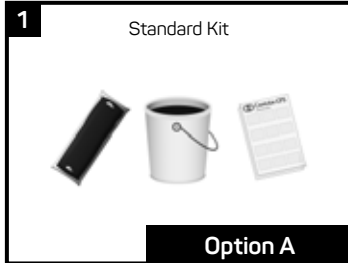


HBE Brush Grade

High Build Epoxy Coating (HBE-95, HBE-HT, HBE-DX or HBE FLX)

Kit Contents (Options A, B, C and D)

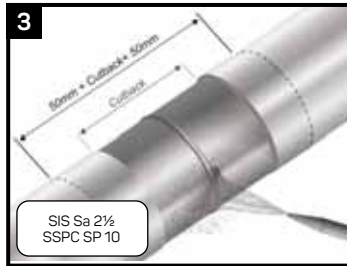


HBE products specified are two part epoxy coatings used for pipeline rehabilitation and protection of pipeline valves, fittings and field joints. HBE is supplied in kits containing pre-measured components of Part A - HBE Cure (small container or bubble pack) and Part B - HBE Base (large container). The "Standard Kit" contains the HBE components while the "Complete Field Ready Kit" also includes a stir stick, scraper and gloves. HBE is also available in a 2-component 3:1 ratio cartridge, and bubble pack. All kit styles are supplied with Installation Guides and MSDS's.

Surface Preparation



Clean exposed steel and adjacent pipe coating according to SSPC SP 1 to remove the presence of oil, grease, and other contaminants. Ensure that the pipe is at least 3°C (5°F) above the dew point before cleaning.



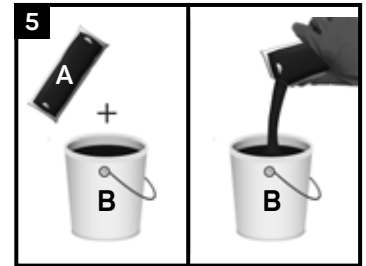
Thoroughly clean the cutback area to "near white metal" SIS Sa 2 1/2 (SSPC-SP10) or equivalent. Materials used for abrasive blasting shall produce an angular surface profile of 2.5-5 mils (64-127 µm) Lightly abrade at least 50mm (2") of the line coating on each side of cutback area.



Wipe clean with a lint-free cloth or air blast the steel and pipe coating to remove foreign contaminants. Surface must be clean and dry prior to application of HBE products.

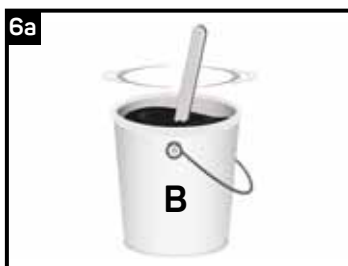
Options A and B

HBE Mixture Kits

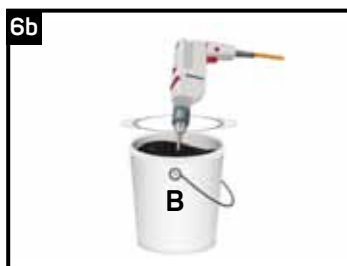


Components should be warmed to at least 20°C (68°F) prior to mixing. Pour Part A - HBE Cure (bubble pack) into Part B - HBE Base (large container). Scrape walls and lids of both containers to ensure all product is used. When mixing, slow the mixer down at the surface of the liquid to prevent the introduction of air into the coating. Do not add solvent or other materials to the mixture.

HBE Stirring Kits

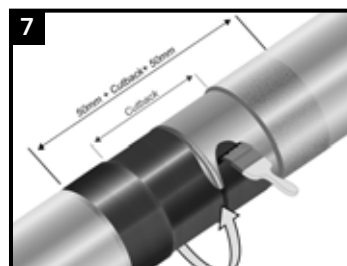


Begin mixing slowly. After initial mix has been achieved, a spatula or mixing stick should be used to remove any resin from the side of container.



Mix at such a speed that ensures a uniform colour, but does not create a vortex in the liquid. Mix with a drill stirrer or a spatula, blending both parts to create one uniform colour with no streaks.

HBE Application



Use a brush, roller or trowel to apply HBE to the joint or application area to a specified minimum thickness. Cover at least 50mm (2") of any adjacent pipeline coating. Coating should only be applied at temperatures above 10°C (50°F) and when the pipe surface temperature is 3°C (5°F) above the dew point. Refer to "Useful Application Information" for other application temperature criteria.

Option C

HBE Repair Cartridge

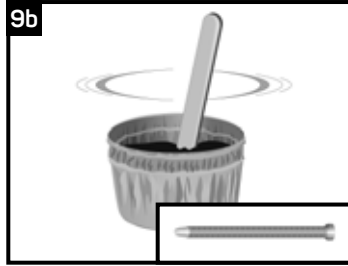


Canusa's HBE is available in a 2-component cartridge. Typical use is as a holiday repair coating on FBE coated pipe or for recently coated rehabilitation projects using HBE-95 or HBE-HT products. The cartridge fits into a universal 2-component cartridge dispenser that is available from Canusa.

