SHERWIN WILLIAMS®

ISO 12944

SYSTEMS GUIDE 2026 EDITION

Compliant With ISO 12944:2018 - Independently Tested

FROM SPEC TO PROTECT

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THE ISO 12944 STANDARD

ISO 12944 is a global industry standard for corrosion protection of steel structures by protective coatings systems. First released in 1998, the standard was put together by a committee of representatives from countries all over the globe, many working for companies involved in the protection of steel structures. The standard is designed to provide guidance to architects, engineers, specifiers, applicators and other parties in the application of coatings to protect steel. Over the years, the standard evolved. The latest edition was published in 2018.

HOW IT WORKS

The ISO 12944 standard provides guidance to select and pre-qualify coatings systems for corrosion protection in different scenarios. Each scenario combines a type of environment (with different levels of corrosivity) with a durability target (a range in years). Different parts of the standard cover for each of these aspects. Parts 1, 2, 5, 6 and 9 are the most relevant in the context of this guide.

Part 1: establishes four durability ranges

- Low (L) up to 7 years;
- Medium (M) 7 years to 15 years;
- High (H) 15 years to 25 years;
- Very High (VH) more than 25 years.

Part 2: provides a classification of environments

- Atmospheric-corrosivity categories from C1 (very low corrosivity) to C5 (very high corrosivity), plus CX for extreme corrosivity
- Water and soil categories Im1(fresh water), Im2 and Im4 (sea or brackish water, with or without cathodic protection) and Im3 (buried in soil).

Part 5: defines coating systems for environments C2 to C5 and Im1 to Im3.

Type of coatings, number of coats and nominal dry film thickness are defined for systems responding to each scenario (combination of environments with durability targets).

Part 6: defines laboratory performance test methods to pre-qualify systems defined in Part 5, for durability up to Very High (VH) range.

Accelerated ageing testing protocols with acceptance criteria for each combination of systems defined in Part 5 with diferent durability ranges.

Part 9:

Defines coatings systems and pre-qualification laboratory performance test methods for High Durability (H) in offshore environments (categories CX, Im4 and CX+Im4 splash zone).

THE 2018 EDITION – WHAT CHANGED

A new Very High (VH) durability target (more than 25 years) was added.

Atmospheric-corrosivity categories C5-I (Industrial) and C5-M (Marine) were merged in a single C5 "Very High corrosivity" category.

A new atmospheric-corrosivity category CX was added, covering "Extreme corrosivity"

For water and soil exposure, a new Im4 category was added covering cathodic-protected structures in sea or brackish water.

Both Part 5 (systems) and Part 6 (laboratory testing) were updated.

Part 9 was added to cover for offshore exposures. This was a new addition to ISO 12944 and replaces ISO 20340 which is now obsolete.

THE FUTURE

The next revision of the ISO 12944 standard is expected to be published in 2028.

OTHER ASPECTS COVERED BY ISO 12944

Additional to the parts that are relevant for selection and pre-qualification of coating systems, detailed above, the ISO 12944 standard provides important additional guidance for:

- Design considerations (Part 3)
- Types of surface and surface preparation (Part 4)
- Execution and supervision of paint work (Part 7)
- Development of specifications for new work and maintenance (Part 8)

DURABILITY CONSIDERATIONS

ISO 12944 Part 1 defines durability as the “expected life of a protective paint system to the first major maintenance painting”. It also states that “the durability range is not a guarantee time”.

The level of coating failure before the first major maintenance painting shall be agreed upon by the interested parties. ISO 12944 provides an example that is often used: “first major maintenance painting would normally need to be carried out for reasons of corrosion protection once about 10% of the coatings have reached Ri 3, as defined in ISO 4628-3. This requirement may be applied to the whole structure or to representative sections as agreed upon between involved parties, which may then be classified separately.”

ISO 12944 specifies a range of timeframes to categorize durability from Low (up to 7 years) to Very High durability (over 25 years) as detailed above.

ABOUT CLASSIFICATION OF ENVIRONMENTS

Part 2 of ISO 12944 standard defines various corrosivity categories for atmospheric conditions, soil, and water. The standard provides a very general evaluation based on the rate of corrosion expected for carbon steel and zinc when exposed to corrosive environments, expressed in loss of mass over time. It does not reflect specific chemical, mechanical or temperature exposures.

When selecting a paint system, it is extremely important to define the environmental conditions in which the structure, facility or installation will operate. To establish the level of environmental corrosivity, the following factors must be considered:

- Relative humidity and temperature
- Level of UV radiation
- Exposure to chemicals (e.g., in industrial plants)
- Potential for mechanical damage (impact, abrasion, etc.)

The different atmospheric, water and soil corrosivity categories are detailed below.

