

## COVALENCE<sup>®</sup> DIRAX

### Product Information

**Product description:** The DIRAX system is a wrap-around heat-shrinkable sleeve reinforced with fiberglass. DIRAX is designed to protect girth welds against corrosion and is the optimum joint protection for PE and FBE coated pipes used in Horizontal Directional Drilling (HDD-Pull Through) applications. The reinforcement gives the backing greater wear resistance.

#### Construction: Three-layer system

- **First layer:** Liquid epoxy, solvent-free two-component.
- **Second layer:** High shear strength copolymer adhesive.
- **Third layer:** Thick, fiberglass reinforced, radiation cross-linked polyethylene.
- **Additional component:** Wear Cone as extra protection against pull-through forces, of the same construction as the main sleeve.

During installation, the epoxy is applied to the prepared pipe surface and the heat-shrinkable sleeve is immediately wrapped around the joint over the wet epoxy. Heat is then applied to the sleeve, which shrinks to form a tight fit around the joint. While curing, the epoxy forms strong mechanical and chemical bonds to the pipe surface & to the copolymer adhesive layer. The radiation cross-linked outer layer forms a tough barrier against mechanical damage and moisture transmission. A wear cone is then applied over the leading edge of the sleeve.

#### Features:

- Highly resistant to shear and peel forces induced by soil and thermal movements.
- DIRAX offers abrasion and wear resistance at pull-through comparable to mill coatings.
- Wear cone protects leading edge of sleeve against pull-through forces.
- Sleeve applied over wet epoxy---there are no curing or waiting times /formation of strong mechanical & chemical bonds.
- Superior cathodic disbondment and hot water immersion resistance.
- Pre-attached closure patch.
- Low preheat requirements.

#### Benefits:

- The DIRAX is tough!
- Provides a monolithic coating system.
- Provides additional strength and security---increases reliability.
- Allows fast application---saves time! Ensures high performance!
- Offers the optimum barrier protection against corrosion.
- Allows fast and easy application.
- Makes installation faster and saves time.

### Product properties

#### Backing

Property	Test method	Typical value
<b>Bursting strength</b>	DIN 30672	2350 N

#### Adhesive

Property	Test method	Typical value
<b>Softening Point</b>	ASTM E28	94°C (201°F)
<b>Lap shear</b>	ASTM D1002	528 psi
<b>Lap shear</b>	ISO 21809-3	0.34 N/mm <sup>2</sup> @ 60°C 0.1 N/mm <sup>2</sup> @ 70°C (158°F)

#### Installed sleeve

Property	Test method	Typical value
<b>Peel to Steel</b>	ASTM D-1000	104 pli
	ISO 21809-3	11 N/mm @ 23°C (73°F) 1 N/mm @ 70°C (158°F)
<b>Specific coating resistance</b>	EN 12068, 100 days immersion	6x10 <sup>9</sup> Ωm <sup>2</sup>
<b>Impact resistance</b>	ASTM G14	170 in.lb
	EN 12068, class C	Pass 30 J
<b>Indentation resistance</b>	ASTM G17	Pass
	EN 12068, class C	2.3 mm* @ 60°C (140°F)
<b>Cathodic disbondment</b>	ASTM G8, 30 days	0.170" (4.33 mm)
	EN 12068, 30 days	< 1 mm radius @ 60°C (140°F) - self healing
<b>Resistance to UV radiation followed by bursting</b>	EN12068	Reduction in bursting strength <25% of the original value

\* Remaining coating thickness

*Note: Typical values in this data sheet are based on lab prepared samples. Values shown are not to be interpreted as product specifications. All properties are at 23°C unless otherwise specified.*

### Product selection guide

<b>Max operating temperature</b>	70°C (158°F).
<b>Compatible line coatings</b>	PE, FBE
<b>Min. preheat temperature</b>	70°C (158°F)
<b>Recommended pipe preparation</b>	Sa 2½
<b>Soil stress restrictions</b>	None
<b>Performance</b>	EN 12068 Class C60 UV ISO 21809-3

### Product thickness

<b>Backing as supplied</b>	1.85 mm (0.073 in)
<b>Backing fully free recovered</b>	2.30 mm (0.091 in)
<b>Adhesive as supplied</b>	1.20 mm (0.047 in)
<b>Wear cone (incl. adhesive) as supplied</b>	3.05 mm (0.120 in)

Order information		
<p>Covalence® DIRAX type products are available as a kit, containing</p> <ul style="list-style-type: none"> <li>- A Uni-sleeve (pre-cut sleeve with pre-attached closure patch)</li> <li>- A wear cone (also pre-cut with pre-attached closure patch)</li> </ul> <p>DIRAX is installed with Covalence® S1301-M two-component epoxy primer.</p> <p>Select sleeve width that will overlap onto the mill-applied coating by 50 mm (2 inches) minimum on each side of the weld joint.</p> <p>DIRAX has no horizontal shrinkage</p>		
<b>Example</b>	<b>DIRAX-16000-24</b>	
	<b>Designation</b>	<b>Standard ordering options</b>
<b>16000</b>	Outside pipe diameter	3.500"-64.000" (DN80-DN1600)
<b>24</b>	Sleeve width (in)	24" (600 mm)* 34" (870 mm)* * <i>nominal width</i>
	Wear cone	Width 3" = 3.125" (80 mm) (included)

General information	
<b>Product dimension</b>	Sleeve cut lengths and appropriate closure patch widths depend on the pipe size and product construction, see latest application table AT-GIRTHWELD.
<b>Installation guide</b>	For proper product installation, see latest application guideline.
<b>Recommended primer</b>	<p>DIRAX is installed with epoxy primer Covalence® S1301-M. Primers are available in bulks or in pre-metered kits. For more ordering information on epoxy primers see latest PDS-S1301-M.</p> <p>As field application of primers may vary, consult a Seal For Life representative or Authorized Distributor for rate of coverage guidance.</p>
<b>Handling</b>	Handle with care. Keep boxes upright.
<b>Storage</b>	Store indoor, clean and dry, away from direct sunlight in a cool place below +50°C. Unlimited shelf life.
<b>Documentation</b>	Extensive information is available on our web-site. Application instructions and other documentation can be obtained by contacting our local distributor Tesi Spa to the following or email to <a href="mailto:info@tesigroup.com">info@tesigroup.com</a>
<b>Certified staff</b>	Application of the described coating system should be carried out by certified personnel.

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