

# Rail

## Coatings, Linings and Fireproofing





# Proven Products from an Industry Leader

Carboline has been a leader in the industrial coatings and linings industry since 1947. Our comprehensive product line of premium Carboline brands, such as Plasite®, Carboguard®, Phenoline®, and Railplex®, provide solutions for a wide range of chemical exposures. These highly regarded product lines are well-established in the rail industry and provide the most inclusive interior and exterior systems in the market. Carboline’s linings are tested on over 75,000 chemicals and concentrations and have a proven field history of delivering the highest level of confidence to rail car owners and lessors.

## Product Line

Carboline offers products for every segment of the rail industry, from high-performance coatings for exteriors of all types of rail cars to interior linings for everything from food service to highly corrosive chemicals. Examples include:

- › Chemical resistant linings
- › Linings for highly corrosive commodities
- › Food-grade linings
- › Single-coat linings
- › Outstanding corrosion protection products
- › DTM exterior coatings
- › Two-coat exterior epoxy/urethane systems

## Certifications / Listing

- › Det Norske Veritas
- › Underwriters Laboratories
- › National Sanitation Foundation
- › ISO 9001 Certified
- › FDA 21 CFR 175.300 Compliant

## Affiliations



# Dedicated Service, Support & Solutions

Our products are backed by the industry’s most experienced sales and service team, and our dedicated team of field representatives is focused solely on the rail transport market. In an ever-evolving market, the Rail Group provides education, training, and technical support so that our specifiers, shippers, and applicators have the latest and best information to make sound decisions.

## Our services include

- › Work with fleet managers to provide inspections and evaluations
- › Technical service and product training for application facilities
- › Courtesy inspections
- › Application training
- › Coating failure analysis
- › Sample car inspections
- › Pre-job meetings

## The Carboline advantage

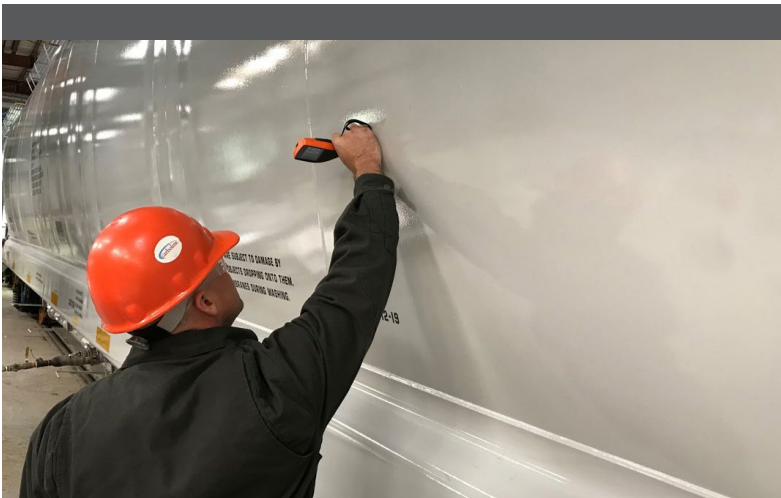
- › Coating and lining recommendations for hopper and tank cars
- › Lining recommendations and testing services
- › Technical and sales support throughout North America
- › Dedicated rail customer service
- › Education - fleet managers, engineers, owners, leasing companies, quality, inspectors & applicators
  - › On-site training
  - › Lunch & Learns
  - › Rail School at Carboline headquarters

## Rail Corrosion School

The two-day seminar covers topics specific to the rail market, such as commonly used coating and lining systems, surface preparation, application, problem resolution, and repairs, just to name a few.

Carboline’s technical experts present to attendees and offer a hands-on experience with several coatings. Attendees not only received education specific to their industry but were able to apply products firsthand and tour the facility.

Carboline understands the importance of educating its customers and is delighted to host several corrosion seminars throughout the year.





## Hopper cars, tank cars and other rolling stock

Carboline's epoxy exterior coatings are designed for easy application and superior corrosion and chemical resistance. We offer a wide range of solutions that can provide fast cure times as well as VOC and HAP's free coating systems. We are the leader in 100% solids technology and direct to metal (DTM) products.

### Carboguard 904

Carboguard 904 is a 98% solids two component high gloss, fast-cure epoxy formulated for use as a direct-to-metal (DTM) exterior coating with excellent corrosion and chemical resistance. We have over 20 years of market history with Carboguard 904.

### Railplex EE-2020

A 1:1, high solids polyamide epoxy designed to provide very good corrosion resistance as a single coat, direct-to-metal (DTM) exterior coating for rail cars and other structures. While all epoxies will chalk and yellow under UV exposure, this coating has good color and gloss retention better than most.

