



**GLOBAL COATINGS LEADERS™**  
RIGHT PEOPLE • RIGHT PRODUCTS • RIGHT LOCATIONS





# CARBOLINE CAPABILITIES

Carboline is a global supplier of coatings, linings, and fireproofing with offices and manufacturing facilities worldwide.



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# HISTORY

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## **Solving our customers' problems is how we got started and after 70 years, it's still our focus at Carboline.**

In 1947, Stanley Lopata developed a product to solve a problem for a single customer. After 70 years, problem-solving remains our focus.

Carboline is a global supplier of coatings, linings, and fireproofing with offices and manufacturing facilities worldwide. We have a strong commitment to the protective coatings industry and take an active role in professional organizations that focus on corrosion control, water transmission, and fire protection. We are committed to progressing science for the future of the coatings industry.

We also are committed to meeting our customers' needs and expectations by recommending products that provide the right solutions to their problems. This approach has gained the trust of global customers who rely on our high-quality coatings, linings, and fireproofing products. Our dedication to performance, broad industrial market experience, continuous investment in long-term product development and testing, and our ability to meet challenges anywhere in the world make us a source of coatings knowledge that customers find invaluable. However, we have never lost sight of what has taken us from our beginnings in Stanley's basement to a world-class supplier of high performance coatings: Solving our customers' problems drives our approach to everything we do.

# 1947

Founded in 1947 to solve a customer's corrosion problem

# 500+

More than 500 active products



Expansive global specification base

# 40+

Champions of more than 40 different coating technologies

## GROWTH



New, innovative product introductions every year



Market expansions through research and development



Technology growth from our dedicated research team



Geographic growth to better serve customers

# PEOPLE

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**Our customers can be confident that behind every sale is a team of dedicated people determined to make it a success.**

Carboline believes good service starts with good people. Our success is rooted in our team approach to business. Everyone working together as a team is the key to making sure customers' needs are being met at every level of the organization.

Our employees are some of the most well-respected members of the industry, many with top certifications and decades of experience. Wherever you are, we have experienced and knowledgeable people there, ready to support you.



## CUSTOMER SERVICE



Individual account management

Quick order entry process

Global coverage

## TECHNICAL SERVICE



Superior hands-on field support

On-location service available from start to finish

Highly trained industry experts

## LOCAL SALES SUPPORT



Fast and reliable system recommendations



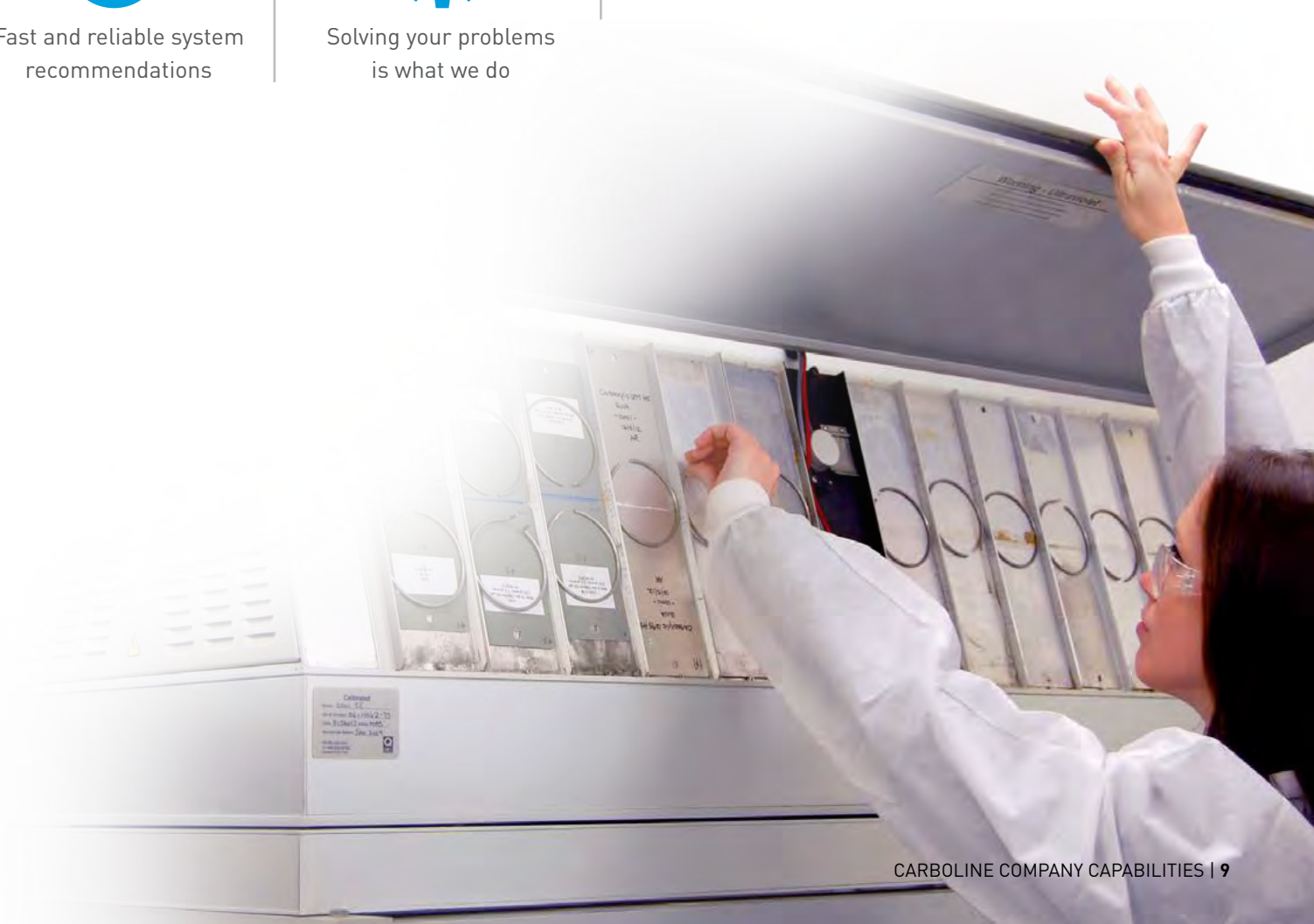
Solving your problems is what we do



Send an email and receive a quick response



Call in and speak directly to knowledgeable support



# LOCATIONS

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**Regardless of your location, we can deliver the products you need to protect your assets.**

Carboline's world-class, global organization can supply products anywhere in the world to meet your requirements. With more than 20 manufacturing facilities around the globe, we can consistently produce and deliver high-quality products to our customers worldwide.

