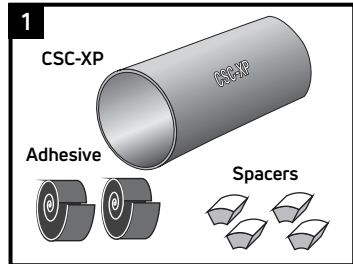


Canusa SuperCase™ (CSC-XP)

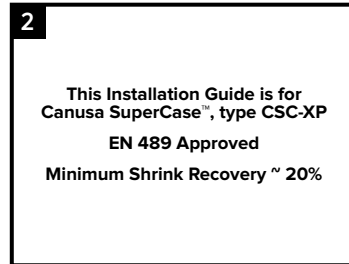
Advanced joint casing system for pre-insulated pipelines

Product Description



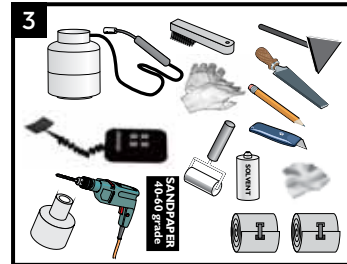
The Canusa SuperCase™ - CSC-XP is a crosslinked, heat shrinkable casing for joint protection of pre-insulated pipe. If the packaged kit is used, it contains: adhesive and spacers for large casings.

General Information



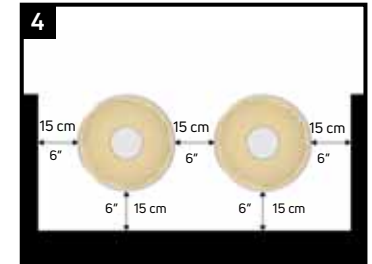
These installation instructions are intended as a guide for standard products. Consult your Canusa representative for specific projects or unique applications.

Equipment List



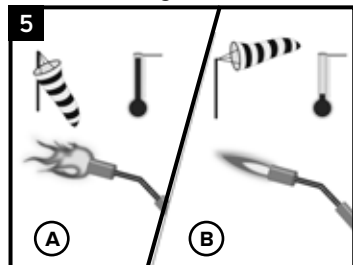
Propane tank, hose, torch & regulator; Sandpaper (40-60 grade) or wire brush; Knife, roller, rags & ethanol (min. 94%) or isopropyl alcohol cleanser; 2 Heat Shields; Temperature measuring device, triangular scraper; Marking pencil, grater, drill, CFS Rolling Tool; Standard safety equipment; gloves, goggles, hard hat, etc.

Backfilling Trench



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

Flame Intensity

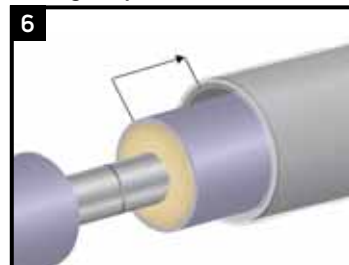


Adjust the flame according to outside conditions.

- Use bluish-yellow flame for low wind, higher temps
- Use blue flame for high wind, lower temperatures

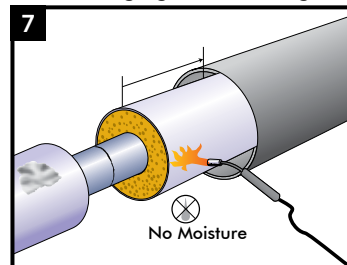
Always aim the torch perpendicular to the shrink zone of the CSC-XP and move in a circumferential direction.

Casing Preparation



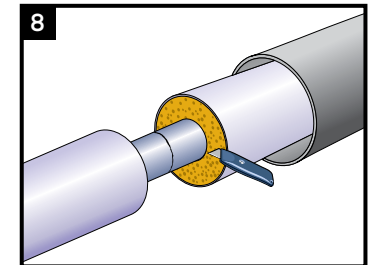
Check the CSC-XP to ensure that it is not damaged. Before welding together the carrier pipes, slide the CSC-XP as far away from the joint as possible.

General Drying and Cleaning



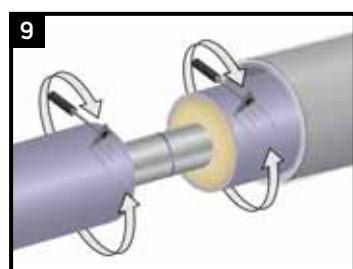
Use a propane torch with a low flame to dry the jacket pipe and carrier pipe. Use a dry, grease and lint-free rag to wipe clean the jacket pipe, carrier pipe and CSC-XP.

