

Rail

High-performance coatings and linings that protect rolling stock



GLOBAL SERVICE AND SUPPORT

Proven products from the industry leader

Carboline is the most trusted manufacturer of corrosion protection solutions for railcars. Renowned Plasite®, Carboguard®, Phenoline®, and Railplex® series products comprise the most comprehensive portfolio of interior lining and exterior coatings on the market. Carboline has earned the confidence of owners, lessors, and shippers worldwide with field-proven linings that are tested on over 75,000 chemical and concentration combinations.

Product types

Carboline products are suitable for all types of freight rail rolling stock, from high-performance exterior coatings to interior linings compatible with the most benign, as well as most aggressively corrosive, cargo types. Generic products include:

- > Chemical-resistant linings
- > Linings for highly corrosive commodities
- > Food-grade linings
- > Single-coat linings
- > Direct-to-metal (DTM) exterior coatings
- > Two-coat exterior epoxy/urethane systems

Certifications and listings

- > Det Norske Veritas
- > Underwriters Laboratories
- > National Sanitation Foundation
- > ISO 9001-certified
- > FDA 21 CFR 175.300-compliant

Affiliations

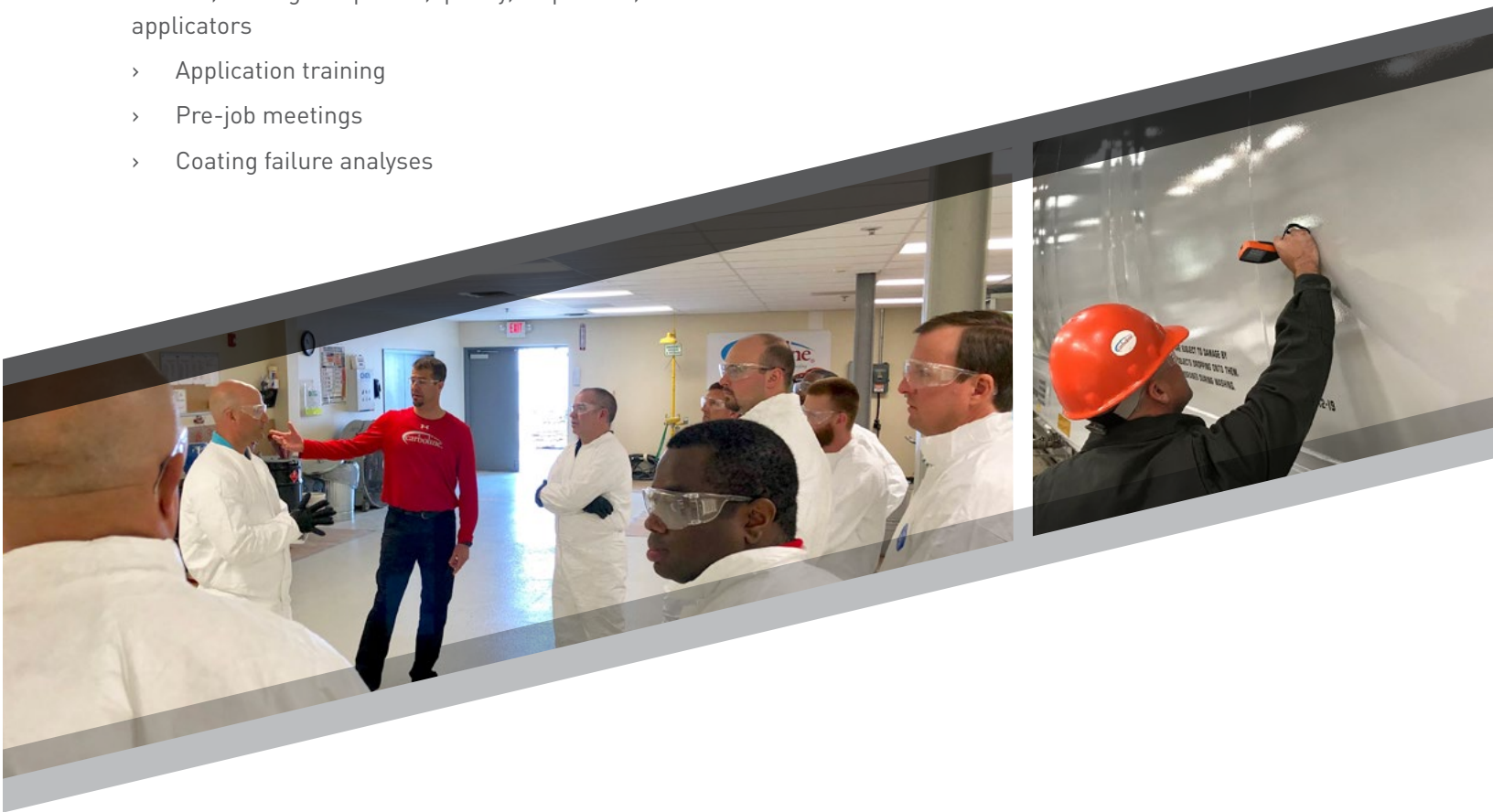


Dedicated rail industry technical support

Carboline supports the industry's most experienced field technical service and sales teams dedicated solely to the rail market. These professionals provide education, training, and project technical support so that specifiers, shippers, and applicators get more than just what comes in the bucket.

Value-add services include

- › Coating and lining recommendations for hopper and tank cars
- › Testing and inspection
- › Technical and sales support throughout North America
- › Dedicated rail customer service
- › On-site training for fleet managers, engineers, owners, leasing companies, quality, inspectors, and applicators
 - › Application training
 - › Pre-job meetings
 - › Coating failure analyses



Rail Corrosion School

Carboline is proud to host this popular two-day seminar a few times each year. In the classroom portion of Rail Corrosion School, Carboline technical experts present on topics including common railcar coating and lining systems, proper coating inspection methods, surface preparation, application, problem resolution, failure analysis, and coating and lining repairs. The hands-on portion of Rail Corrosion School occurs at our state-of-the-art Research, Development, and Innovation lab, where attendees are given in-depth tours and can apply Carboline products. See upcoming dates at carboline.com/trade-shows-events.

