



Clock Spring

The Clock Spring composite repair sleeve and reinforcement system is uniquely designed for high-pressure transmission pipelines. Made up of a pretensioned unidirectional e-glass composite coil, a high-modulus filler material, and a high lap-shear strength methyl methacrylate adhesive, it is proven to 8,000 psi and has a design life beyond 50 years and installation history of more than thirty years, qualifying it as a permanent repair by regulators.

Each Clock Spring coil is made up of 8 layers, providing a repair with a higher failure pressure than the original pristine pipe. Designed to structurally reinforce and permanently restore external anomalies to pristine condition, the Clock Spring sleeve can repair a broad range of mechanical damage and mill defects and can restore to full strength a pipeline with up to 80% wall loss.

The Clock Spring sleeve was the subject of an extensive 10-year research and development program and was the pioneer for the approval of composite repairs across the industry. It is the most tested, investigated, and documented composite repair solution ever developed and has earned its place as the industry's most trusted composite repair system. Clock Spring sleeves have been installed in more than 75 countries in practically every environment for more than three decades.

Applications

- Transmission pipelines – proven permanent repair
- Large diameter and limited access <0.5"
- Bends and girth welds
- Process piping: chemicals, oil, gases, water, and steam

Features

- Made from durable pre-tensioned e-glass fibers
- Sized to fit standard pipe diameters
- Designed with unique “wrap-around” shape
- Available in 4-inch through 56-inch diameter kits
- Can be installed underwater
- Available in a high-temperature system
- Meets standards of internationally recognized repair codes
- Is a 50-year DOT-accepted repair system for high-pressure transmission pipelines
- Conforms to ASME PCC-2 and ISO 24817

BENEFITS:

- Installs without disrupting operations
- One hour to backfill from installation
- Enhances short-term and long-term safety
- Marking band system makes repairs visible to in-line inspection tools
- No environmental hazards
- No special tools to install
- No hot work
- No heavy lifting





QUALIFICATION DATA

PROPERTIES	VALUE
Nominal Thickness	0.065 inch (1.6 mm)
Complete 8-Layer System	0.5 inch (13 mm)
Width	12 inches (305 mm)
Lap Shear Strength	>1,200 psi (8.27 MPa)
Compressive Strength	>12,500 psi (86.18 MPa)

Warranty: ClockSpring|NRI routinely implements product improvements. Please contact your local distributor or office for the most current product specifications. ClockSpring|NRI warrants the quality of this product when used according to directions.



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