Pipe Preparation



Remove any wet PUR foam from the end of the pre-insulated pipe.

CSC-XP Position Marking



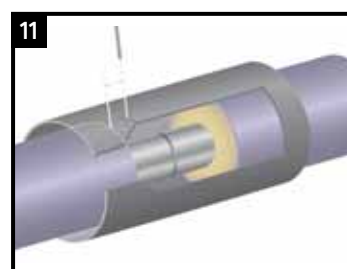
Using a triangular scraper, clean the edges of the jacket pipe to remove any burrs and dirt from the sealing area.

CSC-XP Position Marking



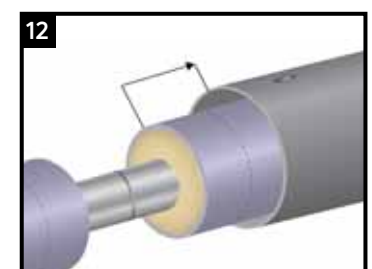
For convenience, centre the CSC-XP over the joint and mark out two reference lines circumferentially on the jacket pipe (this will assist in preparation and positioning of the CSC-XP).

Air Hole



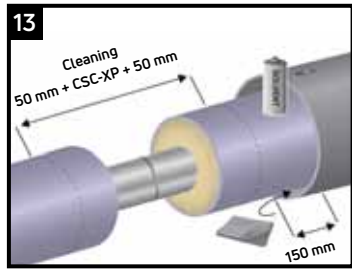
Drill a hole for air pressure relief (at the same position where the foaming hole will be drilled, as close to the shrinkable end as possible while remaining in the cutback area) to allow air to escape during installation. Ensure no damage is done to the jacket pipe.

CSC-XP Position



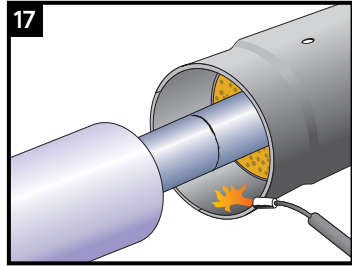
Slide the CSC-XP away from the jacket pipe edge.

Surface Preparation



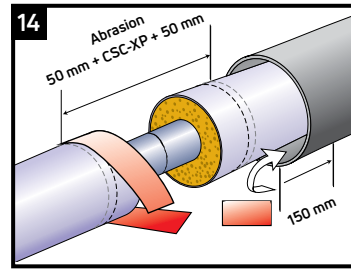
Clean the surface of the jacket pipe and the inside of the casing with a rag (150mm) to remove dirt. Degrease the surface of the jacket pipe and the inside of the CSC-XP (150mm) using a grease and lint-free rag soaked in ethanol (min. 94%) or isopropyl alcohol cleanser.

Pre-Warming (Inside of Casing)



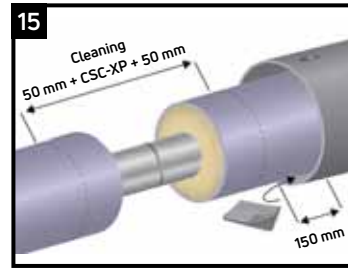
Pre-warm the inside of the casing on each end (150mm) by moving it half-way over the joint. Use medium intensity ("Blue Flame") to make sure that the casing does not start to recover.

Surface Abrasion



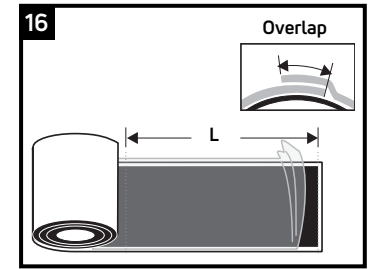
Roughen the surface of the jacket pipe on both sides of the cutback and the inside of the CSC-XP (150mm) using the sandpaper (40 to 60 grade).

Final Surface Cleaning



Using a dry, grease and lint-free rag, clean the roughened surface to remove any polyethylene or sand particles.