EXTERIOR EPOXY RAIL CAR COATING SYSTEMS

Exterior epoxies for rolling stock

Carboline develops epoxy exterior coatings emphasizing safe and easy application, fast shop throughput, and superior corrosion and chemical resistance. Very-high and 100% solids formulas lead to reduced material usage and enhanced applicator safety.

Carboguard 904 is a household name with decades of proof of performance in rail. This 98% solids, two-component, high-gloss, fast-cure epoxy formulated for use as a DTM exterior coating with excellent corrosion and chemical resistance.

Railplex EE-2020 is a 1:1, high-solids polyamide epoxy designed to provide very good corrosion resistance as a single-coat DTM exterior coating. While all epoxies will chalk and yellow under ultraviolet (UV) exposure, this product resists UV degradation longer than most others.



EXTERIOR POLYURETHANE & ACRYLIC RAIL CAR COATING SYSTEMS

Gloss- and color-retentive finishes

Carboline's single-coat, single-pack, and two-coat epoxy/urethane finish systems provide excellent corrosion and UV resistance in a range of options to suit the needs of your shop, your budget, and the railcar's service.

Carbothane® 8845 is a high-gloss, high-build, single-coat acrylic polyurethane finish suitable for DTM application. It exhibits excellent hardness and adhesion, and resists weathering, impact, marring, abrasion, chemicals, and staining. It is known for very friendly spray properties resulting in an outstanding final appearance.

Carbocrylic® 3358-G is a high-performance graphite-reinforced DTM 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 is a single-component water-based acrylic with excellent corrosion resistance and exterior weathering properties. Fast-dry characteristics accelerate shop throughput.

Carbocrylic 3359 DTMC is a single-component, durable DTM acrylic coating for use where excellent weathering properties and chemical resistance are required.

Carboguard 8922 + Carbothane 134 HG is a high-performance exterior coating system. Carboguard 8922 is a versatile corrosion resistant epoxy primer accepting of a wide variety of topcoats, including itself. Carbothane 134 HG is an acrylic polyurethane with excellent chemical resistance and color and gloss retention.