Our global network of industrial service centers and distribution points are strategically located around the world to provide the highest level of customer service and support for your project. Anywhere in the world, anytime you need us, we'll be there.

# CARBOLINE LOCATIONS



Seven research and development facilities



Hundreds of warehouses worldwide



More than 200 sales engineers



Manufacturing facilities located strategically in 20 countries around the world

## ISO

ISO-certified facilities worldwide

# PRODUCTS

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## **We develop products that solve real-world problems and offer real benefits.**

Product development at Carboline is driven by a passion for performance and innovation. Our continued focus and understanding of our customers' needs drives product development.

All new products go through stringent internal and external testing. Rigorous product testing is meaningful, realistic, and based on decades of knowledge and experience. When a new product is released, we know it will perform.

Our comprehensive line of problem-solving technologies has earned the trust and confidence of customers around the globe. Technologies include water-based, 100% solids, and VOC-compliant formulations backed with extensive testing and multiple case histories. Whether you need corrosion protection, fire protection, chemical resistance, long-term weathering, color stability, quick-to-service, abrasion resistance, insulation, heat resistance, or immersion linings, we can deliver.

# PROBLEMS WE SOLVE



Protecting steel and concrete from corrosion, abrasion, and weathering



Shielding storage tanks from aggressive chemicals and corrosive high-temperature cargoes



Quick-to-service application with long service life and color retention



Over-coating existing finishes, marginally prepared surfaces, or wet/damp substrates



Protecting concrete from chemical splash and spillage for secondary containment areas



Providing passive fire protection for industrial and commercial applications

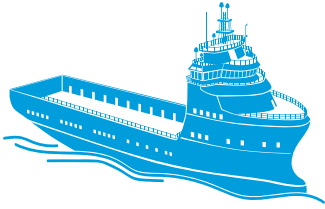
## PRODUCT CERTIFICATIONS

- › ISO 9001-2000
- › LRS (Lloyd's Register of Shipping)
- › IMO (International Maritime Organization)
- › ABS (American Bureau of Shipping)
- › UL (Underwriters Laboratories)
- › ASME NQA-1 (Nuclear)
- › FM (Factory Mutual)
- › NUPIC, 10 CFR 50 (Nuclear)
- › ANSI Standard 61/NSF
- › Plus many regional and local certifications specific to potable water, bridge, food grade handling and processing, and other needs
- › NORSOK M-501 (Offshore Exposure)
- › DNV (Det Norske Veritas)

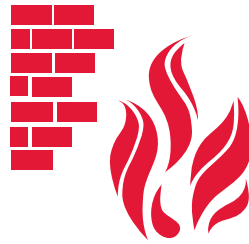
# MARKETS

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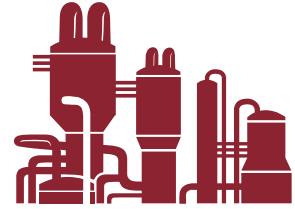
Carboline offers high performance coatings, linings, and fireproofing products for a variety of diverse markets. Each market has unique challenges that require unique products, which is why we have a specialized team of experts for every market we serve.