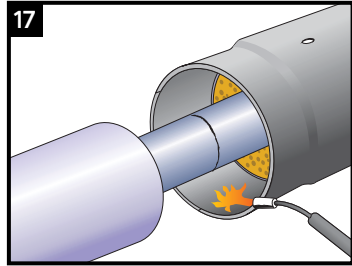
Adhesive Length (With Bulk Roll)



If not using the pre-cut adhesive from a kit, measure the circumference of the jacket pipe and cut two sealing strips long enough to allow for overlap.

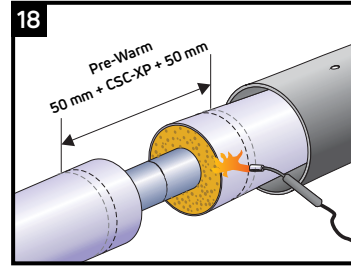
The Length (L) should be the circumference + 50mm overlap.

Pre-Warming



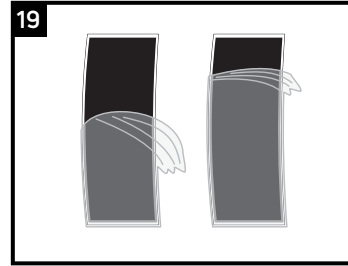
Pre-warm the inside of the casing on each end (150mm) by moving it half-way over the joint. Use medium intensity ("Blue Flame") to make sure that the casing does not start to recover.

Pre-warming



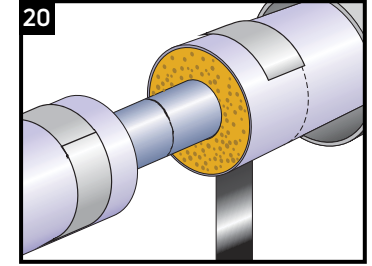
Using high intensity flame pre-heat the pipe to 40°C-50°C. The flame shall be kept perpendicular to the surface of the pipe during pre-heating. **Ensure the correct temperature with a touch probe.** Do not exceed 60°C as this makes the removal of release liner difficult.

Release Liner



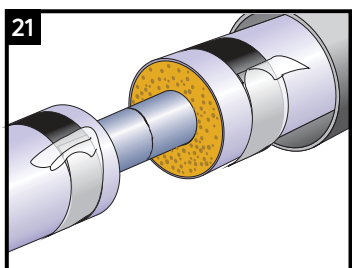
Remove the thinner release liner (opposite the mesh side) from both adhesive strips and...

Adhesive Application



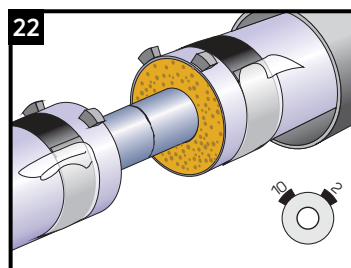
...apply the adhesive strips tightly around the jacket pipe with the mesh side facing up. The strips should be applied so that they are placed approximately 5mm inside the marks. Partially peel-back the release liner on the underlap and wrap the strips around the jacket pipe so that it overlaps.

Spacing Placement



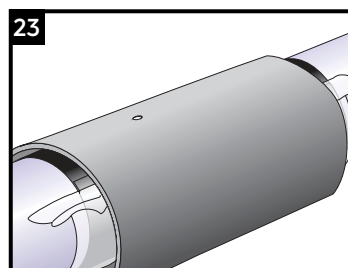
Fold the release liner outwards to allow for easy removal after positioning the casing.

Spacing Placement



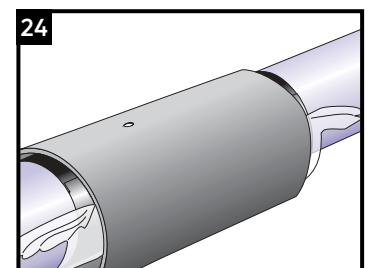
Remove the paper backing and place the spacers at the 10 and 2 o'clock positions of the jacket pipe, right at the edge of the cutback.

CSC-XP Placement



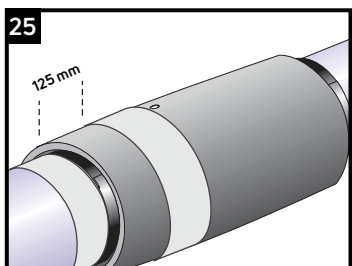
Carefully slide the CSC-XP over the joint, so that the edges are centered over the edge of the adhesive strips.

