transportation



Oil, Gas
&
Industrial



Offshore
&
Onshore



Water
&
Wastewater



PRODUCT DESCRIPTION

The CTech-LLC® Epoxy Resin Saturant (**ERS™300**) is medium viscosity epoxy matrix materials for saturating composite fibers and bonding applications. The reaction of epoxy with hardener results an outstanding durability material which is a proper matrix for all of the composite systems and structural strengthening works. CTech-LLC® epoxy resins offer a wide range of high performance properties like excellent chemical and mechanical resistance and strong adhesion. ERS™300 medium viscosity epoxy resin can be used in different fields like strengthening and retrofitting of structural members. These resins are used for saturating of carbon and glass wrap and bonding FRP plates and FRP anchors (in NSM Methods).

PHYSICAL PROPERTIES

Chemical Base	Epoxy resin
Net Weight	Component A = 20 Kg , Component B = 10 kg Component A= 10 Kg, Component B = 5 kg
Mixing Ratio	100:50 Part A: 100 Part B: 50
Color*	Component A is white Component B is grey paste Mixed resin and hardener is grey paste
Viscosity at 23° C	Viscosity of mixed product ≈ 6600 cps
Recommended Epoxy Usage	Base Layer: 0.7-1.2 kg/m ² Interior Layer: 0.5-0.8 kg/m ² Top Layer: 0.5 kg/m ²
Pot Life	35 Minutes at 35° C
Density at 23° C ASTM D792	Mixed product = 1.34 kg/L
Application Methods	Hand lay-up
Shelf Time	18 months
Storage Condition	Store dry and away from direct sunlight 5° - 35° C

*Different Colors are available by costumer's order

ADVANTAGES

- Medium viscosity epoxy resin saturant.
- ERS™300 epoxy resins have good strength compared with other epoxies.
- ERS™300 epoxy resins are extremely durable and resistant to

temperature and moisture. They also have high fatigue strength.

- ERS™300 epoxy resins have good mechanical and chemical resistance.
- ERS™300 epoxy resins have high adhesive strength and in addition to high saturation capability can be used for bonding an extended range of elements and materials like FRP laminates, metal elements, plastics and many other types of materials and elements.
- ERS™300 epoxy resin is easy to use and can be known as an eco-friendly product.
- ERS™300 epoxy resins have high dielectric performance and are resistant to electricity.

TYPICAL USES

- ERS™300 epoxy resins are high-performance adhesives which are widely used in strengthening of different types of structures and manufacturing composite products.
- Epoxy resins are electrical insulators, so they are highly used in electrical industry.
- Epoxy resins are widely used in aerospace industry. We can use these powerful resins to assemble or repair interior and exterior aircraft components.
- In addition to ERS™300 standard series, other series (including S & W, etc.) are available to meet your specific requirements. Please contact the supplier for more information.

INSTALLATION PROCEDURE

SURFACE PREPARATION

- For retrofitting applications, substrate preparation can highly effect on the quality of the performance of CFRP and GFRP composite systems.
- All the surfaces must be cleaned from dirt, grime, dust, curing compounds, oils, grease, waxes and all the other contaminated materials which may cause voids behind the CTech-LLC® composites.
- Repair mortar must be used to repair all the eroded or damaged concrete surfaces.
- An industrial vacuum cleaner must be used to remove dust and dirt.
- All the surfaces need grinding, sandblasting, shot blasting, pressure wash or other common mechanical methods to reach an even concrete substrate.
- The sharp edges must be smooth and rounded to a minimum radius of 30 mm.
- Note that concrete surfaces must be fully dried or cured so adhesive can properly dry.
- Prime the surface with a suitable type of CTech-LLC® primer.

MECHANICAL PROPERTIES

Property	ASTM Method	Test Value*
Tg	D4065	77° C
Tensile Strength	D638 Type1	<27.5 MPa
Tensile Modulus	D638 Type1	<2.31 GPa
Elongation Percent	D638 Type1	<1.1 %
Compressive Strength	D695	<33 MPa
Compressive Modulus	D695	<2.31 GPa

*Curing schedule 72 hours post cure at 60° C.

* Testing temperature: 21°C

MIXING

Epoxy compounds are usually supplied in two different containers. Before pouring the contents of component B into contents of component A, each part should be stirred separately to avoid deposit in container. Then part A and B should be mixed together depending on the required quantity. Process of mixing should take 3-5 minutes with a low speed mixer. After mixing resin and hardener, you'll have about 35 minutes time (at temperature 35°C) to apply the material. Clean mixing tools with a proper towel to reuse them.

APPLICATION

- You can use saturators for impregnating fabrics or apply hand methods for some of the smaller projects. Using a roller can help to eliminate air bubbles in the resin and substrate, it can also ensure that there is a good bonding between them.
- The recommended epoxy resin usage for FRP fabric application is approximately 0.7–1.2 kg/m² for the base layer, 0.5–0.8 kg/m² for the interior layer, and 0.5 kg/m² for the top layer.

STORAGE & SHELF LIFE

- ERS™300 must be stored in a dry and cool place. Temperature should be between 5° to 35° C. Avoid freezing the product and keep it away from direct sunlight, flame or other hazards.
- ERS™300 must be stored in its original packaging. Lid of the container should be kept closed. With proper storage, resin and hardeners remain usable for at least 18 months.

CAUTION

All components of FRP composite systems may cause skin irritation and sensitization. Use of chemical resistant gloves is recommended.

Avoid breathing vapors and dust. Get medical attention if you are breathing with difficulty.

Resin products can cause strong eye irritation. Avoiding eye contact and using safety goggles is necessary.

CTech-LLC®

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IMPORTANT NOTE:

Before using any CTech-LLC® 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.ctech-llc.com.

WARANTY:

CTech-LLC® warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within one month of the 'date of purchase. CTech-LLC® shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory. The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before utilizing.