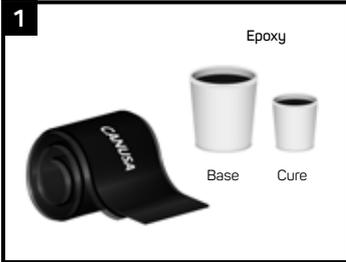


## GTS-80

### 3-Layer Global Transmission Sleeve

#### Product Description



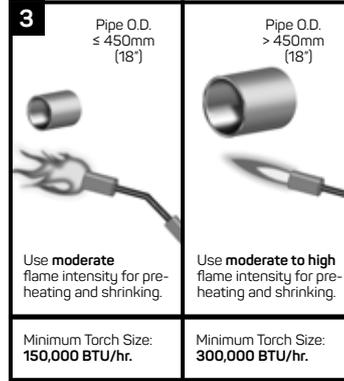
GTS-80 Global Transmission Sleeves are shipped pre-cut with a pre-attached CLH closure. Bulk quantities are also available. The sleeve adhesive is protected from contamination by an inner liner. The joint completion system also uses a liquid epoxy.

#### Equipment List



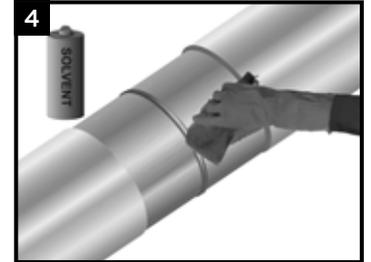
Propane tank, hose, regulator and torch; wet film thickness gauge; mixing sticks, cups and applicator pads; digital thermometer with suitable probe sleeve roller; appropriate tools for abrasion; standard safety equipment (gloves, goggles, hard hat, etc.)

#### Flame Intensity & Torch Size

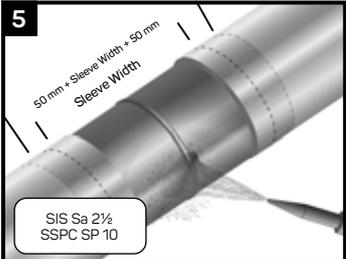


Canusa recommends the use of induction or infrared heating equipment for pipe sizes greater than 760mm (30") O.D.

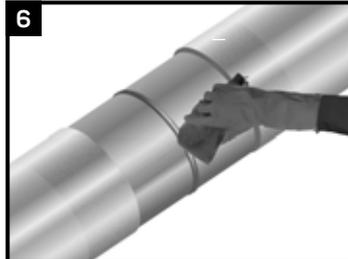
#### Surface Preparation



Ensure that the mainline coating edges are beveled to 30° minimum. If there is the presence of oil, grease, or other surface contaminants; clean the exposed steel and adjacent pipe coating with an approved solvent cleanser.

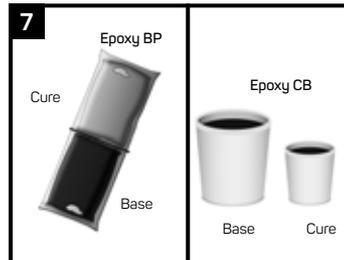


Warm the joint area to 40-50°C (104-120°F) before grit blasting. During high winds or cold ambient conditions (below 15°C (59°F)) pre-warm the joint area to 70°C (158°F) before grit blasting. Thoroughly clean the weld area with a sand or grit blaster to "near white metal" SIS Sa 2½ or equivalent. Abrade the mainline coating adjacent to the weld area to a distance 50mm (2") beyond the sleeve width.



Using a dry, grease and lint-free cloth, wipe clean or air blast the steel and coated areas to remove foreign materials. If necessary, provide additional heat to ensure the surface temperature is 40-50°C (104-120°F).

#### Liquid Epoxy



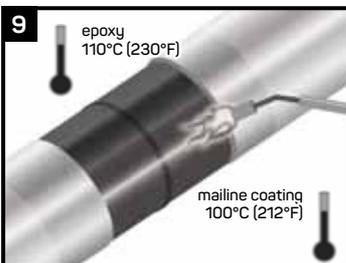
Follow the preparation, mixing and applications instructions provided with the supplied Canusa Liquid Epoxy Pack. For bulk quantities, mix the epoxy cure with epoxy base (see Liquid Epoxy Product data sheet for mixing ratio). Stir for a minimum of 45 seconds to assure uniform mixture.

#### Liquid Epoxy



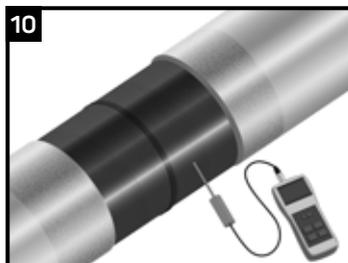
Apply mixed epoxy to a uniform thickness of 4-6 mils (100-150 microns) on all exposed bare metal plus 10mm (0.5") onto the adjacent pipe coating using the applicator pads as supplied or an approved tool. Do not apply the epoxy to the mainline coating.

#### Pre-Heat



Preheat the epoxy to a temperature of 110°C (230°F) and the abraded mainline coating to be covered by the sleeve to a minimum of 100°C (212°F) with the appropriate propane torch, induction heating or infrared heating equipment. **Do not use an intense flame on the mainline coating.** If a film develops on the mainline coating because of preheat, use a surface abrasion tool to remove it.