Atmospheric Corrosivity Category	Environment	
	Exterior	Interior
C1 Very low	-	Heated buildings with a clean atmosphere (e.g., offices, shops, schools, hotels)
C2 Low	Atmospheres contaminated to a small extent, mainly rural regions	Buildings which are not heated and where condensation may occur (e.g., storage facilities, sports halls)
C3 Medium	Industrial and urban atmospheres with a low sulphur oxide (IV) contamination level and inshore areas of low salinity	Production halls to facilities with high humidity and certain air contamination (e.g., food plants, laundries, breweries, dairies)
C4 High	Industrial areas and inshore areas of medium salinity	Chemical plants, swimming pools, ship repair yards
C5 Very high	Industrial areas of high humidity and aggressive atmosphere and inshore areas of high salinity	Buildings and areas of almost constant condensation and high contamination
CX	Offshore areas of high salinity or industrial areas of extremely high humidity and aggressive atmosphere or subtropical and tropical areas	Buildings and areas of almost constant condensation and aggressive contamination

Immersion Corrosivity Category	Environment	Examples of Environments and Structures
Im1	Fresh water	River installations, hydroelectric power plants
Im2	Sea or brackish water	Immersed structure without cathodic protection (e.g., port areas with structures like sluice gates, locks, jetties, offshore structures)
Im3	Soil	Underground tanks, steel stilts, pipelines
Im4	Sea or brackish water	Immersed structure with cathodic protection (e.g., port areas with structures like sluice gates, locks, jetties, offshore structures)

DEFINING A COATING SYSTEM

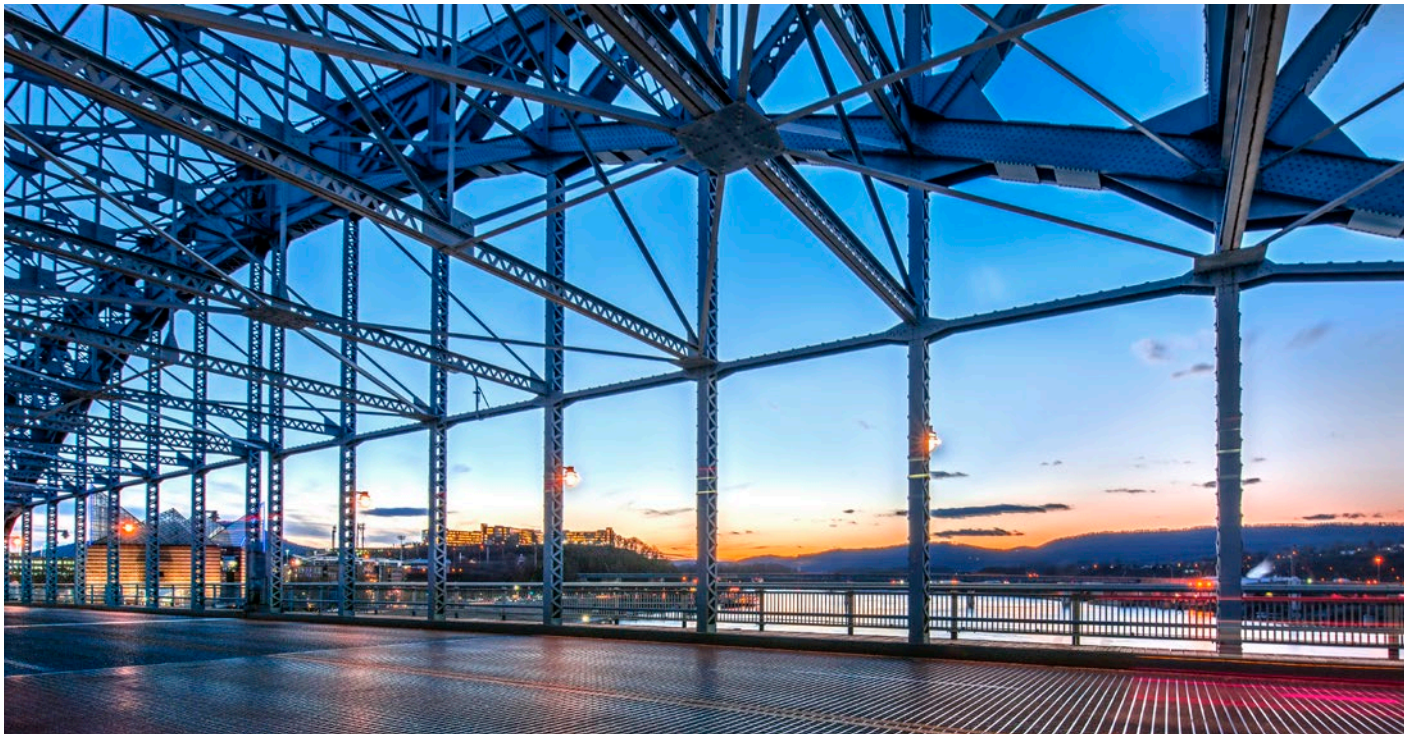
ISO 12944 defines coating systems for different scenarios, establishing the minimum number of coats and dry film thickness in each situation. Systems also differ depending on the substrate to be coated: abrasive blasted carbon steel, hot dip galvanized steel or thermal-sprayed metallic coating. Rules for each system are shared in the **ISO 12944:2018 Coating Systems section** at the end of this document, for the following scenarios:

