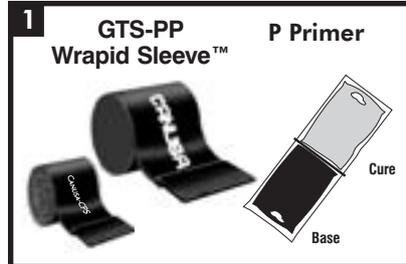


TBK-PP

Multi-Layer Directional Drilling Kit for Polypropylene Coated Pipelines

Product Description



Canusa's Polypropylene Directional Drilling Kit, TBK-PP, is composed of a GTS-PP polypropylene Wrapid Sleeve, a sacrificial sleeve and epoxy kit(s). The epoxy kit(s) includes: application accessories, latex gloves and pre-measured quantities of Canusa's epoxy primer.

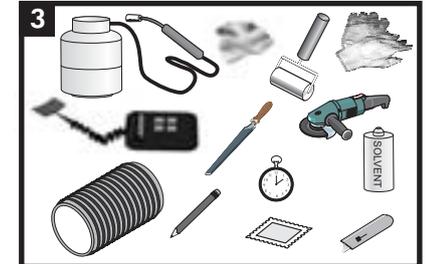
Storage & Safety Guidelines



To ensure maximum performance, store Canusa products in a dry, ventilated area. Keep products sealed in original cartons and avoid exposure to direct sunlight, rain, snow, dust or other adverse environmental elements. Avoid prolonged storage at temperatures above 50°C (122°F) or below -20°C (-4°F). Product installation should be done in accordance with local health and safety regulations.

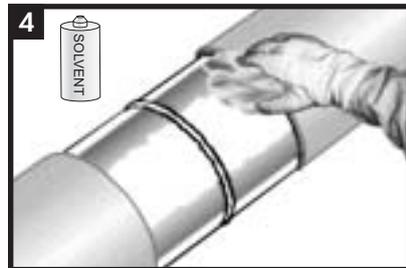
These installation instructions are intended as a guide for standard products. Consult your Canusa representative for specific projects or unique applications.

Equipment List

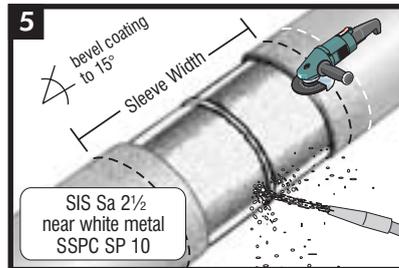


Propane tank, hose, torch & regulator
 Appropriately sized induction coil, stop watch
 Tools for surface abrasion, power grinder,
 Digital thermometer with suitable probe
 Knife, pencil, roller, rags & approved solvent cleanser
 Epoxy applicator pad, wet film thickness gauge
 Standard safety equipment; gloves, goggles, hard hat, etc.

Surface Preparation



Clean any exposed steel and adjacent pipe coating with a solvent cleanser to remove the presence of oil, grease, and other contaminants.

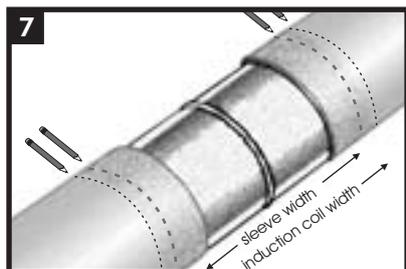


Ensure that the pipe dry before cleaning. Thoroughly clean the weld area with a sand or grit blaster to "near white metal" SIS Sa 2½ or equivalent. Immediately prior to installation, lightly abrade or grit blast the pipe coating adjacent to the weld area to a distance of 25mm (1") beyond each end of the sleeve width. Maximum total cutback length is 300mm (12"). Using the grinder, ensure that the PP mainline coating edges are beveled to 15° from the horizontal.



Wipe clean or air blast the steel and pipe coating to remove foreign contaminants.

Positional Markings



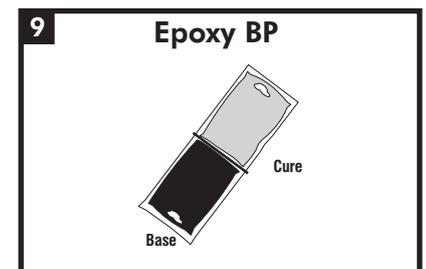
Measure and mark the sleeve width of the Wrapid Sleeve™ GTS-PP sleeve across the joint. Also, measure and mark the induction coil so it is centered over the joint and sleeve.

Pre-Warm



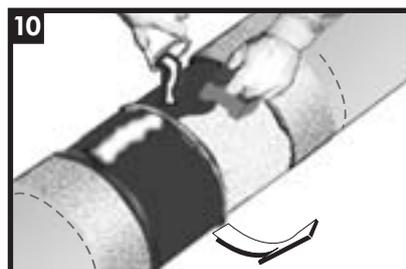
Using the appropriate sized induction coil or propane torch, pre-warm the joint area to 50-65°C (122-149°F). Using a temperature measuring device, ensure that the correct temperature is reached on the steel.

