CORROSION PROTECTION

Leading-edge technologies and solutions that protect the world’s mining and oil & gas resources from corrosion
Aegion protects pipe and the facilities it connects.

The world depends on pipelines. They crisscross continents and seas, totaling millions of miles. Many travel through rough terrain, from high mountain elevations to the depths of the ocean floor. All are responsible for safely collecting, transmitting and distributing the enormous volume of oil, natural gas and other valuable materials that industrialized nations rely on to fuel their economies and their way of life.

These pipeline systems, along with refineries, terminals, above and belowground storage tanks and other structures related to them, are expensive to construct. Corrosive and abrasive materials, together with daily wear, can threaten their integrity and lead to leaks, failures and lost production. Given the risks their sometimes-hazardous contents pose to the environment, these systems and facilities are also highly regulated.

If properly protected and maintained, however, mining and oil & gas infrastructure can be safe and productive for a long time. Every day, we safeguard and maintain this infrastructure throughout the world using technologies that extend its life and meet regulatory requirements.

**Our comprehensive services span infrastructure’s life cycle. Typical projects include:**

- Engineering complete corrosion protection solutions
- Applying coatings, liners and cathodic protection systems
- Rehabilitating pipelines to extend their useful lives

We work wherever energy and mining infrastructure is found, serving industry leaders such as BHP Billiton, BP, Chevron, ConocoPhillips, Enbridge, ExxonMobil, Kinder Morgan, Occidental, Petroleum, PEMEX, Phillips 66, Saudi Aramco, Shell, Tesoro and TransCanada. With customer installations on six continents, our work truly does span the globe. Whether implementing solutions above or belowground, in Western Australia or in a remote village in China, our goal is to protect the things that matter most: public safety, our clients’ resources, the integrity of their infrastructure and the environment.
THE BAYOU COMPANIES

Protective coatings and insulations for pipelines

AT A GLANCE

Given the often harsh environments they reside in and the corrosive materials that pass through them, steel pipelines used in conventional oil and gas production, shale formations and oil sands reserves must be protected from corrosion—inside and out. Pipelines in extreme environments or deepwater also need insulation for temperature control. For example, in deep water environments, water temperatures reach 33°F, while the temperature of the oil being extracted can be as high as 380°F. Bayou has solutions to deal with these challenging environments.

Founded in 1942, The Bayou Companies provides a wide range of the protective coatings and insulations these pipelines require, along with the project management, welding, logistics support and other ancillary services needed to install them safely and efficiently. We deliver these products and services from strategically located facilities in the United States. The largest is our complex in New Iberia, Louisiana, which houses internal and external pipe coating and insulation operations, portable concrete facilities and enough yard storage space to store more than 1,000 miles of our customers’ pipe.

Our New Iberia complex is a prime location for sending pipe into the Gulf of Mexico. In fact, Bayou has provided the protective coatings for a majority of the pipelines installed in the Gulf since the 1970s. We not only send pipe into the Gulf, our sizeable barge on-and-offloading operation combined with rail siding access enables us to receive pipe for inland projects that support the shale formations in the south, southwest and western portions of the United States.
PRODUCTS AND SERVICES

Pipeline Coating, Lining and Insulation – We offer a wide range of coatings, including fusion-bonded epoxy (FBE), concrete weight coatings, three-layer polyethylene, three-layer polypropylene and two-layer polyethylene. Our pre-insulated products are designed for subsea oil and gas gathering, LNG terminals, aboveground steam pipelines and long distance petroleum pipeline transportation. Through a joint venture with Wasco Energy, Bayou also offers offshore insulation coating services to customers in the United States, the Gulf of Mexico, Central America and the Caribbean.

Fabrication and Welding Services – We provide a wide variety of welding services for oil and gas pipeline projects, including pipe multi-jointing, onshore and offshore fabrication and CLAD welding for valves, fittings, wellhead components, pipe and other components. Our professional staff uses computer-controlled welding systems to help ensure weld integrity.

Logistics – As experts in pipeline transportation and handling, we can save our customers time and money on supply chain logistics. Our facility is strategically located to provide pipeline owners easy access to rail, truck or barge loading and offloading. We have the capabilities to accommodate the largest and most challenging projects. Our New Iberia location can load and offload barges at its seven barge sites, is located near major highways and has access to rail spurs. Our contacts and advantageous relationships with carriers help ensure the timely and economic delivery of products when and where they are needed.

MARKETS SERVED

Oil & Gas – Our products have a wide range of applications for onshore and offshore pipelines and include solutions from thermal insulation and concrete coatings for offshore pipelines, to internal and external corrosion resistant coating for transmission pipelines and water supply lines to North American shale formations.