From ISO 12944-5

- Systems for atmospheric categories C2 to C5, Low to Very High durability, over abrasive blasted steel substrates.
- Systems for atmospheric categories C2 to C5, Low to Very High durability, over hot dip galvanized steel.
- Systems for atmospheric categories C3 to C5, durability High and Very High, over thermal-sprayed metallic coating.
- Systems for immersion and buried categories Im1, Im2 and Im3.

From ISO 12944-9

- System for atmospheric category CX, High durability, over abrasive blasted steel.
- System for atmospheric category CX, High durability, over hot dip galvanized steel or thermal-sprayed metallic coating.
- System for immersion category Im4, High durability, over abrasive blasted steel.
- System for combined category CX+Im4 (splash and tidal zones), High durability, over abrasive blasted steel.



SHERWIN-WILLIAMS AND ISO 12944

In conjunction with extensive in-field performance assessment, Sherwin-Williams has carried out extensive testing programs with third-parties to certify systems for use in the commonly specified environments, following ISO 12944:2018 coating system rules for each situation.

PAINT SYSTEM SELECTION

Navigate the table of contents on the next page to find the Sherwin-Williams third-party approved coating system for the service you need. It includes globally available core systems and relevant regional options.

To access a full listing of independent third-party certified systems, for different regions across the globe, please contact your regional Sherwin-Williams Customer Service Support or Sales Representative.

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C2 ENVIRONMENT

HIGH DURABILITY: 15–25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	120
			TOTAL	**120**
2	Epoxy	Macropoxy 646	Primer	120
			TOTAL	**120**
3	Epoxy	Macropoxy 400	Primer	120
			TOTAL	**120**
4	Polyaspartic	Envirolastic 2500	Primer	120
			TOTAL	**120**
5	Alkyd	Kem-Kromik 155	Primer	80
		Kem-Kromik 155	Topcoat	80
			TOTAL	**160**
6	Epoxy	Macropoxy 400	Primer	70
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**120**

C2 ENVIRONMENT

VERY HIGH DURABILITY: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	120
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**180**
2	Epoxy	Macropoxy 646	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
3	Epoxy	Macropoxy 400	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
4	Polyaspartic	Envirolastic 2500	Primer	180
			TOTAL	**180**
5	Epoxy	Macropoxy 400	Primer	180
			TOTAL	**180**
6	Epoxy	Macropoxy 400	Primer	90
		Macropoxy 400	Topcoat	90
			TOTAL	**180**
7	Epoxy	Macropoxy 400	Primer	100
	Acrylic Epoxy	Acrolon 1850	Topcoat	80
			TOTAL	**180**

Globally available

C3 ENVIRONMENT

MEDIUM DURABILITY: 7–15 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	155
			TOTAL	**155**
2	Epoxy	Macropoxy 646	Primer	120
			TOTAL	**120**
3	Epoxy	Macropoxy 400	Primer	120
			TOTAL	**120**
4	Polyaspartic	Envirolastic 2500	Primer	120
			TOTAL	**120**

C3 ENVIRONMENT

HIGH DURABILITY: 15–25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	120
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**180**
2	Epoxy	Macropoxy 646	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
3	Epoxy	Macropoxy 400	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
4	Polyaspartic	Envirolastic 2500	Primer	180
			TOTAL	**180**
5	Epoxy	Macropoxy 400	Primer	180
			TOTAL	**180**
6	Epoxy	Macropoxy 400	Primer	90
		Macropoxy 400	Topcoat	90
			TOTAL	**180**
7	Epoxy	Macropoxy 400	Primer	100
	Acrylic Epoxy	Acrolon 1850	Topcoat	80
			TOTAL	**180**
8	Epoxy	Macropoxy M455V2	Primer	180
			TOTAL	**180**
9	Epoxy	Macropoxy 400	Primer	130
	Acrylic	FIRETEX M71V2	Topcoat	50
			TOTAL	**180**
10	Epoxy	Macropoxy 400	Primer	145
	WB Acrylic	Sher-Cryl M770	Topcoat	35
			TOTAL	**180**
11	Epoxy	Macropoxy 400	Primer	130
	Alkyd	Kem-Kromik 255	Topcoat	50
			TOTAL	**180**

