RES-Q® Composite Wrap

Products and Services for Pipelines, Sizes: 2- through 60-inch

Transportation standards.

ASME B31.4/B31.8, as well as U.S. Department and ISO 24817, liquid and gas pipeline standards of international composite standards ASME PCC-2

RES-Q Composite Wrap meets the requirements tested by accredited third-party laboratories, and longer service are anticipated. Thoroughly of using RES-Q Composite Wrap where high pressure composite wrap.

Wrap truly represents the next generation of carbon on years of customer feedback, RES-Q Composite stronger materials and improved performance based operator and composite wrap installer. Featuring Wrap addresses the needs of both the pipeline pipeline rehabilitation experience, RES-Q Composite replacement.

alternative to repair clamps, welded sleeves and pipe RES-Q Composite Wrap is a flexible in-service design pressure without shutting down operation, axial directions. Capable of restoring a pipeline to its superior structural reinforcement in the hoop and axial directions. The result of T.D. Williamson, Inc.’s extensive pipeline rehabilitation experience, RES-Q Composite Wrap addresses the needs of both the pipeline operator and composite wrap installer. Featuring stronger materials and improved performance based on years of customer feedback, RES-Q Composite Wrap truly represents the next generation of carbon composite wrap.

Certified Performance

Extensive testing validates the significant benefits of using RES-Q Composite Wrap where high pressure and longer service are anticipated. Thoroughly tested by accredited third-party laboratories, RES-Q Composite Wrap meets the requirements of international composite standards ASME PCC-2 and ISO 24817, liquid and gas pipeline standards ASME B31.4/B31.8, as well as U.S. Department of Transportation standards.

Description

Permanent Rehabilitation

RES-Q® Composite Wrap offers a permanent rehabilitation solution for liquid and gas pipelines with external corrosion, gouges, grooves, arc burns and dents. A high-strength carbon fiber and epoxy system, RES-Q Composite Wrap utilizes a stitched, bidirectional carbon fabric to provide superior structural reinforcement in the hoop and axial directions. Capable of restoring a pipeline to its design pressure without shutting down operation, RES-Q Composite Wrap is a flexible in-service alternative to repair clamps, welded sleeves and pipe replacement.

Product Innovation

The result of T.D. Williamson, Inc.’s extensive pipeline rehabilitation experience, RES-Q Composite Wrap addresses the needs of both the pipeline operator and composite wrap installer. Featuring stronger materials and improved performance based on years of customer feedback, RES-Q Composite Wrap truly represents the next generation of carbon composite wrap.

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Solution Assessment

The RES-Q Composite Wrap solution assessment compiles information such as pipe diameter, material grade, wall thickness, design pressure, design temperature, size of anomalies, and minimum and maximum operating pressure and temperature. RES-Q ProCalc™ software analyzes this data to determine the number of wraps and repair length required for straight pipeline. As part of the solution assessment, TDW offers a host of rehabilitation options for customers to select.

Features

Improved Formulations

While maintaining no volatile solvents in a 100% reactive system, improved RES-Q Composite Wrap formulations provide a two-year shelf life. The resin formulation enhances the long-term strength of the epoxy matrix.

Simplicity and Consistency

All RES-Q Composite Wrap resins and hardeners are packaged in metal containers for reliability during transportation. All materials specified for a RES-Q Composite Wrap solution are pre-measured, pre-cut and packaged for field installation. RES-Q Composite Wrap utilizes only one epoxy product to both wet the carbon fabric and bond the wrap to the pipeline. Improved installation techniques ensure a thoroughly wetted carbon fabric and more consistent composite application. The RES-Q Composite wrap is recommended to be applied on substrate surface temperatures between 40 and 120°F with a maximum design temperature of 165°F.

Enhanced Physical Properties

Thanks to material advances, RES-Q Composite Wrap results in fewer plies and reduced thickness because of greater strength, higher modulus of elasticity and lower creep. The fiberglass barrier in each restoration kit provides a positive layer of insulation between the pipeline and carbon fabric. This stitched carbon fabric provides efficient load transfer from the pipeline to individual fibers while also improving long-term strength.

Versatility

RES-Q Composite Wrap is a versatile solution to pipeline defects where clearance between pipelines is limited or width of excavation is narrow due to job site restrictions. RES-Q Composite Wrap can be installed horizontally and vertically, and it can conform to straight pipeline, elbows, and even complex systems such as reducers or tees.

Customization

Each customized RES-Q Composite Wrap solution is based on pipeline configuration and current defect conditions. System design and fabric width options facilitate installation and provide uniform applications for pipeline components like welds and bends. Standard, elbow and tee wraps are available to meet virtually any need.

Training

Expert training for field technicians and contractors is offered at our state-of-the-art facility in Tulsa, Okla., U.S.A., or at customer locations. Composite wrap training can be incorporated with other covered tasks offered by the TDW LineMaster™ training program.

Installation

Drawing upon the accumulated knowledge and experience of more than 200 certified technicians around the globe, TDW is proud to offer RES-Q Composite Wrap installation.

ISO 9001 Certified

Toll Free
1-888-829-1988
1-888-TDWmSon (839-6766)
### Dimensions and Part Numbers

#### RES-Q® Composite Wrap

<table>
<thead>
<tr>
<th>Pipe Size (inches)</th>
<th>Pipe Size (mm)*</th>
<th>Application</th>
<th>Number of Plys</th>
<th>Wrap Width (inches)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>50</td>
<td>0 = Standard (Straight)</td>
<td>2 = Two Ply Kit</td>
<td>00 = For Elbows and Tees</td>
</tr>
<tr>
<td>03</td>
<td>80</td>
<td>2 = Elbow</td>
<td>4 = Four Ply Kit</td>
<td>12 = For Standard Straight Wrap (12-inch)</td>
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<tr>
<td>04</td>
<td>100</td>
<td>3 = Tee</td>
<td>6 = Six Ply Kit</td>
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<tr>
<td>06</td>
<td>150</td>
<td>8 = Eight Ply Kit</td>
<td>Other widths are available, consult factory</td>
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<tr>
<td>08</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>Note: All elbow kits are four ply.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>300</td>
<td>All tee kits are six ply.</td>
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<tr>
<td>14</td>
<td>350</td>
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<tr>
<td>22</td>
<td>550</td>
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</tbody>
</table>

*Metric equivalents provided for reference only. Pipe width must be expressed in inches for purposes of part number designation.

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### Composite Wrap 3-Stage Installation Overview

1. **Prepare Pipeline**
   - Fill void with putty.
   - Apply epoxy to pipeline.

2. **Barrier Fabric Preparation**
   - Wet barrier fabric with epoxy.
   - Wrap barrier fabric on pipeline.

3. **Restore Pipeline**
   - Wet carbon fabric with epoxy.
   - Wrap carbon fabric on pipeline.

† The above does not reflect full installation procedures. For full installation instructions, refer to instructions provided with RES-Q® Composite Wrap Kit.