Mining – Our coatings and insulation solutions can be used to protect pipelines transporting water or slurry materials.

CORE MARKETS

• North America
• Gulf of Mexico

Bayou has provided the protective coatings for a majority of the pipelines installed in the Gulf since the 1970s.
AEGION COATING SERVICES

Internal and external field joint coatings, custom coating, rebar coating plants and specialty products

AT A GLANCE: INTERNAL FIELD JOINTS

For more than 30 years, Aegion Coating Services has been an innovator in coating application technology. A pioneer in internal field joint coating robotics for pipeline projects, we deliver a wide range of internal field joint coating services for new construction pipelines carrying oil and gas, water, CO₂ and other substances. Aegion Coating Services offers a complete corrosion control solution that includes internally cleaning, coating and inspecting each field joint and cutback to ensure a 100 percent defect-free solution for the customer.

Our experts have coated more than 110,000 internal field joints, both onshore and offshore, throughout the world. Our patented robotic equipment can operate in pipe diameters ranging from 8 inches (0.5-inch wall) to more than 60 inches.

AT A GLANCE: EXTERNAL FIELD JOINTS AND CUSTOM COATINGS

For 30 years, Aegion Coating Services has engineered, designed, built and serviced its own fleet of coating equipment for 30 years. We are a global leader in external field joint coating applications for various types of pipeline construction. As specialists in pipeline protection systems, our people design and install protective coatings and specialty products that will extend the life of your assets and infrastructure.

Home to one of the world’s largest fleets of field joint coating systems, Aegion Coating Services has applied anti-corrosion coating to millions of field joints worldwide. We also provide custom solutions and coating systems for pipeline projects around the world.

CCSI and CRTS are now Aegion Coating Services. Aegion Coating Services offers unique ID and OD robotic coating solutions for onshore and offshore pipeline field joints. We also offer custom coating solutions, specialized equipment, foam trench breaker, inspection services and more.
PRODUCTS AND SERVICES

Internal Joint Coating Robots – Aegion Coating Services applies fusion-bonded epoxy (FBE) or liquid epoxy to internal field joints with its patented robotic system. The internal coating equipment consists of robots that travel inside the pipe using live video feedback to ensure defect-free workmanship. Technicians signal the robots to either re-clean the cutbacks and develop an anchor pattern in the weld bead, vacuum the spent cleaning material to reuse on the next cleaning cycle, coat the cutback and field joint or perform a DFT/high voltage holiday inspection regiment.

External Field Joint Coating – We are experts in delivering field joint coating solutions worldwide. As the industry’s leader in the application of FBE welded joints, we have the equipment and expertise to provide you with the right joint coating solution for your project.

Custom Coating – Fittings, bends, headers and other configurations can be challenging to field coat. Aegion Coating Services can quickly find or develop the equipment and skills needed for unique applications and service requirements. Our facilities can handle all of your pipeline coating needs.

Rebar Coating Plants – We design, build and install customized state-of-the-art rebar coating plants for customers worldwide.

Specialty Products:
- Deepwater Insulation – Exploration and production technology are reaching areas of discovery much deeper than ever before. Our solutions for pipeline owners eliminate the thermal loss at the welded joints with thermal solutions for almost every insulated pipeline project. Aegion Coating Services provides a mercury-free product that has excellent insulating properties and a quick installation time, on land or on sea.

- Rehabilitation/Overcoats – As pipelines begin to mature, some require in-service repair to restore them and to conform with regulatory requirements. We can perform in-service repairs on pipelines that need additional coating or provide completely new coating systems to extend its design life.

- UV Protection – We offer solutions for pipeline owners who may have projects delayed or postponed when there is the risk of the coated pipe becoming damaged by UV rays. This is an alternative for pipeline owners who need to extend the life of the coating on their projects by applying a UV protection system to the external coating of the pipe.

- Foam Breakers – Recognizing a need to change the way that trench breakers were installed, our engineers developed a foam breaker system that is not only easy to install and operator friendly, but also aids in maintaining the pipeline’s integrity. This allows the passage of cathodic protection through the pipeline enabling the pipeline owner to take full advantage of the system’s design without shielding areas of the pipeline that could lead to potential coating failures. We also provide traditional foam breaker and pipe pillows to protect your pipeline projects.