Globally available

C3 ENVIRONMENT

VERY HIGH DURABILITY: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
2	Epoxy	Macropoxy 2600MIO	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
3	Epoxy	Macropoxy 646	Primer	180
	Polyurethane	Acrolon 7300	Topcoat	60
			TOTAL	**240**
4	Epoxy	Macropoxy 2440 MFN	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
5	Epoxy	Macropoxy EG-1 PLUS	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
6	Epoxy	Macropoxy 400	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**
7	Epoxy	Macropoxy 400	Primer	140
	Polyaspartic	Envirolastic 2500	Topcoat	100
			TOTAL	**240**
8	Epoxy	Macropoxy 400	Primer	120
		Macropoxy 400	Topcoat	120
			TOTAL	**240**
9	Epoxy	Macropoxy 400	Primer	160
	Acrylic Epoxy	Acrolon 1850	Topcoat	80
			TOTAL	**240**

C4 ENVIRONMENT

LOW DURABILITY: <7 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	155
			TOTAL	**155**
2	Epoxy	Macropoxy 646	Primer	120
			TOTAL	**120**
3	Epoxy	Macropoxy 400	Primer	120
			TOTAL	**120**
4	Polyaspartic	Envirolastic 2500	Primer	120
			TOTAL	**120**

C4 ENVIRONMENT

MEDIUM DURABILITY: 7–15 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	120
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**180**
2	Epoxy	Macropoxy 646	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
3	Epoxy	Macropoxy 400	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
4	Polyaspartic	Envirolastic 2500	Primer	180
			TOTAL	**180**
5	Epoxy	Macropoxy 400	Primer	180
			TOTAL	**180**
6	Epoxy	Macropoxy 400	Primer	90
		Macropoxy 400	Topcoat	90
			TOTAL	**180**
7	Epoxy	Macropoxy 400	Primer	100
	Acrylic Epoxy	Acrolon 1850	Topcoat	80
			TOTAL	**180**
8	Epoxy	Macropoxy M455V2	Primer	180
			TOTAL	**180**
9	Epoxy	Macropoxy 400	Primer	130
	Acrylic	FIRETEX M71V2	Topcoat	50
			TOTAL	**180**
10	Epoxy	Macropoxy 400	Primer	145
	WB Acrylic	Sher-Cryl M770	Topcoat	35
			TOTAL	**180**
11	Epoxy	Macropoxy 400	Primer	130
	Alkyd	Kem-Kromik 255	Topcoat	50
			TOTAL	**180**

Globally available

C4 ENVIRONMENT

HIGH DURABILITY: 15-25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
2	Epoxy	Macropoxy 2600MIO	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
3	Epoxy	Macropoxy 646	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**
4	Polysiloxane	Sher-Loxane 800	Primer	120
		Sher-Loxane 800	Topcoat	120
			TOTAL	**240**
5	Epoxy	Macropoxy 400	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**
6	Epoxy	Macropoxy 400	Primer	140
	Polyaspartic	Envirolastic 2500	Topcoat	100
			TOTAL	**240**
7	Epoxy	Macropoxy 400	Primer	120
		Macropoxy 400	Topcoat	120
			TOTAL	**240**
8	Epoxy	Macropoxy 400	Primer	160
	Acrylic epoxy	Acrolon 1850	Topcoat	80
			TOTAL	**240**
9	Epoxy	Macropoxy 2440 MFN	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
10	Epoxy	Macropoxy EG-1 PLUS	Primer	160
	Polyurethane	Acrolon 7700	Topcoat	80
			TOTAL	**240**

C4 ENVIRONMENT

VERY HIGH DURABILITY REGIME 1: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	240
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**300**
2	Epoxy	Macropoxy 646	Primer	125
	Epoxy	Macropoxy 646	Intermediate	125
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
3	Epoxy	Macropoxy 646	Primer	250
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
4	Epoxy	Macropoxy 4600	Primer	140
	Epoxy	Macropoxy EG-1 Rapid Plus	Intermediate	80
	Polyurethane	Acrolon EG-5	Topcoat	80
			TOTAL	**300**
5	Organic Zinc	Zinc Clad R Plus	Primer	60
	Epoxy	Macropoxy 4600	Intermediate	140
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**260**
6	Epoxy	Macropoxy 400	Primer	125
	Epoxy	Macropoxy 400	Intermediate	125
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
7	Epoxy	Macropoxy 400	Primer	150
	Epoxy	Macropoxy 400	Topcoat	150
			TOTAL	**300**
8	Epoxy	Macropoxy 400	Primer	300
			TOTAL	**300**
9	Epoxy	Macropoxy 400	Primer	250
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
10	Epoxy	Macropoxy 400	Primer	225
	Acrylic epoxy	Acrolon 1850	Topcoat	75
			TOTAL	**300**
11	Epoxy	Macropoxy 646	Primer	225
	Acrylic epoxy	Acrolon 1850	Topcoat	75
			TOTAL	**300**

