



The WPC elevated temperature with *PCI* (Permanent Change Indicator) is a two-layer field-joint coating system for pipeline operating at ambient and elevated temperature.

### Product description

**WPC-C50, WPC65M, WPC100M field-joint coatings.**

**Construction:** Two-layer system:

**First layer:** Visco-elastic adhesive sealant.

**Second layer:** Radiation cross-linked, high density polyethylene with *PCI* (Permanent Change Indicator).

100M are wraparound heat-shrinkable sleeves specially suitable for higher stress conditions caused both by elevated temperatures and by soils with severe contraction between wet-dry cycles. 100M are compatible with most commonly used steel pipe coatings and are used for girth weld protection or to recoat (rehabilitate) long pipe sections and large radius bends. WPC may be cut to the appropriate length to cover all pipe diameters.

The installation is carried out directly on the cleaned and pre-heated pipe surface without any primer being 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.

### Product features/benefits

- **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.
- **Low preheat sensitivity & proven functionality**  
Installation friendly in combination with high functional performance.
- **Available as all-in-one unit or roll form**  
Saves money by keeping inventory and logistics costs low.
- **High shear resistance**  
WPC offers 'safer protection'.
- **Covers a wide range of operating temperature ratings**  
Offers a solution for nearly every application.
- **No special equipment (standard gas torch & a roller) or skills required**  
Makes installation fast and easy.  
Keeps installation costs low.

### Product selection guide

	<b>WPC100M</b>
<b>Max. operating temperature</b>	80°C (176°F) (onshore) 100°C (212°F) (offshore)
<b>Compatible line coatings</b>	PE, PP, FBE, Tape & Coal Tar
<b>Min. preheat temperature</b>	100°C (212°F)
<b>Recommended pipe preparation</b>	ST2½ - ST3 or SA 2½
<b>Soil stress restrictions</b>	None
<b>Performance</b>	

### Product thickness

	<b>WPC100M</b>
<b>Backing (as supplied)</b>	<b>0.030 in.</b> (0.75 mm)
<b>Backing (fully free recovered)</b>	<b>0.040 in.</b> (1.0 mm)
<b>Adhesive (as supplied)</b>	<b>0.040 in.</b> (1.0 mm)

### Product properties: WPC high temperature (1)

Property	Test method	Typical value WPC100M
<b>Backing</b>		
Tensile strength	ASTM D-638	<b>3400 psi</b> (23.5 MPa)
Elongation	ASTM D-638	650%
Hardness, Shore D	ASTM D-2240	55
Shrink force	ASTM D-638, 150°C (302°F)	<b>40 psi</b>
Dielectric strength	ASTM D-149	<b>1000 volts/mil</b> , 39 kV/mm
Water absorption	ASTM D-570	0.04%
<b>Adhesive</b>		
Softening point	ASTM E-28	155°C (311°F)
Lap shear	ASTM D-1002	<b>37 psi @ 23°C (73°F)</b> <b>4.3 psi @ 80°C (176°F)</b>
	EN 12068 @ 10 mm (0.4")/min.	

## Product properties: WPC high temperature (2)

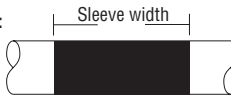
Property	Test method	Typical value WPC100M
<b>Sleeve</b>		
Peel to Steel	ASTM D-1000	40 lbs/in. width, @ 23°C (73°F) 1.5 lbs/in. width, @ 80°C (176°F)
	EN 12068 @ 10 mm (0.4")/min.	
Cathodic disbondment	EN 12068 ASTM G-42, 30 days	10 mm radius, @ 80°C (176°F)
Low temperature flexibility	ASTM D-2671-C	-50°C (-58°F)
Impact resistance	ASTM G-14 EN 12068, Class C	50 in-lbs
Penetration resistance	ASTM G-17 EN 12068, Class C50	no holiday with 10 kV detector @ 80°C (176°F)

\* Remaining coating thickness

## Ordering information

### WPC100M type products are available:

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

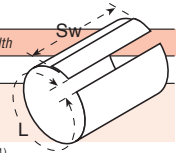


Select sleeve width that will overlap onto the mill-applied coating by 2 inches (50 mm) minimum on each side of the weld joint. Take a 10% shrinkage during installation of sleeve width into account when calculating the minimum sleeve width.

### Example: WPC65M-10750X17/UNI - WPC100M-10750X17 - WPC-C50-DN250-450

<sup>(1)</sup> Nominal width

WPC...	Product type	Standard ordering options: WPC-C50, WPC65M, WPC100M
10750	Outside pipe diameter in mils	2.375" – 48.000"
DN250	Nominal pipe diameter in DN	DN50 – DN1200
17	Sleeve width in inches (Sw)	11" (285 mm) <sup>(1)</sup> , 17" (450 mm) <sup>(1)</sup> , 24" (600 mm) <sup>(1)</sup> , 34" (870 mm) <sup>(1)</sup>
450	Sleeve width in mm (Sw)	450 mm (17") <sup>(1)</sup> , 600 mm (24") <sup>(1)</sup>
/UNI	Designates pre-attached closure patch	optional

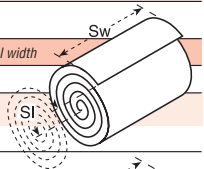


\* Roll form (closure patches to be ordered separately)

### Example: WPC100M-17x100-RL

<sup>(1)</sup> Nominal width

WPC...	Product type	Standard ordering options: WPC-C50, WPC65M, WPC100M
17	Roll width in inches (Sw)	11" (285 mm) <sup>(1)</sup> , 17" (450 mm) <sup>(1)</sup> , 24" (600 mm) <sup>(1)</sup> , 34" (870 mm) <sup>(1)</sup>
100	Roll length in feet (Sl)	100 ft (30 m), 66 ft (= 20 m, for C50/width 34" (870 mm) only)

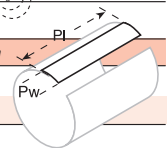


\* Closure patch

### Example: WPCP-IV-4X17

<sup>(1)</sup> Nominal width

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" (285 mm) <sup>(1)</sup> , 17" (450 mm) <sup>(1)</sup> , 24" (600 mm) <sup>(1)</sup> , 34" (870 mm) <sup>(1)</sup>



**Note:** WPC65M – above 20"/DN500 in high shear and high stress environments consider other product alternatives.

Sleeve cut lengths and appropriate closure patch widths depend on the pipe size and product construction, see application table AT-GIRTHWELD-REV-2-08/01.

For proper product installation, see latest installation instruction.

Tyco Adhesives 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 Tyco Adhesives' written instructions. Since many installation factors are beyond our control, the user shall determine the suitability of the products for the intended use and assume all risks and liabilities in connection therewith. Tyco Adhesives' liability is stated in the standard terms and conditions of sale. Tyco Adhesives 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.