



# ISO 12944

A global corrosion standard for paint systems



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## Guidelines for coating protection according to ISO 12944

This brochure is based on the international standard ISO 12944 - Paints and varnishes - Corrosion protection of steel construction by protective paint systems.

Our own advices, guidelines and recommendations in the choice of the most appropriate protective system are included.

Unprotected steel exposed to climatic conditions, air atmosphere, contact with water or soil are favorable factors for corrosion damage. To prevent damage, these structures must be protected during their technical life expectancy.

Several factors are taken into account for a good selection of the best coating and the most suitable paint system to protect against corrosion.

**The ISO 12944 standard takes into account some of these important factors :**

- **Determination of the corrosive environment** : humidity, temperature, chemical exposure, presence of UV rays.
- **Determination of the life expectancy of the paint system**

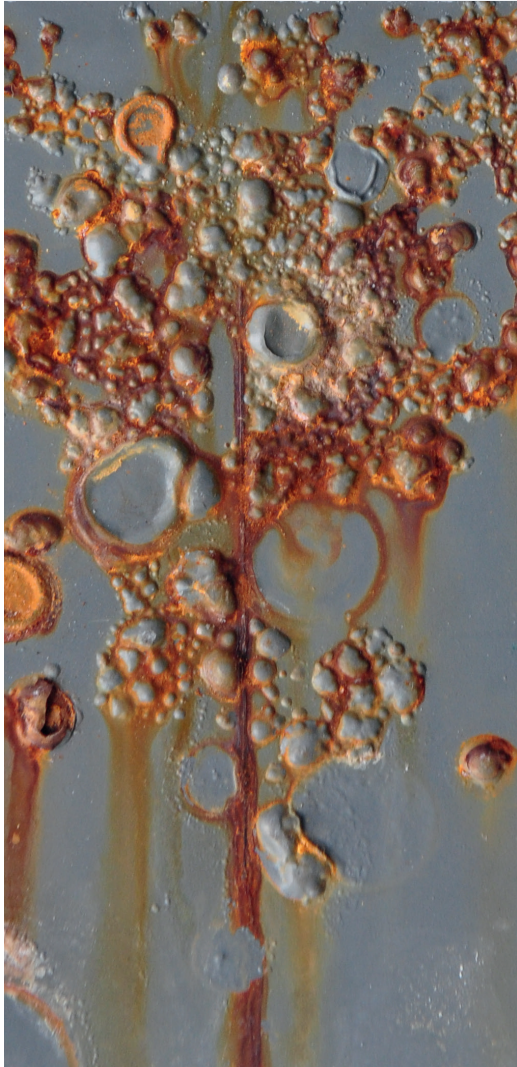


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# Determination of the corrosive environment :



Main environments where steel structures can be subjected and corrosive environments :

## 6 basic categories related to atmospheric corrosion

<b>C1</b>	Very low	<b>C4</b>	High
<b>C2</b>	Low	<b>C5</b>	Highly industrial
<b>C3</b>	Medium	<b>Cx</b>	Extreme

## 4 categories related to water and soil

<b>Im1</b>	Fresh water
<b>Im2</b>	Sea or brackish water without cathodic protection
<b>Im3</b>	Soil
<b>Im4</b>	Sea or brackish water with cathodic protection

## Environment :

Corrosivity classification	Typical environments	
	Outdoor	Indoor
<b>C1 - Very low</b>	-	Heated buildings with a clean atmosphere such as offices, shops, schools, hotels
<b>C2 - Low</b>	Environment with a low pollution usually rural areas	Unheated buildings subject to condensation such as warehouses, sports halls, ...
<b>C3 - Medium</b>	Urban and industrial atmospheres, moderate sulphur dioxide levels Coastal areas with low salinity	Production halls with high humidity and own air pollution such as food processing factories, laundries, breweries, dairy industry
<b>C4 - High</b>	Industrial and coastal areas with medium salinity	Chemical factories, swimming pools, shipyards
<b>C5 - Highly industrial</b>	Industrial areas with high humidity and aggressive atmospheres Coastal areas with high salinity	Buildings and areas with almost constant condensation and high pollution levels Buildings and areas with permanent high humidity
<b>Cx - Extreme</b>	Offshore areas with high salinity or industrial areas with extremely high humidity and aggressive atmosphere or subtropical and tropical areas	Buildings and areas with continuous condensation, permanent high humidity and aggressive pollution

Corrosivity classification		
<b>Im1</b>	Fresh water	Rivers, hydraulic power plants
<b>Im2</b>	Immersion in sea or brackish water without cathodic protection	Sluices, gates, piers, piers in sea
<b>Im3</b>	Soil	Underground tanks, pipelines, lighting posts
<b>Im4</b>	Immersion in sea or brackish water with cathodic protection	Sluices, gates, piers, piers in sea