## Outstanding gloss and color retentive finishes

Our single-coat, single-pack finishes, and two-coat epoxy/urethane systems provide excellent corrosion and UV resistance.

### DTM Urethane

#### Carbothane® 8845

A high-gloss, high-build, acrylic polyurethane coating that can be used as a single-coat, direct-to-metal (DTM) system. This coating has very friendly spray (flow and leveling) properties for an outstanding final appearance. This coating has excellent hardness, adhesion, and resistance to weathering, impact, marring, abrasion, chemicals, and staining.

### Acrylic Coatings

#### Carbocrylic® 3358-G

High-performance graphite-reinforced direct-to-metal primer with excellent corrosion-resistant properties, resistance to flash rusting, and suitability for SPPC-SP3 and SP6-cleaned steel. It is specifically formulated for chemical resistance to acids and chemicals.

#### Carbocrylic 3359 MC

A versatile, high-performance finish with excellent corrosion resistance and exterior weathering properties. This single-component water-based acrylic has fast dry characteristics.

#### Carbocrylic 3359 DTMC

A single-component durable, high-performance, direct-to-metal acrylic coating for use where excellent weathering properties and chemical resistance are required.

### Two Coat Epoxy/Urethane Systems

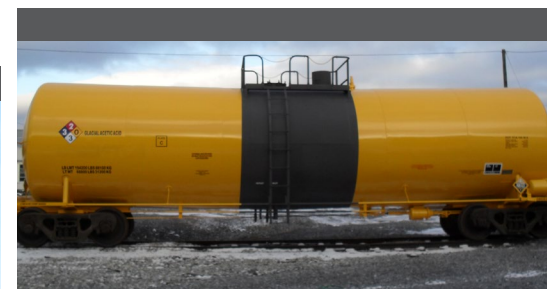
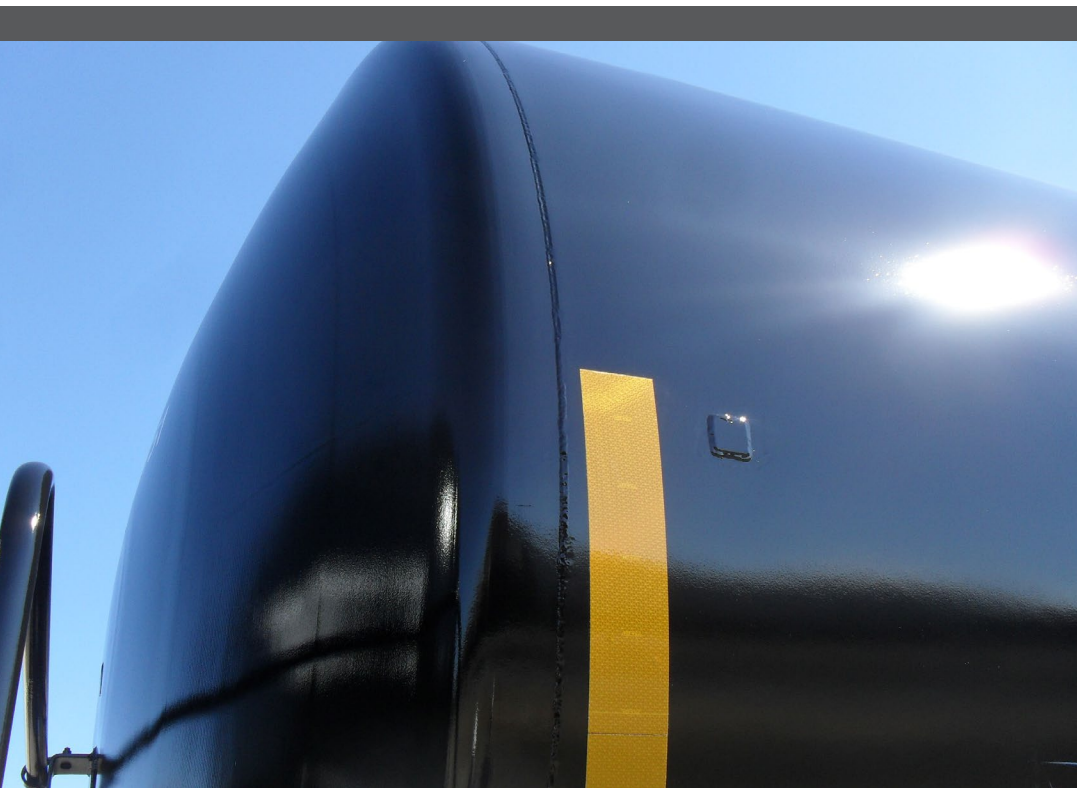
#### Carboguard 8922/Carbothane 134 HG

Carboguard 8922 is a versatile corrosion resistant epoxy primer. Carbothane 134 HG is an acrylic polyurethane that completes a high-performance exterior coating system with excellent chemical resistance and color and gloss retention.

