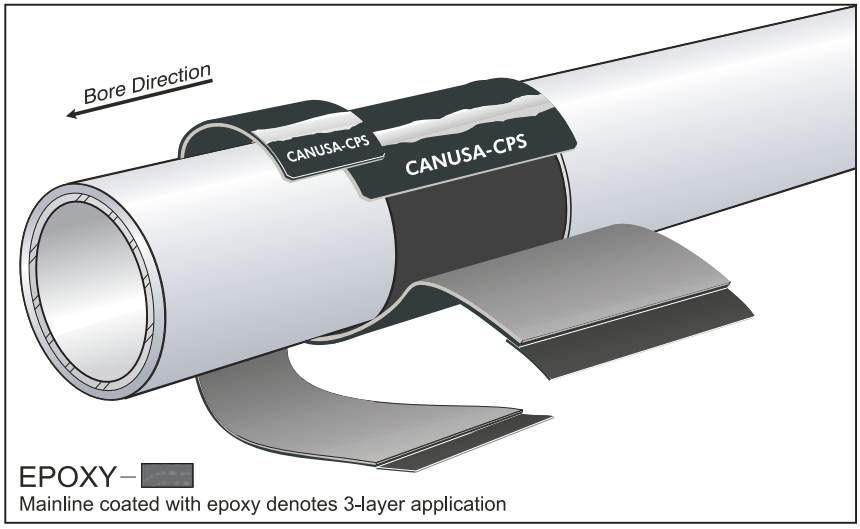
CANUSA-CPS
A SHAWCOR COMPANY

Product Data Sheet

TBK-PP Directional Drilling Kit

Polypropylene Multi-Layer Sleeve System For Directional Drilling

Canusa-CPS is a leading manufacturer of specialty pipeline coatings which, for over 30 years, have been used for sealing and corrosion protection of pipeline joints and other substrates. Canusa high performance products are manufactured to the highest quality standards and are available in a number of configurations to accommodate your specific project applications.



Mainline coated with epoxy denotes 3-layer application

Product Description

The Canusa-CPS TBK-PP Field Joint Coating System uses high performance polypropylene technology to provide superior mechanical and corrosion protection of field joints on 2 and 3-layer PE, PP and FBE coated pipelines in directional drilling applications. The system consists of a polypropylene-based primary heat-shrinkable sleeve to provide effective corrosion protection to the joint and superior mechanical protection for the forces encountered during the pull-through operation; and a secondary heat-shrinkable sleeve, which functions as a sacrificial wear cone. Canusa-CPS offers a range of TBK-PP products designed for pipeline operating temperatures up to 130°C (266°F). The system is fully compatible with cathodic protection systems, resists cathodic disbondment and is designed for a wide range of operating temperatures.

Key Product Advantages

- PP Construction provides superior resistance to impact and abrasive forces over reinforced PE sleeves.
- The toughest Heat-Shrink Sleeve system available!
- Proven Force Cured Epoxy allows 'pre-inspect' providing assurance that pipe is fully protected.
- No internal reinforcement system required, eliminating the possibility of moisture absorption.
- Unique adhesive technology allows for low preheat temperatures and for a superior bond directly to the factory coating, sealing out moisture.

Features & Benefits

Superior Abrasion Resistance

The polypropylene composition, including cross-linked polypropylene backing, provides superior resistance to impact and indentation, stiffness, hardness, and overall mechanical strength and abrasion resistance. These properties are ideally suited to the rigorous forces encountered during directional drilling applications and are vastly superior to all PE-based systems. The included sacrificial wear-cone provides added protection to the leading edge of the sleeve.

Superior Force Cured Epoxy Method

Canusa-CPS' proven method of force curing the epoxy primer to the steel allows the installer to 'pre-inspect' the joint prior to sleeve application. The epoxy will not be displaced during the aligning and shrinking stages of the sleeve installation. This provides the assurance that the pipe is fully protected. Canusa's epoxy primer can be applied to an even, nominal thickness for maximum corrosion protection.

Unique Adhesive Technology

Canusa-CPS' unique adhesive technology allows for low installation pre-heats and superior bonding to PP and PE coatings. Canusa-CPS' adhesives have been formulated to bond directly to the main line coating; epoxy is applied to the steel only. The result is a superior bond to the substrate, easier application and significant cost savings.