Dispensing and Mixing



To dispense, unscrew the cap, remove the two small plugs in each side of the cartridge and replace cap. Squeeze the trigger of the cartridge dispenser and dispense a desired amount of material into a mixing cup. The cartridge dispenser will automatically dispense the correct ratio of base and cure.



With a clean stir stick mix thoroughly to create one uniform colour with no streaks. Alternately for larger projects, a static mixer nozzle (available from Canusa) allows for direct application onto pipe.

Option D HBE Repair Pack



Canusa's HBE is also available in a 50 mL bubble pack. Typical use is as a holiday repair coating on FBE coated pipe or for recently coated rehabilitation projects using HBE-95 or HBE-HT products. Repair Packs are shipped in pre-measured quantities of Epoxy Base and Epoxy Cure (an applicator pad and gloves are required application accessories).

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 40°C (104°F) or below 5°C (41°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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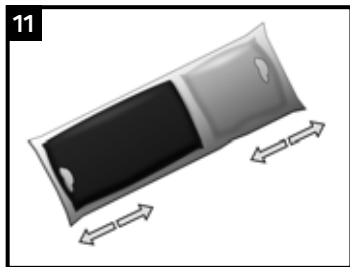
**Quality Management system
registered to ISO 9001**

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. 99060-119

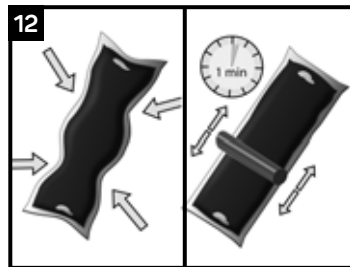
IG_HBE_rev027

Clip Removal



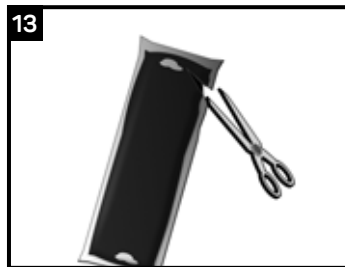
With a gloved hand, remove the clip that separates the base from the cure by pulling on both ends of the package.

Mixing



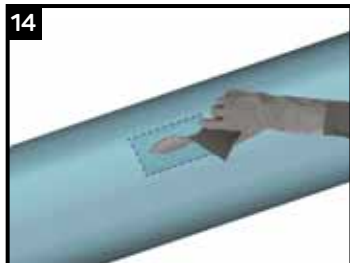
Mix the contents together by kneading the package. Ensure to work the material from the corners. Continue mixing by laying the package on a flat surface and, using the plastic clip or roller, press the contents back and forth from one end to the other. Complete mixing in 1 minute.

Bag Opening

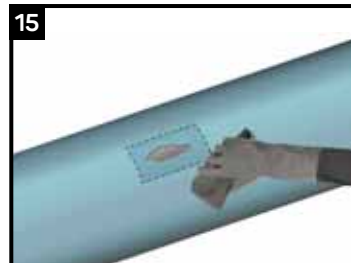


Cut corner to open package. Caution, contents may become hot.

Repair Surface Preparation

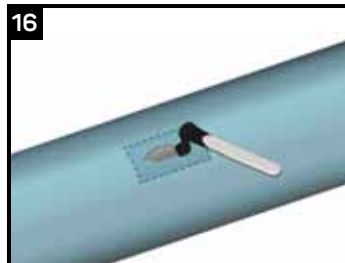


For repair of holidays, pinholes or low film thickness, lightly abrade with clean abrasive sand paper, approximately 15 mm (0.5") around the repair area. For larger repairs, refer to box 2 and 3 before proceeding with box 14-16.



Wipe clean with a lint-free cloth or air blast the steel and pipe coating to remove foreign contaminants. Surface must be clean and dry prior to application of HBE products.

Repair Application



Use clean trowel, stir stick or other application tool to apply HBE to repair area plus abraded perimeter to specified minimum thickness.

Useful Application Information

The ideal mixing and application temperature is between 20°C (68°F) and 40°C (105°F).

The workable pot life after mixing is approximately 15 minutes at 20°C (70°F). Pot life will be extended at lower temperatures and shortened at higher temperatures. Refer to Canusa-CPS' Marketing Technical Bulletin "HBE Cure MTB" for cure type options.

Pipe substrate may be pre-heated or applied coating may be post-heated (force cured) in order to accelerate curing or to cure in cold conditions. Refer to the Canusa-CPS Technical Bulletin 'HBE Expediting the Epoxy Cure Schedule' for details.

A variation on high build application technique: Build a first coat of 15-20 mils (300-500 microns) around entire circumference followed by a second coat to achieve specified film thickness. Directional drill applications routinely employ coating thicknesses >40 mils (1270 microns).

Avoid prolonged storage at temperatures below 5°C (41°F) or above 40°C (104°F). Do not freeze Canusa HBE products.