Coating Systems
- FBE – internal and external
- Liquid epoxy – internal
- 3LPP and 3LPE
- Concrete infill
- Insulation – IMPU
- Pipeline rehabilitation
- Foam breakers
- Custom coating solutions

MARKETS SERVED

Oil Gas – Our products have a wide range of applications for new pipelines, located both offshore and onshore, that are used to transport unrefined products as well as produced water used in oil and gas production. From custom coating tees and elbows to completing field joints on offshore lay barges or onshore pipeline right of way, Aegion Coating Services can handle any project that may arise.

Mining – The water used in ore refining processes and slurry pipelines contains corrosive elements that cause these pipelines to prematurely corrode if not properly protected. Our robotics solution provides protection by internally coating field joints to increase protection at the field joint area.

CORE MARKETS
- North America
- South America
- The Middle East
- Australasia
- Europe

www.aegion.com | Aegion Corporation 5
Our diverse experience enables us to take on the toughest challenges associated with underground, submerged and embedded structures.

AT A GLANCE

Corrosion is a pipe’s worst enemy. Over time it can penetrate the pipe wall, causing leaks that threaten safety and the environment. There are many causes for corrosion and many complex factors to consider when engineering the best corrosion control solution.

At Corrpro, our engineers are corrosion experts. Our diversified staff — the largest group of dedicated corrosion control professionals in our industry — includes professional engineers with backgrounds in metallurgy, electrical systems and chemical engineering. We are a leading provider of cathodic protection systems, AC and DC interference mitigation systems and other long-term solutions for preserving pipes and other infrastructure. Our diverse experience enables us to take on the toughest challenges associated with underground, submerged and embedded structures.

In addition to mitigating corrosion in existing structures, we also prevent it in new ones.

Our solutions help extend the life of these assets, minimize maintenance and replacement costs and achieve compliance with government-mandated pipeline integrity program requirements. In all, Corrpro’s team of corrosion engineers services nearly one million miles of pipe each year.

With locations worldwide, we offer a comprehensive range of pipeline integrity services using the industry’s most advanced cathodic protection design tools, materials and construction techniques. Our rigorous engineering and design procedures, advanced research and proper application of a broad range of products and services are all aimed at protecting and preserving the world’s energy infrastructure.
PRODUCTS AND SERVICES

Cathodic Protection Systems – Cathodic protection systems use an electrochemical process to control corrosion of the metal surfaces found in structures exposed to corrosive environments. Many factors must be considered when selecting the best method for protecting these structures. These factors range from the composition of the metal structure and impact of the surrounding soil or water, to right-of-way conditions, environmental impact and power supplies. We have over 80 years of experience and have engineered hundreds of thousands of these customized systems, with installations in pipelines, refineries, above and underground storage tanks and concrete infrastructure, including offshore and marine environments.

System Materials and Construction – We supply both the materials and the construction services for our solutions. We offer a comprehensive range of corrosion control and cathodic protection equipment, including power supplies, anodes, electrical isolation devices, cables, monitoring equipment and instrumentation. Construction is performed by highly trained crews focused on Aegion’s zero incident safety culture.

Interference Control Systems – A cathodic protection system’s operation can be affected by electrical interference from adjacent facilities, high voltage lines and other sources. The strong electrical backgrounds of many of Corrpro’s engineers make us a leading provider of AC interference studies and mitigation designs for both energy and water pipelines. We are also experts in DC stray current analyses from foreign pipeline cathodic protection systems and DC traction power systems.

Engineering Design, Maintenance, Monitoring and Installation – Our engineering staff includes registered Professional Engineers and NACE International-certified specialists and technicians. This rich talent pool enables us to provide expert advice and a full range of engineering services. In addition to designing and installing cathodic protection and corrosion control systems, Corrpro also provides ongoing maintenance and inspection programs, each performed by qualified technicians to meet the owner’s corrosion control objectives.

MARKETS SERVED

Oil & Gas – Our full range of services and solutions are regularly used in both onshore and offshore facilities, including transmission pipelines, distribution systems, down hole, well casing, gathering systems and above and belowground storage tanks.

Refining and Chemical Processing – Corrpro’s unique combination of application expertise, onsite installation and product portfolio provides the needed protection for legacy piping and tank infrastructure to meet increased production demands.

Offshore and Marine – Our expert coating assessment and inspections complement our corrosion monitoring and cathodic protection for offshore and marine structures.

Water and Wastewater – Deteriorated water and wastewater lines, pump stations and other structures are often excellent candidates for rehabilitation using our corrosion control solutions.

CORE MARKETS

• North America
• Europe
• The Middle East
• South America
**UNITED PIPELINE SYSTEMS®**

*Thermoplastic lining systems for pipeline protection and rehabilitation*

**AT A GLANCE**

The transportation of corrosive or abrasive materials in the oil, gas, mining, industrial and municipal markets can lead to internal corrosion and abrasion in pipelines. This damage can cause leaks, pipeline failure, environmental damage and lost production. Complete replacement of these pipelines is costly and time-consuming, but internal abrasion and corrosion can be avoided by using the pipeline construction capabilities of United Pipeline Systems.

