CANUSA-CPS
Corrosion Protection & Sealing

SuperCase™ (CSC-XP) + IntelliFUSE

Advanced joint casing system for pre-insulated pipelines

Product Description

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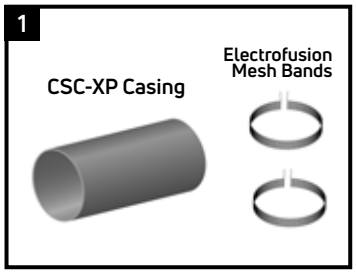

The required materials are a CSC-XP casing and two electrofusion mesh bands selected for the appropriate diameter of the jacket pipe. The casing will be supplied in a protective plastic sock. Adhesive strips for dual sealing systems may be optionally supplied.

General Information

2

This Installation Guide is to be followed in it's entirety, in order and without delay in between steps.

The installation will be protected from direct sunlight, strong winds, precipitation and low ambient temperatures during application.

Additional IntelliFUSE™ equipment standard procedures will be followed.

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

Equipment List

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Propane tank, hose, torch & regulator, Angle Grinder with 40-60 grit flap disc, 40-60 grit sandpaper, Solvent cleanser, Knife, Touch probe thermometer, Marker, Stapler with staples (less than jacket pipe thickness), Hammer, Screwdriver, Drill, Scraper, Standard Safety Equipment: Gloves, Goggles, Hard hat, etc.

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IntelliFUSE™ equipment with all accessories, a portable generator, CANUSA-CPS compression bands and clamps, torque settable tool and bit

Backfilling Trench

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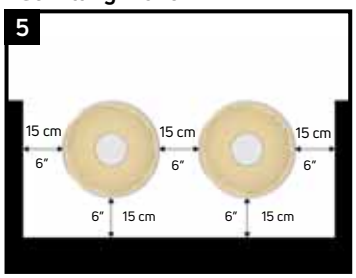

Ensure there is adequate work space area around the pipe in the backfilling trench.

Flame Intensity

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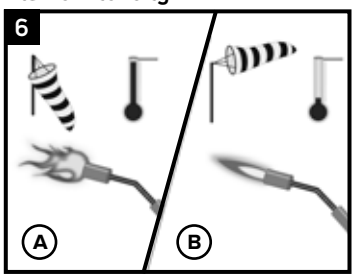

Adjust the flame according to outside conditions.

a. Use bluish-yellow flame for low wind, higher temps

b. Use blue flame for high wind, lower temperatures

Always aim the torch perpendicular to the shrink zone of the CSC-XP and move in a circumferential direction.

Casing Check

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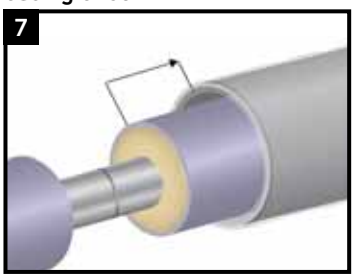

Check the packaged casing to ensure that there are no damages to the casing that would affect final installation quality. Before welding together the carrier pipes, slide the packaged casing as far away from the joint as possible.

Pipe Preparation

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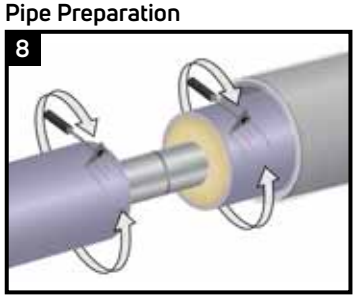

Using a scraper, clean the edges of the jacket pipe to remove any burrs and large contaminants from application areas. Remove any wet PUR foam from the end of the pre-insulated pipe. Use a dry, grease and lint-free rag to wipe clean the jacket pipe and casing taking note of any potential areas of contact during the application procedure.

CSC-XP Position Marking

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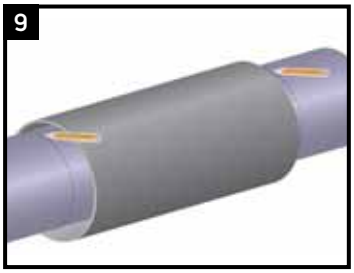

Remove the protective packaging sock and center the casing over the joint. Mark out two reference lines circumferentially on the jacket pipe (this will assist in preparation and positioning of the casing).

