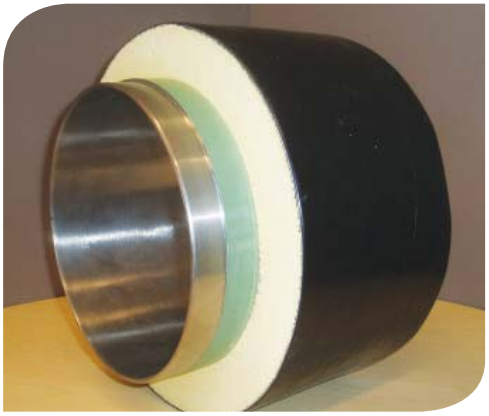
Ultrafoam FBE

Thermal insulation with Fusion Bond Epoxy corrosion barrier

ENERGY & MINING



Ultrafoam FBE consists of a Fusion Bond Epoxy corrosion barrier, spray applied polyurethane foam overcoated with a high integrity rubberized adhesive and/or tape followed by a durable polyethylene jacket. This polyurethane foam insulation system is designed to provide excellent thermal insulation and corrosion protection characteristics. Customer's may choose a standard 85°C version or a 110°C version dependent on their required maximum pipeline operating temperature.

Product Features

- Designed for operating temperatures from -40°C to 85°C with a high temperature version available for 110°C
- Polyurethane foam can be applied at thicknesses from 25.4mm (1 inch) to 76.2mm (3 inches)
- Field bendable to CSA Z662 Specifications
- Designed to provide excellent thermal insulation and corrosion protection for higher temperature buried pipelines

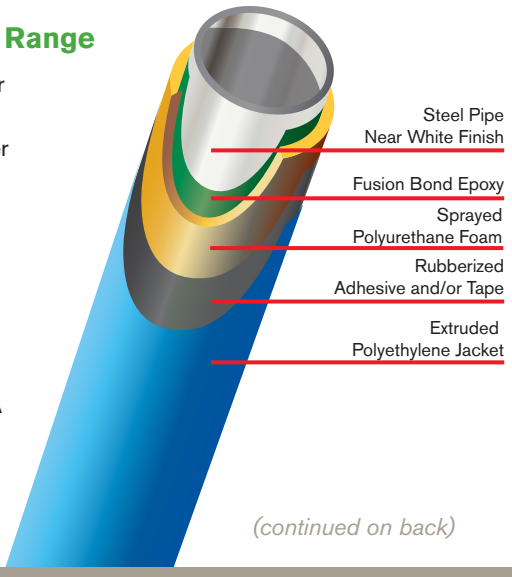
Cold Weather Handling: Precautionary measure must be exercised during handling and installation in cold temperatures (-25°C and colder). Please contact Bayou Perma-Pipe for more information on cold weather handling recommendations and procedures.

Pipe Application Range

Minimum Pipe Diameter
• 88.9mm (3.5 inches)
Maximum Pipe Diameter
• 1067mm (42 inches)
Minimum Pipe Length
• 5.5m (18 feet)
Maximum Pipe Length
• 25m (82 feet)

Compliancy

FBE: CSA Z245.20 1A
ISO 9001:2008



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BPPC™
BAYOU PERMA-PIPE CANADA

Ultrafoam FBE *Thermal insulation with Fusion Bond Epoxy corrosion barrier*

Typical Properties and Performance Characteristics

Corrosion Barrier Properties per CSA Z245.20-10 System 1A

Property	Conditions	Requirements	Typical Values
Adhesion	24 hours @ 75°C	Rating 1 - 3	Rating 1 - 2
Cathodic disbondment	28 days @ 20°C @ 1.5V	≤ 8.5mm	4.0mm
Cathodic disbondment	24 hours @ 65°C @ 3.5V	≤ 11.5mm	3.0mm
Porosity		Rating 1 - 4	Rating 1 - 2
Flexibility (85°C system)	2.5 degrees @ -30°C	No cracking	No cracking
Impact resistance	-30°C	≥ 1.5 J	No holidays @ 1.5 J

Polyurethane Foam Properties

Density ASTM D1622	> 40 kg/m^3
Compressive strength ASTM D1621	≥ 0.3 MPa
Open cell content ASTM D6226	≤ 12%
Thermal conductivity ASTM C518	≤ 0.03 W/mK

External Jacket Properties

PE density ASTM D1505	> 0.940 g/cm^3
Elongation ASTM D638	600%
Tensile strength ASTM D638	18.5 MPa
Impact resistance ISO 179-1	≥ 3.0 kJ/m^2
Outdoor exposure	≤ 2 years

Dimensional Properties

Coating	BPPC Quality Plan	
FBE thickness for 85°C FBE thickness for 110°C	305 micrometers (12 mils) min, 356 micrmoters (14 mils) nom 508 micrometers (20 mils) min, 559 micrometers (22 mils) nom	
Foam thickness (Customer specified)	25.4mm (1 inch) to 76.2mm (3 inches) (-3/+10mm)	
Adhesive over foam and/or tape	Complete coverage	
External polyethylene jacket	≤ NPS 12 > NPS 12 ≤ 20 > NPS 20	≥ 1.0mm ≥ 1.5mm ≥ 2.0mm

Operating Properties

Maximum operating temperature	85°C (or 110°C)
Minimum operating temperature	-40°C*

*Please see notes on cold weather handling on front of data sheet.

Girth Weld Protection: Bayou Perma-Pipe Canada, Ltd. can supply heat shrinkable sleeves and polyurethane foam half shells for completion of insulation system on field joint areas.

Note: For contractual purposes, the most recent edition of BPPC's Quality Plan shall apply, plus additional written agreements between the Customer and Bayou Perma-Pipe Canada, Ltd.

BPPC™
BAYOU PERMA-PIPE CANADA

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