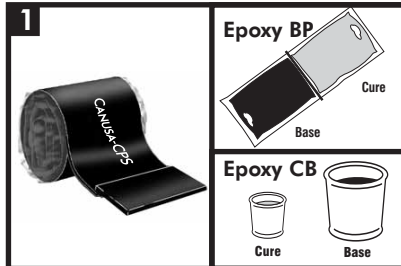


GTS-PP-100 3-Layer

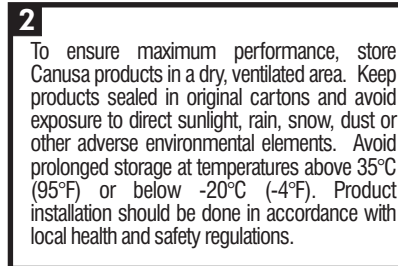
3-Layer High Performance Crosslinked Polypropylene Heat Shrink Sleeve System for the girth weld protection of 3-layer polyolefin coated pipelines

Product Description



GTS-PP-100 3-layer sleeves are shipped pre-cut with a pre-attached closure. The adhesive is protected from contamination by an inner liner. The joint completion system includes Canusa's E Primer epoxy supplied in bulk or pre-measured BP Kit.

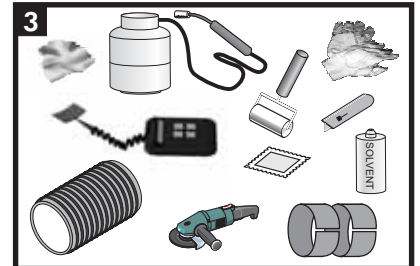
Storage & Safety Guidelines



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.

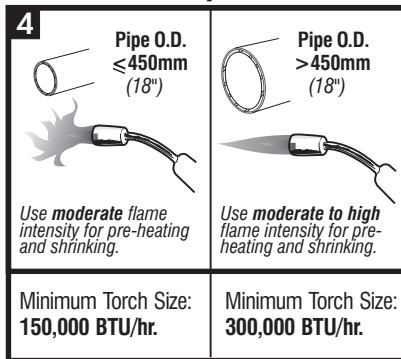
These installation instructions are intended as a guide for standard products. Consult your Canusa representative for specific projects or unique applications.

Equipment List



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
Epoxy applicator pad, wet film thickness gauge
Standard safety equipment; gloves, goggles, hard hat, etc.

Flame Intensity & Torch Size



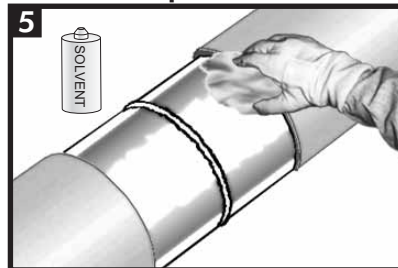
Use moderate flame intensity for pre-heating and shrinking.

Use moderate to high flame intensity for pre-heating and shrinking.

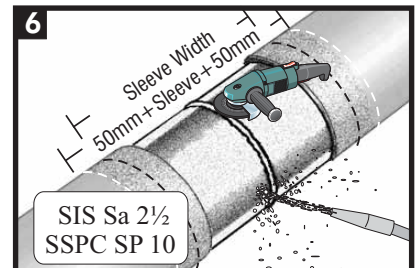
Minimum Torch Size: 150,000 BTU/hr.

Minimum Torch Size: 300,000 BTU/hr.

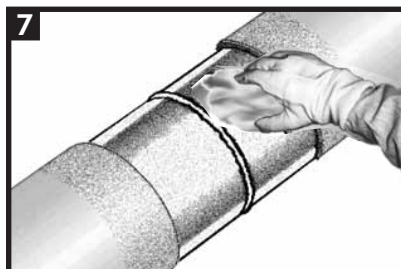
Surface Preparation



Ensure that the mainline coating edges are beveled to 30°. 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.

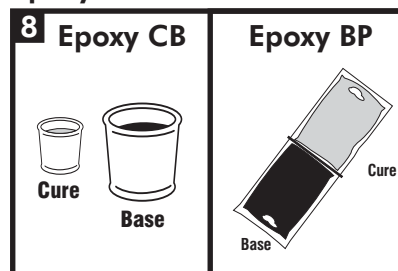


Warm the joint area to 40-50°C (100-120°F) before grit blasting. Thoroughly clean the weld area with a sand or grit blaster to "near white metal" SIS Sa 2 1/2 or equivalent. Abrade the mainline coating adjacent to the weld area to a distance 50mm (2") beyond the sleeve width.