Carboquick® 200 is a single-coat, fast-cure, high-build polyaspartic coating providing excellent corrosion protection and long-term weatherability. DTM application speeds up the painting process, saves labor, and reduces cost without sacrificing performance.



HOPPER CAR LINING SYSTEMS

Hopper car linings

Carboline's industry-leading range of one- and two-coat hopper car lining systems include low-odor, fast-cure, FDA-compliant solutions that are tough, flexible, and resistant to abrasion and impact—including reverse impact damage from hammering.

Carboguard 892 is a high-solids, semi-gloss, high build, self-priming epoxy providing a tough, cleanable, and appealing surface. It is suitable for carrying dry food-grade cargo.

Carboguard 896 is a two-component, high-solids, modified epoxy offering excellent resistance to acetic and hydrochloric acids and suitable for cars carrying EVA, PTA, PE, PP, PS, and PVC plastics.

Carboguard 992 is a solvent-free two-component, single-coat epoxy lining for hopper cars carrying dry loads like plastic pellets or in direct contact with grain or other foods.

Carboguard 995 is a solvent-free, two-component, DTM epoxy formulated as a flexible lining for hopper cars carrying polyethylene (PE), polypropylene (PP), or polystyrene (PS) plastic pellets.

Reactamine® series 100% solids elastomeric polyurethane and polyurea hybrid systems provide a durable, flexible membrane that can withstand significant impact and abrasion. Extremely rapid cure improves shop throughput and quick return to service in the case of field repairs. Reactamine can be used in fertilizer, salt, adipic acid, and plastic pellet services.



Tank car linings

Carboline's roster of tank car linings offer the widest range of chemical resistance, meet FDA food safety requirements, and are safe to apply with little or no odor. These durable systems provide excellent abrasion and impact resistance in one- or multi-coat systems that cure quickly for fast shop throughput.

Carboguard 571 is a solvent-free, plural-component lining commonly used for tank cars in corn syrup service, or for other in-shop applications where single-coat and taste/odor restrictions apply.

Carboguard 891 VOC is an ultra-high solids epoxy designed as a liner for potable water, demineralized water, wastewater, and many other services. It is self-priming and 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 is a low-bake, high-solids modified epoxy demonstrating excellent resistance to molten sulfur. It displays excellent general chemical and thermal shock resistance.

Plasite 3070, 3070 L, and 3073 are high-bake phenolic linings with superior resistance to acids and solvents. They conform to current VOC regulations. Plasite 3070 LB is a low-bake variant.

Plasite 4100 and 4300 are thick-film vinyl esters with extreme chemical resistance.

Plasite 4550 S and 4555 S are thick-film, single-coat, epoxy-novolac linings with outstanding overall resistance to acids, caustics, solvents, and crude oil. Plasite 4555 S is suitable for food-grade service.

Plasite 7133 HS is an epoxy polyamide lining with excellent resistance to a wide range of chemicals, water, and aqueous food solutions. It is specified where taste/odor restrictions to sugar solutions, wine, beer, meat products, and similar cargoes apply.

Plasite 9570, 9571, and 9573 are high-solids, low-bake linings specifically formulated for excellent abrasion resistance while retaining performance and physical properties. They show outstanding overall chemical resistance, especially to caustics.

Stratholiner 7010 is a two-component, single-coat, high-build novolac-modified epoxy formulated for use as a liner in tank cars carrying clay and calcium carbonate.



GLOBAL COATINGS LEADERS™

RIGHT PEOPLE • RIGHT PRODUCTS • RIGHT LOCATIONS

GLOBAL MANUFACTURING PLANTS

ARGENTINA - BUENOS AIRES
EINSTEIN 1095
PARQUE INDUSTRIAL OKS
GARÍN PROV. DE BUENOS
AIRES, ARGENTINA
PHONE: 54-3327-44-2222
FAX: 54-3327-44-2223

BRAZIL - SÃO PAULO
RUA VERGUEIRO 1753/1759,
3RD FLOOR - VILA MARIANA,
SÃO PAULO - SP, 04101-000,
BRAZIL
PHONE: 55-12-3221-3000

