CANUSA-CPS
Corrosion Protection & Sealing

GTS-PE

Factory Grade 3LPE Field Applied Coating System

Product Description

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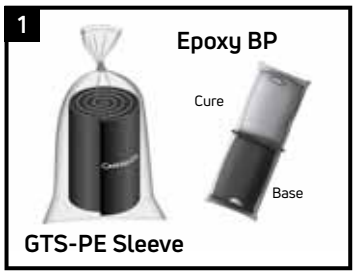

GTS-PE Global Transmission Sleeves are shipped pre-cut with a preattached closure. Bulk quantities are also available. The joint completion system uses liquid epoxy on bare steel cutback. The GTS-PE sleeves are packaged in PE bags that are only to be opened prior to the application of the product.

Equipment List

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Propane tank, hose, torch & regulator; Power grinder with grind wheel of a Grade 40 grit rating; Canusa heat shields, Induction coil & generator; Digital thermometer with suitable probe; Knife, J roller, rags & approved solvent cleanser; Standard safety equipment; gloves, goggles, hard hat, etc.

Flame Intensity & Torch Size

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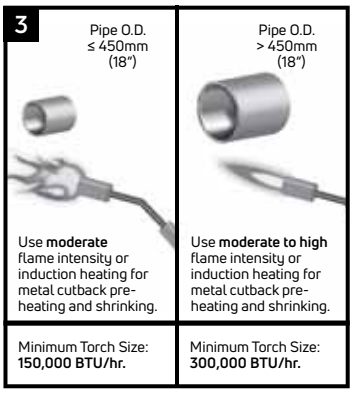

Canusa recommends the use of induction or infrared heating equipment for pipe sizes greater than 760mm(30") O.D.

Surface Preparation

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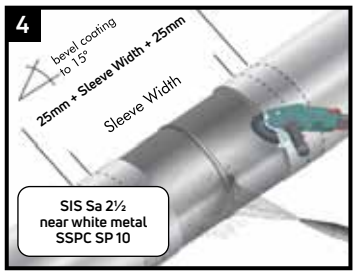

Ensure that the pipe is dry and free of surface contaminants before cleaning. Thoroughly clean the weld area with a sand or grit blaster to "near white metal" – SIS Sa 2½ or equivalent. Sweep blast or use a grinder with a 40-60 grit flap disc to abrade the adjacent mainline coating to 25mm beyond the sleeve width. Ensure the mainline coating edges are beveled to 15° minimum.

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

Positional Markings

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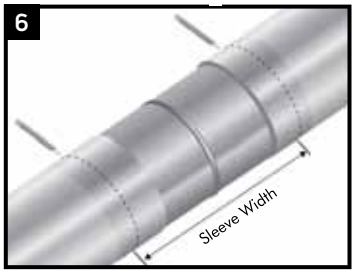

Measure and mark the width of the GTS-PE sleeve across the joint. Also, adjust the induction coil's heating area to the width of the GTS-PE sleeve. The induction coil heating width shall be approximately 25 to 75 mm wider than the supplied GTS-PE sleeve width.

Pre-Warm

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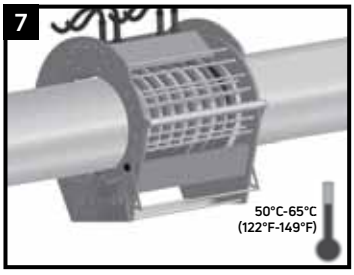

Using the appropriate sized induction coil or propane torch, pre-warm the steel area to 50-65°C. Using a temperature measuring device, ensure that the correct temperature is reached on the steel.

Liquid Epoxy

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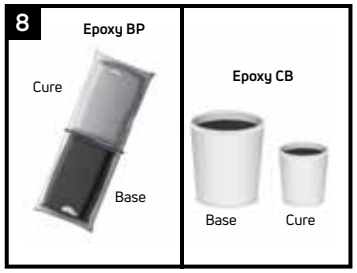

Follow the preparation, mixing and applications instructions provided with the supplied Canusa Liquid Epoxy Pack. For bulk quantities, mix the epoxy cure with epoxy base (see Liquid Epoxy Product data sheet for mixing ratio). Stir for a minimum of 1 minute to assure uniform mixture.

Liquid Epoxy Application

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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.

Pre-Heat

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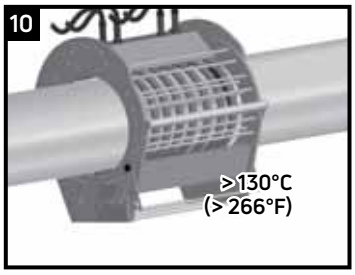

Preheat the epoxy to a minimum of 130°C using the appropriate sized induction coil. While induction heating is highly recommended, in certain cases, propane torches may be used if proven to provide acceptable results in project specific conditions. Preheat temperature and profile is dependant on project specific conditions, and must be determined prior to the start of the project.

Sleeve Installation

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Check the temperature to ensure the preheat has been obtained on the entire pipe circumference. This preheat will substantially cure the epoxy and ensure proper flow and bonding of the sleeve adhesive. Ensure that the epoxy is dry to the touch prior to sleeve installation.

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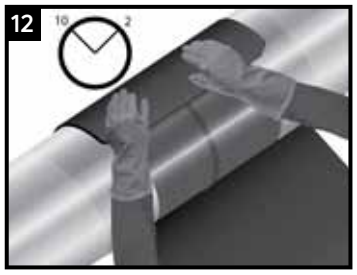
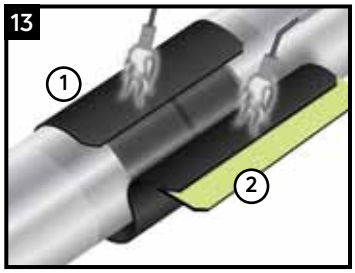


Place the underlap of the sleeve onto the joint, centering the sleeve such that the sleeve overlap is positioned at either the 10 or 2 o'clock position. Press the underlap firmly into place and use a roller to work out any trapped air. Feed the remaining length of sleeve under the pipe.

Optional Heat Shields can be used during the sleeve application. After wrapping the sleeve around the pipe, the heat shields can be wrapped adjacent to the sleeve to protect the mainline coating during shrink down.

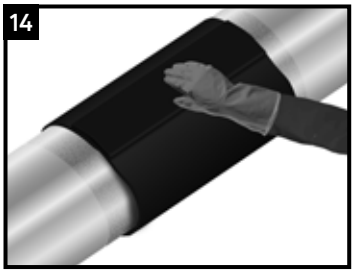


Wrap the sleeve loosely around the pipe, ensuring the appropriate overlap.

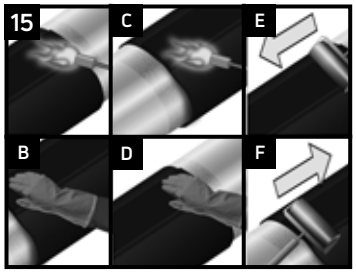
Before finishing wrapping the sleeve:

1. heat the backing side of the underlap until the backing starts to recover. Then use a roller to secure the underlap to the pipe.

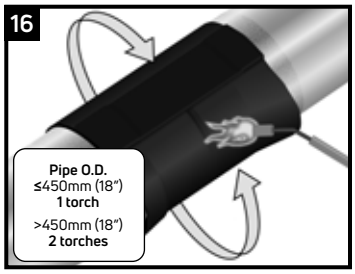
2. gently heat the green-yellow coloured adhesive side of the closure seal until it appears glossy.



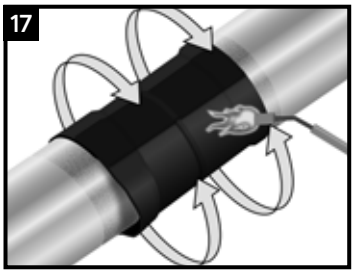
With the green-yellow coloured adhesive side facing down, firmly press the entire closure seal into place. Ensure that the closure is centred evenly over the underlap-overlap sleeve seam. If necessary, add additional heat to the closure underside in cold conditions, using a low flame intensity.



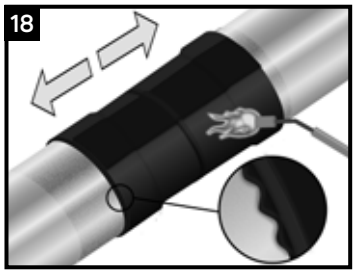
Gently heat the closure and pat it down with a gloved hand. Repeating this procedure, move from one side to the other. Smooth any wrinkles by gently working them outward from the centre of the closure with a roller.



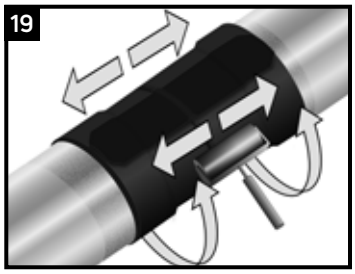
Using the appropriate sized torch, begin at the centre of the sleeve and heat circumferentially around the pipe. Use broad strokes. If utilizing two torches, operators should work on opposite sides of pipe.



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.

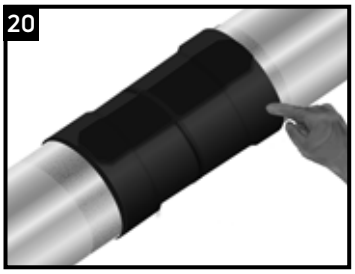


Shrinking has been completed when the adhesive begins to ooze at the sleeve edges all around the circumference. Finish shrinking the sleeve with long horizontal strokes over the entire surface to ensure a uniform bond.



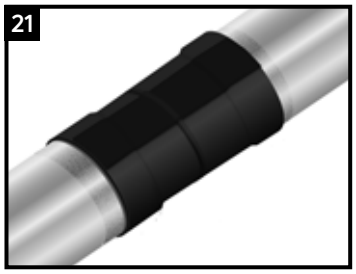
While the sleeve is still hot and soft, use a hand roller to gently roll the sleeve surface and push any trapped air up and out of the sleeve, as shown above. Continue the procedure by also firmly rolling the closure with long horizontal strokes from the weld outwards.

Quality Check - Adhesion Test



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.

Inspection



Visually inspect the installed sleeve for the following:

- Sleeve is in full contact with the steel joint.
- Adhesive flows beyond both sleeve edges.
- No cracks or holes in sleeve backing.

Onshore and Offshore Guidelines

After shrinking is complete, allow the sleeve to cool to less than 90°C prior to laying (for offshore applications, product can be water quenched).

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@canuscps.com.

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