

# COVALENCE<sup>®</sup> HTLP80-HP

## Product Information

**Product description:** Covalence<sup>®</sup> 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
<b>Tensile strength at break</b>	ASTM D-638	3300 psi (22.8 MPa)
<b>Elongation at break</b>	ASTM D-638	600 %
<b>Hardness, Shore D</b>	ASTM D-2240	57
<b>Shrink force</b>	ASTM D-638, @150°C (302°F)	40 psi
<b>Dielectric Strength</b>	ASTM D-149	900 volts/mil (35 kV/mm)
<b>Moisture absorption</b>	ASTM D-570	0.04%
Adhesive		
Property	Test method	Typical value
<b>Softening Point</b>	ASTM E-28	120°C (248°F)
<b>Lap shear</b>	ISO 21809-3 ISO 21809-3 @ 80°C (176°F)	5.0 N/mm <sup>2</sup> 0.6 N/mm <sup>2</sup>
Installed sleeve		
Property	Test method	Typical value
<b>Peel to Steel</b>	EN 12068	6 N/mm
<b>Cathodic disbondment</b>	EN 12068 EN 12068 @ 60°C (140°F), 28 days EN 12068 @ 80°C (176°F), 28 days	< 5 mm radius < 10 mm radius < 15 mm radius
<b>Hot water immersion</b>	ASTM D-870 @ 80°C (176°F), 120 days	No delamination, no blisters or water ingress
<b>Hot Water Soak</b>	ISO 21809-3 @ 80°C (176°F), 100 days	Pass
<b>Soil stress creep resistance</b>	TP-206 @ 80°C (176°F)	0.003 in ( 0.067mm)
<b>Low temperature flexibility</b>	ASTM D2671, C	-25°C (-13°F)
<b>Impact resistance</b>	EN 12068 class C	> 15 J *
<b>Indentation resistance</b>	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

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

## Product thickness

	/1.2-1.2	/1.2-1.4	/1.4.1.4	/1.4-1.8
<b>Backing as supplied</b>	0.9 mm (0.035 in)	0.9 mm (0.035 in)	1.04 mm (0.041 in)	1.04 mm (0.041 in)
<b>Backing fully free recovered</b>	1.2 mm (0.047 in)	1.2 mm (0.047 in)	1.4 mm (0.055 in)	1.4 mm (0.055 in)
<b>Adhesive as supplied</b>	1.2mm (0.047 in)	1.4 mm (0.055 in)	1.4 mm (0.055 in)	1.8 mm (0.071 in)

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

Product order information			General information	
Covalence® HTLP80-HP 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)			<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.	
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.			<b>Installation guide</b> For proper product installation, see latest application guideline.	
<b>Cut piece / Uni-sleeve</b>			<b>Recommended primer</b> 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).	
<b>Example HTLP80-HP-16000X17/1.2-1.2/(UNI)</b>			As field application of primers may vary, consult a Seal For Life representative or Authorized Distributor for rate of coverage guidance.	
	<b>Designation</b>	<b>Standard ordering options</b>		
<b>16000</b>	Outside pipe diameter	2.375" – 100.000" (DN50 – DN2500)		
<b>17</b>	Sleeve width (in.)	17 (17.75" or 450 mm)* 20 (20.25" or 514 mm)* * nominal width		
<b>/1.2-1.2</b>	Product thickness	/1.2-1.2 /1.2-1.4 /1.4-1.4 /1.4-1.8		
<b>UNI</b>	Designates pre-attached closure patch	Optional		
<b>Roll form (closure patch to be ordered separately)</b>			<b>Handling</b> Handle with care. Keep boxes upright.	
<b>Example HTLP80-HP-20X100/1.4-1.8-RL</b>			<b>Storage</b> Store indoor, clean and dry, away from direct sunlight in a cool place below +50°C. Unlimited shelf life.	
	<b>Designation</b>	<b>Standard ordering options</b>		
<b>20</b>	Sleeve width (in.)	17 (17.75" or 450 mm)* 20 (20.25" or 514 mm)* * nominal width		
<b>100</b>	Roll length	100 ft (= 30 m)		
<b>/1.4-1.8</b>	Product thickness	/1.2-1.2 /1.2-1.4 /1.4-1.4 /1.4-1.8		
<i>Note: maximum up to 10% of the supplied rolls can have 1 splice. Min partial length is 5 m or 16.5ft.</i>			<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 email to <a href="mailto:info@sealforlife.com">info@sealforlife.com</a>	
<b>Closure patches (to be ordered separately)</b>			<b>Certified staff</b> Application of the described coating system should be carried out by certified personnel.	
<b>Example WPCP-IV-4X17</b>				
	<b>Designation</b>	<b>Standard ordering options</b>		
<b>4</b>	Patch width (in.)	4 (100 mm) 6 (150 mm) 8 (200 mm)		
<b>17</b>	Patch length (in.)	17 (17.75" or 450 mm)* 20 (20.25" or 514 mm)* * nominal length		

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