### Polyaspartic

#### Carboquick® 200

This fast-cure, high-build polyaspartic coating provides excellent corrosion protection and long-term weatherability in just one coat. It can be applied direct-to-metal (DTM) at 6-10m mils dry film thickness (DFT) to eliminate the need for typical primers and/or intermediate coats. This significantly speeds up the painting process, saves labor, and saves money without sacrificing performance.





# Linings for hopper cars

Carboline’s hopper car coatings are one and two-coat systems that provide proven protection. We offer fast-cure, FDA-compliant systems with little to no odor that is tough, flexible, abrasion, and impact resistant. Our product offering includes the widest variety of chemical-resistant coatings in the rail industry.

## Carboguard 892

A high-solids, semi-gloss, high build, self-priming epoxy that provides a tough, cleanable, and aesthetically pleasing surface. It is suitable for carrying dry food-grade cargo.

## Carboguard 896

A two-component, high-solids, modified Bis-F epoxy formulated as a protective lining with excellent resistance to acetic and hydrochloric acids and suitable for cars carrying EVA, PTA, PE, PP, PS, and PVC plastics.

## Carboguard 992

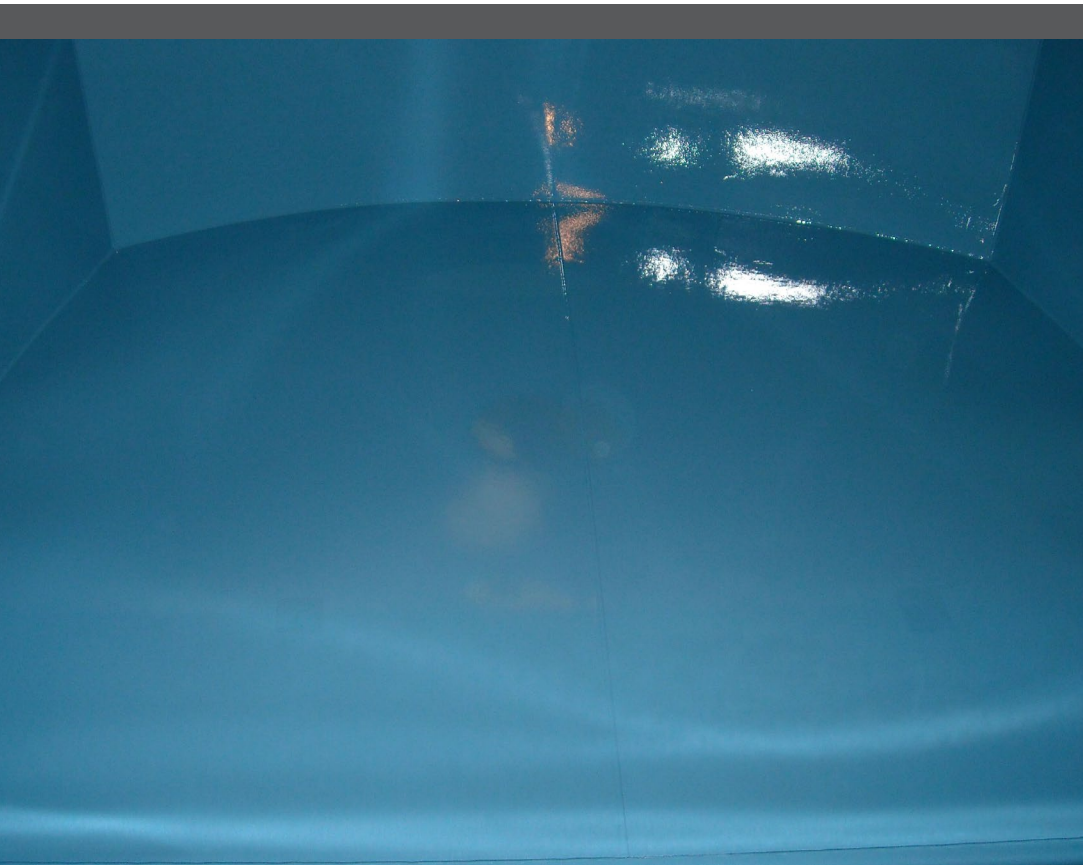
A solventless, epoxy lining for dry bulk cargoes that is applied by heated, airless plural component spray, as a one-coat lining for hopper cars carrying plastic pellets, food and grain, or other dry cargo. It has exceptional chemical resistance and is acceptable for direct contact with dry bulk food products.

