

# Transmission Pipeline Products



| Family Brand  | Product Name    | Primary Use  | Per Ply Thickness   | Max Temperature | Fabric Description                  | Resin Description               |
|---------------|-----------------|--|---------------------|-----------------|-------------------------------------|---------------------------------|
| Clock Spring® | Clock Spring    | Metal loss and small deformations  | 0.075 in. (1.9 mm)  | 201°F (94°C)    | Unidirectional (hoop) Fiberglass    | Pre-cured Polyester             |
|               | Clock Spring HT |  |                     | 264°F (129°C)   | Unidirectional (hoop) Fiberglass    | High-temp pre-cured Vinyl Ester |
|               | SnapWrap        | Metal loss and small deformations with limited thickness availability        | 0.075 in. (1.9 mm)  | 201°F (94°C)    | Unidirectional (hoop) Fiberglass    | Pre-cured Polyester             |
|               | SnapWrap HT     |  |                     | 264°F (129°C)   | Unidirectional (hoop) Fiberglass    | High-temp pre-cured Vinyl Ester |
| A+ Wrap™      | A+ Wrap         | Metal loss and small deformations including non-straight geometries          | 0.014 in. (0.35 mm) | 194°F (90°C)    | Bi-directional fiberglass           | Moisture cured Polyurethane     |
|               | A+ Max          |  |                     | 194°F (90°C)    | Tri-directional fiberglass          | Moisture cured Polyurethane     |
| Atlas™        | Atlas           | Large deformation and crack/crack-like features                              | 0.017 in. (0.43 mm) | 180°F (82°C)    | Bi-directional carbon fiber         | High-strength epoxy             |
|               | Atlas HT        |  |                     | 450°F (232°C)   | Bi-directional carbon fiber         | High-temp epoxy                 |
|               | Atlas UA        | Circumferentially oriented crack-like features and axially dominated repairs | 0.016 in. (0.41 mm) | 180°F (82°C)    | Unidirectional (axial) carbon fiber | High-strength epoxy             |
|               | Atlas UA HT     |  |                     | 448°F (231°C)   | Unidirectional (axial) carbon fiber | High-temp epoxy                 |
| Contour Apex™ | Contour Apex    | Metal loss and small deformations  | 0.042 in. (1.07 mm) | 212°F (100°C)   | Multidirectional Fiberglass         | High-strength epoxy             |

## Defect Type Overview

|                          |   |
|--------------------------|---|
| <b>Metal Loss:</b>       | Corrosion   Internal wall loss   Gouges   Minor manufacturing defects   Abrasion            |
| <b>Deformation:</b>      | Plain Dents   Dents on weld   Buckles   Ovality concerns   Wrinkle Bends (hoop)             |
| <b>Crack/Crack Like:</b> | Seam-weld anomalies   SCC   Plain body cracks   Laminations   Severe manufacturing defects  |
| <b>Axial Dominated:</b>  | Girth weld anomalies   Geohazards   Bending loads   Thermal cycling   Wrinkle Bends (axial) |