Epoxy Primer



Follow the Preparation, Mixing and Application instructions provided with the supplied Canusa Epoxy Pack. For partial kit quantities: mix the P Primer Cure with the P Primer Base (4 parts base to 1 part cure by volume). Mix for a minimum of 1 minute to assure uniform mixture.

Epoxy Primer Application



Apply mixed epoxy to a thickness of 150-230 µm (6-9 mils) on all exposed bare metal.

Epoxy Curing and Pre-Heat



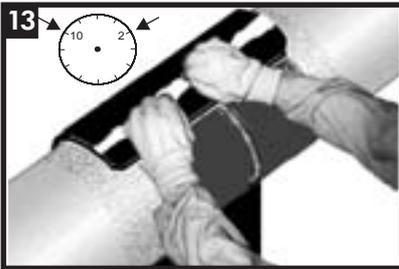
Carefully, move the induction coil into place and pre-heat the steel cutback to 190-210°C (374-410°F) within a time of 2-3 minutes. Remove the coil.

Sleeve Installation

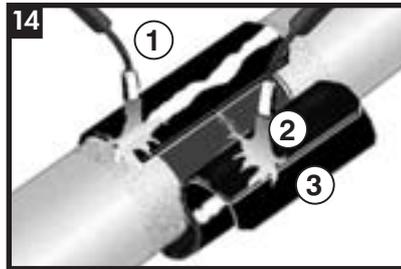


Gently heat the underlap approximately 150 mm (6") from the edge.

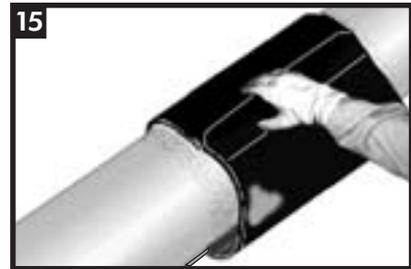
TBK-PP



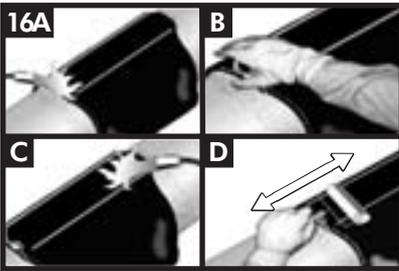
Place the underlap of the sleeve onto the joint, centering the sleeve such that the sleeve overlap is positioned at either the 10 or 2 o'clock position. Press the underlap firmly into place.



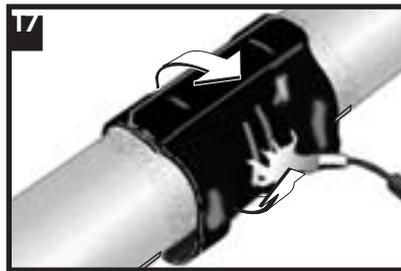
Wrap the sleeve loosely around the pipe, ensuring the appropriate overlap. Before finishing wrapping the sleeve: (1) heat the backing side of the underlap until the backing starts to recover (2) heat the adhesive side of the overlap until the adhesive appears glossy (3) heat the adhesive side of the closure until the adhesive appears glossy.



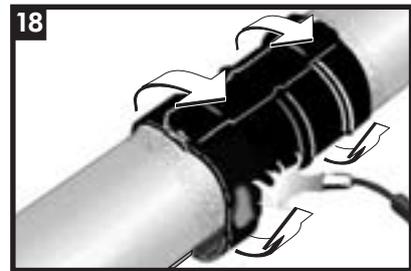
Press the closure and overlap firmly into place.



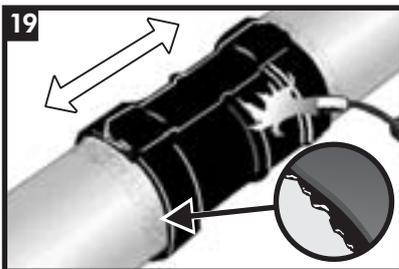
Gently heat the closure and pat it down with a gloved hand. Repeating this procedure, move from one side to the other. Smooth any wrinkles by gently working them outward from the centre of the closure with a roller.



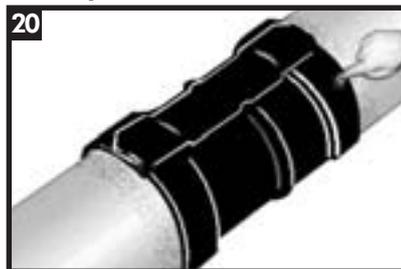
Using the torch, begin heating at the centre of the sleeve and heat circumferentially around the pipe. If the backing becomes shiny or gives off smoke, move the torch away from that area.