Air Hole

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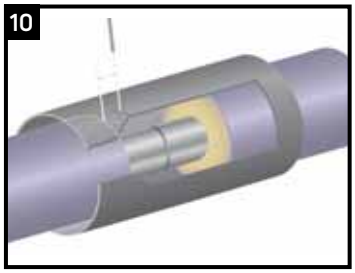

Drill a hole for air pressure relief (at the same position where the foaming hole will be drilled, **as close to the shrinkable end as possible while remaining in the cutback area**) to allow air to escape during installation.

Ensure no damage is done to the jacket pipe.

CSC-XP Position

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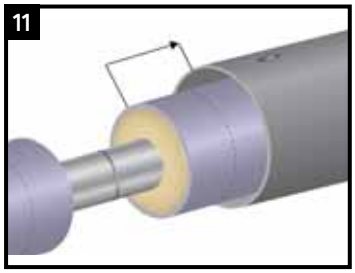

Slide the casing away from the jacket pipe edge to access the application areas. The casing may be moved entirely off the joint to prepare both sides together or less to prepare each side separately. The installer must maintain application surface cleanliness at all times.

Surface Preparation

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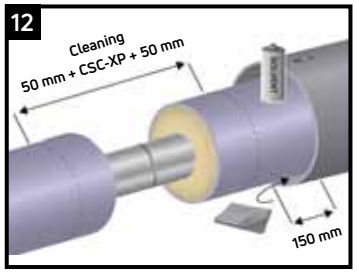
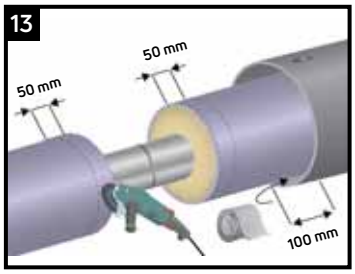


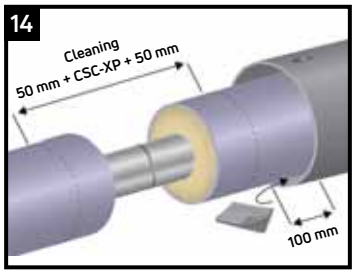
Clean the surface of the jacket pipe and the inside of the casing with a rag (150mm) to remove dirt. Degrease the surface of the jacket pipe and the inside of the CSC-XP (150 mm) using a grease and lint-free rag soaked in ethanol (min. 94%), isopropyl alcohol cleanser or any other suitable solvent.

Surface Abrasion



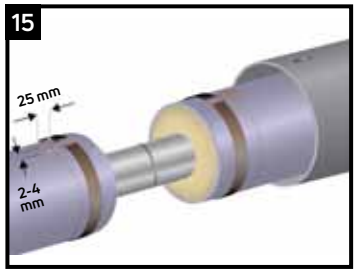
Roughen the surface of the jacket pipe on both sides of the cutback using the angle grinder with 40-60 grit flap disc (50 mm from the marked lines). Also roughen the inside of the CSC-XP (100 mm) using the sandpaper (40-60 grit).

Final Surface Cleaning



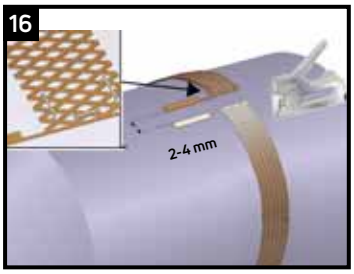
Using a dry, grease and lint-free rag, clean the roughened surface to remove any polyethylene or sand particles. Re-center the casing to re-mark the circumferencial lines around CSC-XP casing edges.

Electrofusion Mesh Placement



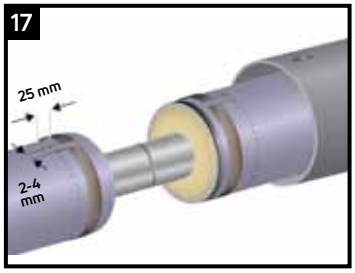
Apply the copper mesh strips by stapling one end (as depicted in the next slide), wrapping tightly around the jacket pipe inset approximately 25 mm away from the marked lines and uniformly stretching to position such that the connector pins are separated by 5-6 mm and the band remains taught to the pipe. Scrap if the band is overstretched.