United Pipeline Systems is a global leader in high-performance thermoplastic internal pipeline lining systems. Since first developing the compressed fit liner process in 1985, United has installed over 15,000 miles of Tite Liner® in more than 30 countries worldwide, from 2- to 52-inches in diameter and with pressures up to 7,500 psi.

Today the Tite Liner® system is the most widely used thermoplastic lining system in the world. Our in-house capabilities give us complete control over the production and quality of the specialized pipeline materials and equipment needed for every installation. Our professional staff provide planning and design services, procurement, installation, and ongoing monitoring and maintenance programs. We have an engineered solution to accommodate whatever passes through a pipe.

**PRODUCTS AND SERVICES**

**Tite Liner®** – The Tite Liner® system is a thermoplastic technology that protects the inside walls of steel pipelines from corrosion and abrasion and extends the lives of new and existing pipelines. To date, this system has been installed in pipelines ranging from 2- to 52-inches in diameter. Fast and economical to install, our technology is designed to create a tight fit barrier between the interior wall of the host pipe and the transported fluids, maximizing throughput, restoring operating capacity in aging pipelines and providing superior protection at a fraction of the cost of pipeline replacement.
Safetyliner™ – The Safetyliner™ system offers the same lining protection as the Tite Liner® system, but with the addition of enhanced venting of permeated gases. Its monitoring and venting capabilities have proven especially effective in high-value, environmentally sensitive applications, including CO2 and sour gas pipelines.

Tite Liner® RT – Tite Liner® RT system is a raised temperature polyethylene material specifically designed for the severe conditions present in oil & gas and industrial environments.

Tite Liner® HC – Tite Liner® HC is designed for severe conditions present in oil & gas and industrial environments.

Tite Liner® Flange Connection – Generally used in corrosive applications, the standard Tite Liner® flange connection uses raised face weld neck flanges.

Slurry Flange™ Flange Connection – For abrasive applications, the Slurry Flange™ connection is used in slurry and non-slurry pipelines where both the steel flange and the thermoplastic flange-fitting are machined with specially designed interlocking surfaces.

WeldTite™ EF Welded Connection – The WeldTite™ EF welded connection allows for the connection of two thermoplastic lined sections of pipe without the use of flanges.

WeldTite™ CRA Welded Connection – The WeldTite™ CRA welded connection allows for the connection of two thermoplastic lined sections of steel pipe without the use of flanges.

MARKETS SERVED

Oil & Gas – Our solutions provide excellent chemical, corrosion and erosion resistance for numerous oil and gas pipeline applications, including:

- Crude oil and oil emulsion
- Multi-phase crude production/transit
- Produced water
- Water injection and disposal systems for both onshore and offshore
- CO₂ production and injection
- Natural gas
- Sour and wet gas
- Acid gas

Mining – The Tite Liner® system is well suited for mining pipelines that handle tailings, concentrate, acid, recovered process water and desalinated water.

- Tailings
- Concentrate
- Acid lines
- Water lines

Industrial – The Tite Liner® system effectively protects steel pipelines used in industry to transport chemical slurries, brine, caustic lines and corrosive effluents.

- Chemical slurries
- Corrosive effluents
- Sodium carbonate
- Brine

Municipal – Aging force mains, transmission lines and other pressure pipes are typically excellent candidates for rehabilitation using the Tite Liner® system.

- Pressure sewer mains
- Water transmission lines

Whether protecting new pipelines or rehabilitating existing lines, United has the know-how and experience to provide an engineered lining solution to meet your needs.

CORE MARKETS

- North America
- South America
- North and South Africa
- The Middle East
# Aegion Companies

Our companies include technology and service leaders in each of the markets we serve.