Applications

- Oil & Gas
- Water Pipelines
- Directional Drilling
- Girth-Weld Joints
- Polypropylene

Configurations

- 2-Layer
- 3-Layer
- Force-Cure Epoxy
- Multi-Sleeve Kit
- Wrapid Sleeve™

Pipe Sizes

55-1520 *(2″-60″)*

Temperature Range

Up to 130°C *(266°F)*

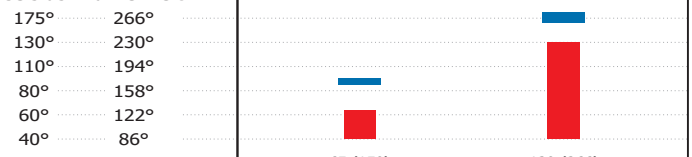
TBK-PP - Directional Drilling Kit

Product Selection Guide

Product must be installed by following the specific Product Installation Guide.

The product selection chart shown here is intended as a guide for standard products. Consult your Canusa representative for specific projects or unique applications.

Sleeve Operating Characteristics



	TBK-PP-65	TBK-PP
Pipeline Operating Temp. (°C (°F))	65 (150)	130 (266)
Minimum Installation Temp. (°C (°F))	90 (195)	175 (347)
Resistance to Circumferential Forces	excellent	excellent
Resistance to Soil Stress	excellent	excellent
Resistance to Axial Pipe Movement	excellent	excellent
Main Line Coating Compatibility	FBE, PE,PP, HPCC	PP

Typical Product Properties

		Test Standard	Unit	TBK-PP-65	TBK-PP
Adhesive	Softening point	ASTM E28	°C (°F)	94 (201)	147 (297)
	Lap shear @ 23°C	DIN 30 672	N/cm^2	245	>500
	Lap shear @ 100°C	DIN 30 672	N/cm^2	N/A	>150
Backing	Specific gravity	ASTM D792		0.93	0.93
	Tensile strength	ASTM D638	MPa (psi)	28 (4061)	28 (4061)
	Elongation	ASTM D638	%	425	425
	Hardness	ASTM D2240	Shore D	65	65
	Stiffness (2% Secant Modulus)	ASIM D882	PSI	>65,000	>65,000
	Volume Resistivity	ASTM D257	ohm-cm	2 x10^{17}	2 x10^{17}
Sleeve	Impact	NF A 49-711	J	>25	>25
	Indentation (@ 23°C)	NF A 49-711	mm	<0.1	<0.1
	Indentation (@ 110°C)	NF A 49-711	mm	N/A	0.38
	Peel (@ 23°C)	DIN 30 672	N/cm	>200	>150
	Peel (@ 100°C)	NF A 49-711	N/cm	N/A	>80
	Cathodic Disbondment	ASTM G8	mm rad	<3	0
	Water Absorption	ASTM D570	%	0.1	0.1

* Epoxy Kits Required uses the standard 170 mL Canusa Primer Kit and assumes a 300mm (12") cutback, a 0.25mm (10 mil) epoxy overcoat thickness and a 0.15mm (6 mil) mainline epoxy thickness covering (for 3-layer systems).

Epoxy Kit Usage

Pipe Diameter (inches)	Pipe Diameter (mm)	Kits Required* 2-layer	Kits Required* 3-layer
4½	60	1220	3
6.6	115	1520	4
8.6	170	1	4
10¾	230	1	1
12¾	280	1	1
14	315	1	1
16	355	1	2
18	400	1	2
20	450	2	2
24	500	2	2
28	610	2	2
30	710	2	3
36	760	2	3
42	915	2	3
48	1060	3	3

Application Guidelines

Refer to specific product Installation Guide.

Canusa Primer Properties

Pot life @ 23°C (73°F)
20 minutes
Typical epoxy coated thickness
4 - 6 mils
Shelf life @ 23°C, out of sunlight

How To Order:

Dimensions & Ordering Info

TBK-PP-65 115-450 BK

- **Colour**
- **Sleeve Width**
- **Pipe Size Range**
- **Primer**
- **Adhesive** (thickness as supplied)
- **Backing** (thickness as supplied)
- **Configuration**

Ordering Options - TBK-PP - Directional Drilling Kit (TBK-PP-65 is standard product for T < 65°C)

	TBK-PP-65	TBK-PP
Colour	**BK**-Black	
Sleeve Width	**Primary Sleeve - 300, 450, 600mm (12, 18, 24")** **Sacrificial Sleeve - 150mm (6")**	
Pipe Size Range	**55-1525 mm (2-60")**	
Primer	Canusa "E" Epoxy	Canusa "P" Epoxy
Adhesive (thickness as supplied)	**1.6 mm (64 mils)**	**1.6 mm (64 mils)**
Backing (thickness as supplied)	**1.1 mm (44mils)**	**1.1 mm (44mils)**
Configuration	**TBK-PP-65**	**TBK-PP**

The above represent standard ordering options.
Consult your Canusa representative for any unique project requirements.

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