

## COVALENCE<sup>®</sup> WPC

### Product Information

The WPC is a two-layer field-joint coating system for pipeline operating at ambient and elevated temperatures.

**Product description:** Covalence<sup>®</sup> WPC is a wraparound heat-shrinkable, ready-to-fit assembly for the corrosion protection of field girth weld joints in distribution and transmission systems. WPC is compatible with standard pipe coatings. WPC can also be used for coating bare, replacement pipe sections and large radius bends. The system is designed to be applied with minimum preheating and is ideal for large diameter water pipe.

Construction: Two-layer system

- *First layer:* Visco-elastic low preheat sealant adhesive.
- *Second layer:* Thick-walled, radiation cross-linked, high density polyethylene with PCI (Permanent Change Indicator).

The installation is carried out directly on the cleaned and dried (pre-heated) pipe surface without any primer being required. During installation, the heatshrinkable sleeve is wrapped and shrunk to form a tight fit around the joint. During recovery, the adhesive softens and flows to form a perfect bond with the pipe surface providing protection against corrosion. The radiation cross-linked outer layer forms a tough barrier against mechanical damage and moisture transmission.

#### Features:

- Dimpled backing provides a "permanent change" indicator for application of heat.
- Low preheat sensitivity & proven functionality.
- High impact and penetration resistance.
- Available as all-in-one unit or roll form.
- Sealing adhesive automatically flows and repairs minor mechanical damages.
- No special equipment or skills required.

#### Benefits:

- Ensures correct application heat & allows easy post-heat inspection. Reliable inspectability at any time.
- Installation friendly in combination with high functional performance.
- Tough, but flexible even at low temperatures!
- Saves money by keeping inventory and logistics costs low.
- Self-healing effect. Saves extra intervention steps.
- Makes installation fast and easy. Keeps installation costs low.

### Product selection guide

<b>Max operating temperature</b>	65°C (149°F)
<b>Compatible line coatings</b>	PE, PP, FBE, PU, Coal Tar, Tape & Asphalt
<b>Min. preheat temperature</b>	60°C (140°F)
<b>Recommended pipe preparation</b>	ST2 ½ - ST3 or SA2 ½
<b>Soil stress restrictions</b>	Moderate
<b>Performance</b>	EN12068 Class B30 for WPCT Class C30 for WPC-C30-E

### Product properties

#### Backing

Property	Test method	Typical value
<b>Tensile strength at break</b>	ASTM D638	3300 psi 22.8 MPa
<b>Elongation at break</b>	ASTM D638	600%
<b>Hardness, Shore D</b>	ASTM D2240	57
<b>Shrink force</b>	ASTM D638, 150°C (302°F)	40 psi
<b>Dielectric strength</b>	ASTM D149	900 V/mil 35 kV/mm
<b>Water absorption</b>	ISO62	0.04%

#### Adhesive

Property	Test method	Typical value
<b>Softening point</b>	ASTM E28	134°C (273°F)
<b>Lap shear</b>	ASTM D1002 EN12068 @ 10 mm /min	50 psi > 0.1 N/mm <sup>2</sup>

#### Installed sleeve

Property	Test method	Typical value
<b>Peel to steel</b>	ASTM D1000 EN12068 @ 10 mm /min	50 lb/in 1.1 N/mm
<b>Cathodic disbondment</b>	ASTM G42 @65°C(149°F), 30 days	7 mm radius
<b>Hot water immersion</b>	ASTM D870 @ 65°C (149°F), 120 days	No delamination, no blisters or water ingress
<b>Impact resistance</b>	ASTM G14 EN12068	80 in-lb WPCT : >8 J C30-E: > 15 J
<b>Penetration resistance</b>	ASTM G17	No holiday with 10 kV detector
<b>Indentation resistance</b>	EN12068, Class B30 Class C30	WPCT : > 1N/mm <sup>2</sup> C30-E : > 10 N/mm <sup>2</sup>
<b>Low temperature flexibility</b>	ASTM D2671, procedure C	-14°C (6.8°F)

*Note: The typical values in this data sheet are based on lab prepared samples. Values shown are not to be interpreted as product specifications.*

### Product thickness

	WPCT	WPC-C30-E
<b>Backing as supplied</b>	0.75 mm (0.030 in)	0.9 mm (0.035 in)
<b>Backing fully free covered</b>	1.00 mm (0.039 in)	1.2 mm (0.047 in)
<b>Adhesive as supplied</b>	1.20 mm (0.047 in)	1.3 mm (0.051 in)
<b>Finished product as supplied</b>	1.95 mm (0.077 in)	2.3 mm (0.086 in)

Ordering information		
Covalence® WPC type products are available <ul style="list-style-type: none"> <li>– As cut piece (pre-cut sleeve and separate closure patch)</li> <li>– As Uni-sleeve (pre-cut sleeve with pre-attached closure patch)</li> <li>– As a roll (closure patch to be ordered separately)</li> </ul> Select sleeve width that will overlap onto the mill-applied coating by 2 inches (50 mm) minimum on each side of the weld joint. Take a 10% shrinkage during installation of sleeve width into account when calculating the minimum sleeve width.		
Cut piece/Uni-sleeve		
<b>Example</b>	<b>WPCT-10750X17/UNI</b>	
	Designation	Standard ordering options
<b>WPCT</b>	Product type	WPCT, WPC-C30-E
<b>10750</b>	Outside pipe diameter (mils)	2.375" – 68.000" (DN50-DN1700)
<b>17</b>	Sleeve width (in)	11 (11.25" or 285 mm)* for WPCT 17 (17.75" or 450 mm)* 24 (23.625" or 600 mm)* 34 (34.25" or 870 mm)* for WPCT * nominal width
<b>/UNI</b>	Designates pre-attached closure patch	Optional
Roll form (closure patches to be ordered separately)		
<b>Example</b>	<b>WPCT-17X100-RL</b>	
	Designation	Standard ordering options
<b>WPCT</b>	Product type	WPCT, WPC-C30-E
<b>17</b>	Roll width (in)	11 (11.25" or 285 mm)* for WPCT 17 (17.75" or 450 mm)* 24 (23.625" or 600 mm)* 34 (34.25" or 870 mm)* for WPCT * nominal width
<b>100</b>	Roll length (ft)	100 (30 m)
Rolls can have a splice. Max 10% of the roll order will have a splice. Min partial length will be 5M or 15 ft.		
Closure patches		
<b>Example</b>	<b>WPCP-IV-4X17</b>	
<b>4</b>	Patch width (in)	4 (100 mm), 6 (150 mm), 8 (200 mm)
<b>17</b>	Patch length (in)	11 (11.25" or 285 mm)* 17 (17.75" or 450 mm)* 24 (23.625" or 600 mm)* 34 (34.25" or 870 mm)* * nominal length

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 installation instruction.
<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 at temperatures between 0°C (32°F) and +50°C (122°F). Unlimited shelf life.

Information	
<b>Documentation</b>	Extensive information is available on our web-site. Application instructions and other documentation can be obtained by contacting our head office, from our local distributor or by sending an email to <a href="mailto:info@sealforlife.com">info@sealforlife.com</a>
<b>Certified staff</b>	Application of the described coating system shall be carried out by certified personnel.