## Carboguard 995

A two-component, solventless epoxy formulated as a flexible, direct-to-metal (DTM) protective lining for rail cars, used for dry bulk service for hopper cars carrying polyethylene (PE), polypropylene (PP), or polystyrene (PS) plastic pellets.

## Reactamine® Series

A 100% solids elastomeric, polyurethane and polyurea hybrid system, applied at a nominal thickness of 18 to 125 mils, depending on conditions of use. The high-build coating provides a durable, flexible membrane that can withstand significant impact and abrasion. Extremely rapid cure improves throughput in the shop and allows quick return to service for field repairs. Reactamine can be used in fertilizer, salt, adipic acid, and plastic pellet services.



# Tank car linings to handle acids, caustics, solvents, crude oil or food-grade cargoes

Carboline’s tank car linings are the most complete product offering in the industry, with a long proven history of performance, a wide variety of chemical resistance options, FDA compliant, with little or no odor. Our offering also includes tough, resilient systems that provide abrasion and impact resistance and come in one or multiple-coat systems with fast cure times.

## Carboguard 571 & 4571

This solvent-free, plural component-applied coating is commonly used for tank lining applications in the rail industry (corn syrup cars) and other in-shop applications where single-coat and taste/odor restrictions are primary requirements.

## Carboguard 891 VOC

An ultra-high-solids epoxy that is designed as a liner for potable water, demineralized water, wastewater, and many other services. It is widely used as a tank lining for steel and concrete tanks. This product is self-priming and is normally applied in two coats, formulated for application at conventional builds (4-6 mils per coat) and high-builds (10 mils per coat).

## Phenoline 333

A low bake, high solids, modified epoxy formulated as a protective lining with excellent resistance to molten sulfur. Excellent chemical and thermal shock resistance.

## Plasite 3070, 3070 L, 3073, 3070 LB

High-bake coatings using an unmodified phenolic resin with superior resistance to acids and solvents. Conforms to current VOC regulations. Plasite 3070 LB is the low-bake version of this coating.

## Plasite 4100 & 4300

Thick-film vinyl esters with extreme chemical resistance.

## Plasite 4550 S, 4555 S

Thick-film, single-coat, epoxy-novolac linings with outstanding overall chemical resistance to acids, caustics, solvents, and crude oil. Plasite 4555 S handles food-grade service.

## Plasite 7133 HS

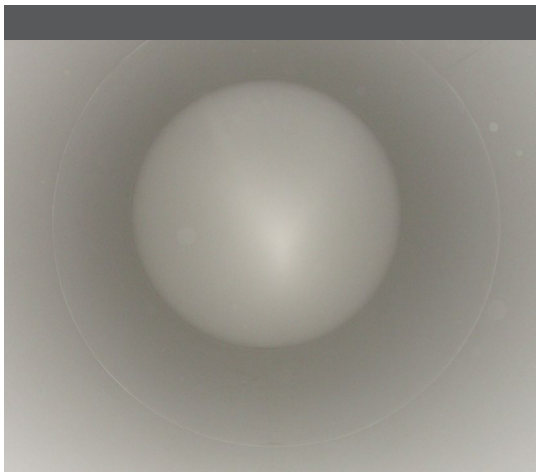
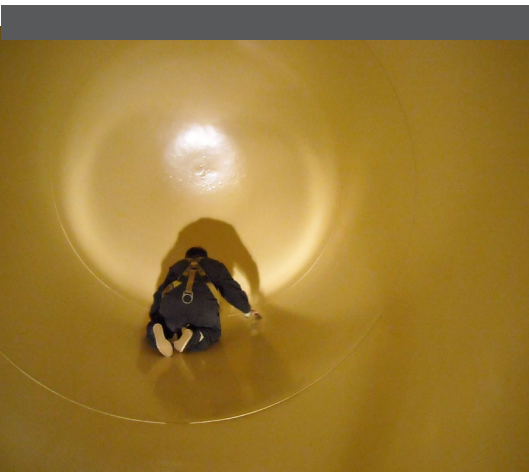
Excellent resistance to a wide range of chemicals, water, and aqueous food solutions. To be used where taste/odor restrictions to sugar solutions, wine, beer, meat products, and similar cargoes are needed.

## Plasite 9570, 9571, 9573

They are specifically formulated for excellent abrasion resistance while retaining performance and physical properties. These are high-solids, low-bake linings with outstanding overall chemical resistance (especially caustics).

## Stratholiner 7010

A two-component, novolac-modified epoxy formulated for use as a liner in tank cars carrying clay and calcium carbonate: high-build, single-coat application.



# GLOBAL COATINGS LEADERS™

RIGHT PEOPLE • RIGHT PRODUCTS • RIGHT LOCATIONS



## GLOBAL MANUFACTURING PLANTS

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