C4 ENVIRONMENT

VERY HIGH DURABILITY REGIME 2: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Organic Zinc	Zinc Clad R Plus	Primer	60
	Epoxy	Macropoxy 646	Intermediate	140
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**260**
2	Organic Zinc	Zinc Clad R Plus	Primer	60
	Epoxy	Macropoxy 4600	Intermediate	140
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**260**
3	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 267	Intermediate	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**260**
4	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 646	Intermediate	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**260**
5	Organic Zinc	Zinc Clad IV EU	Primer	60
	Polyaspartic	Envirolastic 2500	Topcoat	200
			TOTAL	**260**
6	Epoxy	Macropoxy 400	Primer	175
	Polyaspartic	Envirolastic 2500	Topcoat	125
			TOTAL	**300**
7	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 400	Intermediate	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**260**

Globally available

C5 ENVIRONMENT

LOW DURABILITY: <7 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	120
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**180**
2	Epoxy	Macropoxy 646	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
3	Epoxy	Macropoxy 400	Primer	125
	Polyurethane	Acrolon 7300	Topcoat	55
			TOTAL	**180**
4	Polyaspartic	Envirolastic 2500	Primer	180
			TOTAL	**180**
5	Epoxy	Macropoxy 400	Primer	180
			TOTAL	**180**
6	Epoxy	Macropoxy 400	Primer	90
		Macropoxy 400	Topcoat	90
			TOTAL	**180**
7	Epoxy	Macropoxy 400	Primer	100
	Acrylic Epoxy	Acrolon 1850	Topcoat	80
			TOTAL	**180**
8	Epoxy	Macropoxy M455V2	Primer	180
			TOTAL	**180**
9	Epoxy	Macropoxy 400	Primer	130
	Acrylic	FIRETEX M71V2	Topcoat	50
			TOTAL	**180**
10	Epoxy	Macropoxy 400	Primer	145
	WB Acrylic	Sher-Cryl M770	Topcoat	35
			TOTAL	**180**
11	Epoxy	Macropoxy 400	Primer	130
	Alkyd	Kem-Kromik 255	Topcoat	50
			TOTAL	**180**

C5 ENVIRONMENT

MEDIUM DURABILITY: 7–15 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
2	Epoxy	Macropoxy 2600MIO	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
3	Epoxy	Macropoxy 646	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**
4	Polysiloxane	Sher-Loxane 800	Primer	120
	Polysiloxane	Sher-Loxane 800	Topcoat	120
			TOTAL	**240**
5	Epoxy	Macropoxy 2440 MFN	Primer	180
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**240**
6	Epoxy	Macropoxy EG-1 PLUS	Primer	160
	Polyurethane	Acrolon 7700	Topcoat	80
			TOTAL	**240**
7	Epoxy	Macropoxy 400	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**
8	Epoxy	Macropoxy 400	Primer	140
	Polyaspartic	Envirolastic 2500	Topcoat	100
			TOTAL	**240**
9	Epoxy	Macropoxy 400	Primer	120
		Macropoxy 400	Topcoat	120
			TOTAL	**240**
10	Epoxy	Macropoxy 400	Primer	160
	Acrylic Epoxy	Acrolon 1850	Topcoat	80
			TOTAL	**240**

Globally available

C5 ENVIRONMENT

HIGH DURABILITY REGIME 1: 15–25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 4600	Primer	240
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**300**
2	Epoxy	Macropoxy 2600	Primer	240
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**300**
3	Epoxy	Macropoxy 2600 MIO	Primer	240
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**300**
4	Epoxy	Macropoxy 646	Primer	125
	Epoxy	Macropoxy 646	Intermediate	125
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
5	Epoxy	Macropoxy 646	Primer	250
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
6	Epoxy	Macropoxy 4600	Primer	140
	Epoxy	Macropoxy EG-1 Rapid Plus	Intermediate	80
	Polyurethane	Acrolon EG-5	Topcoat	80
			TOTAL	**300**
7	Organic Zinc	Zinc Clad R Plus	Primer	60
	Epoxy	Macropoxy 646	Intermediate	140
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**260**
8	Organic Zinc	Zinc Clad R Plus	Primer	60
	Epoxy	Macropoxy 4600	Intermediate	140
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**260**
9	Epoxy	Macropoxy 400	Primer	125
	Epoxy	Macropoxy 400	Intermediate	125
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
10	Epoxy	Macropoxy 400	Primer	150
	Epoxy	Macropoxy 400	Topcoat	150
			TOTAL	**300**
11	Epoxy	Macropoxy 400	Primer	300
			TOTAL	**300**
12	Epoxy	Macropoxy 400	Primer	250
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**300**
13	Epoxy	Macropoxy 400	Primer	225
	Acrylic Epoxy	Acrolon 1850	Topcoat	75
			TOTAL	**300**
14	Epoxy	Macropoxy 646	Primer	225
	Acrylic Epoxy	Acrolon 1850	Topcoat	75
			TOTAL	**300**