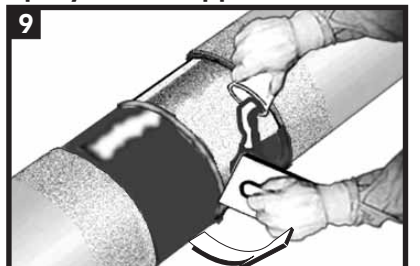
Using a dry, grease and lint-free cloth, wipe clean or air blast the steel and coated areas to remove foreign materials. If necessary, provide additional heat to ensure the surface temperature is 30-50°C (86-120°F).

Epoxy Primer



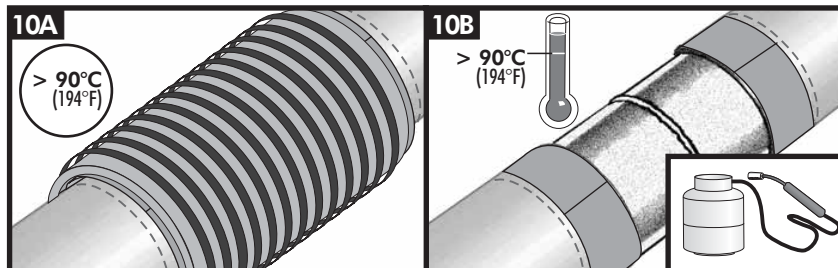
Follow the Preparation, Mixing and Application instructions provided with the supplied Canusa Epoxy Pack.

Epoxy Primer Application

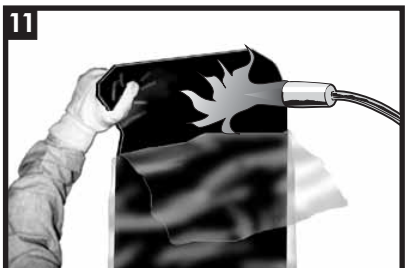


Apply mixed epoxy to a uniform specified thickness of 4-6 mils (100-150 microns) on all exposed bare metal using the applicator pads as supplied or an approved tool. Do not apply the epoxy to the mainline coating. Use a wet film thickness gauge to confirm the thickness.

Pre-Heat



Using the appropriate sized induction coil or propane torch(es), pre-heat the joint area to > 90°C (194°F). When heating with torch, use heat shields to protect mainline coating from the flame. Using a temperature measuring device, ensure that the correct temperature is reached on the steel and the coating overlap which the sleeve will cover. Check to ensure the correct minimum temperature has been achieved on each quadrant of the bare steel cutback surface and mainline coating overlaps.

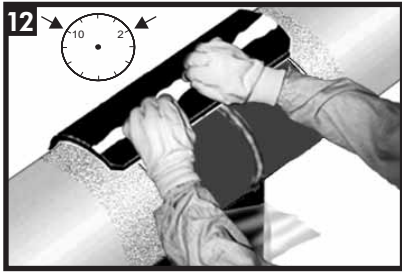


Partially remove the release liner [approximately 0.5m (1.5') from the edge] from the corner trimmed sleeve edge.

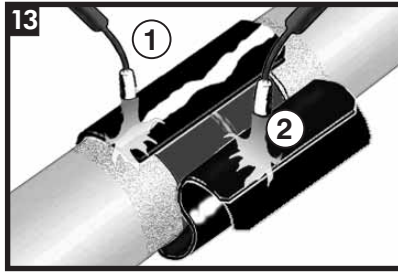
Unroll sleeve so that closure is on the inside of the roll before applying heat to other end of sleeve.

GTS-PP-100 3-Layer

Sleeve Installation Cont'd

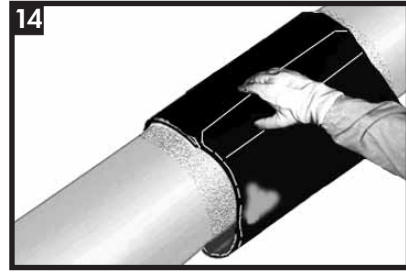


Place the underlap of the sleeve onto the joint, centering the sleeve such that the sleeve overlap is positioned at either the 10 or 2 o'clock position. Ensure that the sleeve is placed square to the pipe.

