

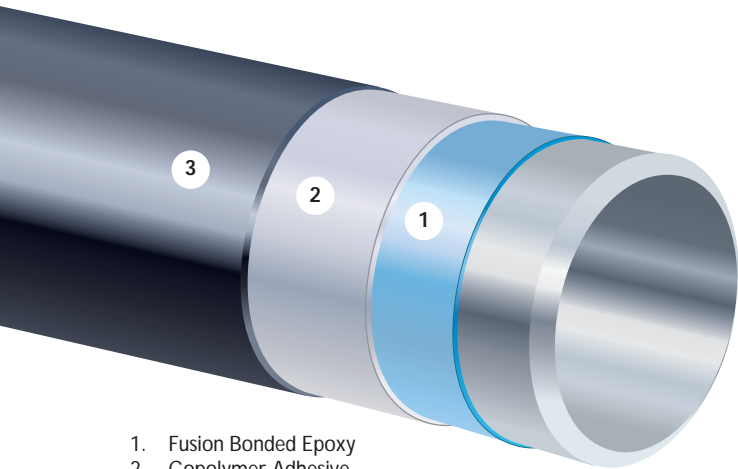
3LPE

Three Layer Polyethylene Coating



ANTI-CORROSION

PRODUCT DATA SHEET



1. Fusion Bonded Epoxy
2. Copolymer Adhesive
3. Polyethylene

Product Description

Bredero Shaw is the world's leading provider of Three Layer Polyethylene Systems (3LPE). Bredero Shaw's 3LPE System is a multilayer coating composed of three functional components. **This anti-corrosion system consists of a high performance fusion bonded epoxy (FBE) followed by a copolymer adhesive and an outer layer of polyethylene which provides tough, durable protection.**

3LPE Systems provide excellent pipeline protection for small and large diameter pipelines with moderate to high operating temperatures.

Applications



Oil & Gas Pipelines



Large Diameter Pipelines



Small Diameter Pipelines

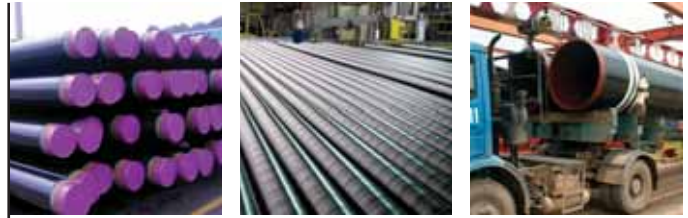


Waterworks Pipelines

Related Standards and Specifications

- CSA Z245.21
- AS 1518
- DIN 30670
- ISO 9001:2008

For additional standards and specifications with which this product complies, please contact your Bredero Shaw representative.



Long Term Corrosion Protection

- The FBE component provides excellent adhesion to steel, providing superior long term corrosion resistance and protection of pipelines operating at moderate temperatures.
- Excellent resistance to cathodic disbondment which reduces the total cost of cathodic protection during the operation of the pipeline.

Engineered Solutions

- Advanced manufacturing techniques allow the 3LPE System to be customized to your specific project.
- Can be applied to pipe diameters from 51 mm (2") to over 1220 mm (48").
- Can be applied in a wide range of thicknesses to cost effectively meet unique project specifications and performance requirements.

Very Good Mechanical Protection

- The tough outer layer of PE protects pipelines during transportation and installation thereby reducing costly repairs while also providing added in-ground protection against shear forces, chemicals and abrasive soil conditions.
- By increasing the thickness of the PE outer layer, the 3LPE System can provide a high level of mechanical protection across many diverse environments without requiring the use of costly select backfill.

Global Availability

- Can be manufactured in a single plant or in multiple coating plants to improve project logistics.
- High capacity within the Bredero Shaw plant network allows the client to benefit from single source advantages, providing more cost effective management of pipe coating needs.

