

COVALENCE[®] WPCT

Product Information

WPCT is a two-layer field-joint coating system for corrosion protection of pipelines operating at ambient temperature.

Product description: Covalence[®] WPCT is a wraparound heat-shrinkable, ready-to-fit assembly for the corrosion protection of field girth weld joints in distribution and transmission systems. WPCT is compatible with standard pipe coatings. WPCT 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:* 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 heat-shrinkable 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.
- High impact and penetration resistance.
- Available as all-in-one unit or roll form.
- Low preheat sensitivity & proven functionality.
- 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.
- Tough, but flexible even at low temperatures!
- Saves money by keeping inventory and logistics costs low.
- Installation friendly in combination with high functional performance.
- Self-healing effect. Saves extra intervention steps.
- Makes installation fast and easy. Keeps installation costs low.

Product selection guide

Max operating temperature	40°C (104°F) For pipe diameters ≤ 16" DN400): 45°C (113°F)
Compatible line coatings	PE, PP, FBE, Tape, Coal Tar & Asphalt
Min. preheat temperature	60°C (140°F)
Recommended pipe preparation	ST2 ½ - ST3 or SA2 ½
Soil stress restrictions	Moderate
Performance	EN12068 Class B30, AWWA-C-216

Product properties

Backing

Property	Test method	Typical value
Tensile strength at break	ASTM D-638	3300 psi 22.8 MPa
Elongation at break	ASTM D-638	600 %
Hardness, Shore D	ASTM D-2240	55
Shrink force	ASTM D-638 @ 150°C (302°F)	40 psi
Dielectric Strength	ASTM D-149	900 V/mil 35 kV/mm
Water absorption	ISO 62	0.05%

Adhesive

Property	Test method	Typical value
Softening point	ASTM E-28	90°C (194°F)
Lap shear	ASTM D-1002 EN 12068/ @ 10 mm /min	35 psi 0.22 N/mm ²

Installed sleeve

Property	Test method	Typical value
Peel to Steel	ASTM D-1000 EN 12068 @ 10 mm /min	17 lb/in 1.1 N/mm
Cathodic disbondment	EN 12068, 28 days	8 mm radius
Impact resistance	ASTM G-14 EN 12068	35 lb/in >8 J
Indentation resistance	ASTM G-17 EN 12068, Class B30	No holiday with 10 kv detector >0.6 mm remaining thickness
Low temperature flexibility	ASTM D-2671, procedure C	-10°C (14°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
Backing as supplied (mm)	0.55 mm (0.22 in)
Backing fully free recovered (mm)	0.76 mm (0.30 in)
Adhesive as supplied (mm)	1.40 mm (0.55 in)

General order information		General order information (continued)	
Covalence® WPCT type product are available – As Uni-sleeve (pre-cut sleeve with pre-attached closure patch) – As a roll (closure patch to be ordered separately) Min.sleeve width = (bare steel dimension + 50 mm (2") on each side of the fieldjoint) + 10%		Product dimension Sleeve cut lengths and appropriate closure patch widths depend on the pipe size and product construction, see latest application table AT-GIRTHWELD.	
		Installation guide For proper product installation, see latest installation instruction.	
		Handling Handle with care. Keep boxes upright.	
		Storage Store indoor, clean and dry, away from direct sunlight in a cool place below +50°C. Unlimited shelf life.	
Cut piece / Uni-sleeve		Information	
Example	WPCT-10750X17/UNI	Documentation	Extensive information is available on our website. Application instructions and other documentation can be obtained by contacting our head office, from our local distributor or by sending an email to info@sealforlife.com
	Designation	Standard ordering options	
10750	Outside pipe diameter (mils)	2.375 – 48.000 (DN50-DN1700)	
17	Sleeve width (in)	11 (285 mm), 17 (450 mm), 24 (600 mm), 34 (870 mm) *	
/UNI	Designates pre-attached closure patch	Optional	
		* nominal width	
Roll form (closure patch to be ordered separately)		Certified staff	Application of the described coating system should be carried out by certified personnel.
Example	WPCT-17X100-RL		
	Designation	Standard ordering options	
17	Sleeve width (in)	11 (285 mm), 17 (450 mm), 24 (600 mm), 34 (870 mm) *	
100	Roll length (ft)	100 (30 m)	
		* nominal width	
Closure patches (to be ordered separately)			
Example	WPCP-IV-4X17		
	Designation	Standard ordering options	
4	Patch length (in)	4 (100 mm), 6 (150 mm), 8 (200 mm)	
17	Patch width (in)	11 (285 mm), 17 (450 mm), 24 (600 mm), 34 (870 mm) *	
		* nominal width	