# Determination of life expectancy of a system :



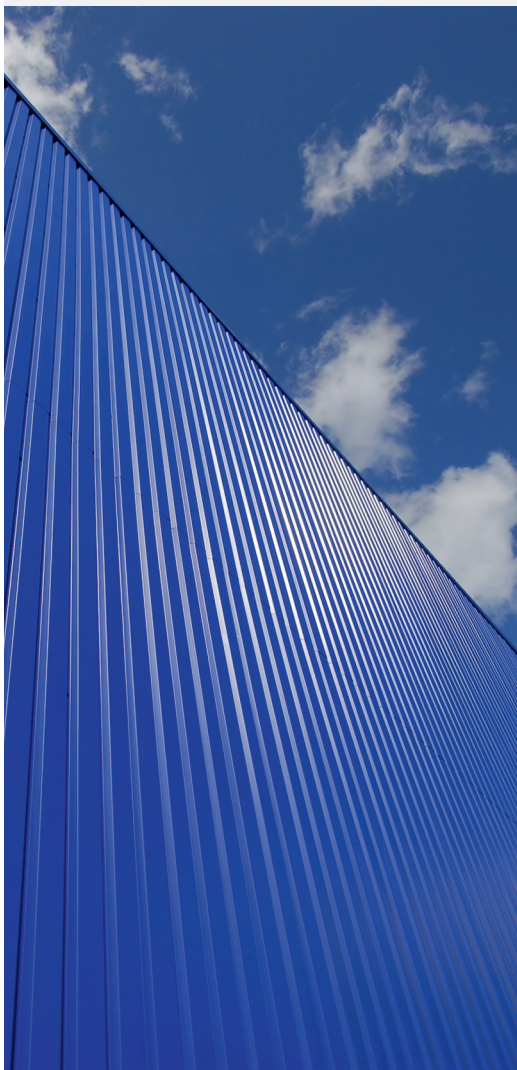
The durability of a paint system means the time elapsed until major maintenance.  
ISO 12944 mentions three periods to specify the durability :

Low (LD)	2 to 7 years
Medium (MD)	7 to 15 years
High (HD)	15 to 25 years
Very high (VH)	> 25 years

The ISO 12944 standard (section 6) describes the tests and test results that should be performed so that a coating system provides the required protection when applied in a certain environment category.

The following pages contain a selection of Libert Paints paint products / paint systems that have been tested and meet the requirements as described in this standard.

# Libert Paints systems according to ISO 12944-6 :



## PREPARATION SA 2,5

<i>Life expectancy</i>						
<i>Corrosivity classification</i>	<i>DFT <math>\mu</math></i>	<i>LD 2-7 years</i>	<i>DFT <math>\mu</math></i>	<i>MD 7-15 years</i>	<i>DFT <math>\mu</math></i>	<i>HD 15-25 years</i>
C1 / C2			80	DTS 40 - 60 - 80		
C1 / C2	40 40	Monoprim Monotop				
C2			80 40	Monoprim Monotop		
C2			60 40	Oxyprim Fixtane		
C2					60 60 40	Monoprim Monoprim Monotop
C2					70 40	Oxyprim Fixtane

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# Libert Paints systems according to ISO 12944-6 :



## PREPARATION SA 2,5

Corrosivity classification	DFT $\mu$	LD 2-7 years	DFT $\mu$	MD 7-15 years	Life expectancy	
					DFT $\mu$	HD 15-25 years
C3			60 60	DTS 40 - 60 - 80 DTS 40 - 60 - 80		
C3					70 60	Polysilco HS Universal Polygloss
C3					60 60	DTS 20 DTS 20
C3					60 70	Polysilco HS Universal Polygloss
C3					100 50	DTS 20 Mixtane Clear HG
C3	80 40	Monoprim Monotop				
C3			90 40	Monoprim Monotop		
C3			60 60	Oxyprim Fixtane Finish		
C3					80 60	Oxyprim Fixtane

Libert paint systems approved by external laboratories (COT, UNIFAP, ...) 

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# Libert Paints systems according to ISO 12944-6 :



## PREPARATION SA 2,5

Corrosivity classification	DFT $\mu$	LD 2-7 years	DFT $\mu$	MD 7-15 years	Life expectancy	
					DFT $\mu$	HD 15-25 years
C4					60 70	Polyzinc / Polysilco Polyguard
C4					100 100	DTS 20 DTS 20
C4					70 70 60	Polysilco Polysilco DTS 60
C4					60 60 60	Polyzinc DTS 60 DTS60
C4			70 70	Fixtane Primer Fixtane Finish		
C4					90 60	Oxyprim Fixtane

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# Libert Paints systems according to ISO 12944-6 :



## PREPARATION SA 2,5

Corrosivity classification	DFT $\mu$	LD 2-7 years	DFT $\mu$	MD 7-15 years	DFT $\mu$	Life expectancy
						HD 15-25 years
C5					60 100 60	Polyzinc Polyguard / Polymicace DTS 60 / Polygloss / Mixtane
Lm1					60 80 80	Polyzinc Polyguard Polyguard
Lm2 / 4					60 80 80	Polyzinc Polyguard Polyguard
Lm3					60 80 80 80	Polyzinc Polyguard Polyguard Polyguard

Libert paint systems approved by external laboratories (COT, UNIFAP, ...) ■

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# Libert Paints systems according to ISO 12944-6 :



## THERMAL GALVANIZED / METALLIZATION

Corrosivity classification	DFT $\mu$	LD 2-7 years	DFT $\mu$	MD 7-15 years	Life expectancy	
					DFT $\mu$	HD 15-25 years
C1 / C2					80	DTS
C3					60 60	DTS DTS
C4					60 80	Polysilco DTS
C4					60 80	DTS DTS
C5			70 70	Fixtane Primer DTS		
C5					60 60 60	Polysilco DTS DTS
C5					100 100	DTS 20 DTS 20

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For further information about Libert Paints:  
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