

COVALENCE® WPC100M

Product Information

Product description: Covalence® WPC100M system is a two-layer wrap-around heat-shrinkable sleeve field-joint coating system for pipeline operating at elevated temperatures.

Construction: Two-layer system

- **First layer:** Visco-elastic butyl based adhesive.
- **Second layer:** Radiation cross-linked, high density polyethylene with permanent Change Indicator (PCI).

The WPC100M is compatible with most commonly used steel pipe coatings and is used for offshore and onshore girth weld protection or to recoat (rehabilitate) long pipe sections and large radius bends. The installation is carried out directly on the cleaned and pre-heated pipe surface without any primer required. During installation, the heat-shrinkable sleeve is wrapped around 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:

- Low preheat sensitivity & proven functionality.
- No asphalt nor bitumen components in the adhesive.
- Covers a wide range of operating temperature ratings.
- Very good low temperature flexibility for installations in cold climates.
- No special equipment (standard gas torch & a roller).
- Dimpled backing provides a "permanent change" indicator for application of heat.

Benefits:

- Installation friendly in combination with high functional performance.
- No shelf life issues.
- Offers the optimum barrier protection against corrosion.
- Makes installation fast and easy. Keeps installation costs low.
- Dimpled backing allows easy post-heat inspection and offers a reliable inspectability at any time.

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	57
Shrink force	ASTM D-638, @150°C (302°F)	40 psi
Dielectric Strength	ASTM D-149	900 V/mil (35 kV/mm)
Moisture absorption	ASTM D-570	0.04%
Adhesive		
Property	Test method	Typical value
Softening Point	ASTM E-28	155°C (311°F)
Lap shear	ASTM D-1002	47 psi @ 23°C (73°F)
		5 psi @ 80°C (176°F)
	ISO 21809-3	0.2 N/mm² @ 23°C (73°F)
		0.02 N/mm² @ 80°C (176°F)
Installed sleeve*		
Property	Test method-	Typical value
Peel to Steel	ASTM D-1000	42 pli
	ISO 21809-3 @ 10 mm/min	1.2 N/mm
	DIN 30672 @ 100 mm/min	50 N/cm
Cathodic disbondment	ISO 21809-3, 28 days @ 23°C (73°F)	9 mm
	@ 80°C (176°F)	7 mm
Hot water immersion	ISO 21809-3, 100 days @ 80°C (176°F)	P ₁₀₀ /P ₀ ≥ 0.75
Low temperature flexibility	ASTM D-2671, C	-40°C (-40°F)
Impact resistance	EN12068, class C ISO 21809-3	> 15 J > 5 J/mm
Indentation resistance	ISO 21809-3, @ 80°C (176°F)	Residual thickness > 0.6 mm

* Construction /C

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 selection guide

Max operating temperature	80°C (176°F) For offshore applications max.operating temperature 100°C (212°F)
Compatible line coatings	PE, PP, FBE, Asphalt Enamel, Tape & Coal Tar
Min. preheat temperature	100°C (212°F)
Recommended pipe preparation	ST3 or SA2 ½
Soil stress restrictions	Moderate
Performance	ISO 21809-3, type 14-A2 (80°C)

Product thickness

	-	/1-1.5*	/C*
Backing as supplied	0.75 mm (0.030 in)	0.75 mm (0.030 in)	1.04 mm (0.041 in)
Backing fully free recovered	1.00 mm (0.039 in)	1.00 mm (0.039 in)	1.40 mm (0.055 in)
Adhesive as supplied	1.00 mm (0.039 in)	1.50 mm (0.060 in)	1.50 mm (0.060 in)

* Minimum order quantities apply

Ordering information		
Covalence® WPC100M products are available <ul style="list-style-type: none"> – As cut piece (pre-cut with separate closure patch) – As Uni-sleeve (pre-cut with attached closure patch) – As a roll (closure patches to be ordered separately) Select sleeve width that will overlap onto the mill-applied coating by 50 mm (2 inches) minimum on each side of the weld joint. Take a 10% shrinkage during installation of sleeve into account when calculating minimum sleeve width.		
Cut piece / Uni-sleeve		
Example	WPC100M-16000X17/C/(UNI)	
	Designation	Standard ordering options
16000	Outside pipe diameter	2.375" – 100.000" (DN50 – DN2500)
17	Sleeve width (in)	17 (17.75" or 450 mm)* 20 (20.25" or 514 mm)* 24 (23.50" or 600 mm)*
/C	Product thickness	-, 1-1.5, /C
UNI	Designates pre-attached closure patch	Optional
* nominal width		
Roll form (closure patch to be ordered separately)		
Example	WPC100M-20X100-RL	
	Designation	Standard ordering options
20	Sleeve width (in)	17 (17.75" or 450 mm)* 20 (20.25" or 514 mm)* 24 (23.50" or 600 mm)*
100	Roll length	100 ft (= 30 m)
-	Product thickness	-, 1-1.5, /C
* nominal width		
Note: maximum up to 10% of the supplied rolls can have 1 splice. Min partial length is 5 m or 16.5ft.		
Closure patches (to be ordered separately)		
Example	WPCP-IV-4X17	
	Designation	Standard ordering options
4	Patch width (in)	4 (100 mm) 6 (150 mm) 8 (200 mm)
17	Patch length (in)	17 (17.75" or 450 mm)* 20 (20.25" or 514 mm)* 24 (23.50" or 600 mm)*
* nominal width		

General information	
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 application guideline.
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.
Documentation	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 info@sealforlife.com
Certified staff	Application of the described coating system should be carried out by certified personnel.