

TITAN[®] MCU

FACTORY-SATURATED STRUCTURAL REPAIR SYSTEM

Description	The Titan-MCU product line is the first factory-saturated ACI 440.2R-08 compliant composite repair system designed for structural repairs and reinforcement. The systems are comprised of unique, uni-directional carbon or glass fiber fabrics, pre-saturated with Titan-MCU Saturant Resin.
Typical Applications	Structural strengthening of concrete or masonry structures for: <ul style="list-style-type: none"> • An increase in load requirements due to code change or design error • Containment and shear reinforcement • Seismic retrofitting • Structural damage
Benefits	<ul style="list-style-type: none"> • No field-saturation required • System meets all ACI 440.2R-08 material specification requirements • Manufactured in an ISO 9001 facility with available certification for minimum physical properties, no field coupon testing required • 100% solvent free; zero VOC system • Moisture-cure provides increased surface tolerance in wet or high humidity environments, applicable at up to 85% humidity • Durable, highly resistant to aggressive environments; can be used in splash zone or immersion • High strength and light weight
Coverage	300ft ² (27.9m ²) surface area requires: (2) gallons of Titan-Primer MCU Epoxy, (5) rolls of factory-saturated 24" x 30' (0.6m x 9.14m)
Mixing & Mix Ratio	As detailed on individual product datasheets
Pot Life	Factory-saturated systems: 150 minutes @ 75°F (24°C), less at higher temperatures Titan-Primer MCU Epoxy: 90 minutes @ 75°F (24°C), less at higher temperatures
Limitations	<ul style="list-style-type: none"> • Application temperature shall be a minimum of 40°F (10°C) and maximum of 180°F (83°C) • Service temperature -40° to 180°F (-40 to 83°C)
Related Products	Titan-Primer MCU Epoxy

Composite Gross Laminate Properties per ASTM D-3039

Property	Average Test Values			
	Titan-109C MCU	Titan-118C MCU	Titan-113G MCU	Titan-127G MCU
Tensile Strength *	119,770 psi	147,594 psi	62,985 psi	71,457 psi
Tensile Modulus	8.97 x 10 ⁶ psi	12.32 x 10 ⁶ psi	4.35 x 10 ⁶ psi	3.81 x 10 ⁶ psi
Elongation at Break **	1.22%	1.12%	1.40%	1.84%
Laminate Thickness	0.02" (0.5mm)	0.035" (0.9mm)	0.025" (0.6mm)	0.05" (1.27mm)
Property	Design Values			
	Titan-109C MCU	Titan-118C MCU	Titan-113G MCU	Titan-127G MCU
Tensile Strength *	93,662 psi	120,589 psi	51,328 psi	64,226 psi
Tensile Modulus	8.97 x 10 ⁶ psi	12.32 x 10 ⁶ psi	4.35 x 10 ⁶ psi	3.81 x 10 ⁶ psi
Elongation at Break **	1.04%	1.0%	1.40%	1.69%
Laminate Thickness	0.02" (0.5mm)	0.035" (0.9mm)	0.025" (0.6mm)	0.05" (1.27mm)

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

* Design value calculated as mean ultimate tensile strength minus three standard deviations, per ACI 440.8-13.

** Ultimate rupture strain calculated as the ultimate tensile force per unit width divided by mean chord tensile stiffness per unit width, per ACI 440.8-13.



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Dry Fiber Material Properties	Property	Titan-109C MCU	Titan-118C MCU	Titan-113G MCU	Titan-127G MCU
	Tensile Strength	550,000 psi (3.79 GPa)	550,000 psi (3.79 GPa)	330,000 psi (2.27 GPa)	330,000 psi (2.27 GPa)
	Tensile Modulus	34.5 x 10 ⁶ psi (230 GPa)	34.5 x 10 ⁶ psi (230 GPa)	10.5 x 10 ⁶ psi (72.4 GPa)	10.5 x 10 ⁶ psi (72.4 GPa)
	Ultimate Elongation	1.5%	1.5%	4%	4%
	Density	0.065 lbs/in ³ (1.8 g/cm ³)	0.065 lbs/in ³ (1.8 g/cm ³)	0.092 lbs/in ³ (2.5 g/cm ³)	0.092 lbs/in ³ (2.5 g/cm ³)
	Weight	9 oz/yd ² (300 g/m ²)	18 oz/yd ² (600 g/m ²)	13 oz/yd ² (440 g/m ²)	27 oz/yd ² (915 g/m ²)

Design The Titan-MCU product line is an ACI 400.2R-08 compliant 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-MCU systems shall be performed by NRI qualified applicators only. Surface preparation, mixing of epoxy, and installation of the system are to be in accordance with NRI's Titan-MCU product line Installation Guide, latest revision. Quality control inspection during and after installation of the system shall be performed per NRI's In-Field Quality Manual, latest revision.

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

Shelf Life Factory-saturated: 12 months
Epoxy primer: 12 months

Storage Conditions Factory-saturated: Store indoors in cool, dry, ventilated storage at temperatures below 95°F (35°C).
Epoxy primer: store in original, unopened containers.

Packaging Titan-MCU factory-saturated systems: 24" x 30' (0.6m x 9.14m)
Titan-Primer MCU: 2 gallon (7.6L)

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