SYNTHO-SLEEVE® OUTER WRAP
BURY, BORE OR DRILL IN LESS THAN ONE HOUR

Description
Syntho-Sleeve® Outer Wrap is designed to protect welded field joints on pipelines from the abrasion stresses and scarring of directional drilling and boring. Syntho-Sleeve provides mechanical protection to the preapproved corrosion coating of your choice, such as viscous elastic coatings, epoxy coatings, shrink sleeves, and cold applied tapes. This unique product has a faster setting time, is easier to apply, has a very low profile, is extremely conformable, and is highly impact resistant. The result is cost-effective, long-term protection against corrosion for buried pipelines of with superior mechanical protection.

Mechanical Properties*

<table>
<thead>
<tr>
<th>Test</th>
<th>Method</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength</td>
<td>ASTM D638</td>
<td>36,000 psi (2482.7 bar)</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>ASTM D790</td>
<td>26,000 psi (1793.1 bar)</td>
</tr>
<tr>
<td>Compressive Strength</td>
<td>ASTM D695</td>
<td>24,000 psi (1655.1 bar)</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>ASTM G14/G62</td>
<td>123 ft. lb. (167 J)</td>
</tr>
<tr>
<td>Dielectric Strength</td>
<td>ASTM D149</td>
<td>16,000 Volts</td>
</tr>
<tr>
<td>Hardness, Shore D</td>
<td>ASTM D2240</td>
<td>80</td>
</tr>
<tr>
<td>Lap Shear (to FBE)</td>
<td>ASTM D5868</td>
<td>800 psi (55.1 bar)</td>
</tr>
<tr>
<td>Set Time</td>
<td>Time</td>
<td>5 Min @ 75 °F (167 °C)</td>
</tr>
</tbody>
</table>

*Mechanical properties of Syntho-Sleeve Outer Wrap

Typical Applications
- Horizontal directional drilling
- Boring
- Coating repair
- Coating protection

Benefits
- Quick setting
- Simple, cost-effective installation
- Non-hazardous
- Drastically reduced installation time and materials
- Easy to apply
- Consistency of application, joint after joint
- Pre-impregnated, no field mixing or messy field wetting
- Water activated, no UV light or heating required
- Smoother profile reduces damage during pull through
Description
The Syntho-Sleeve® System consists of two components: the primary layer, Wrapid-Bond™, requires minimal surface preparation and provides corrosion protection of the pipe; while the secondary composite layer, Syntho-Sleeve outer wrap, provides mechanical protection against abrasion during pull through. This unique product has a faster setting time, is easier to apply, has a very low profile, is extremely conformable, and is highly impact resistant. The result is cost-effective, long-term protection against corrosion with superior mechanical protection.

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<tr>
<th>Test</th>
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</thead>
<tbody>
<tr>
<td>Thickness</td>
<td>Measured</td>
<td>&gt; 0.071” (&gt; 1.8mm)</td>
</tr>
<tr>
<td>Density</td>
<td>ASTM D792</td>
<td>0.04 - 0.1 lb/in² (1.1-3 g/cm²)</td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>EN 12068</td>
<td>11 ft. lb. (15 J)</td>
</tr>
<tr>
<td>Indentation Resistance</td>
<td>EN 12068</td>
<td>0.02” remaining (pass)(0.60mm)</td>
</tr>
<tr>
<td>Peel Strength</td>
<td>EN 12068</td>
<td>&gt; 72.5 psi Cohesive failure (&gt; 0.5N/mm²)</td>
</tr>
<tr>
<td>Lap Shear Strength</td>
<td>EN 12068</td>
<td>2.9 psi (0.02 N/mm²)</td>
</tr>
<tr>
<td>Glass Transition Temperature</td>
<td>ASTM D3418</td>
<td>&lt; -4°F (&lt; -20°C)</td>
</tr>
<tr>
<td>Cathodic Disbondment Resistance</td>
<td>ASTM G8/EN 12068</td>
<td>0.08“ @ 73°F (2mm @ 23°C)</td>
</tr>
<tr>
<td></td>
<td>ASTM G42/EN 12068</td>
<td>0.04“ @ 140°F (1mm @ 60°C)</td>
</tr>
<tr>
<td>Electrical Resistance</td>
<td>EN 12068</td>
<td>&gt; 9.3x106 ohm/ft² (&gt; 108 ohm/m²)</td>
</tr>
<tr>
<td>Unwinding Test @ -22°F (-30°C)</td>
<td>EN 12068</td>
<td>No separation, tears or cracks</td>
</tr>
<tr>
<td>Low Temperature Flexibility @ -22°F (-30°C)</td>
<td>EN 12068</td>
<td>No separation, tears or cracks</td>
</tr>
<tr>
<td>Water Absorption</td>
<td>ASTM D570</td>
<td>&lt; 0.05%</td>
</tr>
<tr>
<td>Drip Resistance</td>
<td>EN 12068</td>
<td>Pass at 194°F (90°C)</td>
</tr>
</tbody>
</table>

**Mechanical properties of Wrapid-Bond (See Syntho Sleeve Outer Wrap for full mechanical properties)

Typical Applications
- Horizontal directional drilling
- Boring
- Corrosion coating

Benefits
- Simple, cost-effective installation
- Highly effective protection against corrosion
- Non-hazardous
- No osmosis or under creep
- Self healing capability
- No cooling
- Smoother profile reduces damage during pull through
- Outstanding impact resistance
- Extremely surface tolerant; no grit blasting, only wire brushing or hand tool cleaning required
- Eliminates the need for flame torch and preheating
- Low surface tension; adheres on all dry substrates at a molecular level

SYNTHO•SLEEVE® SYSTEM
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