**COMMERCIAL MARINE**



**FIREPROOFING**



**PETROCHEMICAL**



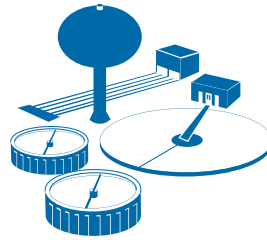
**POWER**



**OIL & GAS UPSTREAM**



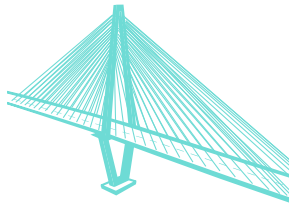
**OIL & GAS MIDSTREAM**



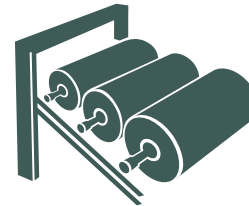
**WATER & WASTEWATER**



**COMMERCIAL/ARCHITECTURAL**



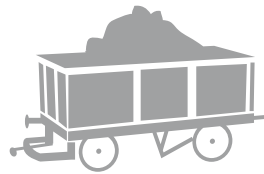
**BRIDGE & HIGHWAY**



**PULP & PAPER**



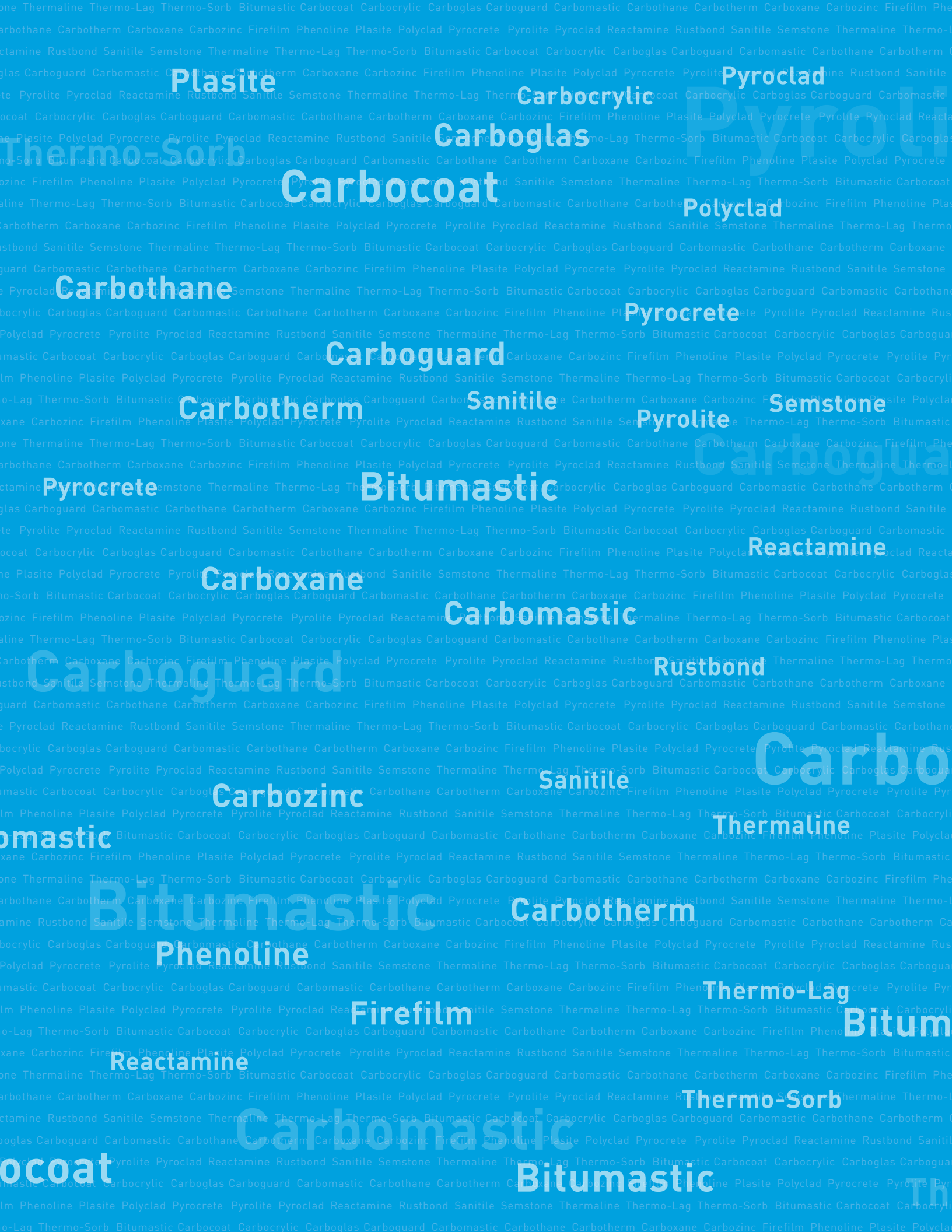
**RAIL**



**METALS & MINING**



**ORIGINAL EQUIPMENT  
MANUFACTURERS (OEM)**



Plasite

Carbocrylic

Pyroclad

Thermo-Sorb

Carboglas

Carbocoat

Polyclad

Carbothane

Pyrocrete

Carboguard

Carbotherm

Sanitile

Pyrolite

Semstone

Pyrocrete

Bitumastic

Carboxane

Carbomastic

Reactamine

Carbozinc

Sanitile

Thermaline

Bitumastic

Carbotherm

Phenoline

Firefilm

Thermo-Lag

Reactamine

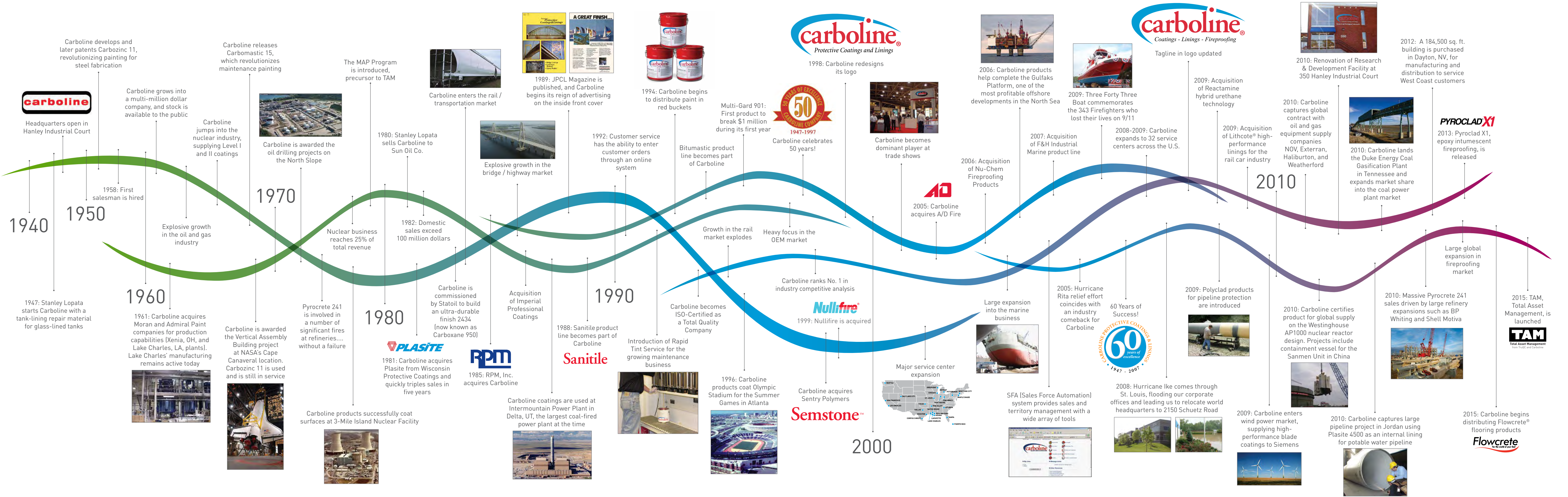
Thermo-Sorb

Carbomastic

Carbocoat

Bitumastic





1940: Carboline develops and later patents Carbozinc 11, revolutionizing painting for steel fabrication