CSC-XP Installation



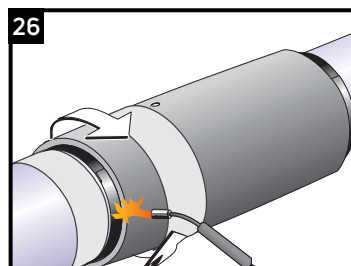
Completely remove the release liners from the adhesive strips.

Positioning of Heat Shields



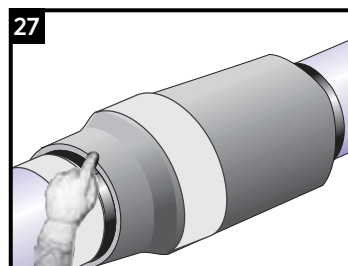
Position the first heat shield against the marked line by wrapping it tightly around the circumference of the jacket pipe. Position the second heat shield on the casing ~125mm away from the edge. Also wrap it tightly around the circumference of the casing. Heat Shields are reusable.

CSC-XP Installation



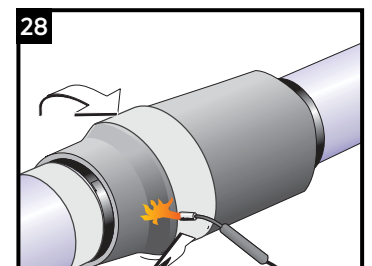
Using broad strokes and a medium flame, begin shrinking one end of the CSC-XP evenly all around. Keep the torch moving to avoid overheating any spots; ensure sufficient heat is applied at the bottom.

CSC-XP Installation



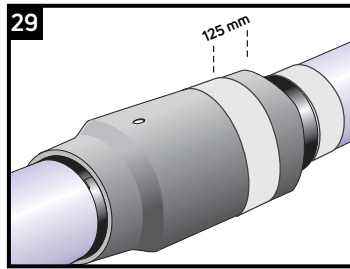
With a gloved finger, press down on the shrunk area to ensure the backing and adhesive are soft. If there are cool spots, the shrink zone should be reworked with additional heat.

CSC-XP Installation



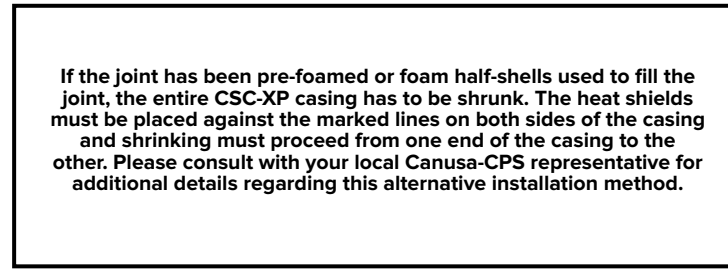
Continue heating the edge until it is fully recovered around the entire circumference of the jacket pipe. **Shrinking has been completed when the shrink zone of the CSC-XP has conformed to the entire pipe jacket.**

CSC-XP Installation - other side



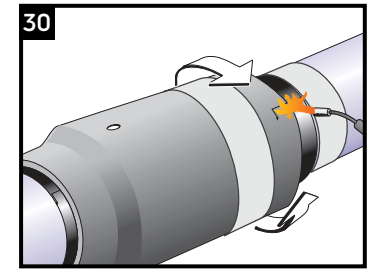
Position the heat shields on the other end of the casing and jacket pipe.

Alternative Fully Shrinkable Installation



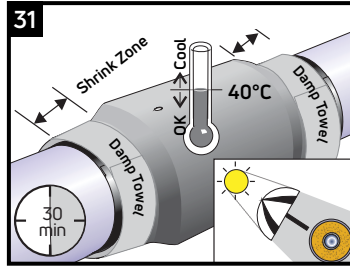
If the joint has been pre-foamed or foam half-shells used to fill the joint, the entire CSC-XP casing has to be shrunk. The heat shields must be placed against the marked lines on both sides of the casing and shrinking must proceed from one end of the casing to the other. Please consult with your local Canusa-CPS representative for additional details regarding this alternative installation method.

Metal Strip Application



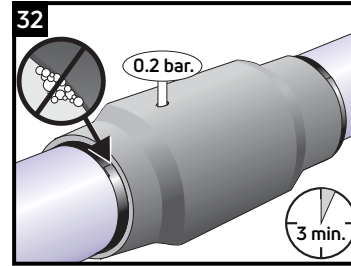
Repeat Steps 26 to 28 on the other shrink zone.