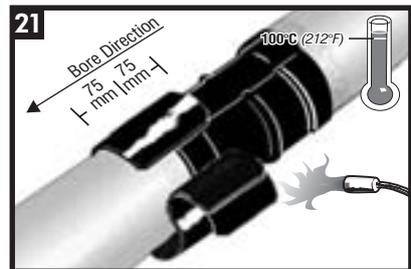
Continue heating from the centre toward one end of the sleeve until recovery is complete. In a similar manner, heat and shrink the remaining side.



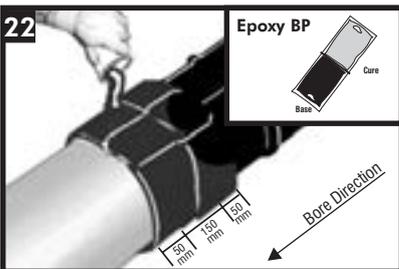
Initial shrinking has been completed when the sleeve fully conforms to the entire pipe profile. Finish shrinking the sleeve with long circumferential strokes over the coating overlap surface to ensure a uniform bond. Adhesive should begin to ooze at the sleeve edges all around the circumference.



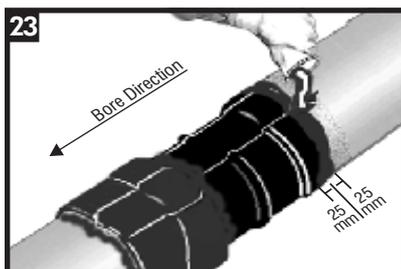
Test sleeve adhesion by gently pressing the sleeve edge with a gloved finger. The sleeve is well bonded when the adhesive and coating remain intimately contacted. If required to improve bonding, additional heat should be applied to the sleeve.



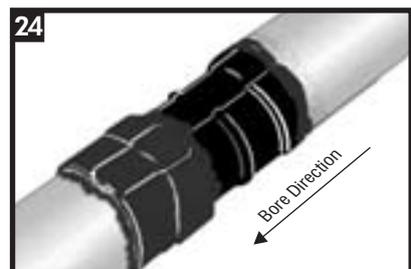
Ensure that the front 100mm (4") of the first sleeve and 100mm (4") onto the coating is at the required temperature. Completely remove any release liners from the 150mm (6") sacrificial sleeve. Wrap the 150mm (6") sacrificial sleeve so that half of the sleeve overlaps the first sleeve and half of the sleeve extends onto the coating. Position the closure on the opposite side of the pipe relative to the first sleeve closure. Recover the sleeve as in steps 10 through 17.



Follow the Preparation, Mixing and Application instructions provided with the supplied Canusa Epoxy Pack. When the sleeve is between 15 - 40°C, apply epoxy over the sacrificial sleeve to form a wear cone; covering 50mm (2") onto the pipe coating, the entire sacrificial sleeve and 50mm (2") onto the first sleeve. Epoxy applied should thoroughly cover the edge of the sleeves.



Apply epoxy to trailing edge of first sleeve; 25mm (1") onto sleeve, 25mm (1") onto adjacent coating. Epoxy applied should thoroughly cover the edge of the sleeves. It is best to allow the epoxy to cure at ambient temperature. If necessary, use a low flame to cure epoxy. Cover the entire sleeve with any left-over epoxy.



Visually inspect the installed system to ensure that:

- Sleeve is in full contact with the steel joint.
- Adhesive flows beyond all sleeve edges.
- No cracks or holes in sleeve backing.
- Complete epoxy coverage for the areas mentioned in step 20 & 21.

The sleeve system must be left to completely cool and epoxy fully cured before pipe is pulled through.



Canada

CANUSA-CPS
a division of SHAWCOR LTD.
25 Bethridge Road
Toronto, Ontario
M9W 1M7,
Canada
Tel: +1 (416) 743-7111
Fax: +1 (416) 743-5927

U.S.A./Latin America

CANUSA-CPS
a division of SHAWCOR INC.
2408 Timberloch Place
Building C-8
The Woodlands, Texas
77380, U.S.A.
Tel: +1 (281) 367-8866
Fax: +1 (281) 367-4304

Europe/Middle East

CANUSA-CPS
a division of Canusa Systems Ltd.
Unit 3, Sterling Park
Gatwick Road
Crawley, West Sussex
England RH10 9QT
Tel: +44 (1293) 541254
Fax: +44 (1293) 541777

Asia/Pacific

CANUSA-CPS
BrederoShaw (S) Pte Ltd
101 Thomson Road
#17-01/02, United Square
Singapore
307591
Tel +65-6732-2355
Fax +65-6732-9073

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