1947: Stanley Lopata starts Carboline with a tank-lining repair material for glass-lined tanks

1950: Headquarters open in Hanley Industrial Court

1958: First salesman is hired

1960: Explosive growth in the oil and gas industry

1961: Carboline acquires Moran and Admiral Paint companies for production capabilities (Xenia, OH, and Lake Charles, LA, plants). Lake Charles' manufacturing remains active today

1970: Carboline jumps into the nuclear industry, supplying Level I and II coatings

1970: Carboline is awarded the oil drilling projects on the North Slope

1970: Carboline releases Carbomastic 15, which revolutionizes maintenance painting

1970: The MAP Program is introduced, precursor to TAM

1970: Carboline enters the rail / transportation market

1970: JPCL Magazine is published, and Carboline begins its reign of advertising on the inside front cover

1974: Carboline begins to distribute paint in red buckets

1980: Stanley Lopata sells Carboline to Sun Oil Co.

1982: Domestic sales exceed 100 million dollars

1982: Nuclear business reaches 25% of total revenue

1982: Carboline is commissioned by Statoil to build an ultra-durable finish 2434 (now known as Carboxane 950)

1982: Pyrocrete 241 is involved in a number of significant fires at refineries... without a failure

1980: Acquisition of Imperial Professional Coatings

1988: Sanitile product line becomes part of Carboline

1988: Introduction of Rapid Tint Service for the growing maintenance business

1981: Carboline acquires Plasite from Wisconsin Protective Coatings and quickly triples sales in five years

1985: RPM, Inc. acquires Carboline

1985: Carboline coatings are used at Intermountain Power Plant in Delta, UT, the largest coal-fired power plant at the time

1986: Carboline products coat Olympic Stadium for the Summer Games in Atlanta

1986: Carboline acquires Sentry Polymers

1992: Customer service has the ability to enter customer orders through an online system

1992: Bitumastic product line becomes part of Carboline

1992: Multi-Gard 901: First product to break \$1 million during its first year

1992: Carboline celebrates 50 years!

1992: Carboline becomes dominant player at trade shows

1992: Carboline ranks No. 1 in industry competitive analysis

1992: Carboline acquires A/D Fire

1992: Acquisition of Nu-Chem Fireproofing Products

1992: Large expansion into the marine business

1992: Hurricane Rita relief effort coincides with an industry comeback for Carboline

1992: 60 Years of Success!

1992: Polyclad products for pipeline protection are introduced

1992: Carboline certifies product for global supply on the Westinghouse AP1000 nuclear reactor design. Projects include containment vessel for the Sanmen Unit in China

1994: Carboline enters wind power market, supplying high-performance blade coatings to Siemens

1994: Carboline captures large pipeline project in Jordan using Plasite 4500 as an internal lining for potable water pipeline

1994: Carboline captures global contract with oil and gas equipment supply companies NOV, Exterran, Haliburton, and Weatherford

1994: Carboline lands the Duke Energy Coal Gasification Plant in Tennessee and expands market share into the coal power plant market

1994: Pyroclad X1, epoxy intumescent fireproofing, is released

1994: Large global expansion in fireproofing market

1994: TAM, Total Asset Management, is launched

1994: Carboline begins distributing Flowcrete® flooring products

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1998: Carboline redesigns its logo

2000: Major service center expansion

2000: Carboline acquires Semstone™

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2006: Carboline products help complete the Gulfaks Platform, one of the most profitable offshore developments in the North Sea

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2009: Acquisition of Lithcote® high-performance linings for the rail car industry

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2010: Renovation of Research & Development Facility at 350 Hanley Industrial Court

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**Carboguard**

**Carbocoat**

**Carbotherm**

**Carbomastic**

**Thermo-Lag**

**Bitumastic®**

**Polyclad®**

Coal tar epoxy

Coatings & linings  
for pipeline

**Carbocoat®**

**Pyrocrete®**

Industrial alkyds

High-density cement-based  
fireproofing

**Carbocrylic®**

**Pyrolite®**

Water-borne acrylics

Low-density gypsum-based  
fireproofing

**Carboglas®**

**Pyroclad®**

Flake-glass polyester

Ultra-durable epoxy  
intumescent fireproofing

**Carboguard®**

**Reactamine®**

Epoxy primers & finishes

Polyurea & hybrid  
polyurethane elastomers

**Carbomastic®**

**Thermo-Lag**

Surface-tolerant  
epoxy mastics

**Rustbond®**

**Carbothane®**

Penetrating sealers

Aliphatic polyurethanes

**Sanitile®**

**Carbotherm®**

Tile-like wall finishes  
& floor coatings

Insulative coatings

**Semstone®**

**Carboxane®**

Chemical-resistant  
coatings for concrete

Ultra-weatherable finishes

**Thermaline®**

**Carbozinc®**

High-heat coatings

Inorganic & organic  
zinc-rich primers

**Thermo-Lag®**

Epoxy-based intumescent  
fireproofing

**Thermaline®**

High-heat coatings

**Thermo-Lag®**

Epoxy-based intumescent  
fireproofing

**Thermo-Sorb®**

Solvent-based intumescent  
fireproofing

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**Thermo-Sorb®**

Solvent-based intumescent  
fireproofing

**Firefilm®**

Thin-film intumescent  
fireproofing

**Phenoline®**

Chemically resistant  
coatings & linings

**Plasite®**

Ultra-high performance  
tank linings

**Thermaline®**

High-heat coatings

**Thermo-Lag®**

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High-heat coatings

**Thermo-Lag®**

Epoxy-based intumescent  
fireproofing

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# Commercial Marine

The **Harvey Energy** offshore service vessel is the first LNG-powered craft in the United States and the first of six 302-foot dual-fuel vessels built in Gulfport, Mississippi. **Carboguard 635**, an extremely versatile epoxy coating, was used for the topside coating system, ballast water tanks, and even the potable water tanks. In addition, Carboline supplied underwater hull coatings and the antifoulant.