Seal For Life Industries LLC
 Franklin, MA, USA
 Tel: +1 508 918 1600
 Toll Free: +1 800 248 7659
 Fax: +1 508 918 1905
franklin@sealforlife.com

Seal For Life Industries Mexico
 S de R.L. de C.V.
 Tijuana, Mexico
 Tel USA: +1 858 633 9797
 Fax USA: +1 858 633 9740
 Tel Mx: +52 664 647 4397
 Fax Mx: +52 664 607 9105
mexico@sealforlife.com

Seal For Life Industries
 Stopaq B.V.
 Stadskanaal, the Netherlands
 Tel: +31 599 696 170
 Fax: +31 599 696 177
info@sealforlife.com

Seal For Life Industries BVBA
 Westerlo, Belgium
 Tel: +32 14 722 500
 Fax: +32 14 722 570
belgium@sealforlife.com

Seal For Life India Private Ltd.
 Baroda, India
 Tel: +91 2667 264 721
 Fax: +91 2667 264 724
india@sealforlife.com

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Wrap-around Pipe Sleeve with Thermal Indicator
Installation Instructions

AG-WPCT-REV10-Jan10



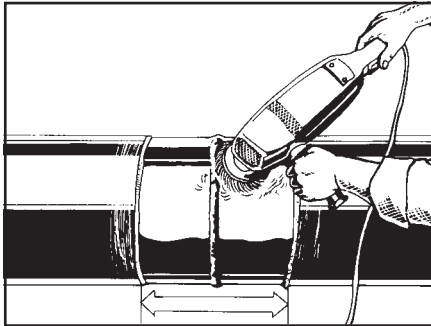
Materials and equipment

1. Appropriate size WPCT sleeve and WPCP IV closure patch
2. Torch
3. Propane gas tank, hose, regulator and gauge

4. Standard safety equipment such as gloves, goggles, hard hat, etc.

Installation has to be done according to local government regulations and usual safety precautions.

For proper selection of joint protection materials, see Product Selection Guide or contact your local Sales Engineer.



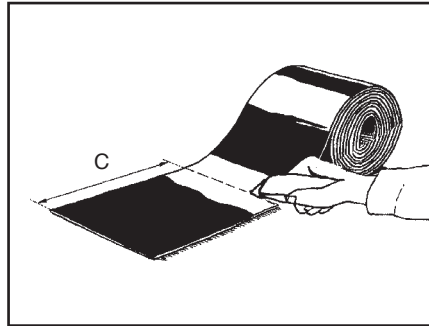
Sleeve application

1. Clean exposed steel and adjacent pipe coating to be covered by WPCT sleeve with a hand or power wire brush, to remove loose and foreign materials. Wiping may be necessary to remove the particles from cleaning.

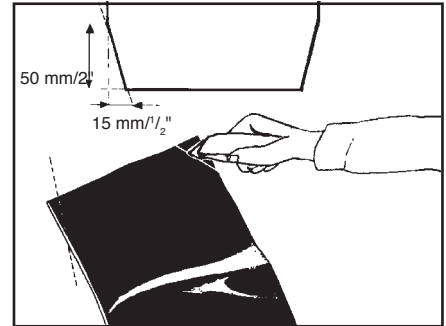
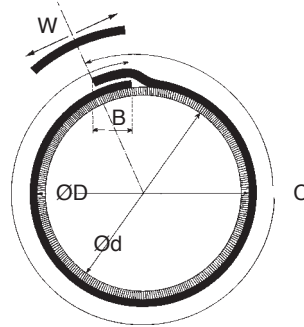
Note:

Coal tar - remove outer paper wrap 5" (125 mm) to 6" (150 mm) adjacent to cut-back to expose coal tar.