Cool CSC-XP to < 40°C



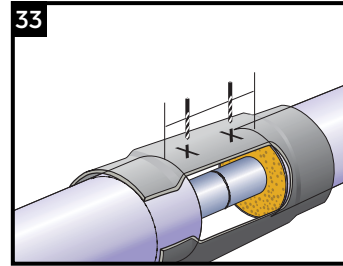
Allow the CSC-XP to cool for 30 minutes. After 30 minutes measure the surface temperature of the CSC-XP shrink zones. If the surface temperature of the shrink zones are still above 40°C, use shading and/or damp towels to quicken CSC-XP shrink zone cooling time.

Quality Check (Air Pressure Test)



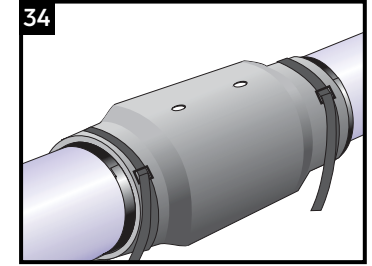
Ensure the CSC-XP shrink zones have cooled to below 40°C. Perform the pressure test using the previously drilled pressure hole. The CSC-XP should be checked with an air pressure test for 3 minutes at 0.2 bar. In case of a leak, the CSC-XP shrink zones should be reworked with additional heat at the leaking area. The pressure test should then be repeated.

Foaming Holes



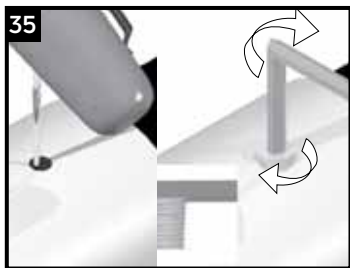
Drill one foaming hole over the pressure testing hole. Drill the other foaming hole, if required (as close to the shrinkable end as possible while remaining in the cutback area).

Foaming Straps



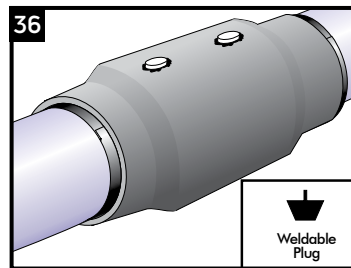
Foaming straps should be used when the shrink zone surface temperature is between 35°C and 40°C (or if they have been specifically recommended for the project). To use, wrap the strap around the casing (ensure no kinks or twirls in the strap) at each shrink zone. Centre the strap 75mm (3") from the edge of the casing. Follow the installation guide supplied with the straps for further instructions. These straps are re-usable.

Foaming



Ensure the CSC-XP shrink zones have cooled to at least 40°C. If they have not, follow the cooling instructions as described in step 31. Do not foam if the surface temperature is above 40°C. Foam the joint according to the manufacturer's guideline. Use standard ventilation plugs while foaming. After the foam has cured, remove the foaming straps (if used).

Foam Hole Sealing

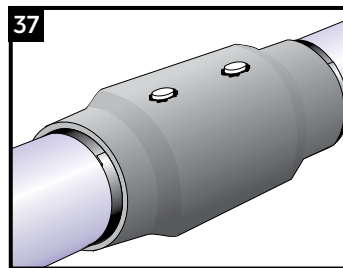


After the foam has hardened, remove the ventilation plugs and drill any holes necessary for sealing. When using Canusa approved weldable plugs and welding machine, it is required to match the conical geometry with all pieces of equipment (i.e. weldable plug, drill bit, welding machine heating cups). 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.

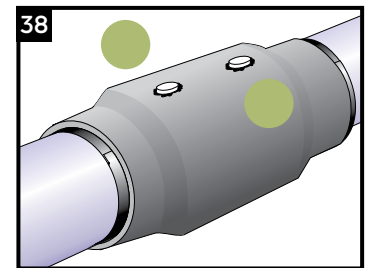
Total Installation Time=105 sec.

