Covalence®
Heat Shrinkable Technology
SEALFORLIFE

InexChile
Servicios de ingenieria

HTLP60 Wrap-around Sleeve & Epoxy System

The most widely used girth weld protection system for three-layer coated pipes.

Product description

HTLP60 field-joint 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 ***PCI*** (Permanent Change Indicator).

The HTLP60 system is a wrap-around heat-shrinkable sleeve which replicates the structure and performance of mill-applied three-layer PE coatings. HTLP60 also has excellent compatibility and has been extensively used on many other mill-applied coatings (see below). By far the majority of the girth welds worldwide on three-layer coated pipes, diameters up to 100" (DN2500), have been coated with HTLP60.

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 radiation cross-linked outer layer forms a tough barrier against mechanical damage and moisture transmission.

Product features/benefits

- **Fully resistant to shear forces induced by soil and thermal movements**
  The HTLP is tough & lasts as long a 3-layer, mill-applied coating.
- **Sleeve applied over wet epoxy---allowing formation of strong mechanical & chemical bonds**
  Allows fast application, combined with high performance!
- **Superior cathodic disbondment and hot water immersion resistance**
  Offers the optimum barrier protection against corrosion.
- **Fully reconstructs the coating of three-layer coated pipes**
  Thus, the HTLP allows the pipeline to have a virtually monolithic coating system.
- **Dimpled backing provides a "permanent change" indicator for application of heat**
  Ensures correct application heat & allows easy post-heat inspection.
  Reliable inspectability at any time.

Product selection guide

	HTLP60
Max operating temperature	65°C (149°F)
Compatible line coatings	PE, PP, FBE, Coal Tar
Min preheat temperature	70°C (158°F)
Recommended pipe preparation	SA 2½
Soil stress restrictions	None
Performance	EN 12068 Class C50

Product thickness

	/B	/1-1.5	/1.2-1	/1.4-1	/C
Backing (as supplied)	0.030 in. 0.75 mm	0.030 in. 0.75 mm	0.035 in. 0.9 mm	0.041 in. 1.04 mm	0.041 in. 1.04 mm
Backing (fully free recovered)	0.039 in. 1.0 mm	0.039 in. 1.0 mm	0.047 in. 1.2 mm	0.055 in. 1.4 mm	0.055 in. 1.4 mm
Adhesive (as supplied)	0.039 in. 1.0 mm	0.060 in. 1.5 mm	0.039 in. 1.0 mm	0.039 in. 1.0 mm	0.060 in. 1.5 mm

Product properties: HTLP

Property	Test method	Typical Value HTLP60
Backing		
Tensile strength	ASTM D-638	3300 psi (22.8 MPa)
Elongation	ASTM D-638	650%
Hardness, Shore D	ASTM D-2240	55
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	0.05%
Adhesive		
Softening point	ASTM E-28	103°C (217°F)
Lap shear	ASTM D-1002	350 psi @ 23°C (73°F)
		11 psi @ 65°C (149°F)
	EN 12068, @ 10 mm (0.40")/min.	0.22 N/mm^2 @ 50°C (122°F)
Sleeve		
Peel to Steel	ASTM D-1000	25 lbs/in. width
	EN 12068, @ 10 mm (0.40")/min.	4.2 N/mm
Cathodic disbondment	ASTM G-42, 30 days	13 mm radius @ 65°C (149°F)
Hot water immersion	ASTM D-870, 120 days	no delamination, no blisters
		or water ingress, @ 65°C (149°F)
Soil stress creep resistance	TP-206	
	65°C (149°F)	0.009 mm. (0.0004 in.)
Low temperature flexibility	ASTM D-2671-C	-40°C (-40°F)
Impact resistance	ASTM G-14	66 in-lbs
	EN 12068, class C	> 15 Nm *
Penetration resistance	ASTM G-17, @ 65°C (149°F)	no holidays @ 10.000 volts
	EN 12068, Class C	> 0.6 mm * @ 50°C (122°F)

* *Construction /1-1.5 or thicker*

DS-HTLP-60-REV13-0309

Ordering information

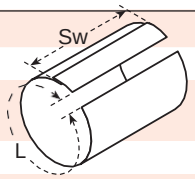
HTLP type products are available:

- U as cut piece (pre-cut sleeve with separate closure patch)
- U as Uni-sleeve (pre-cut sleeve with pre-attached closure patch)
- U as a roll (closure patches to be ordered separately)

Select sleeve width that will overlap onto the mill-applied coating by 2 inches (50 mm) minimum on each side of the weld joint. Take a 10% shrinkage during installation of sleeve width into account when calculating the minimum sleeve width.