Features & Benefits

Three Layer Polyethylene Coating

Typical Plant Capabilities and Product Properties

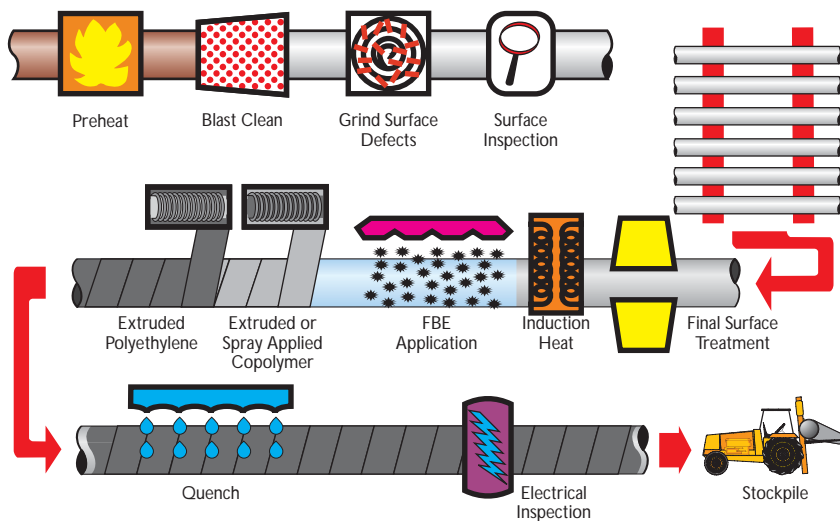
Capability/Property	3LPE
Minimum Pipe Diameter	51 mm (2")
Maximum Pipe Diameter	1220 mm + (48" +)
Minimum Pipe Length	5.5 m (18')
Maximum Pipe Length.....	24.4 m (80')
Minimum Recommended Operating Temperature	-40°C (-40°F)
Maximum Recommended Operating Temperature	85°C (185°F)

Values shown are typical and may vary from plant to plant. Consult Bredero Shaw for special requirements.



3LPE_rev021

Product Application Process



Plants

North America

Fontana, California
Pearland, Texas

Latin America

Monterrey, Mexico
Veracruz, Mexico
Belo Horizonte, Brazil

EMAR

Ellon, Scotland
Leith, Scotland
Orkanger, Norway
Jubail, Saudi Arabia
Ras Al Khaimah, UAE

Asia Pacific

Rayong, Thailand
Kuantan, Malaysia
Kabil, Batam Island, Indonesia
Kembla Grange, Australia

About Bredero Shaw

Bredero Shaw is the global leader in pipe coating solutions. With more than 80 years of experience, the largest team of dedicated pipe coating professionals, the most extensive network of strategically located plants worldwide and with proven innovative coating technologies, the company has protected more pipelines in virtually every environment and operating condition than anyone in the industry.

Bredero Shaw offers technologically advanced solutions for anti-corrosion coatings, protective and weight coatings, thermal flow assurance coatings, internal coatings, custom coatings and field joints for both onshore and offshore applications. This broad range of products and services provides Bredero Shaw with the unique capability to service the full spectrum of pipeline protection and flow assurance requirements. Consult your Bredero Shaw representative for your unique project requirements.

HEAD OFFICE
Bredero Shaw
3838 N. Sam Houston Pkwy E.
Suite 300
Houston, Texas
77032-3400, USA
Phone: +1-281-886-2350
solutions@brederoshaw.com

NORTH AMERICA
Bredero Shaw
Two Executive Place,
200, 1824 Crowchild Trail, N.W.
Calgary, Alberta
T2M 3Y7, Canada
Phone: +1-403-263-2255
northamerica@brederoshaw.com

LATIN AMERICA
Bredero Shaw
3838 N. Sam Houston Pkwy E.
Suite 300
Houston, Texas
77032-3400, USA
Phone: +1-281-886-2350
latinamerica@brederoshaw.com

**EUROPE, MIDDLE EAST,
AFRICA & RUSSIA**
Bredero Shaw
Lakeside House
1 Furzeground Way
Stockley Park, Uxbridge
UB11 1BD
Phone: +44 (0) 208 622 3071
EMAR@brederoshaw.com

ASIA PACIFIC
Bredero Shaw
101 Thomson Road
#17-01/02 United Square
Singapore 307591
Phone: +65-6732-2355
asiapacific@brederoshaw.com