Metal Strip Application



Staple the other end of the electrofusion band as detailed. Staple around the electrofusion band in the center at approximately 300 mm spacing or at ¼ points around the circumference for smaller diameters.

Placement (Optional)

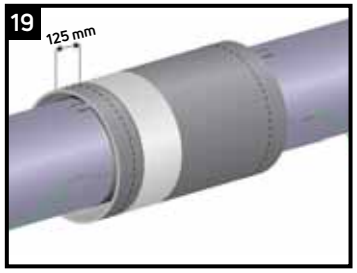


Place the adhesive strip 25 mm away from the metal mesh on the inside of the joint on both sides. The release liner is to be left on the adhesive strips until the casings is placed over the joint.

CSC-XP Placement

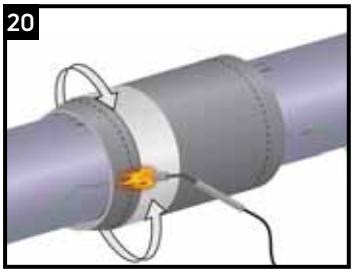
Carefully slide the CSC-XP over the joint, so that the edges are aligned with the orginally marked lines. Ensure the casing is equally spaced off of the jacket pipe surface.

Positioning of Heat Shields (Optional)



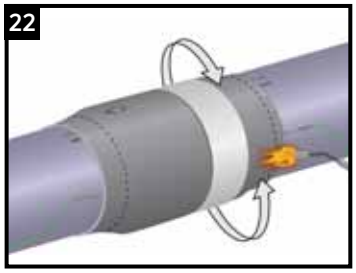
Position the heat shield on the casing ~125 mm away from the edge. Also wrap it tightly around the circumference of the casing. Heat Shields are reusable.

CSC-XP Installation



Using broad strokes and a moderate flame, begin shrinking one end of the casing evenly all around. Keep the torch moving to avoid overheating any spots and ensure uniform temperature is reached particularly at the bottom. Continue heating until the end is fully conformed around the circumference of the jacket pipe.

With a gloved finger, press down on the shrunk area in multiple locations around the circumference to ensure the backing is soft. If there are cool spots, the shrink zone should be reworked with additional heat. The profile of the electrofusion mesh should be evenly visible from the outside of the casing.



Repeat steps 18-20 on the other shrink zones.

NOTE: Both sides of the casing can be shrunk at the same time if 2 heatshields are used.

Alternative Fully Shrinkable Installation

If the joint has been pre-foamed or foam half-shells used to fill the joint, the entire CSC-XP casing has to be shrunk. Shrinking must proceed from the middle towards both ends of the casing. Please consult with your local Canusa-CPS representative for additional details regarding this alternative installation method.

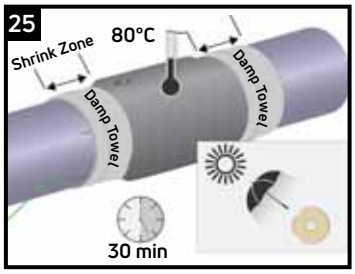
Compression Band Installation

While the casing is hot and soft, place the CANUSA-CPS supplied compression bands and clamps to loosely hold the band in position. The compression band will be aligned with the casing edge evenly without overhang. The clamp area must be offset from the terminals by a minimum of 100 mm. Tighten the clamp bolts uniformly using a torque settable tool as advised by a CANUSA-CPS technical representative. The compression bands must be tight to the surface of the casing without visible gaps.

Fusion Cycle

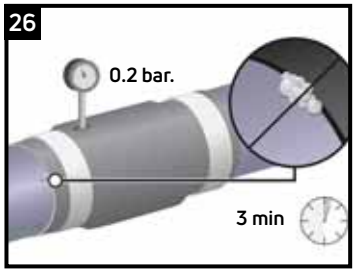
Connect the IntelliFUSE™ system to the electrofusion band and follow separate IntelliFUSE™ operating instructions. Allow the joint to cool checking the temperature periodically. Re-Torque the compression bands just prior to running the fusion cycle. Run the cycle as provided in the operating instructions. Repeat for the other side of the joint as applicable.

