

# TechnoDur™HE

High Viscosity FRP Epoxy Gel Saturant

## PRODUCT DESCRIPTION

TechnoDur™HE is a two-component, high-strength, high-modulus epoxy resin system used to prime substrates and saturate the composite strengthening systems fabrics. When extended with fumed silica, thickened TechnoDur™HE is used as a high-performance substrate repair material. This product has been evaluated per AC125 for concrete and unreinforced masonry strengthening using externally bonded fiber-reinforced polymer (FRP) composite systems. This product is NSF-listed safe for potable water. This product is part of the tested assembly in UL Design No. N861, which achieved a four-hour fire rating when subjected to ASTM E119 / UL 263 full-scale fire testing.



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Water &  
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Oil, Gas &  
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Structures



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## TECHNICAL DATA

	Unit	TechnoDur™HE
Chemical Base	-	Epoxy Resin
Tensile Strength	MPa	<25
Tensile Modulus	GPa	<2.1
Elongation Percent	MPa	<1.0%
Compressive Strength	MPa	<30.0
Compressive Modulus	GPa	<2.1
Density at 21°C ASTM D792	kg/l	Component A= 1.30 Component B= 1.20 Mixed product =1.26
Mixing Ratio	-	100:50 Part A:100 Part B:50
Color	-	Part A: Light Gray Paste Part B: Grey Paste Mixed: Grey Paste
T <sub>g</sub>	°C	70
Application Methods	-	Hand lay-up
Shelf Time	month	18
Storage Conditions	-	Store dry at 4°C -40°C

## ADVANTAGES

- Long working time
- High elongation
- Ambient cure
- Minimal odor
- High versatility
- High fatigue and final compressive strength. They also have high strength.

- Good impregnation due to optimized mixed viscosity for wet lay-up.
- Curing of epoxy resin is very slow and has long pot life.

## TYPICAL USES

### Seismic Retrofit

- Shear strengthening
- Displacement/ductility

### Damage Repair

- Deterioration/corrosion
- Blast/vehicle impact

### Load Rating Upgrade

- Increased live loads
- New equipment

## INSTALLATION PROCEDURE

### SURFACE PREPARATION

Repair existing substrate per ICRI Guideline No. 310.1R. Concrete shall be abrasively prepared to achieve an open pore structure in accordance with ICRI Guideline No. 310.2R by means of grinding, sand blasting, shot blasting, or pressure washing. Application surface shall be clean, sound, and free of standing water at time of application. All dust, laitance, grease, curing compounds, and other foreign materials that may hinder the bond must be removed before installation.

### 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 90 minutes' time (at temperature 21°C) to apply the material. Clean mixing tools with a proper towel to reuse them.

#### APPLICATION

Apply epoxy to substrate surfaces using a nap roller. Saturate fabrics using manual or mechanical rollers, ensuring full fiber saturation is achieved. Use trowels to apply thickened epoxy. This product may also be used for near surface mounted (NSM) laminate applications.

#### CLEAN UP

##### ENVIRONMENTAL PRECAUTIONS:

Construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters and soils.

##### SMALL SPILLS

Soak up with an absorbent material, such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.

##### LARGE SPILLS

Approach suspected leaks with caution. Construct a dike or trench to contain material. Soak up with an absorbent material, such as clay, sand or other suitable non-reactive material. Place in leak-proof containers. Seal tightly for proper disposal.

##### DISPOSAL

Dispose of container and unused portions in accordance with local, state and federal regulations. Emptied container may contain product residue and should not be reused.

#### CAUTION

##### COMPONENT A

May cause eye and/or skin irritation. Prolonged or repeated exposure may cause skin sensitization.

##### COMPONENT B

**CORROSIVE!** Severe irritation to eyes and skin. Prolonged or repeated exposure may cause skin sensitization. Components of this product

may affect the central nervous system.

#### PROTECTIVE MEASURE

The use of safety glasses and chemically resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the PEL.

#### FAIRST AID

##### Skin

Wash fibers off skin with water and soap. If fibers are embedded in the skin, remove with tweezers. Discard clothing that may contain embedded fibers. Seek medical advice if exposure results in adverse effects.

##### Eyes

Immediately flush with a continuous water stream for at least 20 minutes. Washing immediately after exposure is expected to be effective in preventing damage to the eyes. Seek medical advice.

##### Inhalation

If there is inhalation exposure to the fibers of this product, remove source of exposure and move victim to fresh air. If victim is not breathing, give artificial respiration. If there is breathing difficulty, give oxygen. Seek medical advice for any respiratory problems.

##### Ingestion

Ingestion is not a likely means of exposure for this product. If ingestion does occur, do not induce vomiting. Give nothing by mouth if victim is unconscious. Seek medical advice.

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