## INFRASTRUCTURE SOLUTIONS

<table>
<thead>
<tr>
<th>Company</th>
<th>Services</th>
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<tbody>
<tr>
<td>Insituform.com</td>
<td>Trenchless rehabilitation solutions for water, wastewater and industrial pipelines</td>
</tr>
<tr>
<td>Fibrwrap.com</td>
<td>Fiber-reinforced polymer systems used to strengthen, repair and restore pipelines and masonry, concrete, steel and wooden structures</td>
</tr>
<tr>
<td>FyfeCo.com</td>
<td>Commercial and structural project design support, feasibility assessments, budget pricing and up-to-date solutions developed through continuous research and innovation</td>
</tr>
<tr>
<td>MTC</td>
<td>High-quality product and equipment sales, including CIPP, Tyfo® and installation equipment</td>
</tr>
<tr>
<td>Underground Solutions®</td>
<td>PVC technologies for water, sewer and conduit applications</td>
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## CORROSION PROTECTION

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<th>Company</th>
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<tr>
<td>AegionCoatingServices.com</td>
<td>Unique OD and ID robotic coating solutions for onshore and offshore pipeline field joints as well as custom coating solutions, specialized equipment, foam trench breaker and inspection services</td>
</tr>
<tr>
<td>BayouCompanies.com</td>
<td>Project management, logistics support and prefabrication for onshore and offshore pipelines, including coatings, linings and insulations</td>
</tr>
<tr>
<td>Corrpro.com</td>
<td>Cathodic protection systems, corrosion solutions and engineering services to preserve pipelines, storage tanks and other structures</td>
</tr>
<tr>
<td>UnitedPipeline.com</td>
<td>Thermoplastic lining solutions for the rehabilitation and protection of pipelines used to transport corrosive or abrasive materials</td>
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## ENERGY SERVICES

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<thead>
<tr>
<th>Company</th>
<th>Services</th>
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<tbody>
<tr>
<td>Brinderson.com</td>
<td>Engineering, procurement, fabrication, construction, maintenance and turnarounds for oil &amp; gas related facilities</td>
</tr>
<tr>
<td>SchultzServices.com</td>
<td>Fabrication, construction, maintenance and turnarounds for oil &amp; gas related facilities</td>
</tr>
<tr>
<td>Aegion.com/AllSafe</td>
<td>Safety services</td>
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</table>
Aegion companies operate across the world.

Aegion companies can be found where we are most needed, onshore and offshore, in big cities and remote locations throughout the world. With operations across the United States, Canada, South America, Europe, Australia, the Middle East and Asia-Pacific, we work in geographic markets where demand for our products and services is strong.
<table>
<thead>
<tr>
<th>United Arab Emirates</th>
<th>United Kingdom – London (Redhill)</th>
<th>Mexico – Queretaro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hockway Middle East FZE</td>
<td>Unit 4, Trowers Way Centre Holmthorpe Ind Estate Redhill, UK RH1 2LP</td>
<td>United Pipeline de Mexico, S.A. de C.V.</td>
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<tr>
<td>United Kingdom – Durley</td>
<td>Cathodic Protection House 4 Mill Court The Sawmills Durley, Southampton, UK SO32 3EJ</td>
<td>Oman – Muscat</td>
</tr>
<tr>
<td>Ph: 4489.861.980</td>
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<td>PO Box 307, Al-Harthry Complex PC118, Muscat</td>
</tr>
<tr>
<td>Ph: 968.9947.1006</td>
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</table>

**Infrastructure Solutions**

**FIBRWRAP**

**HEADQUARTERS**

California – Los Angeles (Fullerton) 1400 E. Orangehorpe Ave. Fullerton, CA 92831 Ph: 909.390.4363 www.fibrwrap.com

**FYFE**

**HEADQUARTERS**

3940 Ruffin Road, Suite C San Diego, CA 92123 Ph: 858.642.0694 www.fyfeco.com

**INSITUFORM**

**HEADQUARTERS**

Missouri – St. Louis (Chesterfield) 17988 Edison Avenue St. Louis, MO 63005 Ph: 800.234.2992 www.insituform.com

**MTC**

**HEADQUARTERS**

Missouri – St. Louis (Chesterfield) 17988 Edison Avenue St. Louis, MO 63005 Ph: 636.530.3330 www.manufacturedtechnologies.com

**UNDERGROUND SOLUTIONS**

**HEADQUARTERS**

California – San Diego (Poway) 13135 Danielson Street, Suite 201 Poway, CA 92064 Ph: 858.679.9551 www.underground-solutions.com

**www.aegion.com | Aegion Corporation**
Aegion Corporation

We are a global leader in infrastructure protection and maintenance, providing proprietary technologies and services to rehabilitate and strengthen water, wastewater, energy and mining piping systems and buildings, bridges, tunnels and waterfront structures. Our technologies and services protect against the corrosion of industrial pipelines and provide integrated professional services in engineering, procurement, construction, maintenance and turnaround services to a broad range of energy related industries.

Our products and services are currently utilized in more than 100 countries across six continents. We believe that the depth and breadth of our products and services platform make us a leading “one-stop” provider for infrastructure rehabilitation, protection and maintenance needs.

For more information please contact: