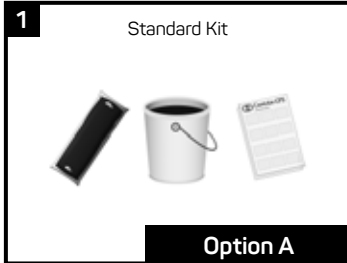


HBE-ARMOR

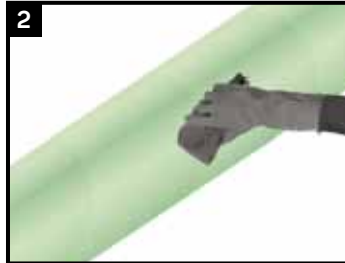
Abrasion Resistant Overcoat for FBE Pipelines

Kit Contents (Options A, B)

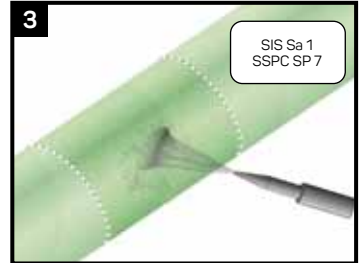


HBE product specified is a two part epoxy coating designed to protect fusion bond epoxy (FBE) coated mainline pipe; and field joints. HBE is supplied in kits containing pre-measured components of Part A - HBE Cure (small container or bubble pack) and Part B - HBE Base (large container). The "Standard Kit" contains the HBE components while the "Complete Field Ready Kit" also includes a stir stick, scraper and gloves. All kit styles are supplied with Installation Guides and MSDS's.

Surface Preparation



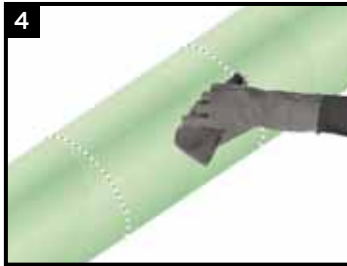
Clean FBE or HBE pipe coating according to SSPC SP 1 to remove the presence of oil, grease, and other contaminants. Ensure that the pipe is at least 3°C (5°F) above the dew point before cleaning.



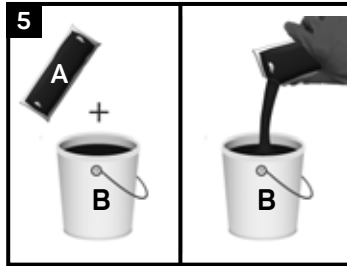
Prepare the FBE or HBE to SIS Sa 1 (SSPC SP 7 [sweep blasting or sandpaper]) or equivalent. Materials used for preparation shall produce an angular surface profile of approximately 2 mils (50 µm).

Options A and B

HBE Mixing

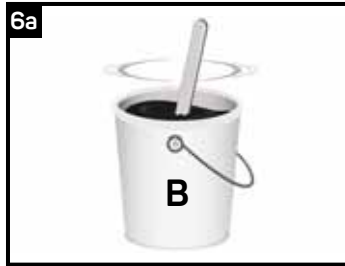


Wipe clean with a lint-free cloth or air blast the pipe coating to remove foreign contaminants. Surface must be clean and dry prior to application of HBE products.



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 Kit Stirring



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.



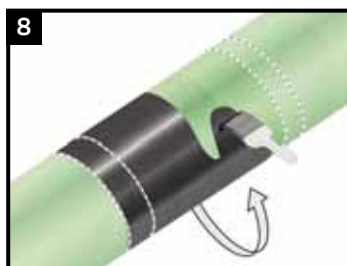
Mix at such a speed that ensures a uniform colour, but does not create a vortex in the liquid. Mix with a drill stirrer or a spatula, blending both parts to create one uniform colour with no streaks.

HBE Application



Pour the product onto the prepared FBE or HBE surface.

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.

Useful Application Information

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

The workable pot life after mixing is approximately 50 minutes at 20°C (68°F). Pot life will be extended at lower temperatures and shortened at higher temperatures.

Pipe coating 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.

Directional drill applications routinely employ coating thicknesses >40 mils (1270 microns).

A second-pass overcoat, when necessary, shall be applied within 2.5 hours at 20°C (68°F). If recoat window expires, 80 grit sandpaper or sweep blasting is required to prepare the surface prior to topcoat application.

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

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.

Canusa-CPS
A division of Shawcor Ltd.

Head Office

25 Bethridge Road
Toronto, ON, Canada M9W 1M7
Tel: +1 416 743 7111
Fax: +1 416 743 5927

Canada

Dome Tower St. 2200,
333-7th Avenue SW
Calgary, AB, Canada T2P 2Z1
Tel: +1 403 218 8207
Fax: +1 403 264 3649

Americas

5875 N. Sam Houston Pkwy W.,
Suite 200
Houston, TX, USA 77086
Tel: +1 281 886 2350
Fax: +1 281 886 2353

Middle East

Plot # 37-WR43, Sector no.: ICAD III
Musaffah South, PO Box 2621
Abu Dhabi, The United Arab Emirates
Tel: +971 2 204 9800

Europe, Africa & Russia

Dellaertweg 9-E, Gebouw
"Le Carrefour"
2316 WZ Leiden,
The Netherlands (NL)
Tel: +31 71 80 802 70
Fax: +31 71 80 802 71

Asia-Pacific

101 Thomson Road,
#11-03 United Square
307591 Singapore
Tel: +65 6749 8918
Fax: +65 6749 8919

**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. 99060-277

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