

# TITAN<sup>®</sup> 24

## CARBON FIBER STRUCTURAL REPAIR SYSTEM

<b>Typical Applications</b>	Structural strengthening of concrete or masonry structures for: <ul style="list-style-type: none"> <li>• An increase in load requirements due to code change or design error</li> <li>• Containment and shear reinforcement</li> <li>• Seismic retrofitting</li> <li>• Structural damage</li> </ul>
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• System meets all ACI 440.8-13 material specification requirements</li> <li>• ICC-ES ESR listed product</li> <li>• 100% solvent-free</li> <li>• Zero VOC system</li> <li>• Long working time, even in hot environments</li> <li>• Durable, highly resistant to aggressive environments</li> <li>• Applicable at up to 90% humidity</li> <li>• High strength and light weight</li> </ul>
<b>Coverage</b>	300 sq. ft. surface area requires: (2) gallons of Titan-Primer Epoxy, (5) gallons of Titan-Saturant, (1) 12" x 300' roll (0.3m x 91m)
<b>Thickness</b>	As detailed on individual product datasheets and determined by NRI engineering calculations
<b>Mixing &amp; Mix Ratio</b>	As detailed on individual product datasheets
<b>Pot Life</b>	75 minutes @ 75°F (24°C), less at higher temperatures
<b>Limitations</b>	<ul style="list-style-type: none"> <li>• Application temperature shall be a minimum of 50°F (10°C) and maximum of 280°F (138°C)</li> <li>• Relative humidity must be 85% or below</li> <li>• Pipe surface must be 5°F (-15°C) above dew point</li> </ul>
<b>Related Products</b>	The following products are system components of the Titan-24 system: <ul style="list-style-type: none"> <li>• Titan-Primer Epoxy</li> <li>• Titan-Saturant</li> <li>• Titan-Top Coat (if required)</li> </ul>

### Composite Gross Laminate Properties per ASTM D-3039

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per ASTM D-3039

Property	Average Value	Design Value
*Tensile Strength	80,030psi (552 MPa)	53,620 psi (370 MPa)
**Elongation at Break	2.1%	1.3%
Tensile Modulus	4.25 x 10 <sup>6</sup> psi (29.30 GPa)	4.25x 10 <sup>6</sup> psi (29.30 GPa)
Laminate Thickness	0.038 in. (1.0mm)	0.034 in. (0.9mm)

Specimens were conditioned & tested under ambient laboratory conditions at 73°F (23°C) with 60% relative humidity.



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Titan-Primer & Titan-Saturant Epoxy Material Properties	Property	Typical Test Value
	Tensile Strength	9,500 psi (65.5 MPa)
	Tensile Modulus	380 ksi (2,620 MPa)
	Elongation at Break	4%
	Flexural Strength	14,530 psi (100.2 MPa)
	Flexural Modulus	865 ksi (5,964 MPa)
	Glass Transition Temp (T <sub>g</sub> )	185°F (85°C)

**Design** Titan-24 is an ICC-ES, AC-125, ACI 400.8-13 repair system. Consult NRI Engineering for specified use.

**Surface Preparation** Surface preparation shall be in accordance with ACI 546R, ICRI No. 310.1R-2008 and ACI 562-13 detail methods for the repair and surface preparation of concrete.

**Installation** Installation of the Titan-24 System shall be performed by NRI qualified applicators only. Surface preparation, mixing of epoxy, material saturation, and installation of the system are to be in accordance with NRI's Titan Installation Guide, latest revision. Quality control inspection during and after installation of the Titan system shall be performed per NRI's Installation Validation Procedure: Quality Control Records, latest revision.

Cure Schedule	Temperature	Working Time	Set Time
	50°F (10°C)	225 minutes	24 hours
	60°F (16°C)	150 minutes	12 hours
	75°F (24°C)	75 minutes	6 hours
	90°F (32°C)	35 minutes	3 hours

Measure Shore D hardness to confirm full set has been achieved.

**Cleanup and Safety** For proper information regarding the safe handling, storage, and disposal of chemical products, users shall refer to the most recent SDS, latest revision, containing physical, ecological, toxicological, and other safety-related data.

**Shelf Life** Epoxy: 12 months  
Fabric: 12 months

**Storage Conditions** Store indoors in cool, dry, ventilated storage at temperatures below 95°F (35°C)  
Epoxy: store in original, unopened containers  
Fabric: store in original packaging away from moisture or any contaminants

**Packaging** Titan-Saturant: 1 gallon (3.8L) and 5 gallons (19L)  
Titan-24 fabric: 12" x 300' (0.3m x 91m) rolls  
Typically ships in 12" x 12" x 18" boxes (305mm x 330mm x 1626mm)

**Warranty** ©Neptune Research Inc. (NRI) NRI<sup>®</sup>, Titan<sup>®</sup>-24, and Titan<sup>®</sup>-Saturant Epoxy are registered trademarks while of NRI. NRI utilizes a process of continuous product improvement for all of our products. While we do strictly adhere to our products' specifications, we routinely implement product improvements. Therefore, please contact your local NRI distributor or office for the most current product specifications. NRI warrants the quality of this product when used according to directions. Titan-24 is NOT an approved coating system. Failing to coat per standard procedures can lead to atmospheric corrosion damage. Apply protective coatings per company standards. User shall determine suitability of product for use and assumes all risk. The seller will not accept liability for more than product replacement.