## Our expertise in providing products and technical service to the marine industry is invaluable to our customers.

Carboline offers a comprehensive line of zinc primers, epoxy anticorrosives, high performance topcoats, IMO- approved ballast tank linings, and antifouling that will provide service for up to 60 months. Our high-temperature coatings, interior primers and finishes, surface-tolerant coatings, and chemically resistant tank linings show the range of our ability to provide high-quality coatings for virtually any marine service requirement.



We offer coatings ideal to reduce the heat build-up on barge covers and decks caused by solar radiation while simultaneously protecting the cargo.



Anti-corrosive and antifoulant coatings are key in the marine industry. Good systems reduce hull cleaning costs and offer fuel savings by reducing friction.



Our linings offer long-term performance in what is considered "critical" service in cargo tank lining applications.

# Fireproofing

This multi-use indoor arena in Edmonton, Alberta, Canada, will be used for ice hockey, various indoor sports, concerts and similar events. Our architectural fireproofing products were chosen as the perfect fit for this state-of-the-art facility. Carboline's **Southwest Fireproofing** products and **Firefilm** were selected to protect the structural steel. The arena will have a seating capacity of more than 20,000 and features a bold, modern design that will serve as a symbol of the city's future.



## Our fireproofing products have offered unparalleled protection for more than 40 years.

Carboline's complete line of commercial and industrial fireproofing products offers a level of unparalleled performance in several markets. With various types of intumescent and cementitious technologies designed for industrial or architectural applications, we can meet any project specification. All of our fireproofing products have been rigorously tested and have a proven track record of performance when subjected to the harshest environmental conditions and the extreme heat of fire exposure.



Our cementitious Sprayed Fire Resistive Materials (SFRMs) offer high performance for both concealed and exposed steel structures and assemblies.



Our Intumescent Fire Resistive Materials (IFRMs) offer superior fire protection and high-quality aesthetics for commercial and light industrial projects.



Our products have been tested and certified to the highest industry standards. Testing includes multiple destructive exposures to mimic real-world conditions.

# Petrochemical

**Jamnagar Refinery** in Jamnagar, Gujarat, India, is currently the largest refinery in the world. Carboline has been a highly regarded supplier for more than 20 years and has supplied coatings and linings for high-temperature insulated pipelines, tanks, equipment, and various other structures. **Carbozinc 11**, **Carboguard 893**, **Thermaline 450**, **Carbomastic 15**, and **Carbothane 133 HB** are among the products used at this facility. (Not pictured)



## We have solutions for everything from structural steel and tank exteriors to processing, piping, and equipment.

Petrochemical facilities are continuously assaulted by corrosion and chemical attack, costing the industry billions of dollars annually. Carboline offers a wide selection of products to protect these assets, including; high-temperature coatings, tank linings, tank bottom repair, maintenance coatings, and industrial fireproofing.



We offer epoxy and cementitious fireproofing products that provide both hydrocarbon and jet fire ratings.



Tankage and tank integrity are top priority. We offer time-tested linings, to cutting-edge polymers, thick film single coat to thin multi-coat systems.



Our unique coatings provide an outstanding barrier against wet/dry and thermal cycling corrosive conditions often seen under insulation.

# Power

The **Thomas C. Ferguson Power Plant** is in Horseshoe Bay, Texas. This 540-megawatt combined-cycle power plant is producing power for the state's electric grid as one of the newest, most efficient and reliable electric generating facilities in Texas. The heat recovery steam generator, tanks, and secondary containment areas were protected with **Carboline** products.



## We offer a full line of coatings to protect against demanding conditions found in the power market.

Carboline offers coatings for conventional power, nuclear, and the renewable energy market. Carboline's coatings for new construction provide long-term protection against chemical, abrasive, high-temperature, and extreme atmospheric environments. Carboline has a full line of maintenance coatings that provide aesthetic value and extended corrosion protection for the aggressive in-service conditions present in the power market.



Coatings used on wind turbines are formulated for their specific needs. Turbine blades and parts are continuously moving and exposed to harsh weather and UV rays.



We have a long history in the nuclear power industry. Our nuclear certified coatings are ideal for both new construction and maintenance.



Other types of energy coatings, like those used in the hydroelectric energy industry, require high levels of water immersion and abrasion resistance.

# Oil & Gas Upstream

The **Johan Sverdrup** oil field is located in the North Sea, 87 miles (140 kilometers) west of Stavanger, Norway. It is one of the five biggest oil fields on the Norwegian continental shelf with production expected to begin in 2019. Carboline is supplying **Carboguard 1601 SG** and **Carboguard 878** for the jackets on the platforms. These products have more than 30 years of history in the oil and gas market. (Not pictured)



## We offer reliable solutions developed through years of experience in the complex oil and gas industry.

Carboline knows that owners and operators are under continuous pressure to reduce capital costs while meeting strict regulatory requirements. Offshore facilities, where maintenance is extremely difficult and costly, are expected to last 20 to 30 years. We offer proven high performance coatings, linings, and fireproofing products that stand the test of time in the harshest environments. In addition, Carboline has numerous Norsok-approved systems.



Offshore atmospheric exposures are particularly aggressive due to the severity of constant UV radiation and salt-laden environment.



Epoxy intumescent fireproofing products provide both hydrocarbon and jet fire ratings for offshore structures.



