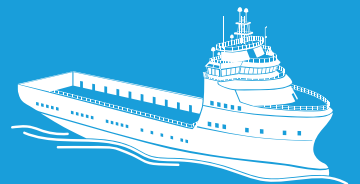


Marine

System Guide

Coatings and Linings



Weathering Exposures

Weathering and Salt Environment (Minimum SSPC-SP6)

PRIMER	DESCRIPTION	MID-COAT	DESCRIPTION	TOPCOAT	DESCRIPTION
Superstructure and Deck Structures					
Applications – Wheelhouse steel, cranes, equipment, piping and handrails and other equipment operating up to 250°F (121°C)					
Carbozinc 11 -or- Carbozinc 808 -or- Carbozinc 859	Inorganic zinc primer for maximum corrosion protection -or- Organic zinc for quick topcoating -or- High zinc load organic zinc for quick topcoating	Carboguard 890 -or- Carboguard 635	Versatile, chemical resistant epoxy -or- Moisture tolerant, low temp cure epoxy	Carbothane 134 Series -or- Carbothane 133 Series	High gloss weatherable acrylic urethane -or- Satin finish; high build urethane hybrid

Weathering and Salt Environment (Minimum SSPC-SP3)

PERFORMANCE	PRIMER	DESCRIPTION	MID-COAT	DESCRIPTION	TOPCOAT	DESCRIPTION
Superstructure and Deck Structures						
Applications – Wheelhouse steel, cranes, equipment, piping and handrails and other equipment operating up to 250°F (121°C)						
Excellent	Carbomastic 15 Series -or- Carbomastic 615	Aluminum surface tolerant epoxy -or- Inert-flake filled, moisture tolerant, low temp cure epoxy	Carboguard 890 -or- Carboguard 635	Versatile, chemical resistant epoxy -or- Moisture tolerant, low temp cure epoxy	Carbothane 134 Series -or- Carbothane 133 Series	High gloss weatherable acrylic urethane -or- Satin finish; high build urethane hybrid
Good	Carbocoat 150 UP -or- Carbocoat 8215	Universal phenolic alkyd primer -or- High build, surface tolerant, direct to metal alkyd			Carbocoat 45 -or- Carbocoat 8215	High gloss alkyd enamel -or- High build, surface tolerant, direct to metal alkyd

Weathering Exposures

Weathering and Salt Environment – Systems over Existing Coatings*

PERFORMANCE	OVERCOAT SEALER	DESCRIPTION	SPOT PRIMER	DESCRIPTION	TOPCOAT	DESCRIPTION
Superstructure and Deck Structures						
Applications - Wheelhouse steel, cranes, equipment, piping and handrails and other equipment operating up to 250°F (121°C)						
Excellent	Rustbond Series	Penetrating epoxy sealer	Carboguard 890 -or- Carboguard 635	Versatile, chemical resistant epoxy -or- Moisture tolerant, low temp cure epoxy	Carbothane 134 Series -or- Carbothane 133 Series	High gloss weatherable acrylic urethane -or- Satin finish; high build urethane hybrid
Good	Carbocoat 150 UP -or- Carbocoat 8215	Universal phenolic alkyd primer -or- High build, surface tolerant, direct to metal alkyd			Carbocoat 45 -or- Carbocoat 8215	High gloss alkyd enamel -or- High build, surface tolerant, direct to metal alkyd

*Recommended surface preparation is SP1 followed by SP2/3. Always determine suitability for overcoating prior to application (see Notes section).

Underwater Hull

Fresh or Salt Water Immersion

PREP	TWO COATS ANTI-CORROSIVE COATING	DESCRIPTION	2-3 COATS ANTIFOULANT COATING	DESCRIPTION
Underwater Hull Applications – Underwater hull exposed to fresh or salt water exposures.				
SP 10	Carboguard 890 -or- Carboguard 235 -or- Carboguard 635	Versatile, chemical resistant epoxy -or- Moisture tolerant, low temp cure epoxy -or- Moisture tolerant, low temp cure, fast recoat epoxy	C-Flex 1-2-3 AF	Self-polishing, abrasive, tin-free, antifoulant

Hull Above the Waterline (Freeboard)

Weathering/Salt Spray Exposure

PREP	PRIMER	DESCRIPTION	MID-COAT	DESCRIPTION	TOPCOAT	DESCRIPTION
Hull Above the Waterline Applications – Exterior hull above the waterline (freeboard).						
SP 6	Carbozinc 11 -or- Carbozinc 808 -or- Carbozinc 859	Inorganic zinc primer for maximum corrosion protection -or- Organic zinc for quick topcoating -or- High zinc load organic zinc for quick topcoating	Carboguard 890 -or- Carboguard 235 -or- Carboguard 635	Versatile, chemical resistant epoxy -or- Moisture tolerant, low temp cure epoxy -or- Moisture tolerant, low temp cure, fast recoat epoxy	Carbothane 134 Series -or- Carbothane 133 Series	High gloss weatherable acrylic urethane -or- Satin finish; high build urethane hybrid