CSC-XP Completed Installation



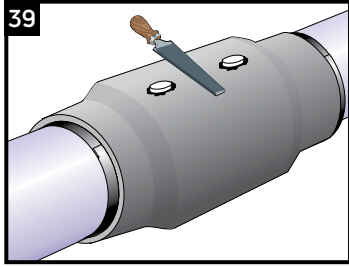
Visually inspect the completed casing. Ensure that the ends of the CSC-XP are completely shrunk down. To double seal the foaming hole use a Canusa Foam Seal - CFS.

Foaming Plug Sealing- Optional

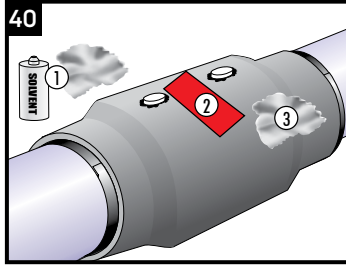


Continue with step 39 when the foaming hole is to be double sealed with a weldable plug and Canusa Foam Seal - CFS.

Surface Preparation

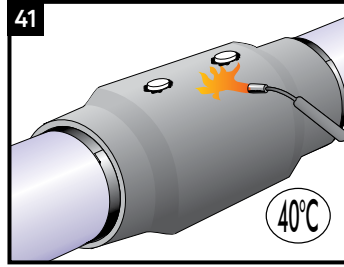


For Weldable Plugs: Using a grater, sand down the plugs bringing them flush to the surface of the CSC-XP.

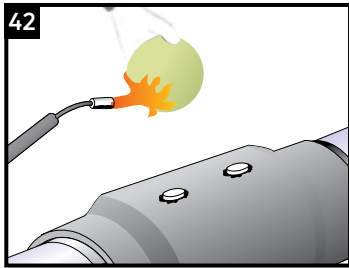


1. De-grease the surface around the plug using a grease and lint-free rag soaked in ethanol.
2. Roughen the surface with sandpaper (40 to 60 grade).
3. Use a grease and lint-free rag to remove any polyethylene or sand particles caused by roughening the surface.

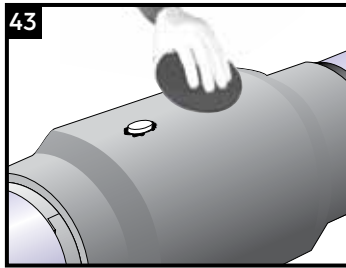
CFS Installation Optional



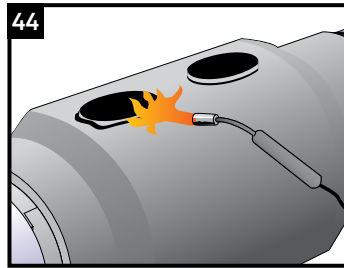
Pre-warm the casing surface around the foaming hole to 40°C. **Do not overheat the surface as the foam will gas.** Check the temperature using a temperature measuring device.



Heat the adhesive side of the CFS with a medium intensity flame until the adhesive becomes glossy (Adhesive will melt).

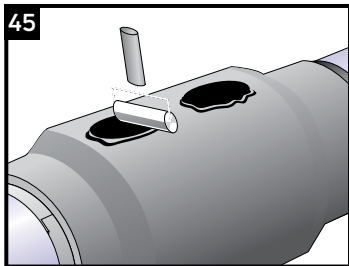


Place the CFS onto the pre-cleaned and pre-warmed section of casing directly over the centre of the foaming hole.



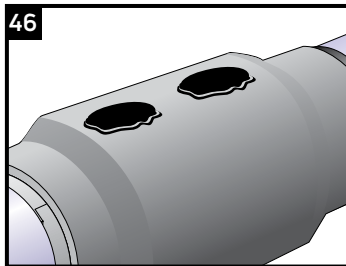
Using a weak medium flame, heat the backside of the CFS until the adhesive oozes from the edge. **Do not overheat the surface as the foam will gas.**

Weldable Plug CFS Rolling



Using a roller, gloved hand or the side of the larger end of the CFS Rolling Tool; smooth out the CFS surface. Ensure adhesive has oozed from all sides of the CFS.

CFS Completed Installation



The CFS has been fully installed when adhesive can be seen around the entire circumference and is in full contact with the casing.

Backfilling Guidelines

After shrinking is complete, the CSC-XP should be left for as much time as possible prior to backfilling (minimum 1 hour). This ensures that the adhesive has cooled enough and that sealing is achieved. 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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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.

IG_CSC-XP_rev012