Our coatings are excellent for splash zone areas, such as jack-up legs and semi-submersible hulls, or boat landing areas.

# Oil & Gas Midstream

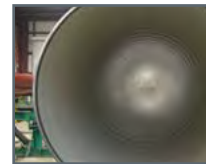


## Protecting assets in the pipeline and terminals industry is part of who we are.

Carboline has provided solutions to the pipeline and terminals industry since our beginning. In fact, back in 1947, our first product was a tank lining. Today, we offer the widest array of coatings that provide proven protection for your company's assets. We have products for steel tank exteriors that can handle various corrosive environments (coastal and others) and tank linings with a proven history designed for the petroleum industry. We offer pipeline coatings that are easy to apply, both in the field and the shop.



We have solvent-free epoxy tank linings designed to handle storage of crude oil, process liquids, and various fuels, including ethanol, jet fuels, and gasoline.



Pipeline linings provide protection against harsh corrosive chemicals, both above ground and underground, and work in extreme temperatures.



Protecting assets in the pipeline and terminals industry is part of who we are at Carboline.



# Water & Wastewater



## We offer a variety of coatings and linings for the water and wastewater market.

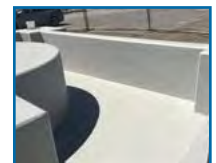
Carboline can protect concrete and steel, from collection to treatment to storage. We are recognized as a leader in the coatings industries for providing proven systems that defend against corrosion caused by microbes and hydrogen sulfide. Our proven tank linings, secondary containment products, and concrete protection coatings stand up against the numerous challenges facing treatment facilities.



We offer exterior coatings that ensure a vibrant and clean appearance and exhibit ultra-weathering durability.



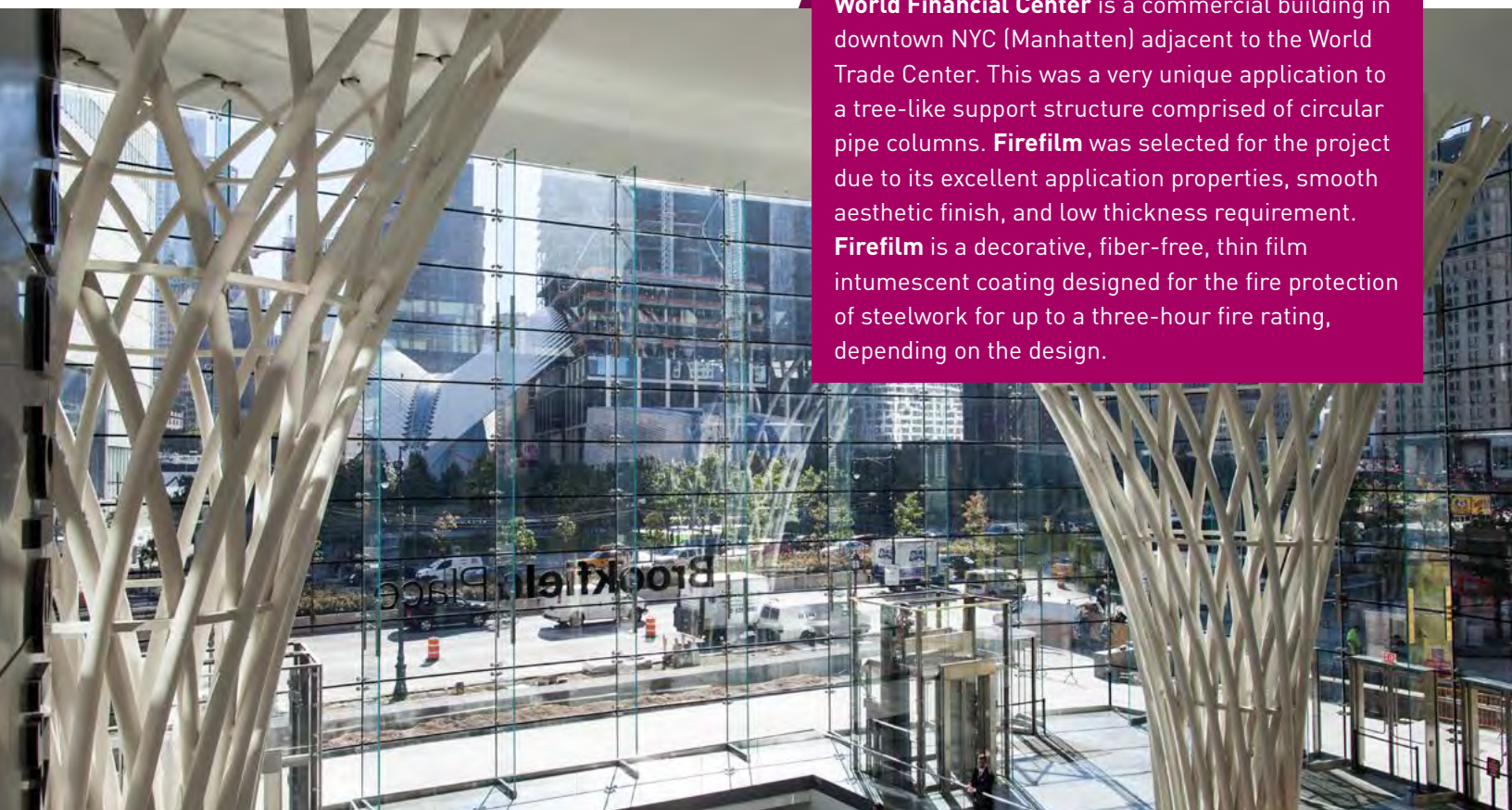
Our water tank linings utilize the safest polymers available, which offer the longest protection on the market. Both thick and thin film linings are available, based on your needs.



Secondary containment can be challenging, and we have systems that provide proper sealing and protection against the cracking of joints and junctions.