Globally available

C5 ENVIRONMENT

HIGH DURABILITY REGIME 2: 15–25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Organic Zinc	Zinc Clad R Plus	Primer	60
	Epoxy	Macropoxy 646	Intermediate	140
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**260**
2	Organic Zinc	Zinc Clad R Plus	Primer	60
	Epoxy	Macropoxy 4600	Intermediate	140
	Polyurethane	Acrolon 7700	Topcoat	60
			TOTAL	**260**
3	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 267	Intermediate	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**260**
4	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 646	Intermediate	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**260**
5	Organic Zinc	Zinc Clad IV EU	Primer	60
	Polyaspartic	Envirolastic 2500	Topcoat	200
			TOTAL	**260**
6	Epoxy	Macropoxy 400	Primer	175
	Polyaspartic	Envirolastic 2500	Topcoat	125
			TOTAL	**300**
7	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 400	Intermediate	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**260**

C5 ENVIRONMENT

VERY HIGH DURABILITY REGIME 2: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Organic Zinc	Zinc Clad R PLUS	Primer	60
	Epoxy	Macropoxy EG-1 PLUS	Intermediate	160
	Polyurethane	Acrolon EG-5	Topcoat	80
			TOTAL	**300**

GALVANIZED - C3 ENVIRONMENT

HIGH DURABILITY: 15-25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	70
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**120**
2	Epoxy	Macropoxy 400	Primer	70
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**120**
3	Epoxy	Macropoxy K267	Primer	70
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**120**

GALVANIZED - C3 ENVIRONMENT

VERY HIGH DURABILITY: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	110
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**160**
2	Epoxy	Macropoxy K267	Primer	110
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**160**
3	Epoxy	Macropoxy 400	Primer	110
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**160**

GALVANIZED - C4 ENVIRONMENT

HIGH DURABILITY: 15 - 25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	110
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**160**
2	Epoxy	Macropoxy K267	Primer	110
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**160**
3	Epoxy	Macropoxy 400	Primer	110
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**160**

GALVANIZED - C4 ENVIRONMENT

VERY HIGH DURABILITY REGIME 1: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**
2	Epoxy	Macropoxy 400	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**
3	Epoxy	Macropoxy K267	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**

Globally available

GALVANIZED - C5 ENVIRONMENT

HIGH DURABILITY REGIME 1: 15-25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**
2	Epoxy	Macropoxy 400	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**
3	Epoxy	Macropoxy K267	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**

GALVANIZED - C5 ENVIRONMENT

HIGH DURABILITY REGIME 2: 15-25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**
2	Epoxy	Macropoxy 400	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**
3	Epoxy	Macropoxy K267	Primer	150
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**200**

GALVANIZED - C5 ENVIRONMENT

VERY HIGH DURABILITY REGIME 2: >25 YRS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**
2	Epoxy	Macropoxy 400	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**
3	Epoxy	Macropoxy K267	Primer	190
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**240**

SYSTEMS SUITABLE FOR Im1 ENVIRONMENT

HIGH DURABILITY

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	250
	Epoxy	Macropoxy 646	Topcoat	250
			TOTAL	**500**
2	Epoxy	Dura-Plate UHS	Primer	500
			TOTAL	**500**
3	Epoxy	Macropoxy M922	Primer	500
			TOTAL	**500**
4	Epoxy	Macropoxy M922	Primer	250
	Epoxy	Macropoxy M922	Topcoat	250
			TOTAL	**500**
5	Epoxy	Dura-Plate 301W	Primer	120
	Epoxy	Dura-Plate 301W	Intermediate	120
	Epoxy	Dura-Plate 301W	Topcoat	120
			TOTAL	**360**
6	Epoxy	Dura-Plate 301W	Primer	180
	Epoxy	Dura-Plate 301W	Topcoat	180
			TOTAL	**360**

SYSTEMS SUITABLE FOR Im2/Im3 ENVIRONMENT

HIGH DURABILITY

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	250
	Epoxy	Macropoxy 646	Topcoat	250
			TOTAL	**500**
3	Epoxy	Macropoxy M922	Primer	250
	Epoxy	Macropoxy M922	Topcoat	250
			TOTAL	**500**
4	Epoxy	Macropoxy M922	Primer	500
			TOTAL	**500**
7	Epoxy	Dura-Plate SW501	Primer	200
	Epoxy	Dura-Plate SW501	Intermediate	200
	Epoxy	Dura-Plate SW501	Topcoat	200
			TOTAL	**600**