Decks and Walkways

PREP	1ST COAT	DESCRIPTION	2ND COAT	DESCRIPTION	OPTIONAL THIRD COAT	DESCRIPTION
Walkways (Non-Slip Areas) – Steel Applications – For applications where non-slip walking surfaces are required.						
SP 3	Carbocoat 8215	Economical fast-dry alkyd enamel	Carbocoat 8215 Non-Skid	Economical fast-dry non-skid alkyd enamel		
SP 10	Carbozinc 808 -or- Carboguard 890	Organic zinc for additional corrosion resistance -or- Chemical resistant epoxy primer	Carboguard 1209 -or- Carboguard 869 Non-Skid	Heavy-duty, glass-flake, non-skid epoxy -or- Medium-duty, non-skid epoxy	Carbothane 134 Series	High gloss weatherable acrylic urethane

High Heat Applications

Non-Insulated

PREP	PRIMER	DESCRIPTION	TOPCOAT	DESCRIPTION	OPTIONAL THIRD COAT	DESCRIPTION
Uninsulated Piping and Equipment – Steel operating to 450°F (232°C) Applications – Piping, heaters, furnaces, boilers, stacks, vessels, heat exchangers, mufflers, valves and pumps and equipment operating at 250-450°F (121-232°C).						
SP 10	Carbozinc 11 Series	Inorganic zinc primer for maximum corrosion protection	Thermaline 4000 -or- Thermaline 4900	Inorganic silicate; no heat cure requirement -or- Silicone acrylic	Thermaline 4000 -or- Thermaline 4900	Inorganic silicate; no heat cure requirement -or- Silicone acrylic
Uninsulated Piping and Equipment – Steel operating up to 800-1000°F (427-538°C) Applications – Piping, heaters, furnaces, boilers, stacks, vessels, heat exchangers, mufflers, valves and pumps and equipment operating at 800-1000°F (427-538°C).						
SP 10	Carbozinc 11 Series*	Inorganic zinc primer for maximum corrosion protection	Thermaline 4000 -or- Thermaline 4700	Inorganic silicate; no heat cure requirement -or- Silicone	Thermaline 4000 -or- Thermaline 4700	Inorganic silicate; no heat cure requirement -or- Silicone

*Thermaline 2977 VOC can be used up to 800°F (427°C) over an SP3 surface preparation.

Insulated

PREP	PRIMER	DESCRIPTION	TOPCOAT	DESCRIPTION	OPTIONAL THIRD COAT	DESCRIPTION
Insulated Piping and Equipment – Steel operating up to 300°F (148°C) Applications – Insulated piping and equipment operating at elevated temperatures.						
SP 3	Carbomastic 15 Series	Aluminum surface tolerant epoxy	Carbomastic 15 Series	Aluminum surface tolerant epoxy		
Insulated Piping and Equipment – Steel operating up to 425°F (218°C) Applications – Insulated piping and equipment operating at elevated temperatures.						
SP 10	Thermaline 450	Glass-flake epoxy novolac				
Insulated Piping and Equipment – Steel operating up to 1000°F (538°C) Applications – Insulated piping and equipment operating at elevated temperatures.						
SP 10	Carbozinc 11	Inorganic zinc-rich primer	Thermaline 4700	Silicone	Thermaline 4700	Silicone

Tanks

SERVICE CONDITIONS	GENERIC TYPE	PRODUCT	# OF COATS	mils (µm) TOTAL
Ballast Tanks and Double Bottoms	Epoxy Polyamide	Carbomastic 18 BT	2	12-14 (300-350)
	Epoxy Phenalkamine	Carboguard 635	2	12-14 (300-350)
	Epoxy Polyamide	Carboguard 890	2	12-14 (300-350)
	Epoxy Phenalkamine	Carboguard 235	2	12-14 (300-350)
	Solvent-Free Epoxy	Phenoline Tank Shield	1-2	12-20 (300-500)
Chemical Storage Tanks	Cycloaliphatic Amine Epoxy	Phenoline 385	2	12-14 (300-350)
	Epoxy Novolac	Phenoline 353	2	12-14 (300-350)
	Epoxy Amine	Plasite 9060 or 9060 LT	2	12-14 (300-350)
	Solvent-Free Epoxy Amine	Plasite 4500 S	1	25-35 (625-875)
Potable Water Tanks	Epoxy Polyamide	Carboguard 61	2	12-14 (300-350)
	Epoxy Phenalkamine	Carboguard 635	2	8-12 (200-300)
	Epoxy Phenalkamine	Carboguard 692	2	12-14 (300-350)
	Solvent-Free Epoxy	Phenoline Tank Shield	1	15-20 (375-500)
Dry Void Tanks	Epoxy Polyamide	Carboguard 890	2	12-14 (300-350)
	Epoxy Phenalkamine	Carboguard 635	2	12-14 (300-350)
	Epoxy Polyamide	Carboguard 60	2	12-14 (300-350)
Fuel Oil, Gasoline Storage	Cycloaliphatic Amine Epoxy	Phenoline 385	2	12-14 (300-350)
	Solvent-Free Epoxy	Phenoline Tank Shield	1	15-20 (375-500)

NOTES:

1. This system guide often refers to a “series” of products (e.g. Carbozinc 11 Series) where you may select the specific product for your application within this equivalent family. This “series” typically includes product versions that meet regional VOC regulations (e.g. Carbozinc 11 VOC) as well as product versions that offer faster cure (e.g. Carbozinc 11 FC). You can be assured that all the products within a “series” offer the same performance characteristics. Please consult your Carboline Sales Representative for specific recommendations.
2. Please consult your Carboline Sales Representative for specific recommendations to meet regional environmental regulations. Carboline offers many products with reduced VOC and HAPs.



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