*** Cut piece / Uni-sleeve**

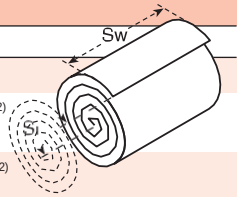
Example: HTLP60-16000X17/B (/UNI)		
		Standard Ordering options
60	Operating temperature in Celsius	60 (= 65°C (149°F))
16000	Outside pipe diameter in mils	2.375" – 100.000" (DN50 – DN2500)
17	Sleeve width in inches (Sw)	11" (11.25 or 285 mm)[1][2], 17" (17.75 or 450 mm)[1], 20" (20.25 or 514 mm)[1][2] 24" (23.5 or 600 mm)[1], 34" (34.25 or 870 mm)[1]
/B	Product thickness	/B, /1-1.5, /1.2-1, /1.4-1, /C
/UNI	Designates pre-attached closure	Optional



[1] *nominal width* [2] *not standard in all countries*

*** Roll form** (closure patches to be ordered separately)

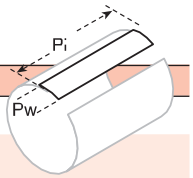
Example: HTLP60-20x100/1-1.5-RL		
		Standard Ordering options
60	Operating temperature in Celsius	60 (= 65°C (149°F))
17	Roll width in inches (Sw)	11" (11.25 or 285 mm)[1][2], 17" (17.75 or 450 mm)[1], 20" (20.25 or 514 mm)[1][2] 24" (23.5 or 600 mm)[1], 34" (34.25 or 870 mm)[1]
20	Roll width in inches (Sw)	11" (11.25 or 285 mm) 17" (17.75 or 450 mm) 20" (20.25 or 514 mm) [1][2] 24" (23.5 or 600 mm)[1] 34" (34.25 or 870 mm)[1]
100	Roll length in feet (Sl)	100 ft (= 30 m), 66 ft (= 20 m, for 34" (870 mm) width)
/B	Product thickness	/B, /1-1.5, /1.2-1, /1.4-1, /C



[1] *nominal width* [2] *not standard in all countries*

*** Closure patch**

Example: WPCP-IV-4X17		
4	Closure patch width in inches (Pw)	4" (100 mm), 5" (125 mm), 6" (150 mm), 8" (200 mm)
17	Closure patch length in inches (Pl)	11" (11.25 or 285 mm)[1][2], 17" (17.75 or 450 mm)[1], 20" (20.25 or 514 mm)[1][2] 24" (23.5 or 600 mm)[1], 34" (34.25 or 870 mm)[1]



[1] *nominal width* [2] *not standard in all countries*

Sleeve cut lengths and appropriate closure patch widths depend on the pipe size and product construction, see latest application table AT-GIRTHWELD.
For proper product installation, see latest installation instruction.
HTLP60 type products are installed with epoxy primer: HTLP60 is installed with S1239 or S1301-M primer.

Epoxy Primers are ordered separately. For more ordering information on epoxy primers see application tables DS-S1239 and DS-S1301M or latest revision. As field application of primers may vary, consult a Berry Plastics CPG Representative or Authorized Distributor for rate of coverage guidance

Berry Plastics warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the technical data sheet when used in compliance with Berry Plastics written instructions. Since many installation factors are beyond the control of Berry Plastics, the user shall determine the suitability of the products for the intended use and assume all risks and liabilities in connection herewith. Berry Plastics liability is stated in the standard terms and conditions of sale. Berry Plastics makes no other warranty either expressed or implied. All information contained in this technical data sheet is to be used as a guide and is subject to change without notice. This technical data sheet supersedes all previous data sheets on this product.

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