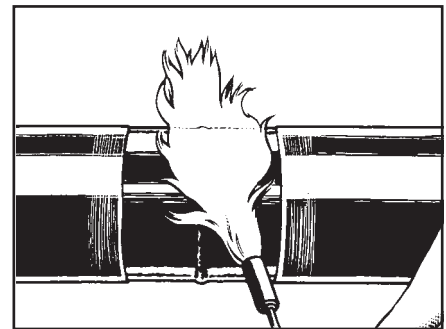
Painted coatings - remove whitewash paint on the surface of coating to be covered by WPCT sleeve.



2. Cut the sleeve to the appropriate length according to below table.



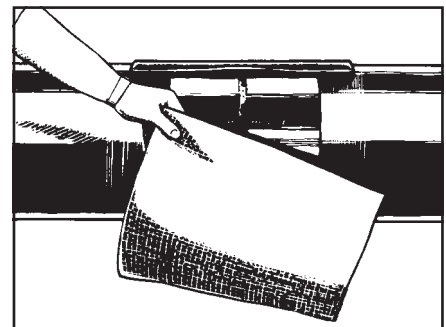
3. Cut the corners of the underlying end of the sleeve to approximately 1/2" x 2" (15 mm x 50 mm).



4. Preheat joint area until hot to the hand, approximately 140°F (60°C) minimum. Preheating reduces installation time and ensures proper bonding.

Note:

Two people working on opposite sides of the pipe are recommended for installing sleeves on pipe 16" (400 mm) in diameter and larger.



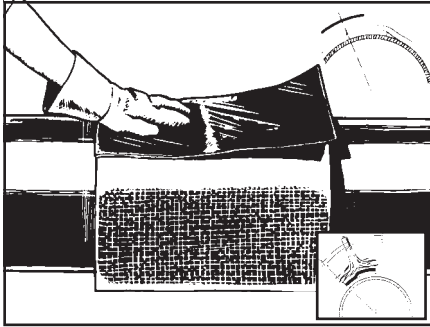
5. Remove the protective release plastic from the coated sleeve. Center sleeve over the weld so it is evenly overlapping adjacent pipe coating. Wrap loosely around pipe so that the logo runs around the pipe.

Note:

- 1) Clean overlap area of the sleeve to remove dirt and other foreign materials.
- 2) Edges of sleeve should extend 2" or more onto adjacent pipe coating.
- 3) Overlapping ends of sleeve should align evenly.
- 4) Position overlap to permit easy access for installing closure.

Ø D mils inches (0,001)	Ø d mm	C inches/mm	B in./mm	W in./mm
2375	50	12/305	2/50	4/100
2875	65	13/330	2/50	4/100
3500	80	15/380	2/50	4/100
4000	90	18/460	2/50	4/100
4500	100	18/460	2/50	4/100
5563	125	21,5/550	2/50	4/100
6625	150	25/640	2/50	4/100
8625	200	31,5/800	2/50	4/100
10750	250	38,5/980	2/50	4/100
12750	300	45,5/1150	2/50	4/100
14000	350	49,5/1260	2/50	4/100
16000	400	56/1420	2/50	4/100
18000	450	62,5/1590	2/50	4/100
20000	500	69,5/1770	2/50	6/150
22000	550	77/1950	2/50	6/150
24000	600	83/2110	2/50	6/150
26000	650	89,5/2270	2/50	6/150
28000	700	95,5/2430	2/50	6/150
30000	750	102,5/2600	2/50	6/150
32000	800	108,5/2760	2/50	6/150
34000	850	115,5/2930	2/50	6/150
36000	900	122/3100	2/50	6/150