Globally available

CX ENVIRONMENT

HIGH DURABILITY, TESTED IN ACCORDANCE WITH ISO 12944-9:2018

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Organic Zinc	Zinc Clad IV	Primer	60
	Epoxy	Macropoxy 646	Intermediate	170
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**280**
2	Organic Zinc	Zinc Clad IV	Primer	60
	Epoxy	Macropoxy 400	Intermediate	170
	Polyurethane	Acrolon 7300	Topcoat	50
			TOTAL	**280**
3	Inorganic Zinc	Zinc Clad II EU	Primer	60
	Epoxy	Macropoxy 646	Intermediate	160
	Polyurethane	Acrolon 7300	Topcoat	60
			TOTAL	**280**
4	Inorganic Zinc	Zinc Clad II EU	Primer	60
	Epoxy	Macropoxy 400	Intermediate	160
	Polyurethane	Acrolon 7300	Topcoat	60
			TOTAL	**280**
5	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 267	Intermediate	160
	Polyurethane	Acrolon 7300	Topcoat	60
			TOTAL	**280**
6	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 646	Intermediate	160
	Polyurethane	Acrolon 7300	Topcoat	60
			TOTAL	**280**
7	Inorganic Zinc	Zinc Clad II EU	Primer	60
	Epoxy	Macropoxy 267	Intermediate	160
	Polyurethane	Acrolon 7300	Topcoat	60
			TOTAL	**280**
8	Inorganic Zinc	Zinc Clad II EU	Primer	75
	Epoxy	Macropoxy 267	Intermediate	145
	Acrylic Epoxy	Acrolon 1850	Topcoat	60
			TOTAL	**280**
9	Inorganic Zinc	Zinc Clad II EU	Primer	75
	Epoxy	Macropoxy 646	Intermediate	145
	Acrylic Epoxy	Acrolon 1850	Topcoat	60
			TOTAL	**280**
10	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 646	Intermediate	160
	Acrylic Epoxy	Acrolon 1850	Topcoat	60
			TOTAL	**280**
11	Inorganic Zinc	Zinc Clad II EU	Primer	75
	Epoxy	Macropoxy 267	Intermediate	105
	Polysiloxane	Sher-Loxane 800	Topcoat	100
			TOTAL	**280**
12	Organic Zinc	Zinc Clad IV EU	Primer	60
	Epoxy	Macropoxy 400	Intermediate	170
	Acrylic Epoxy	Acrolon 7300	Topcoat	50
			TOTAL	**280**

SYSTEMS SUITABLE FOR CX/Im4 ENVIRONMENT

TESTED IN ACCORDANCE WITH NORSOK M-501 REV 6 AND ISO 12944:2018 PART 9

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Heat-Flex 750	Primer	175
	Epoxy	Heat-Flex 750	Topcoat	175
			TOTAL	**350**
2	Epoxy	Heat-Flex Ace	Primer	175
	Epoxy	Heat-Flex Ace	Topcoat	175
			TOTAL	**350**
3	IMM	Heat-Flex 1200	Primer	175
	IMM	Heat-Flex 1200	Topcoat	175
			TOTAL	**350**
4	IMM	Heat-Flex 1200 Plus	Primer	175
	IMM	Heat-Flex 1200 Plus	Topcoat	175
			TOTAL	**350**
5	Repair Coating/Putty	Repacor™ SW-1000	Primer	600
			TOTAL	**600**

SYSTEMS SUITABLE FOR Im4 ENVIRONMENT

TESTED IN ACCORDANCE WITH NORSOK M-501 REV 6 7B COMPLIANT WITH ISO12944:2018 - IM4

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Macropoxy 646	Primer	175
	Epoxy	Macropoxy 646	Topcoat	175
			TOTAL	**350**
2	Epoxy	Macropoxy M922	Primer	175
	Epoxy	Macropoxy M922	Topcoat	175
			TOTAL	**350**
3	Epoxy	Dura-Plate SW-501 GF	Primer	175
	Epoxy	Dura-Plate SW-501 GF	Topcoat	175
			TOTAL	**350**

SPLASH AND TIDAL ZONE CX + Im4 (OFFSHORE) HIGH IMPACT AREAS

System	Product Chemistry	Coating System	Coat	Dry Film Thickness (µm)
1	Epoxy	Dura-Plate SW-501	Primer	200
	Epoxy	Dura-Plate SW-501	Intermediate	200
	Epoxy	Dura-Plate SW-501	Topcoat	200
			TOTAL	**600**

Please report to the Sherwin-Williams NORSOK M-501 Revision 7 Systems Guide, with a wider choice of systems for splash zone in CX / Im4 exposure.

Globally available

ISO 12944:2018 COATING SYSTEMS - The Rules For Systems' Build Up

EP - Epoxy, AK - Alkyd, AY - Acrylic, ESI - Ethyl Silicate, Zn - Zinc rich, PUR - Polyurethane, Misc - All other primers
MNOC = Minimum Number of Coats; NDFT = Nominal Dry Film Thickness

FROM ISO 12944-5, ANNEX B (NORMATIVE)

Systems for atmospheric categories C2 to C5, Low to Very High durability, over abrasive blasted steel substrates

