

ERA[™] 420

Epoxy Resin Adhesive for FRP Laminate Bonding



Building
&
Transportation



Oil, Gas
&
Industrial



Offshore
&
Onshore



Water
&
Wastewater



PRODUCT DESCRIPTION

The CTech-LLC[®] Epoxy Resin Adhesive (**ERA[™]420**) is a two-component, high-strength, thixotropic epoxy adhesive that has been specially developed for bonding FRP laminates. This product is part of CTech-LLC[®] FibraOne[™] FRP strengthening system that provide a high tensile strength and are suitable for supplemental, externally bonded reinforcement of concrete elements.

ADVANTAGES

- High adhesive strength and bonding strength
- Remains firm on both vertical and horizontal surfaces such as concrete slabs
- High mechanical strength
- Hardens without shrinkage
- Solvent-free
- Thixotropic, does not run or drip

TYPICAL USES

For use as a structural adhesive when used in conjunction with CTech-LLC[®] FibraOne[™] FRP strengthening system.

INSTALLATION PROCEDURE

SURFACE PREPARATION

- For retrofitting applications, substrate preparation can highly effect on the quality of the performance of systems.
- All the surfaces must be cleaned from dirt, grime, dust, curing compounds, oils, grease, waxes and all the other contaminated materials.
- 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.
- Note that concrete surfaces must be fully dried or cured so adhesive can properly dry.

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 2-3 minutes with a low speed mixer.

APPLICATION

Apply one layer of ERA[™]420 adhesive of 1-3mm thick to both surfaces (substrate and laminate). Place the FRP Laminate on the surface and using a hard roller, exert a constant pressure by moving the tool both ways in the direction of the fibers to expel the air.

STORAGE & SHELF LIFE

- Epoxy resin adhesive can be stored for two years in its original packaging. Lid of the container should be kept closed. Moisture can decrease shelf life of epoxy adhesive.
- ERA[™]420 should be stored in a dry and cool place at 10° to 35° C. Avoid freezing the product and keep it away from direct sunlight, flame or other hazards.

PHYSICAL PROPERTIES

Chemical Base	Epoxy resin
Mixing Ratio	100:50 Part A: 100 Part B: 50
Color	Component A is grey paste Component B is white paste Mixed resin and hardener is grey paste
Pot Life	10-15 Minutes at 21° C
Density at 21° C ASTM D792	Mixed product =1.53kg/L
Application Methods	Hand lay-up
Shelf Time	24 months
Storage Condition	Store dry and away from direct sunlight 10-35° C

MECHANICAL PROPERTIES

Property	ASTM Method	Test Value*
Tensile Strength	D638 Type1	17 MPa
Compressive Strength	D695	85 MPa

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

* Testing temperature: 21°C

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.