Cool CSC-XP to < 80°C



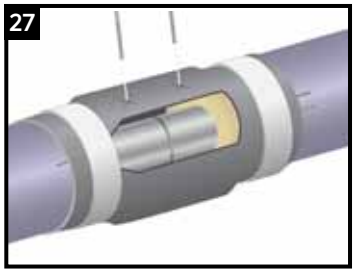
Allow the fusion area to cool, under shade from direct sunlight, until the surface temperature reading is below 80°C (approximately 30 minutes). Beyond 30 minutes, damp towels may be used to improve the cooling time. Remove the compression bands and inspect the fusion areas. The surface should be smooth and uniform around the circumference.

Quality Check (Air Pressure Test)



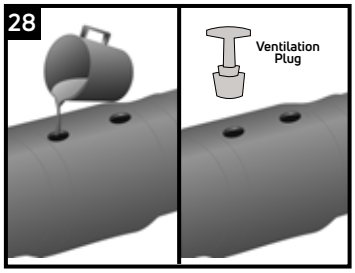
Ensure the CSC-XP shrink zones have cooled to below 80°C. Perform the pressure test using the previously drilled pressure hole. The CSC-XP should be checked with an air pressure test for 3 minutes at 0.2 bar. In case of a leak, follow separate repair instructions. The pressure test should then be repeated.

Foaming Holes



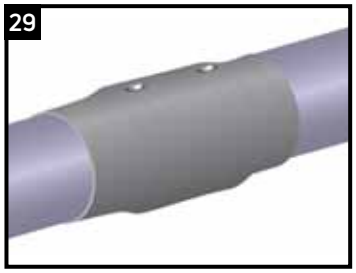
Drill one foaming hole over the pressure testing hole. Drill the other foaming hole **as close to the shrinkable end as possible while remaining in the cutback area.**

Foaming



Ensure the CSC-XP shrink zones have cooled to at least 80°C. If they have not, follow the cooling instructions as described in step 32. **Do not foam if the surface temperature is above 80°C.** Foam the joint according to the manufacturer's guideline. Use standard ventilation plugs while foaming.

Foam Hole Sealing



After the foam has hardened, remove the ventilation plugs and drill any holes necessary for sealing. When using Canusa approved weldable plugs and welding machine, it is required to match the conical geometry with all pieces of equipment (i.e. weldable plug, drill bit, welding machine heating cups). Cylindrical tools for plug welding are not recommended Note: Using an approved welding tool, (at 250°C the recommended times for plug welding are:

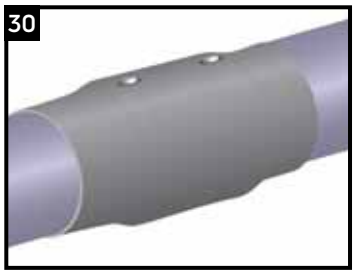
1) pre-warm the sealing hole for 45 sec.

2) At the same time as step 1), pre-warm the welding plug for 30sec.

3) Insert plug into sealing hole and hold for 30sec.

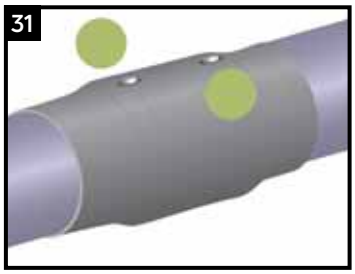
Total Installation Time = 105 sec.

Installation



Visually inspect the completed casing. To double seal the foaming hole use a Canusa Foam Seal - CFS.

Canusa Foam Seal



If the foaming hole is to be double sealed with a weldable plug and Canusa Foam Seal - CFS, please follow Canusa Foam Seal (CFS) Install Guide.

Backfilling Guidelines

To prevent damage to the CSC-XP, use selected backfill material (no sharp stones or large particles).

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 80°C (176°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

Part No.

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