

Mechanical Reinforcement

Stop It[®] CR-E

by InduMar Systems, L.P

STOP IT[®] CR-E is an engineered composite system that consists of fiberglass fabric and high performance epoxy resulting in a powerful piping reinforcement product.

Our industry leading kit format provides all the necessary tools for a professional installation. During production the fabric is cut to length and the epoxy components are factory pre-measured and sealed. This eliminates the need for measuring and weighing in the field, which can be cumbersome and inaccurate.

STOP IT[®]CR-E is available with your choice of up to four different epoxy systems for almost any application. Whether it is in a cold climate, high-heat, or harsh chemical environment, there is a system to suit your needs. All resin systems have no VOC's and are 100% solids.

STOP IT[®] CR-E has been used worldwide to repair damaged and corroded piping. Whether it's in the deserts of Egypt or the cold mist of the North Sea, CR-E has been there to provide a composite solution to the oil, gas, refining, and power generation industries.

STOP IT[®] CR-E kits ship to the field with all components pre-measured and factory sealed. Everything is included: Composite fabric, 2-part epoxy resin, primer, stirring sticks, and UV paint where needed. The technician simply lays out a pre-measured fiber reinforcement segment, mixes the pre-measured epoxy resin components (with the furnished mixing stick) and applies the epoxy resin to the reinforcement. No measuring is required in the field and performance tolerances are tightened with controlled fabric/epoxy resin ratios.

Composite Properties with STD Resin	CR-E ₁	CR-E ₃	CR-E ₂₂	CR-Ec ₂
Per Ply Thickness	.034" nominal	.017" nominal	.048" nominal	.045" nominal
Tensile Strength Warp Direction	55,900 psi	48,874 psi	44,199 psi	70,893 psi
Tensile Modulus Warp Direction	2.49x10 ⁶ psi	2.64x10 ⁶ psi	2.38x10 ⁶ psi	5.48 msi
Load Per Ply	1,900 lbs	823 lbs	2,113 lbs	2,394 lbs

Features

- Complete installation kits
- High strength
- Very versatile
- Many different widths and lengths
- Excellent toughness – resists cracking
- Alternate systems for high-temperature
- Maximum temperature range of 450°F
- Pre-measured and sealed components
- No VOC's

Industries Served

- Power generation
- Petrochemical plants
- Mining
- Industrial
- Pulp and paper
- Liquid and gas transportation
- Production facilities
- Water and wastewater treatment

General Characteristics – Standard Epoxy Resin Systems

Working Time: 30 minutes at 77°F

Cure Time: 8 hours nominal at 77°F to full cure

Chemically resistant to acetone, MEK, toluene, gasoline, ethyl alcohol and many others



STOP IT® CR-E “Reinforcement Fabrics”

- CR-E₁** This fabric hybrid fabric employs aerospace grade E-glass and DuPont® Kevlar™ yarns, arranged in a multi-axis layout that maximizes the ultimate composite strengths. It is constructed using a unique non-crimped method that reduces stress on the individual fibers and increases strength over generic woven fabrics by as much as 30%. This fabric allows for much better resin wet out and its multi-axis format provides strength in the 90°, +45°, and -45° axis. Width is 12” nominal (wider widths available).
- CR-E₃** This woven E-Glass fabric with modified widths is designed for easy installations on smaller repairs.
- CR-E₂₂** A highly conformable knitted fabric for use in complex geometries.
- CR-Ec²** This carbon fabric is designed to provide maximum strength on high modulus repairs.
- CR-Ec₃** This is a lightweight carbon fabric designed for smaller pipes or tight installations. Available in 2”, 4”, and 6” widths.

Stop It® Standard Epoxy Resin “STD”

A two-component, standard temperature epoxy resin is suitable for use with all our STOP IT® CR-E fabrics. This ambient temperature cure epoxy resin wets out easily and is relatively fast setting (approximately 30 minutes at 77°F) and is used where a maximum service temperature of 265°F is not exceeded. No VOC's, 100% solids. This product ships DOT non-hazardous.

Stop It® Medium Temperature Epoxy Resin “MT”

The MT two-component, medium temperature epoxy resin is suitable for use with all of our STOP IT® CR-E fabrics. This ambient temperature cure epoxy resin wets out easily and has very good chemical resistance. It is relatively fast setting (approximately 60 minutes at 77°F) and is used where a maximum service temperature of 325°F is not exceeded. This epoxy resin system should be post cured in order to achieve the best chemical resistance. This product ships DOT hazardous (corrosive).

Stop It® High Temperature Epoxy Resin “HT”

The two-component, heat-resistant epoxy resin system is suitable for use with all of our STOP IT® CR-E fabrics. This epoxy resin system is suitable for service temperatures between ambient and 450°F. It sets relatively quickly, achieving an initial cure in 80 minutes at 150°F. This epoxy resin system should be post cured in

order to achieve the best chemical resistance. This product ships DOT hazardous (corrosive).

Stop It® Underwater Epoxy Resin “UW”

It sets relatively quickly, achieving an initial cure. The epoxy resin cures under water and bonds well to wet steel surfaces. The fabric is wetted out in dry conditions but can then be applied to wet submerged substrates. This product ships DOT non-hazardous.

Design Calculations and Installation Assistance

Design recommendations and calculations pursuant to ASME PCC-2 standards are available.

Assistance in the planning of installations in order to achieve the best installation at minimum labor cost is also available. For field assistance InduMar Services, LLC may provide services, which are confined to on-site supervision, training, certification, project management, or technical support. For further assistance regarding an application, installation, or product capabilities, please contact InduMar Systems, LP at www.InduMar.com or 713.977.4100/800.523.7867.

Data and parameters listed in our data sheets have been obtained using materials under carefully controlled conditions. Data of this type should not be used by engineers as design specifications, but rather as indicative of ultimate properties obtainable. Before using, user should determine the suitability of the product for its intended use. In determining whether the material is suitable for a particular use, such factors as overall application configuration and design, field conditions and environmental criteria should be considered by user.

