Covalence®
Heat Shrinkable Technology

PRODUCT DATA SHEET

COVALENCE® WPC65M

Product Information

Product description: Covalence® WPC65M system is a two-layer wrap-around heat-shrinkable sleeve field-joint coating system for pipeline operating at ambient and 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 WPC65M 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.
- Excellent aging performance.
- Superior cathodic disbondment and hot water immersion resistance.
- 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 selection guide

Max operating temperature	65°C (149°F) 93°C (200°F) for offshore applications with infill.
Compatible line coatings	PE, PP, FBE, Coal Tar, AE, CTE, DFBE.
Min. preheat temperature	60°C (140°F)
Recommended pipe preparation	Sa 2½ or ST3
Soil stress restrictions	Moderate
Performance	ISO21809-3, Type 14A2* EN12068 UV

Product thickness

	/B	/E*	/C**	/1.4-1.8**
Backing as supplied	0.75 mm (0.030 in)	0.90 mm (0.035 in)	1.04 mm (0.041 in)	1.04 mm (0.041 in)
Backing fully free recovered	1.0 mm (0.039 in)	1.2 mm (0.047 in)	1.4 mm (0.055 in)	1.4 mm (0.055 in)
Adhesive as supplied	1.0 mm (0.039 in)	1.3 mm (0.051 in)	1.5 mm (0.060 in)	1.8 mm (0.071 in)

* **Minimum order quantities apply*

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 %
Specific gravity	ASTM D-792	0.97 g/cm^3
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	134°C (273°F)
Lap shear	ASTM D-1002 EN 12068 EN 12068 @ 35°C (95°F) EN 12068 @ 65°C (149°F) ASTM D-1002 @ 65°C (149°F)	50 psi > 0.1 N/mm^2 0.02 N/mm^2 0.01 N/mm^2 3 psi

Installed sleeve

Property	*Test method-*	*Typical value*
Peel to Steel	ASTM D-1000 (@300 mm/min) EN 12068 DIN30672 (@100 mm/min) ASTM D-1000 @ 65°C (149°F) EN 12068 @ 35°C (95°F) EN 12068 @ 65°C (149°F)	50 pli (8.8 N/mm) 1.1 N/mm > 20 N/cm 3 pli (5.3 N/mm) 0.6 N/mm 0.2 N/mm
Cathodic disbondment	ASTM G-42 @ 65°C (149°F), 30 days	7 mm radius
Hot water immersion	ASTM D-870 @ 65°C (149°F), 120 days	No delamination, no blisters or water ingress
Low temperature flexibility	ASTM D-2671, C	-14°C (6.8°F)
Impact resistance	ASTM G-14 EN12068 class C	80 in lbf > 8 J > 15 J *
Penetration resistance	ASTM G-17 @ 65°C (149°F)	No holidays @ 10,000 v
Indentation resistance	EN 12068, Class C, @ 65°C (149°F)	Residual thickness > 0.6 mm *

** Construction /E or thicker*

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

Ordering information

Covalence® WPC65M products are available
- 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	**WPC65M-16000X17/C(/UNI) (-OS)**	
	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	-, /C, /E,/1.4-1.8
UNI	Designates pre-attached closure patch	Optional
-OS	For off shore (OS) designates pre-attached closure patch (UNI) and cut corners	Optional
		** nominal width*

Roll form (closure patch to be ordered separately)		
Example	**WPC65M-20X100/C-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)
/C	Product thickness	-, /C, /E,/1.4-1.8
		** 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 order 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.

Information

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 shall be carried out by certified personnel.

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