Durability		Low (l)			Medium (m)			High (h)			Very High (vh)		
Type of primer		Zn (R)	Misc.		Zn (R)	Misc.		Zn (R)	Misc.		Zn (R)	Misc.	
Binder base of primer		ESI, EP, PUR	EP, PUR, ESI	AK, AY	ESI, EP, PUR	EP, PUR, ESI	AK, AY	ESI, EP, PUR	EP, PUR, ESI	AK, AY	ESI, EP, PUR	EP, PUR, ESI	AK, AY
Binder base of subsequent coats		EP, PUR, AY	EP, PUR, AY	AK, AY	EP, PUR, AY	EP, PUR, AY	AK, AY	EP, PUR, AY	EP, PUR, AY	AK, AY	EP, PUR, AY	EP, PUR, AY	AK, AY
C2	MNOC	If coating is needed use a system from a higher corrisive category or durability			–	–	1	1	1	1	2	2	2
	NDFT				–	–	100	60	120	160	160	180	200
C3	MNOC	–	–	1	1	1	1	2	2	2	2	2	2
	NDFT	–	–	100	60	120	160	160	180	200	200	240	260
C4	MNOC	1	1	1	2	2	2	2	2	2	3	2	–
	NDFT	60	120	160	160	180	200	200	240	260	260	300	–
C5	MNOC	2	2	–	2	2	–	3	2	–	3	3	–
	NDFT	160	180	–	200	240	–	260	300	–	320	360	–

Systems for atmospheric categories C2 to C5, Low to Very High durability, over hot dip galvanized steel

Durability		Low (l)		Medium (m)		High (h)		Very High (vh)	
Binder base of primer		EP, PUR	AY	EP, PUR	AY	EP, PUR	AY	EP, PUR	AY
Binder base of subsequent coats		EP, PUR, AY	AY	EP, PUR, AY	AY	EP, PUR, AY	AY	EP, PUR, AY	AY
C2	MNOC	If coating is needed use a system from a higher corrisive category or durability		If coating is needed use a system from a higher corrisive category or durability		1	1	1	2
	NDFT					80	80	120	160
C3	MNOC	If coating is needed use a system from a higher corrisive category or durability		1	1	1	2	2	2
	NDFT			80	80	120	160	160	200
C4	MNOC	1	1	1	2	2	2	2	–
	NDFT	80	80	120	160	160	200	200	–
C5	MNOC	1	2	2	2	2	–	2	–
	NDFT	120	160	160	200	200	–	240	–

ISO 12944:2018 COATING SYSTEMS

EP - Epoxy, AK - Alkyd, AY - Acrylic, ESI - Ethyl Silicate, Zn - Zinc rich, PUR - Polyurethane, Misc - All other primers
MNOC = Minimum Number of Coats; NDFT = Nominal Dry Film Thickness

FROM ISO 12944-5, ANNEX B (NORMATIVE)

Systems for atmospheric categories C3 to C5, durability High and Very High, over thermal-sprayed metallic coating

Durability		High (h)	Very High (vh)
Binder base of subsequent coats		EP, PUR	EP, PUR
C3	MNOC	1	2
	NDFT	120	160
C4	MNOC	2	2
	NDFT	160	200
C5	MNOC	2	2
	NDFT	200	240

Systems for immersion and buried categories Im1, Im2 and Im3

The below systems are valid for all categories Im1, Im2 and Im3

Durability	High (h)			Very High (vh)		
Type of primer	Zn (R)	Misc.	–	Zn (R)	Misc.	–
Binder base of primer	ESI, EP, PUR	EP, PUR	–	ESI, EP, PUR	EP, PUR	–
Binder base of subsequent coats	EP, PUR	EP, PUR	EP, PUR	EP, PUR	EP, PUR	EP, PUR
MNOC	2	2	1	2	2	1
NDFT	360	380	400	500	540	600

FROM ISO 12944-9

Systems for offshore

- System for atmospheric category CX, High durability, over abrasive blasted steel
- System for atmospheric category CX, High durability, over hot dip galvanized steel or thermal-sprayed metallic coating
- System for immersion category Im4, High durability, over abrasive blasted steel
- System for combined category CX+Im4 (splash and tidal zones), High durability, over abrasive blasted steel

Durability	Low (l)		Medium (m)		High (h)			Very High (vh)
	Blast cleaned carbon steel: Sa 2½; Surface profile: medium (G)							Hot-dip-galvanized steel or steel with thermal-sprayed zinc coating
Type of environment	CX (offshore)		Splash and tidal zones CX (offshore) and Im4			Im4		CX (offshore)
Type of primer	Zn (R)[b]	Other primers	Zn (R)[b, c]	Other primers		Other primers		
NDFT of primer (µm)	≥40	≥60	≥40	≥60	≥200	–	≥150	
MNOC	3	3	3	3	2	1	2	2
NDFT of paint system (µm)	≥280	≥350	≥450	≥450	≥600	≥800	≥350	≥200

ISO 12944

SYSTEMS GUIDE 2026 EDITION

Compliant With ISO 12944:2018 - Independently Tested

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