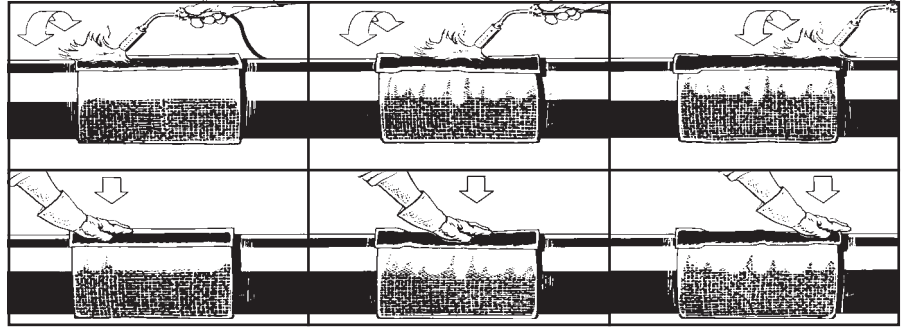
WPCT



WPCT IV closure application

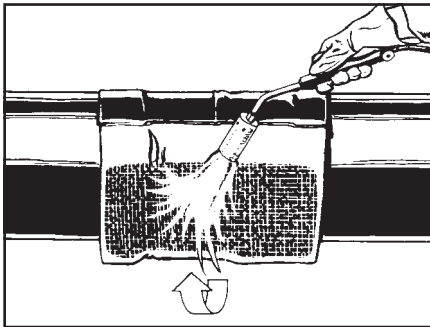
1. Press WPCTIV closure in position, centering over the exposed sheet end. (For UNISLEEVE products, the closure is pre-attached and already centered in position.)

The sheet should overlap the sheet (excluding closure) by 2" (50 mm) minimum.



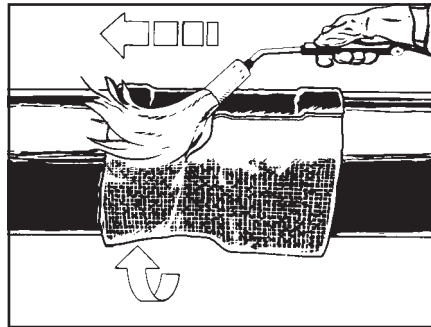
2. Using a torch, adjust flame length to approximately 20" (500 mm) to produce a blue tipped yellow flame. Using the yellow portion of the flame, heat the closure evenly until the pattern of the fabric reinforcement is visible.

With gloved hand, smooth any wrinkles by working outward from the center.



Sleeve recovery

1. Using the torch, begin at the center of the sleeve and heat circumferentially around the pipe, using a constant paintbrush motion, until the embossed pattern on the sheet surface has changed to a smooth surface.



2. Continue heating toward one end of the sleeve, followed by the other.

Note:

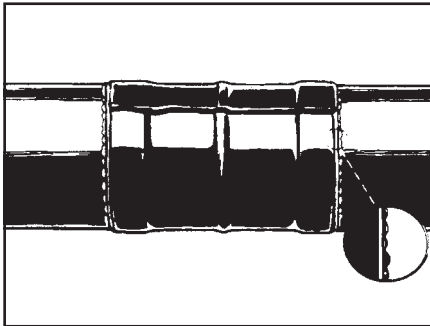
Sleeve may be recovered starting at one end and proceeding toward the opposite end, depending on conditions (i.e., wind).



3. During shrinkdown, occasionally check adhesive flow with a finger. Wrinkles should disappear automatically. Remember to wear gloves.

Note:

While sleeve is hot, press or roll overlap and closure area to remove any air voids.



4. Sleeve is fully recovered when all of the following have occurred:

- 1) The WPCT sheet has a smooth surface.
- 2) There are no cold spots on the sleeve surface.
- 3) Weld bead profile can be seen through the sleeve.
- 4) After sleeve is cool, mastic flow is evident on both edges.
- 5) The sleeve has fully conformed to the pipe and adjacent coating.
- 6) The pattern on the backing has disappeared and the backing has a smooth surface.

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CORROSION PROTECTION GROUP
www.berrycpg.com

Local Distributor / Representative:

For contact details of local Distributors / Representatives
Please visit www.berrycpg.com.

Headquarters : Berry Plastics Tapes & Coatings Division, Franklin MA, USA

Franklin, MA, USA
Tel: +1 508 918 1714
US Toll Free: +1 800 248 0149
Fax: +1 508 918 1910
CPG@berryplastics.com

Houston, TX, USA
Tel: +1 713 676 0085
US Toll Free: 01 888 676 7202
Fax: +1 713 676 0086
CPGH@berryplastics.com

Tijuana, Mexico
Tel USA +1 858 633 9797
Fax US: +1 858 633 9740
Tel Mexico: +52 664 647 4397
Fax Mexico: +52 664 647 4370
CPGTJ@berryplastics.com

Westerlo, Belgium
Tel. +32 14 722500
Fax +32 14 722570
CPGE@berryplastics.com

Baroda, India
Tel: +91 2667 264721
Fax: +91 2667 264724
CPGIN@berryplastics.com