

# Power Generation

**Comprehensive asset protection for power generation stations**



# Proven Products from the Industry Leader

Solving our customers' problems is how we got started and after over 75 years, it's still our focus at Carboline.

# 1947

Since 1947, we have been dedicated to delivering innovative coatings, linings, and fireproofing products. We are driven to provide the best solutions, service, and quality to our customers.



Our customers can be confident that behind every sale is a team of some of the most well-respected members of the industry, dedicated and determined to make your project a success.



Our global network of industrial service centers and distribution points are strategically located around the world to provide the highest level of service and support for your project.



[www.carboline.com](http://www.carboline.com)



Carboline manufactures coatings, linings, and fireproofing materials that extend the service life of critical power generation assets while keeping workers safe.

## Product types

- > Corrosion protection linings
- > Surface- and moisture-tolerant coatings
- > Safety coatings
- > Low-temperature and quick-cure coatings
- > Ultra-weatherable finishes
- > Chemical-resistant linings
- > Secondary containment coatings
- > High-temperature coatings
- > Coatings under insulation

## Certifications and listings

- > Nuclear Regulatory Commission level 1
- > Underwriters Laboratories
- > National Sanitation Foundation
- > American Bureau of Shipping
- > Det Norske Veritas
- > NORSOK
- > Lloyd's Registry
- > ISO

## Affiliations



## ATMOSPHERIC EXPOSURES

### Structural steel, piping, and equipment

Product series described below are suitable for all power plant structural steel, plus piping and equipment operating up to 250°F (121°C) and exposed to a variety of pollutants, normal weathering, and ultraviolet radiation.

#### Corrosion-inhibitive and chemical-resistant coatings

**Carbozinc**® series zinc-rich coatings offer outstanding performance in power plant environments, demonstrating excellent galvanic corrosion protection and longevity to match the life of the structure.

**Carbomastic**® series surface-tolerant epoxies apply well over marginally prepared substrates, can be applied over damp surfaces, and some can cure at low temperatures for year-round painting in challenging conditions.

**Rustbond**® series surface-tolerant epoxy primers/sealers feature excellent wetting properties and demonstrate outstanding adhesion to existing coatings. They accept a variety of topcoats.

**Carboguard**® series epoxies feature excellent barrier properties and strong chemical resistance. These flexible solutions are easy to apply and are suitable over zinc-rich primers, or applied directly to metal or cementitious substrates.

#### Durable finish solutions

**Carbothane**® series high-performance urethane finishes offer long-term weather resistance, excellent color and gloss retention, and chemical resistance to splashes and spills.

**Carboxane**® series polysiloxane finishes are ultra-weatherable and provide outstanding long-term color and gloss retention owing to UV-resistant formulas.

#### Novel emergency maintenance hybrid coating

Carboline's new **Carbothane DTM Mastic** is a hybrid urethane formula with mastic properties developed specifically for emergency maintenance or rapid-turnaround coating projects. It applies directly to metal, including marginally prepared surfaces, while also demonstrating good weathering and UV resistance.



## Piping and process equipment

Product series below are suitable for a wide range of service exposures and operating temperatures ranging from ambient up to 1,000°F (538°C).

### Uninsulated steel up to 1000°F (538°C)

**Carbozinc** series coatings offer exceptional corrosion protection and are stable at very high temperatures. They perform very well over steel substrates during downtime or thermal cycling events where the risk of corrosion of unprotected steel is very high.

**Thermaline**® series high-heat polymer coatings provide excellent corrosion protection and come in a wide range of colors to color-code high-temperature equipment. They are ideally applied over Carbozinc zinc-rich primers for superior performance and longevity.

### Worker protection and insulation up to 350°F (177°C)

**Carbotherm**® series composite coatings feature temperature-resistant epoxy or acrylic binders and are ideal for providing heat barriers that protect workers in proximity to hot surfaces. They also inhibit transfer through surfaces to reduce energy consumption.



## Coatings under insulation

High-temperature piping or equipment is often insulated to protect workers or conserve energy. But moisture or chemicals are likely to eventually breach the insulation and accelerate corrosion unless the underlying asset is protected. Under-insulation coatings described below are formulated to resist aggressive chemicals as well as thermal and wet-dry cycling.

### Insulated metal up to 300°F (148°C)

**Carboguard** series epoxies demonstrate outstanding barrier properties against moisture and are moderately chemical-resistant.

**Carbomastic** aluminum pigment coatings are ideal for application over marginally prepared surfaces and provide excellent moisture and chemical protection to insulated steel.

### Insulated metal up to 1,200°F (650°C)

**Thermaline** series coatings provide ultimate chemical resistance and corrosion under insulation (CUI) protection in thermal cycling or wet-dry cycling events. This versatile series includes modified epoxy phenolic, glass-flake reinforced epoxy novolac, inorganic polymer, silicone, and zinc-rich technologies.

## LININGS AND SECONDARY CONTAINMENT

### Protecting tanks and pipe infrastructure

Protecting the storage tanks and piping common across all power generation plants is crucial to providing reliable energy supplies. Product series described below are lab-tested and field-proven to protect these essential assets.

### Resisting water, fuels, and harsh chemicals

**Carboguard** series epoxy linings perform well in tanks or pipelines that carry moderately corrosive fluids like water or mild chemicals at near-ambient temperatures.

