TITAN®
Structural Reinforcement

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PRODUCT DATA

TITAN® SATURANT EPOXY

MOISTURE INSENSITIVE EPOXY

GENERAL DESCRIPTION

Titan® Saturant Epoxy is a 100% solids, solvent-free, two-component moisture insensitive epoxy. Titan® Saturant Epoxy is a low viscosity epoxy formulated as a seal coat and impregnating matrix for carbon fiber wet lay-ups to provide a high performance laminate. Formulated as a Fast Set for rapid strength development.

FEATURES

- Easy mix ratio: 2 Parts A to 1 Part B by Volume
- Provides excellent adhesion to most structural materials
- Insensitive to moisture before, during and after cure
- Low temperature cures – As low as 40ºF (4ºC)
- Zero VOC - Fully reactive, no low boiling constituents

PHYSICAL PROPERTIES

TECHNICAL DATA

Curing Schedule 72 Hours Post Cure @ 140°F (60°C)
Testing Temperature @ 70° F (21° C)

		TEST METHOD
Mixing Ratio: Component A/B	2 A:1B by volume	
Color: Part A Resin	Straw	
Part B Hardener	Dark Amber	
Ad-Mix	Dark Amber	
Viscosity	700-900 cps	ASTM-D-2393
Gel Time: 75°F (24ºC)	95-105	ASTM-C-881 minutes
90°F(32ºC)	55-60	
Tack Free Time: 75°F (24ºC) hrs.	6-7	
90°F(32ºC) hrs.	4-5	
Glass Transition Temp.	174°F(79°C)	ASTM-E-1356
Water Absorption 24 Hrs %	.08% max.	ASTM-D-570
Bond Strength:		ASTM-C-882
2 Days (moist cure) Hardened concrete to hardened concrete or steel	1,200 min. (8.2 MPa)	
Tensile Properties: Type 1	11,400 psi (79 MPa)	ASTM-D-638
Elongation at Break: Type 1	2 - 4 %	ASTM-D-638
Flexural Properties	17,400 psi (120 MPa)	ASTM-D-790
Compressive Yield Strength	9,800 (68 Mpa)	ASTM-D-695
Density lbs. at 68-72°F (20°C)	9.13	

FOR BEST PERFORMANCE

- Precondition the components to 70°F (23°C) to 80°F (27°C) for 24 hours before use.
- Minimum ambient, surface, aggregate and epoxy temperatures should be 50°F (10°C) and rising at the time of application.
- Store at 55°F to 90°F (15°C to 32°C).
- Protect from moisture and freezing.
- Do not add solvents or water to epoxy material.
- Do not alter or change the recommended proportions when blending the components.

FORMULATED AND LABELED FOR PROFESSIONAL USE ONLY
NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC

PRODUCT DATA (cont'd)

SURFACE PREPARATION

All surfaces must be structurally sound, clean and free of dirt, dust, oil, grease or any contaminant that would adversely affect the bond. Surfaces may be dry (recommended) or damp, but free of standing water.
Epoxies generally bond very well to properly prepared concrete; it is essential that the surface to which the epoxy is to be applied be sound and clean. Dirt, oil, grease, laitance or other surface deposits can interfere with the bond of the epoxy to the structural substrate.
All concrete surfaces must be cleaned to a minimum CONCRETE SURFACE PROFILE CSP 5, according to International Concrete Repair Institute: Concrete Surface Profile Specifications.

It is necessary to determine the surface preparation requirements prior to the application of the epoxy matrix.

Weak, delaminated areas should be removed using chipping hammers, scarifiers, scabblers, hydro demolition; other techniques may be used especially where more extensive concrete removal is necessary. The method used to remove deteriorated concrete should not weaken or crack the surrounding sound concrete. Additional cleaning may be necessary to remove any debris remaining after the removal of unsound concrete.
The surface must be free of protrusions or cavities which may cause voids behind the carbon fiber strap.
Remove any dust or debris immediately prior to the application of the epoxy.

STEEL: Sandblast to white metal finish with a minimum Surface Profile of 3 mils.

TEMPERATURE EFFECTS OF MIXING, APPLICATION AND WORKING TIME

Epoxy and substrate temperatures have a direct effect on the usability of the epoxy compound. The quantity and temperature of the adhesive at time of mixing have a significant influence on the working time. Elevated temperatures will thin the epoxy making it easier to apply but will shorten the working time in the container resulting in less open time before early polymerization thereby affecting the bonding ability of the broadcast aggregate. Cooler temperatures thicken the epoxy, lengthen the working time in the container and extend the open time prior to the placement of the broadcast aggregate. Do not mix a quantity of epoxy at any one time that cannot be readily applied within the pot life in the container and the working time on the substrate at the prevailing temperature. Contact Emecole Metro, LLC for assistance of the gel time in the container and working time on the substrate at different temperature ranges.

PRE-APPLICATIONS

All materials are to be conditioned to a minimum of 75ºF (24ºC) and a maximum of 100ºF (38ºC) for 24 hours prior to use. When ambient temperature falls below 70ºF all materials are to be stored in a warm environment of a minimum of 70 - 75ºF and removed from this environment just prior to use. Warm materials provide better wetting in (lower viscosity) and faster set time.

MIXING

Remove cap and plugs from the Titan® Saturant epoxy cartridge, attach a mixing tube to the cartridge and Insert the epoxy cartridge into the dual 'Jake' dispensing gun. Dispense a small amount onto a paper plate or scrap piece of cardboard until epoxy in the tube has mixed completely, After thorough mixing, a uniform green color should be observed.

APPLICATION

Dispense 1 complete cartridge into a paint tray (mix with a paint stir stick to insure product is thoroughly mixed) Use a paint roller to apply first coat to the wall prior to installing the carbon fiber strap to wall.
Apply a topcoat of saturant to strap after installing strap. Ensuring total saturation of the strap.

SHELF LIFE 1 year in original unopened container.

CAUTION

- Minimum surface application temperature is 40°F (4°C)
- Do not seal slabs on grade
- Material is a vapor barrier after cure
- Not for sealing cracks under hydrostatic pressure
- Minimum age of concrete must be 21 – 28 days
- Test for surface vapor transmission. Moisture passing through the substrate by pressure during the application and curing will cause bond failures
- Due to many variables in bonding on damp or underwater surfaces, be certain to test application under the same conditions as full-scale work

PRODUCT DATA (cont'd)

TITAN® epoxies contain alkaline amines. Strong sensitizer; **MAY CAUSE SKIN SENSITIZATION** or allergic response ranging from a mild wheezing to a severe asthmatic type attack. Avoid contact with skin or eyes. **IN CASE OF CONTACT** immediately wash skin with soap and water. Flush eyes with water and obtain medical attention. Wear protective clothing, goggles, and barrier cream on all exposed skin.

STORAGE:
Store Dry at 40ºF (4.4ºC) - 95ºF(35ºC).Condition to 70ºF (21ºC) - 75ºF(24ºC) before using. Protect from inclement weather and freezing.

CLEAN-UP:
Ventilate area. Confine spill. Collect with absorbent material. Dispose of in accordance with current, applicable local, state, and federal regulations. Uncured material can be removed with approved solvent. Cured material can only be removed mechanically. Clean tools and equipment with xylene immediately after using. Wash hands and skin with soap or Industrial hand cleaner, not with solvent. Cured material must be removed mechanically.

VOC CONTENT: 0.21 lb/gal (25 g/L) (EPA Method 24), less water and exempt solvents

LIMITED WARRANTY NOTICE: Emecole Metro LLC (TITAN®) warrants this product to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. The purchaser must examine the product when received and promptly notify Emecole Metro LLC in writing of any nonconformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Emecole Metro LLC, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty.

The information in this data sheet supersedes all other sales information received by the customer during the sales process. THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.

Emecole Metro, LLC shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Emecole Metro, LLC could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.

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