

COVALENCE® HTLP80-HP

Product Information

Product description: Covalence® HTLP80-HP system is a wrap-around heat-shrinkable sleeve which replicates the structure and the performance of factory applied three-layer PE coatings.

Construction: Three-layer system

- **First layer:** Liquid epoxy, solvent-free two-component.
- **Second layer:** High shear strength copolymer adhesive.
- **Third layer:** Radiation cross-linked, high density polyethylene with permanent Change Indicator (PCI).

The Covalence wet liquid epoxy methodology ensures that HTLP80-HP is not only easy to install but ensures the integrity of the parent coating is preserved. 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 cross-linked outer layer forms a tough barrier against mechanical damage and moisture vapour transmission.

Features:

- Fully resistant to shear forces induced by soil and thermal movements.
- Sleeve applied over wet epoxy, allowing fast installation and formation of strong mechanical & chemical bonds.
- Superior cathodic disbondment and hot water immersion resistance.
- Fully reconstructs the coating of three-layer coated pipes.
- Dimpled backing provides a "permanent change" indicator for application of heat.

Benefits:

- The HTLP is tough & lasts as long as a 3-layer, factory applied coating.
- Allows fast application combined with high performance.
- Offers the optimum barrier protection against corrosion.
- HTLP systems allow three layer coated pipelines to have a virtually monolithic coating system.
- 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 volts/mil (35 kV/mm)
Moisture absorption	ASTM D-570	0.04%
Adhesive		
Property	Test method	Typical value
Softening Point	ASTM E-28	120°C (248°F)
Lap shear	ISO 21809-3	5.0 N/mm ²
	ASTM D-1002	800 psi
	ISO 21809-3	0.6 N/mm ²
	ASTM D-1002 @ 80°C (176°F)	88 psi
Installed sleeve		
Property	Test method	Typical value
Peel to Steel	ISO	6 N/mm
Cathodic disbondment	ISO21809-3	< 5 mm radius
	ISO21809-3 @ 60°C (140°F), 28 days	< 10 mm radius <i>With S1301-M epoxy</i>
	ISO21809-3 @ 80°C (176°F), 28 days	< 10 mm radius <i>With S1401-M epoxy</i>
Hot water immersion	ASTM D-870 @ 80°C (176°F), 120 days	No delamination, no blisters or water ingress
Hot Water Soak	ISO 21809-3 @ 80°C (176°F), 100 days	Pass
Soil stress creep resistance	TP-206 @ 80°C (176°F)	0.003 in (0.067mm)
Low temperature flexibility	ASTM D2671, C	-25°C (-13°F)
Impact resistance	EN 12068 class C	> 15 J *
Indentation resistance	EN 12068, Class C, @ 80°C (176°F)	Residual thickness > 0.6 mm *

* Construction /1.2-1.2 or thicker

Note: The typical values in this data sheet are based on lab prepared samples. For project specific requirements please consult your local SFL representative.

Product selection guide	
Max operating temperature	85°C (185°F).
Compatible line coatings	PE, FBE, Coal Tar, DFBE.
Min. preheat temperature	70°C (158°F)
Recommended pipe preparation	Sa 2½
Soil stress restrictions	None
Performance	EN 12068: Class C60 UV Class C80 UV ISO 21809-3 14 B2 EIL

	Product thickness		
	/1.2-1.2	/1.2-1.4	/1.4-1.4
Backing as supplied	0.9 mm (0.035 in)	0.9 mm (0.035 in)	1.04 mm (0.041 in)
Backing fully free recovered	1.2 mm (0.047 in)	1.2 mm (0.047 in)	1.4 mm (0.055 in)
Adhesive as supplied	1.2 mm (0.047 in)	1.4 mm (0.055 in)	1.4 mm (0.055 in)

	Product thickness		
	/C	/1.4-1.6	/1.4-1.8
Backing as supplied	1.04 mm (0.041 in)	1.04 mm (0.041 in)	1.04 mm (0.041 in)
Backing fully free recovered	1.4 mm (0.055 in)	1.4 mm (0.055 in)	1.4 mm (0.055 in)
Adhesive as supplied	1.5 mm (0.059 in)	1.6 mm (0.063 in)	1.8 mm (0.071 in)

* Other thickness available on request. Minimum order quantities apply.

Product order information		
<p>Covalence® HTLP80-HP products are available</p> <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) <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. Take a 10% shrinkage during installation of sleeve into account when calculating minimum sleeve width.</p> <p>For special projects HTLP80-HP can be made with an additional weld bead filler (WBF) = min 0.50 mm extra adhesive thickness in the centre of the sleeve) to guaranty min installed coating thickness on the weld bead.</p>		
Cut piece / Uni-sleeve		
Example	HTLP80-HP-16000X17/1.2-1.2/(UNI)(WBF)	
	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 (19.75" or 500 mm)* 24 (23.625" or 600 mm)* * <i>nominal width</i>
/1.2-1.2	Product thickness	/1.2-1.2 /1.2-1.4 /1.4-1.4 /C /1.4-1.6 /1.4-1.8
UNI	Designates pre-attached closure patch	Optional
WBF	Extra adhesive thickness in the sleeve centre functioning as Weld Bead Filler (WBF)	Optional
Roll form (closure patch to be ordered separately)		
Example	HTLP80-HP-20X100/1.4-1.8-RL(WBF)	
	Designation	Standard ordering options
20	Sleeve width (in.)	17 (17.75" or 450 mm)* 20 (19.75" or 500 mm)* 24 (23.625" or 600 mm)* * <i>nominal width</i>
100	Roll length	100 ft (= 30 m)
/1.4-1.8	Product thickness	/1.2-1.2 /1.2-1.4 /1.4-1.4 /C /1.4-1.6 /1.4-1.8
WBF	Extra adhesive thickness in the sleeve centre functioning as Weld Bead Filler (WBF)	Optional
<p><i>Note: maximum up to 10% of the supplied rolls can have 1 splice. Min partial length is 5 m or 16.5ft.</i></p>		
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)* 20S (19.75" or 500 mm)* 24 (23.625" or 600 mm)* * <i>nominal length</i>

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.
Recommended primer	HTLP type products are installed with epoxy primer. HTLP80 is installed with S1301-M or S1401-M. Epoxy primers are ordered separately. For more ordering information on epoxy primers see latest PDS-S1301 and PDS-S1401-M. As field application of primers may vary, consult a Seal For Life representative or Authorized Distributor for rate of coverage guidance.
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 email to info@sealforlife.com
Certified staff	Application of the described coating system shall be carried out by certified personnel.



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