CHINA - DALIAN
HOU SHI CUN, DA WEI JIA
ZHEN
JIN ZHOU DISTRICT
DALIAN, CHINA 116110
PHONE: 86-411-8789-8441,
8442, 8443, 8444
FAX: 86-411-8789-8445

INDIA - CHENNAI
NO. 356 & 357 SIDCO
INDUSTRIAL ESTATE
AMBATTUR,
CHENNAI 600 098
INDIA
PHONE: 91-22-28500321
FAX: 91-22-28500323

INDONESIA
PT CARBOLINE INDONESIA
SOLUSI
WISMA 77, TOWER 1 - 12TH
FL
JL. LETJEN S PARMAN KAV 77
SLIPI, JAKARTA BARAT
INDONESIA 11410
PHONE: 62-21-536-3070

ITALY
VIA M. VIGANO' DE VIZZI,77
20092 CINISELLO BALSAMO
(MI), ITALY
PHONE: 39-02-947592.36
FAX: 39-02-6172687

JAPAN - AMAGASAKI
TERAMOTO UNYU SOKO CO.,
LTD 17
MINAMIHATSUSHIMA-CHO,
AMAGASAKI, 660-0833 JAPAN
PHONE: 81-3-3643-4501
FAX: 81-3-3643-2951

NEW ZEALAND - TAURANGA
91-111 OROPI ROAD
GREERTON
TAURANGA
NEW ZEALAND
PHONE: 64-7-5411-221
FAX: 64-7-541-1310

**NORWAY -
LIERSTRANDA**
P.O. BOX 593
3412 LIERSTRANDA, NORWAY
PHONE: 47-32-857300
FAX: 47-32-857301

SAUDI ARABIA - DAMMAM
1ST INDUSTRY CITY, 28TH
STREET
P.O. BOX 1050
DAMMAM 31431,
KINGDOM OF SAUDI ARABIA
PHONE: 966-3-847-3044
FAX: 966-3-847-3689

**SOUTH AFRICA -
JOHANNESBURG**
8 CRESSET ROAD
MIDRAND INDUSTRIAL PARK
JOHANNESBURG,
SOUTH AFRICA
PHONE: 27-11-2545500
FAX: 27-11-310-2872

SOUTH KOREA - BUSAN
43-1, JINYOUNG-RI
JINYOUNG-EUB
KIMHAE-CITY, 621-800
KYOUNGSANGNAMDO, KOREA
PHONE: 82-55-343-6441/5
FAX: 82-55-343-6414

THAILAND
DIMET (SIAM) PUBLIC
COMPANY LIMITED.
602 MOO 2 BANGPOO
INDUSTRIAL ESTATE
BANGPOOMAI, MUANG
SAMUTPRAKARN
THAILAND
PHONE: 66-2-323-2800

TURKEY - BURSA
ALI OSMAN SONMES CAD.
NO: 4
BURSA, DOSAB 16369 TURKEY
PHONE: 90-224-261-0537

UAE - DUBAI
P.O. BOX 3034
DUBAI, UAE
PHONE: 971-4-347-0460
FAX: 971-4-347-0242

USA - DAYTON
95 AIRPARK VISTA BLVD.
DAYTON, NV 89403
PHONE: 775-246-0760
FAX: 775-246-0763

**USA -
GREEN BAY**
614 ELIZABETH ST
GREEN BAY, WI 54302
PHONE: 920-437-6561
FAX: 920-437-8546

USA - LAKE CHARLES
900 OPELOUSAS STREET
LAKE CHARLES, LA 70601
PHONE: 337-433-0605
FAX: 337-439-0380

USA - LOUISA
321 DUKE ST.
LOUISA VA 23093
PHONE: 540-967-5119
FAX: 540-967-5120

VIETNAM - TINH BINH DUONG
LO D, 4R-CN
KHU CONG NGNIEP MY PHUOC 3
THI XA BEN CAT
VIETNAM
PHONE: 84-08-3822-7684



CARBOLINE
GLOBAL HEADQUARTERS
2150 SCHUETZ ROAD
ST. LOUIS, MO 63146 USA
PH: 1-314-644-1000
WWW.CARBOLINE.COM