# Commercial/ Architectural

**World Financial Center** is a commercial building in downtown NYC (Manhattan) adjacent to the World Trade Center. This was a very unique application to a tree-like support structure comprised of circular pipe columns. **Firefilm** was selected for the project due to its excellent application properties, smooth aesthetic finish, and low thickness requirement. **Firefilm** is a decorative, fiber-free, thin film intumescent coating designed for the fire protection of steelwork for up to a three-hour fire rating, depending on the design.



## We have the widest array of coatings, flooring, and fireproofing products for the complex commercial market.

Carboline can meet specifications for all building types, project requirements, and conditions with multiple product choices. We offer coatings, flooring, and fireproofing systems designed for every type of architectural construction, and can provide you with products that meet aesthetic requirements while inherently adding value, longevity, design flexibility, and corrosion protection.



Our architectural coatings have the special requirements, to meet high design standards while also providing protection.



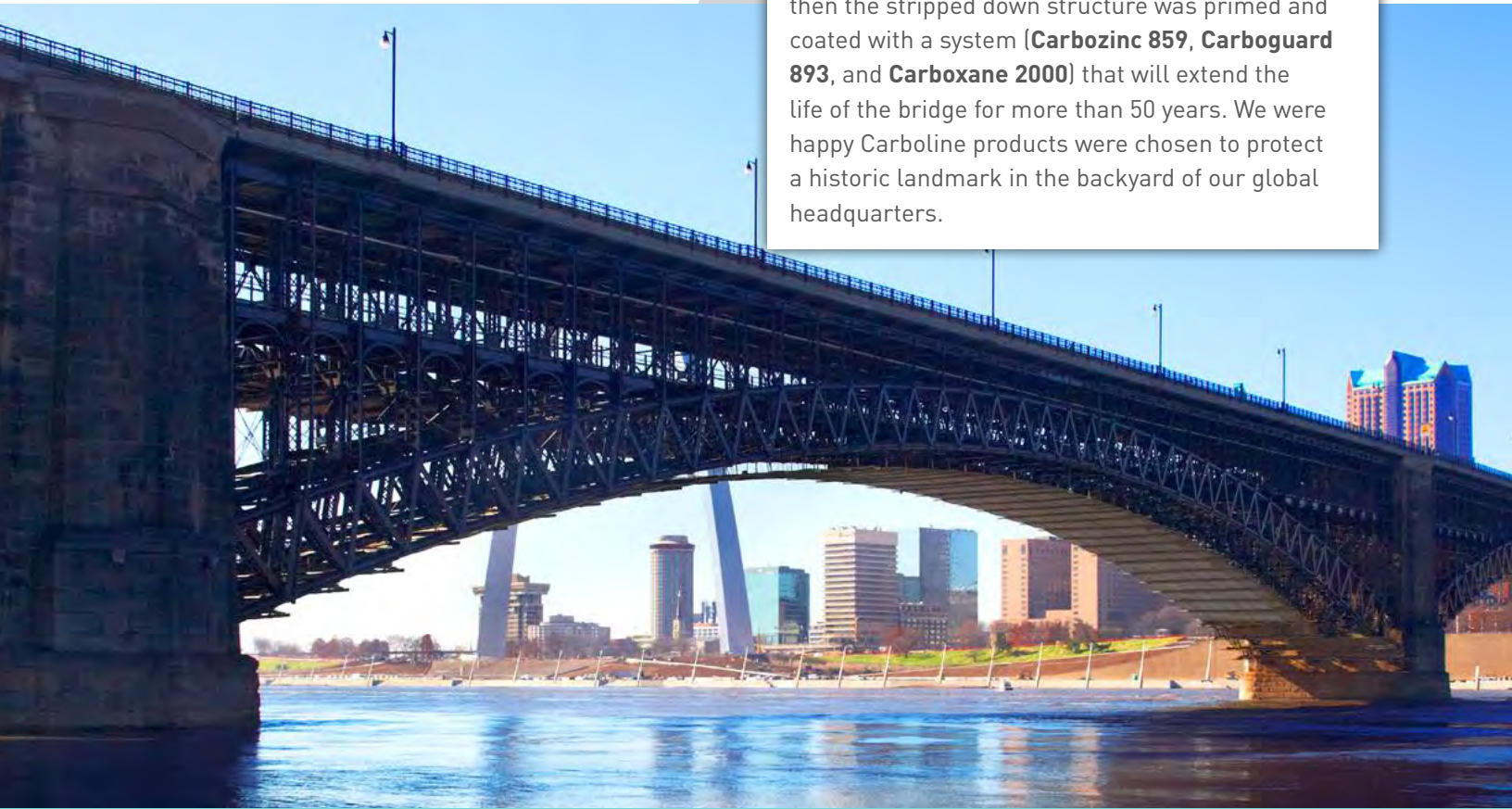
Our flooring systems have non-skid and antimicrobial elements when needed, and offer heavy foot traffic protection.



Places like airports, office buildings, and stadiums require fireproofing protection with design flexibility that our products provide.

# Bridge & Highway

The **Eads Bridge** in St. Louis, MO was completed in 1874, and was the first structural steel bridge in the United States. After more than 130 years, the structural steel and coatings systems showed signs of aging, so a rehabilitation project was initiated. Up to nine layers of paint and rust were removed, then the stripped down structure was primed and coated with a system (**Carbozinc 859**, **Carboguard 893**, and **Carboxane 2000**) that will extend the life of the bridge for more than 50 years. We were happy Carboline products were chosen to protect a historic landmark in the backyard of our global headquarters.



## For more than 50 years, our bridge coatings have been the industry standard.

Bridge and highway coating systems have been a cornerstone of Carboline's business for decades. We offer a wide range of products for bridge maintenance, overcoating, and refurbishment. From coast to coast, our products continue to be the first choice in coatings for owners, specifiers, fabricators, and painters for both new construction and maintenance painting of bridges.