**Phenoline**<sup>®</sup> series epoxy and modified epoxy linings offer excellent protection against a wide variety of contents including demineralized water, fuels, caustic solutions, and more.

**Plasite**<sup>®</sup> series specialty high-performance linings protect against severe and aggressive chemical exposures in high-pressure and higher-temperature service conditions. Single-coat, high-build, solvent-free, and fast-cure variants are available for rapid-return-to-service.



### Concrete repair and secondary containment

Secondary containment of chemicals, wastewater, fuels, or other compounds in power plants is required by law, presenting owners with the challenge of protecting concrete substrates in the event of a spill. Series described below were developed especially for these complex scenarios.

**Semstone**<sup>®</sup> series products consist of epoxy- and vinyl ester-based technologies forming the backbone of aggregate-filled or other reinforced systems that withstand aggressive chemical exposure and mechanical abuse.

**Reactamine**<sup>®</sup> series elastomeric polyureas and hybrids feature excellent elongation and crack bridging properties and offer outstanding protection against a wide range of fuels, chemicals, and wastewater.

# Structural steel fire protection

Passive fire protection is instrumental to protecting people and infrastructure in the event of a fire. Carboline manufactures both epoxy intumescent and cementitious fire resistive materials with hydrocarbon pool and jet fire ratings suitable for rapid-rise and overpressure scenarios.

## Cementitious

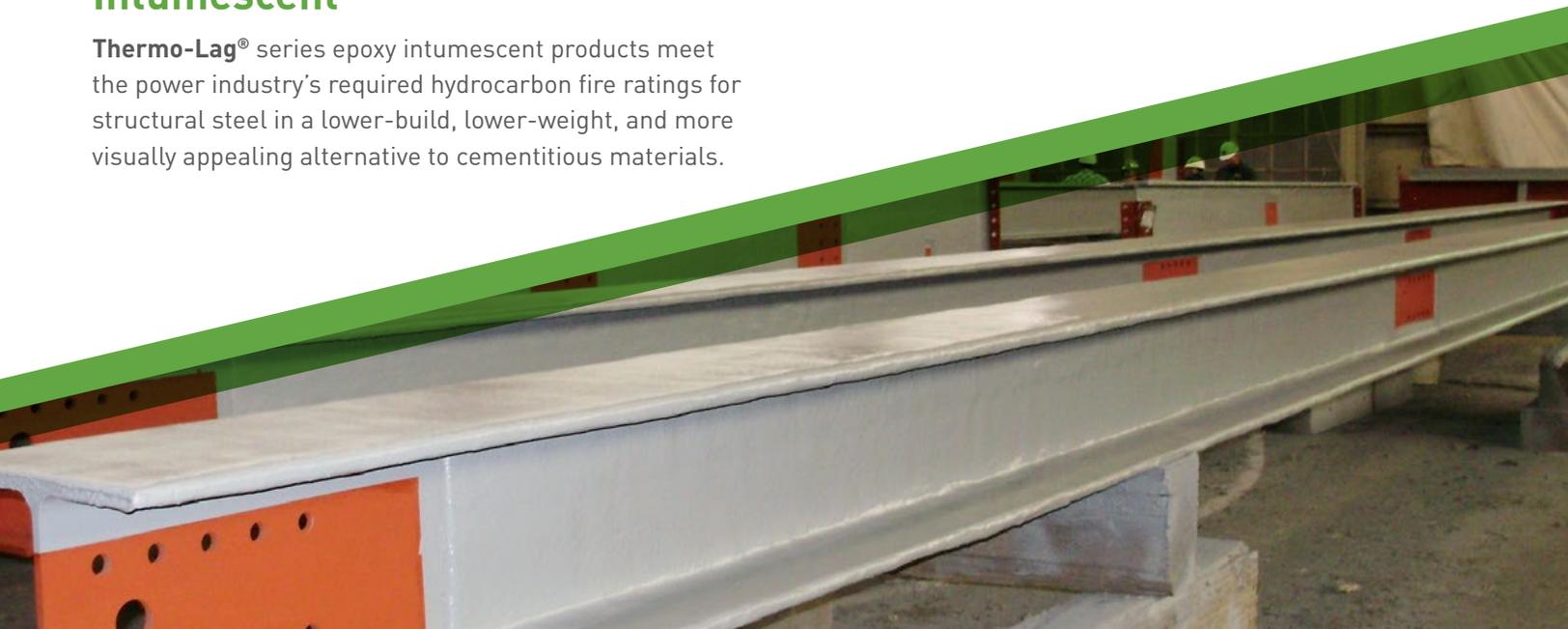
**Pyrocrete**® series medium- and high-density, exterior-grade cementitious fire-resistive materials withstand hydrocarbon pool and jet fires, and additionally provide cryogenic spill protection for assets in proximity to liquefied natural gas (LNG).

## Intumescent

**Thermo-Lag**® series epoxy intumescent products meet the power industry's required hydrocarbon fire ratings for structural steel in a lower-build, lower-weight, and more visually appealing alternative to cementitious materials.

## Specialty fire protection for cables

**Thermo-Lag 270** is a water-based mastic fire-resistive coating specially developed for grouped or bundled electrical cables in exterior or interior locations. Factory Mutual-rated and International Electrochemical Commission-approved.



# GLOBAL COATINGS LEADERS™

RIGHT PEOPLE • RIGHT PRODUCTS • RIGHT LOCATIONS

## GLOBAL MANUFACTURING PLANTS

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