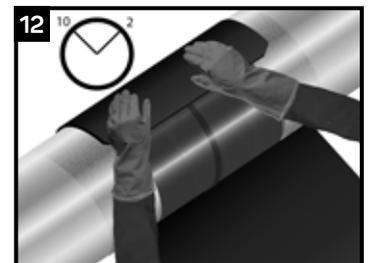
#### Sleeve Installation



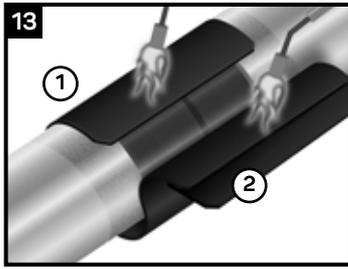
**Check the temperature to ensure the preheat has been obtained on the entire pipe circumference.** This preheat will substantially cure the epoxy and ensure proper flow and bonding of the sleeve adhesive. Ensure that the epoxy is dry to the touch prior to sleeve installation.



Partially remove the release liner [approximately 1 metre (3') from the edge] from the corner trimmed sleeve edge.



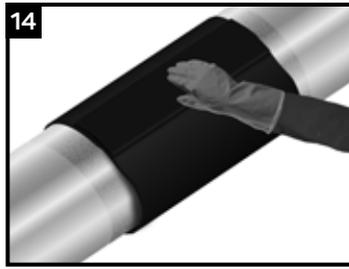
Place the underlap of the sleeve onto the joint, centering the sleeve such that the sleeve overlap is positioned at either the 10 or 2 o'clock position. Press the underlap firmly into place and use a roller to work out any trapped air. Feed the remaining length of sleeve under the pipe.



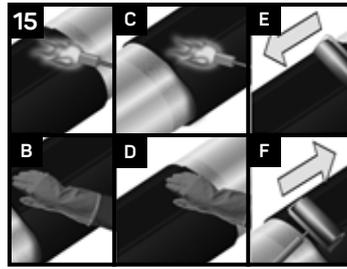
Remove the remaining sleeve release liner and wrap the sleeve loosely around the pipe, ensuring the appropriate overlap.

Before finishing wrapping the sleeve:

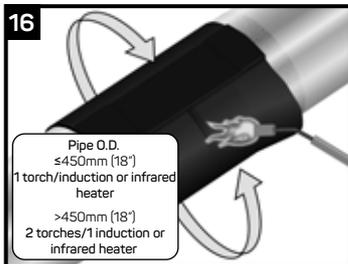
1. heat the backing side of the underlap until the backing starts to recover. Then use a roller to secure the underlap to the pipe.
2. gently heat the green-yellow coloured adhesive side of the closure seal until it appears glossy.



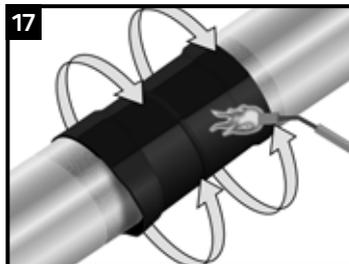
With the green-yellow coloured adhesive side facing down, firmly press the entire closure seal into place. Ensure that the closure is centred evenly over the underlap-overlap sleeve seam. If necessary, add additional heat to the closure underside in cold conditions, using a low flame intensity.



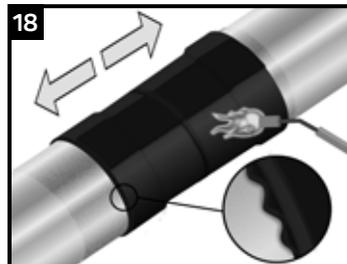
Gently heat the closure and pat it down with a gloved hand. Repeating this procedure, move from one side to the other. Smooth any wrinkles by gently working them outward from the centre of the closure with a roller.



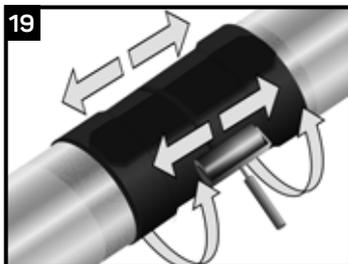
Using the appropriate sized torch, begin at the centre of the sleeve and heat circumferentially around the pipe. Use broad strokes. If utilizing two torches, operators should work on opposite sides of pipe.



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.



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.

### Backfilling/Laying Guidelines

After shrinking is complete, allow the sleeve to cool before pipe handling. For onshore applications, prevent damage to the sleeve by backfilling with select backfill or material with no sharp stones or large particles. Alternately, protect the sleeve with extruded polyethylene mesh or other suitable protective shield as approved by the Manufacturer. For offshore applications, allow the sleeve to cool to less than 60°C prior to laying, sleeve can be water quenched. If the field joint is to be infilled, then water quenching is unnecessary.

### 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.

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### Quality Management system registered to ISO 9001

Canusa warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the installation guide when used in compliance with Canusa's 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. Canusa's liability is stated in the standard terms and conditions of sale. Canusa makes no other warranty either expressed or implied. All information contained in this installation guide is to be used as a guide and is subject to change without notice. This installation guide supersedes all previous installation guides on this product. E&OE

Part No. 99060-093

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