

TRANS-WRAP™ APEX

OPTIMIZED COMPOSITE REPAIR SYSTEM

Description	Trans-Wrap™ is a custom-engineered, ASME PCC-2 4.1,4.2 compliant, optimized composite repair for system that utilizes a special APEX optimized, bi-directional, fiberglass in conjunction with NRI's Trans-Wrap epoxy system.
Typical Applications	<ul style="list-style-type: none"> • Repair external corrosion and mechanical damage such as gouges and dents on distribution and transmission pipe • Transmission and distribution pipeline integrity
Benefits	<ul style="list-style-type: none"> • Optimized performance system specifically designed for high pressure pipeline repairs • Design conforms to ASME PCC-2, ASME B31, ISO TS24817, DOT, API, and CSA Z662 standards for nonmetallic reinforcing solutions
Coverage	Sold based on square foot of coverage required
Thickness	As determined by NRI engineering calculations
Mixing & Mix Ratio	Power mix Part A, then combine with Part B and power mix. Do not mix partial kits. Resin to hardener 100A:18.5B by weight
Pot Life	40 minutes @ 75°F (24°C), less at higher temperatures
System Components	<p>The following products are system components of the Trans-Wrap APEX system:</p> <ul style="list-style-type: none"> • Trans-Wrap™ APEX Optimized Performance Fiberglass • Trans-Wrap™ APEX Epoxy, Part A & B • Trans-Wrap™ APEX Filler

Composite Laminate Properties	Property	Circumferential Direction	Axial Direction
	Tensile Modulus	4.9 Msi (24.3 GPa)	2.64 Msi (18.2 GPa)
Thermal Expansion Coefficient	5.59 ppm/°F (10.06 ppm/°C)	12.09 ppm/°F (21.77 ppm/°C)	
Property		Typical Test Value	
Laminate Thickness	0.0415" (1.05 mm)		
Poisson Ratio	0.120		
Glass Transition Temperature	248°F (120°C)		
Shear Modulus of Polymer	122 ksi (841.2 MPa)		
Shore D Hardness	87		
Lap Shear Strength	2,616 psi (18 MPa)		

Design The Trans-Wrap APEX composite repair system was designed to conform to ASME PCC-2, ASME B31, ISO 24817, DOT, API, and CSA Z662 standards for nonmetallic, reinforcing solutions. Consult NRI Engineering for specified use.

Surface Preparation Surface preparation and profiling shall promote continuous intimate contact between the Trans-Wrap APEX system and pipe by providing a clean, smooth, and circumferential surface. Recommended surface preparation shall be in accordance with NACE 2/SSPC-SP10 standards with a minimum of 1 mil surface roughness minimum. NRI's composite repair systems are bond-critical and require a strong adhesive bond between the clean pipe and the composite system for maximum effectiveness.



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Installation

Installation of the Trans-Wrap APEX composite repair system shall be performed by NRI qualified applicators only. Surface preparation, mixing of epoxy, material saturation, and installation of the system shall be in accordance with NRI's product specific installation guides, latest revision. Quality control inspection during and after installation of the system shall be performed per NRI's Installation Quality Control Form.

Cure Schedule

Temperature	Set Time
50°F (10°C)	9 hours
60°F (16°C)	4.5 hours
70°F (24°C)	2 hours
90°F (32°C)	45 minutes

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

NRI provides a 12-month shelf-life if Trans-Wrap™ APEX and all components are stored according to proper specifications and the packaging free from external damage.

Storage Conditions

For ideal shelf life, store in a cool, shaded area at an ambient temperature of 72°F (23°C). Do not expose materials to temperatures above 95°F (35°C) or below 40°F (5°C) for long term storage.

Warranty & Disclaimer

NRI® is a registered trademark and Trans-Wrap™ is a trademark of Neptune Research, Inc. (NRI). NRI, the Manufacturer of Trans-Wrap™ APEX (and other aforementioned products) will replace at no charge to the purchaser any product proved to be defective. Responsibility of the Manufacturer and the Distributor is limited to replacement of the product only. Neither the Manufacturer nor the Distributor shall be liable for consequential or incidental damage or loss of any kind as they do not have any control over the conditions under which these products may be used or over the methods of application. Users should test the product for their particular need and suitability. Users should consult with the Manufacturer or the Distributor for all proposed repairs using the Trans-Wrap™ APEX system. Written procedures for specific repairs are available upon request from the Manufacturer or Distributor. Trans-Wrap™ APEX is not an approved coating system. Failing to coat composite system per standard procedures can lead to atmospheric corrosion damage or degradation of the Trans-Wrap™ APEX system. Apply protective coatings per company standards.



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