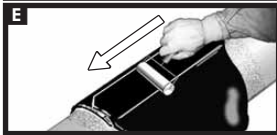


Remove the remaining sleeve release liner and wrap the sleeve loosely around the pipe, ensuring the appropriate overlap. Before finishing wrapping the sleeve:

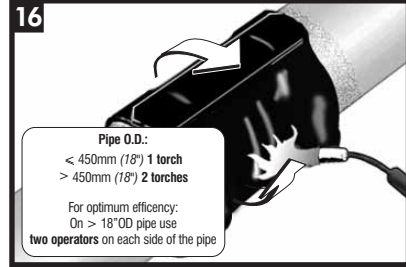
1. Heat the backing side of the underlap until the backing starts to recover. Then use a roller to secure the underlap to the pipe.
2. Gently heat the adhesive side of the closure seal until it appears glossy.



Firmly press the entire closure seal into place. Ensure that the closure is centered evenly over the underlap-overlap sleeve seam.



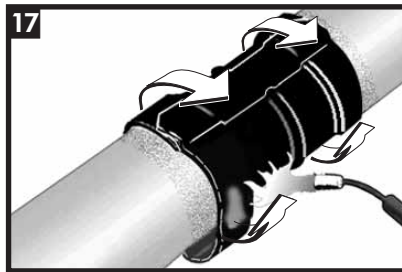
Gently heat the closure and pat it down with a gloved hand. Repeating this procedure, move from one side to the other. Smooth any wrinkles by gently working them outward from the centre of the closure with a roller.



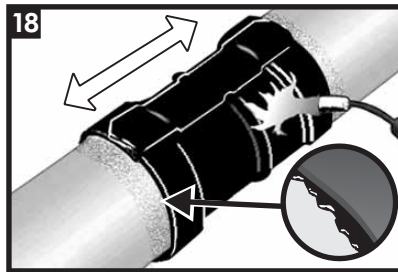
Pipe O.D.:
 < 450mm (18") 1 torch
 > 450mm (18") 2 torches

For optimum efficiency:
 On > 18"OD pipe use
 two operators on each side of the pipe

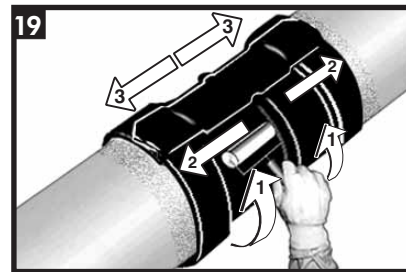
Using the appropriate sized torch, begin at the centre of the sleeve and heat circumferentially around the pipe. Use broad strokes. If utilizing two torches, operators should work on opposite sides of pipe.



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.

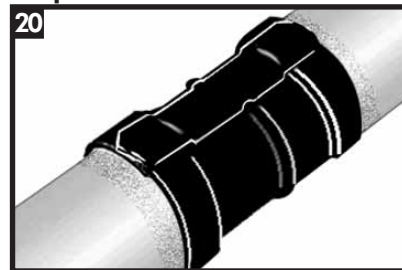


Shrinking has been completed when the adhesive begins to ooze at the sleeve edges all around the circumference. Finish shrinking the sleeve with long horizontal strokes over the entire surface to ensure a uniform bond.



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.

Inspection



Visually inspect the installed sleeve for the following:

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

Backfilling Guidelines

After shrinking is complete, allow the sleeve to cool for 2 hours. Conduct Holiday testing to project specification, if required, prior to lowering and backfilling. To prevent damage to the sleeve, use typical soft soil or small pebble backfill. Revert to project specific backfill if different.



A SHAWCOR COMPANY

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

www.canusacps.com

Asia/Pacific

CANUSA-CPS
 Bredero Shaw (S) Pte Ltd
 #05-31, Blk 52, Frontier
 Ubi Avenue 3
 Singapore
 408867
 Tel: +65-6749-8918
 Fax: +65-6749-8919

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. EKOE