We offer VOC-compliant coating systems with infinite recoatability characteristics, which is excellent for future touch-up needs.



Bridge maintenance is very important, and we have mastics that provide barrier protection and corrosion resistance over most existing finishes.



Whether your project is shop or field applied, or requires low-temperature curing, we have a solution.

# Pulp & Paper



## We have a long history of solving the needs of the pulp and paper industry.

Paper factories are one of the most corrosive environments, downtimes need to be kept short, and long-term coating and lining solutions are important. Our ultra-durable high performance coatings and system solutions have a proven record of corrosion protection. We have systems that cater to constructibility needs and project requirements, such as Class B slip coefficient, low-odor, zero VOC, and single-coat systems. Quick cure coatings are also available when shortened down times are required.



We offer coatings that protect against weathering, high heat, and chemical exposures found in paper factories.



Carboline has tank linings that protect against the very wet corrosive paper-making process, which uses acids and caustics.



Carboline has products to protect assets and increase longevity, including coatings for walls, steel, piping, towers, and flooring.

# Rail

**Carboguard 876** was selected for this project that included coating the exteriors of more than 300 tank cars. These cars carry up to 30,000 gallons of oil and must stand up to chalking and UV exposure. **Carboguard 876** is a user-friendly, cost-effective, shop-applied product that builds well, and has outstanding corrosion protection.



## Our rail product line provides the most inclusive interior and exterior systems in the market.

Carboline offers a complete line of water-based, high solids and solvent-less technology primers, as well as low-temperature cure, DTM epoxies, and high performance topcoats for the exterior. We also have the most comprehensive selection of linings in the industry that have been tested in more than 4,000 commodities.



We have flexible, direct-to-metal (DTM) protective linings for rail cars. They are needed to keep the cargo pure and protect the steel from corrosive and abrasive cargoes.



We offer a wide range of exterior coatings that can provide fast cure times, high-gloss finishes as well as VOC and HAP's free coating systems.



Along with providing exterior protection against the elements, we have coatings with great color retention and varying gloss finishes.

# Metals & Mining



## We understand the challenges and stringent demands of the metals and mining industry.

Carboline is a proven supplier of chemical-resistant coatings for steel structures and equipment that must withstand aggressive chemicals, physical abuse, and abrasion. Our reputation is built on providing a complete range of high performance and ultra-durable maintenance coatings that meet the demands of the metals and mining industry.



Our coatings and linings help reduce downtime, maintenance costs, and will add years of service to equipment.



Using our coatings and linings helps protect assets at these facilities, and helps keep them operating efficiently.



It is critical for storage and transport equipment to withstand rough contents, and our coatings provide the necessary protection.

# Original Equipment Manufacturers (OEM)

One OEM customer in Michigan completely refurbishes used natural gas tanks. The tanks are recertified, valved, and recoated back to original condition. HP Tanks prefers **Carbothane 8845** to powder coating, and the gloss level exceeds the competition's powder gloss.



## We produce high-quality systems designed to increase throughput at OEM shops.

Carboline has an extensive line of coatings that provide cost-effective alternatives for protecting and finishing OEM products, tanks, and equipment. Our broad selection of products is designed to help minimize VOC and HAP emissions as well as waste disposal. Our direct-to-metal formulations reduce labor costs, improve safety, increase production, and positively impact your bottom line. Our ability to offer high performance protection, corrosion resistance, and aesthetic value sets us apart from the competition.

30 | CARBOLINE COMPANY CAPABILITIES



We have been supplying cost-effective coating solutions to heavy industry fabricators for many years and know the importance of speed and performance.



Our OEM coatings are easy to apply and offer benefits that result from faster throughput, fewer repairs, repaints or call-backs.



Our new technologies allow extremely fast recoat times (often wet-on-wet), which dramatically speeds the painting and curing process.



We share information on projects like the ones featured in this brochure on social media. You can also find current information about trade shows, press releases, and other company news there.

Follow us, like us, connect and/or subscribe. We'd love to see you there!

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## GLOBAL MANUFACTURING PLANTS

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

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

**AUSTRALIA – BRISBANE**  
 7 PRODUCTION AVE  
 ERNEST JUNCTION  
 QUEENSLAND 4214  
 AUSTRALIA  
 PHONE: +61 7 3287 0222  
 FAX: +61 7 5594 9093

**CANADA – ONTARIO**  
 420 TAPSCOTT ROAD UNIT 5  
 SCARBOROUGH, ONTARIO  
 M1B 1Y4, CANADA  
 PHONE: 416-292-2361  
 FAX: 416-298-5887

**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

**INDIA – MAHARASHTRA**  
 GUT NO. 300  
 VILLAGE MUSSARNE  
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 MAHARASHTRA  
 INDIA

**ITALY – ALGHERO**  
 VIA MILANO 150  
 20093 COLOGNO MONZESE  
 (MI), ITALY  
 PHONE: 3902-25 3751  
 FAX: 3902-25 37560

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

**MALAYSIA – KUALA LUMPUR**  
 LOT 37631-37632 JALAN 6/37A  
 TAMAN BUKIT MALURI  
 INDUSTRIAL AREA  
 KEPONG 52100,  
 KUALA LUMPUR, MALAYSIA  
 PHONE: 603-6277-9575  
 FAX: 603-6277-4645

**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

**PUERTO RICO – SAN LORENZO**  
 URB. APONTE #5  
 SAN LORENZO, PUERTO RICO  
 00754  
 PHONE: 787-736-4221  
 FAX: 787-736-53133

**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

**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

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 URBANIZACION INDUSTRIAL  
 "EL TIGRE"  
 AVENIDA PRINCIPAL  
 GALPÓN "H"  
 VALENCIA EDO. CARABOBO  
 VENEZUELA  
 PHONE: 58-245-4000400  
 FAX: 58-245-5642011

