

TBK-PP

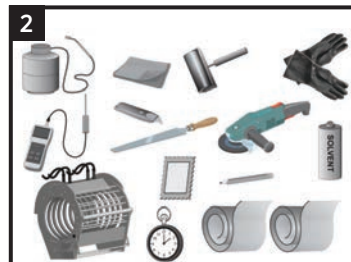
Advanced girth-weld protection for pipes used in directionally drilled applications.

Product Description



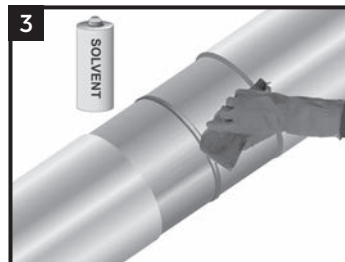
Canusa's TBK systems are composed of a primary sleeve, a sacrificial sleeve and liquid epoxy.

Equipment List

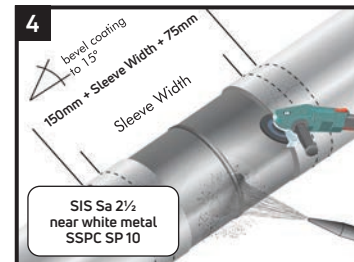


Propane tank, hose, torch & regulator; Appropriately sized induction coil, stop watch; Tools for surface abrasion, power grinder; Digital thermometer with suitable probe; Spacer Blocks (recommended); Protective Heat Shields (pre-sized for the pipe diameter); Knife, pencil, roller, rags & approved solvent cleanser; Epoxy applicator pad, wet film thickness gauge; Standard safety equipment; gloves, goggles, hard hat, etc.

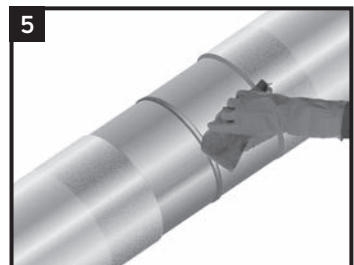
Surface Preparation



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

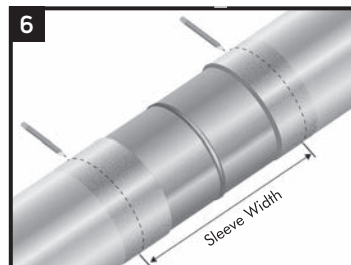


Ensure that the pipe is dry before cleaning. Thoroughly clean the weld area with a sand or grit blaster to "near white metal" SIS Sa 2½ or equivalent. Using a grinder with a grind disk with roughness rating of 40-60, ensure that the PP mainline coating edges are beveled to 15° from the horizontal and that the adjacent PP pipe coating is cleaned, exposing fresh PP, to a distance that is at least 25 mm beyond the edge of all joint coating, which includes the primary and sacrificial sleeves.



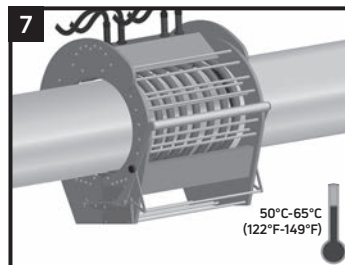
Wipe clean or air blast the steel and pipe coating to remove foreign contaminants.

Positional Markings



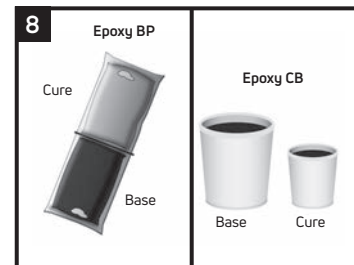
Measure and mark the width of the TBK-PP sleeve across the joint. Also, adjust the induction coil's heating area to the width of the TBK-PP sleeve. The induction coil heating width shall be approximately 25 to 75 mm wider than the supplied TBK-PP sleeve width.

Pre-Warm



Using the appropriate sized induction coil or propane torch, pre-warm the steel area to 50-65°C. Using a temperature measuring device, ensure that the correct temperature is reached on the steel. Avoid heating epoxies unnecessarily and be sure that adequate ventilation is used when epoxies must be heated or when the curing reaction generates heat.

Liquid Epoxy



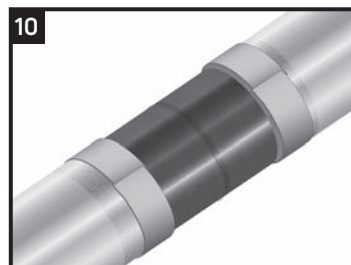
Follow the preparation, mixing and applications instructions provided with the supplied Canusa Liquid Epoxy Pack. For bulk quantities, mix the epoxy cure with epoxy base (see Liquid Epoxy Product data sheet for mixing ratio). Stir for a minimum of 1 minute to assure uniform mixture.

Liquid Epoxy Application



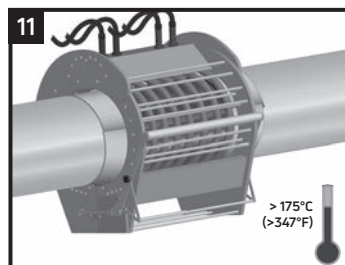
Apply mixed epoxy to a minimum uniform thickness of 6 mils (150 microns) on all exposed bare metal plus FBE toe only, using the applicator pads as supplied or an approved tool.

Heat Shield Application



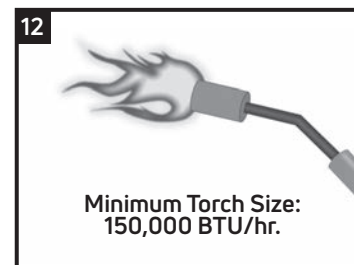
Heat shields are to be wrapped tightly around the overlap edges to prevent the mainline coating from potentially lifting during pre-heating. Ensure that the heat shields are not in contact with the epoxy coated cutback area.

Epoxy Curing and Pre-Heat

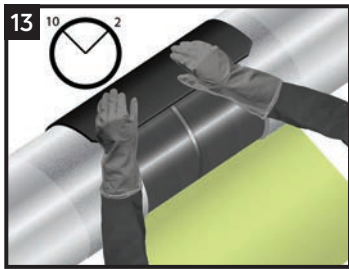


Carefully, move the induction coil into place and pre-heat the epoxy coated cutback to a minimum of 175°C. Preheat temperature and profile is dependent on project specific conditions, and must be determined prior to the start of project.

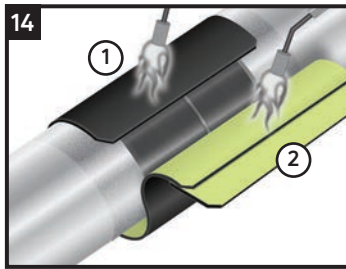
Sleeve Installation



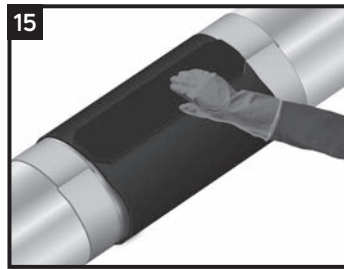
Use moderate flame intensity for sleeve shrinking. Remove protective heat shields prior to next step.



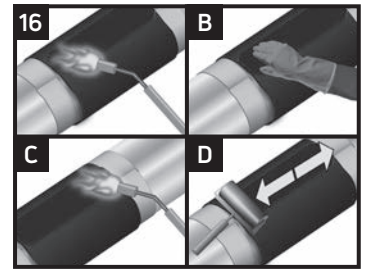
Place the underlap of the sleeve onto the joint, centering the sleeve such that the sleeve overlap is positioned at either the 10 or 2 o'clock position. Press the underlap firmly into place. **For J-Lay installation, use Canusa sleeve stabilization bracket to maintain sleeve in the vertical position. Optional spacers can be inserted under the edge of the sleeve to minimize the potential of air entrapment.**



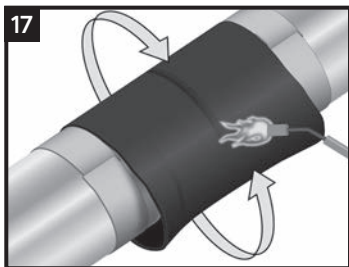
Wrap the sleeve loosely around the pipe, ensuring the appropriate overlap. Ensure that the overlap of the sleeve is a nominal width of 75mm (minimum acceptable width is 50mm). Before finishing wrapping the sleeve: (1) heat the backing side of the underlap until the backing starts to recover (2) heat the adhesive side of the closure until the adhesive appears glossy.



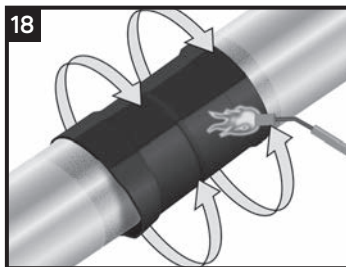
Press the closure and overlap firmly into place. It is strongly recommended that protective heat shields are wrapped around the pipe beside the ends of the sleeve to prevent waxing of the mainline coating.



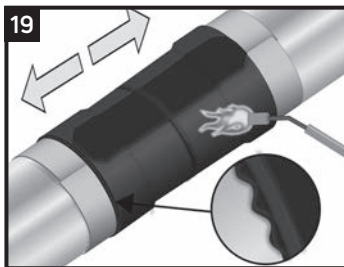
Gently heat the closure and pat it down with a gloved hand. Repeating this procedure, move from one side to the other. Smooth any wrinkles by gently working them outward from the centre of the closure with a roller.



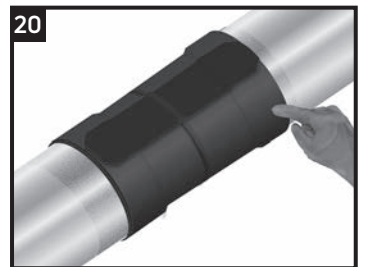
Using the torch, begin heating at the centre of the sleeve and heat circumferentially around the pipe. If the backing becomes shiny or gives off smoke, move the torch away from that area. **For J-Lay installation, when the centre portion of the sleeve is shrunk tightly to the pipe, remove the sleeve stabilization bracket.**



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.

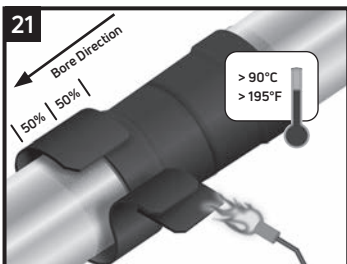


Initial shrinking has been completed when the sleeve fully conforms to the entire pipe profile. Adhesive should begin to ooze at the sleeve edges all around the circumference.



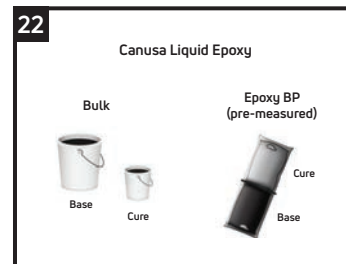
Test sleeve adhesion by gently pulling the edge of the backing back to ensure that the adhesive remains in place and is fully bonded to the factory coating. The sleeve is well bonded when the adhesive and coating remain intimately contacted. If required to improve bonding, additional heat should be applied to the sleeve. Remove protective heat shields when application is completed.

Sacrificial Sleeve Installation



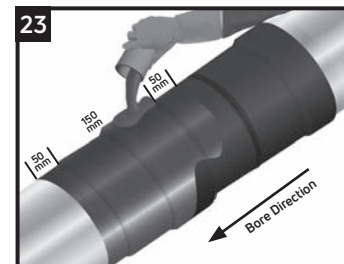
Ensure that the front 100 mm (4") of the primary sleeve and 100 mm (4") onto the coating is at the required temperature. Completely remove release liners from the sacrificial sleeve, if present. Wrap the sacrificial sleeve so that half of the sleeve overlaps the primary sleeve and half of the sleeve extends onto the coating. Recover the sleeve as in steps 12 through 20, but position the closure on the opposite side of the pipe relative to the primary sleeve closure.

Epoxy (Overcoat) Mixing

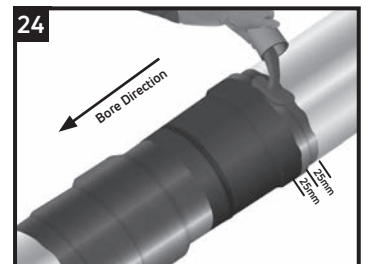


Follow the Preparation, Mixing and Application instructions provided with the supplied Canusa Epoxy Pack. For bulk quantities: mix the epoxy cure with the epoxy base (4 parts base to 1 part cure **by volume**). Stir for a minimum of 30 seconds to assure uniform mixture.

Epoxy (Overcoat) Application



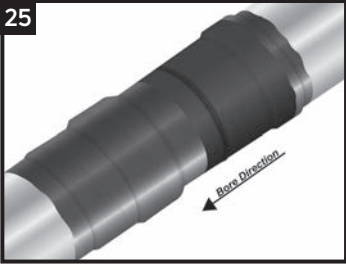
When the sleeve is between 15 - 40°C, apply epoxy over the sacrificial sleeve to form a wear cone; covering 50mm (2") onto the pipe coating, the entire sacrificial sleeve and 50mm (2") onto the first sleeve. **Epoxy applied should thoroughly cover the edge of the sleeves.**



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.**

Inspection

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Visually inspect the installed system to ensure that:

- Sleeve is in full contact with the steel joint.
- Adhesive flows beyond all sleeves edges.
- No cracks or holes in sleeve backing.
- Complete epoxy coverage for the areas mentioned in step 23 & 24.

Useful Application Information

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

Avoid prolonged storage at temperatures below 5°C (41°F) or above 35°C (95°F). Do not freeze epoxies.

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 35°C (95°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 at info@canusacps.com.

Epoxy Usage

Example of calculation: Quantity of liquid Epoxy Type P required for installation of one TBK-PP kit with main sleeve supplied in 450 mm width.

Cutback: Total width of 300 mm / 12 in.

Main Sleeve: Total width applied 300 mm (Steel)

- WFT on Steel: 0.15 mm / 0.006 in.

Overcoat: Total width applied 300 mm

- WFT: 0.25 mm / 0.010 in.

Wastage factor: 75% (Bulk) – 100% (BP)

Pipe Diameter		Quantity Required		Quantity of 170mL BP per joint
mm	in	Base (ml)	Cure (ml)	
114	4½	60.6	15.2	1
168	6¾	89.3	22.3	1
219	8¾	116.2	29.1	2
273	10¾	144.8	36.2	2
324	12¾	171.8	42.9	2
356	14	188.6	47.2	2
406	16	215.6	53.9	3
457	18	242.5	60.6	3
508	20	269.5	67.4	3
610	24	323.3	80.8	4
660	26	350.3	87.6	4
762	30	404.2	101.0	4
914	36	485.0	121.3	5
1067	42	565.9	141.5	6
1219	48	646.7	161.7	7
1422	56	754.5	188.6	8
1524	60	808.4	202.1	8

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Quality Management system registered to ISO 9001

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