

# Oil & gas upstream

Superior protection for exploration and production



# 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.

Carboline is the leader in the protection of offshore structures. Our comprehensive product line offers the right solutions on new construction and maintenance projects for these demanding environments anywhere in the world. Our products are fully tested, field proven, and backed by a team of professionals focused on the needs of the oil and gas upstream industry.

## Product types

- › NORSOK-approved systems
- › Outstanding corrosion protection products
- › Surface-tolerant coatings
- › Moisture-tolerant coatings
- › Low-temperature and quick-cure products
- › Ultra-weatherable finishes
- › Chemical-resistant linings
- › Non-slip deck systems
- › Fireproofing products for life safety

## Certifications and listings

- › Det Norske Veritas
- › NORSOK
- › Underwriters Laboratories
- › Factory Mutual
- › National Sanitation Foundation
- › Lloyds Register of Shipping
- › American Bureau of Shipping



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



## Topsides: superstructure, legs, bracing, pipe racks, handrails, ladders, cranes, derricks, piping, and process equipment exteriors

Offshore atmospheric exposures are particularly aggressive due to the severity of constant ultraviolet radiation and a corrosive salt-laden environment. Coatings must offer reliable outstanding barrier protection from moisture permeation, resist sub-film corrosion should breaks in the film occur, and retain their color and gloss for long periods of time. Long-term performance is required due to the high cost of offshore maintenance.

**Carboxane**® ultra-weatherable siloxanes provide extreme long term color and gloss retention due to their outstanding resistance to ultraviolet radiation.

**Carbomastic**® surface-tolerant epoxies can be applied over marginally prepared steel substrates, will tolerate damp surfaces, and can cure at low temperatures for year round painting in some of the worst conditions.

**Carbozinc**® zinc-rich primers offer outstanding performance in marine environments, showing excellent sub-film corrosion resistance and longevity to match the life of the structure.

**Carboguard**® epoxies include a wide variety of excellent barrier coatings with chemical resistance and ease of use characteristics for use over zinc primers or direct to steel substrates.

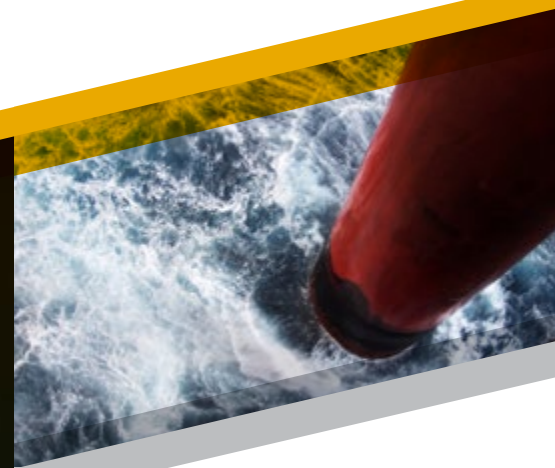
**Carbothane**® high performing urethanes provide long-term color and gloss retention and chemical resistance to splash and spills.

## Decks: helidecks, main deck, cellar decks, lay down areas, and walkways

Non-slip coating systems incorporating high-profile, non-skid aggregate in a tough epoxy matrix to provide safer working conditions in critical areas.

**Carboguard** non-slip epoxies incorporate high-profile aggregate in a tough epoxy binder system for safer working conditions, excellent barrier protection, and chemical resistance to oils, salt water, drilling mud, and other chemicals.

Flake-reinforced systems add physical durability and improve barrier protection.



## Tidal / splash zone and subsea: pipeline, risers, boat landings, jacket legs, and hulls

Coatings designed for highly abusive conditions (impact and abrasion) with aerated salt water exposure and usually must be compatible with cathodic protection.

**Carboguard** glass-flake reinforced epoxies are ideal for these environments providing added internal film strength for abrasion and impact resistance as well as additional barrier protection against the salt water exposures.

Excellent for splash zone areas such as jack-up legs and semi-submersible hulls; or boat landing areas.

**Carboguard** aggregate-filled epoxies provide exceptional impact and abrasion resistance in the tidal zone areas where workboats and wave action require ultra-durable protection to structural components.

## TANK LININGS

### Salt water, drilling mud, sewage, oil, ballast, fuel, and potable water

There are a variety of tank lining needs on board vessels specific to the cargo to be stored. Whether the need is for abrasion resistance, chemical resistance, corrosion resistance, or product purity, Carboline linings offer long-term performance in critical tank lining applications.

**Carboguard** epoxies include a wide variety of excellent barrier coatings with chemical resistance and ease of use characteristics for a wide variety of water and wastewater exposures.

**Phenoline**® epoxy and modified epoxy linings offer excellent protection against a wide range of petroleum products including fuels, oils, and crude oil. They are also ideal for ballast tank lining.

**Plasite**® ultra-high performance linings provide unsurpassed performance in extreme chemical service.



## FIREPROOFING



### Structural steel, bulkheads, underdecks, crew quarters, supports for pipes, tanks, and vessels

Epoxy intumescent fireproofing products provide both hydrocarbon and jet fire ratings for offshore structures. They cure to a tough, durable, protective finish with high flexural and compressive strengths that can handle the harsh marine exposures.

**Pyroclad**® ultra-durable epoxy-based fireproofing offers unsurpassed weathering characteristics, low thickness requirements, and excellent hydrocarbon and jet fire protection.

**Thermo-Lag**® series products are the most efficient epoxy-based fireproofing solutions on the market, with industry leading ratings.

#### Ratings

- › ISO 22899 jet fire ratings
- › ISO 834 / BS-476 hydrocarbon pool fire ratings
- › UL 1709 hydrocarbon ratings
- › H-0, H-60, H120, A-30, A-60 bulkhead and underdeck ratings

# GLOBAL COATINGS LEADERS™

RIGHT PEOPLE • RIGHT PRODUCTS • RIGHT LOCATIONS

## GLOBAL MANUFACTURING PLANTS

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