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 operating temperatures.

**PRODUCT DESCRIPTION**

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**FEATURES AND BENEFITS**

**Long Term Corrosion Protection**

The FBE component of the 3LPE system provides excellent adhesion to steel, thereby providing superior long term corrosion resistance and protection of pipelines operating at moderate temperatures. The superior adhesion properties of the FBE also results in 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. The system can be applied to various pipe diameters from 90 mm (3.5”) to over 1220 mm (48”). 3LPE Systems can also 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 polyethylene 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 polyethylene 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**

Bredero Shaw has a network of 27 coating plants strategically located across 6 continents to minimize pipe transportation costs. The 3LPE System 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, ultimately providing more cost effective management of pipe coating needs.
PRODUCT APPLICATION PROCESS

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

APPROVALS

- CSA Z245.21
- DIN 30670
- AS 1518
- ISO 9001:2000

PLANTS

<table>
<thead>
<tr>
<th>Country</th>
<th>Plant Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fontana, Calif.</td>
<td>Pearland, Texas (planned)</td>
</tr>
<tr>
<td>Veracruz, Mex.</td>
<td>Belo Horizonte, Brazil</td>
</tr>
<tr>
<td>Orkanger, Norw.</td>
<td>Enerhen/Warr, Nigeria</td>
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<tr>
<td>Jubail, Saudi</td>
<td>Ras Al Khaimah, UAE</td>
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<tr>
<td>Kuantan, Malay.</td>
<td>Kabil, Batam Island, Indonesia</td>
</tr>
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</tbody>
</table>

BREDERO SHAW: THE GLOBAL LEADER IN PIPE COATING SOLUTIONS

Bredero Shaw is the world leader in pipe coating solutions, with more than 75 years of experience, over 27 pipe coating facilities on 6 continents and the largest team of technical and service specialists in the business. 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.

The information contained herein is indicative of the types of coatings provided by Bredero Shaw, and is not intended to be a guarantee that a particular coating will be suitable for a given application. Since many unique environmental, operating, and design conditions must be considered, the user shall determine the suitability of the coating for the intended use and assume all the risks and liabilities in connection therewith. Bredero Shaw’s liability is stated in our standard conditions of sale.