



**Cloverdale Paint**

**INDUSTRIAL DIVISION**

**ISO 12944-2017 Systems Guide For C4, C5  
and CX Extreme**

## CATEGORIES OF ISO 12944 ATMOSPHERIC-CORROSIVITY ENVIRONMENTS

CORROSIVITY CATEGORY	ENVIRONMENT TYPES	
	EXTERIOR	INTERIOR
<b>C4 High</b>	Industrial areas and coastal areas with moderate salinity	Chemical plants, swimming pools, coastal ships and boatyards

Each corrosivity class is sub-divided into three durabilities:

Low (L): up to 7 years

Medium (M): 7-15 years

High (H): 15-25 years

Very High (VH): > 25 years

These durabilities represent the approximate service time expectancy

## LABORATORY TEST REQUIREMENTS

CORROSIVITY CATEGORY	Durability	ISO 6270-1 (water condensation), hours	ISO 9227 (neutral salt spray), hours	ISO 12944-6:2018 Annex B (cyclic ageing test), hours
C4.05	Low	120	240	N/A
	Medium	240	480	N/A
C4.06	Low	120	240	N/A
	Medium	240	480	N/A
	High	480	720	N/A
C4.09	Low	120	240	N/A
	Medium	240	480	N/A
C4.10	Low	120	240	N/A
	Medium	240	480	N/A
	High	480	720	N/A
C4.11	Low	120	240	N/A
	Medium	240	480	N/A
	High	480	720	N/A
	Very High	720	1440	1680

## SURFACE PREPARATION STANDARDS

ISO 8501-1 Preparation Grade	Related SSPC Grade	ISO 8501-1 Surface Preparation Appearance
A Sa2½ B Sa2½ C Sa2½	SSPC-SP10	A near-white blast cleaned metal surface. All visible dirt, oil, rust, mill scales, old paint, and any other contaminants removed. Only slight stains as spots or stripes shall be seen.
A Sa3 B Sa3 C Sa3	SSPC-SP5	A white blast cleaned metal surface. All dirt, rust, mill scales, old paint, stains, and foreign material removed. A uniform metallic surface.

## CORROSIVITY CATEGORY C4

ISO 12944 System No.	Generic Type Coating	Product Code	DFT (mils)	DFT (microns)	Expected Durability			
					Low	Medium	High	Very high
C4.05*	Epoxy	83021	3.1 to 6.3	80 to 160				
	Polyurethane	Armour Shield 839 series	0.8 to 4.0	20 to 100				
			7.1	180				
C4.06*	Epoxy	83110	3.1 to 9.4	80 to 160				
	Polyurethane	Armour Shield 839 series	1.6 to 3.1	40 to 80				
			9.4	240				
C4.09*	Zinc rich epoxy	83003/83005	2.4 to 3.1	60 to 80				
	Polyurethane	Armour Shield 839 series	3.1 to 3.9	80 to 100				
			6.3	160				
C4.10*	Zinc rich epoxy	83003/83005	2.4 to 3.1	60 to 80				
	Epoxy	83021	2.0 to 3.0	50 to 75				
	Polyurethane	Armour Shield 839 series	1.8 to 3.5	45 to 90				
			7.9	200				
C4.11*	Zinc rich epoxy	83003/83005	2.4 to 3.1	60 to 80				
	Epoxy	83021	2.0 to 3.0	50 to 75				
	Epoxy	83021	2.0 to 3.0	50 to 75				
	Polyurethane	Armour Shield 839 series	1.2 to 4.0	30 to 100				
			10.2	260				
Notes:								
Metal surface preparation requirement: Sa3 (SSPC-SP5)								
*Coating System is UV Durable								

## CATEGORIES OF ISO 12944 ATMOSPHERIC-CORROSIVITY ENVIRONMENTS

CORROSIVITY CATEGORY	ENVIRONMENT TYPES	
	EXTERIOR	INTERIOR
<b>C5 very high</b>	Industrial areas with high humidity and aggressive atmosphere and coastal areas with high salinity	Buildings or areas with almost permanent condensation and with high pollution
<b>CX extreme</b>	Offshore areas with high salinity and industrial areas with extreme humidity and aggressive atmosphere and subtropical and tropical atmospheres	Industrial areas with extreme humidity and aggressive atmosphere

Each corrosivity class is sub-divided into three durabilities:

Low (L): up to 7 years

Medium (M): 7-15 years

High (H): 15-25 years

Very High (VH): > 25 years

These durabilities represent the approximate service time expectancy

## LABORATORY TEST REQUIREMENTS

CORROSIVITY CATEGORY	Durability	ISO 6270-1 (water condensation), hours	ISO 9227 (neutral salt spray), hours	ISO 12944-6:2018 Annex B (cyclic ageing test), hours
C5.02	Low	240	480	N/A
	Medium	480	720	N/A
C5.03	Low	240	480	N/A
	Medium	480	720	N/A
	High	720	1440	1680
C5.07	Low	240	480	N/A
	Medium	480	720	N/A
	High	720	1440	1680
C5.08	Very High	N/A	N/A	2688
CX	Extreme	N/A	N/A	4200

## SURFACE PREPARATION STANDARDS

ISO 8501-1 Preparation Grade	Related SSPC Grade	ISO 8501-1 Surface Preparation Appearance
A Sa2½ B Sa2½ C Sa2½	SSPC-SP10	A near-white blast cleaned metal surface. All visible dirt, oil, rust, mill scales, old paint, and any other contaminants removed. Only slight stains as spots or stripes shall be seen.
A Sa3 B Sa3 C Sa3	SSPC-SP5	A white blast cleaned metal surface. All dirt, rust, mill scales, old paint, stains, and foreign material removed. A uniform metallic surface.

## CORROSIVITY CATEGORY C5

ISO 12944 System No.	Generic Type Coating	Product Code	DFT (mils)	DFT (microns)	Expected Durability			
					Low	Medium	High	Very high
C5.02*	Epoxy	83110	3.1 to 6.3	80 to 160				
	Polyurethane	Armour Shield 839 series	3.1 to 6.3	80 to 160				
			9.45	240				
C5.03*	Epoxy	83110	3.1 to 9.4	80 to 240				
	Polyurethane	Armour Shield 839 series	2.4 to 8.7	60 to 220				
			11.8	300				
C5.07*	Zinc rich epoxy	83003/83005	2.4 to 3.1	60 to 80				
	Epoxy	83150	3.9 to 5.9	100 to 150				
	Polyurethane	Armour Shield 839 series	1.2 to 3.9	30 to 100				
			10.2	260				
C5.08*	Zinc rich epoxy	83003 /83005	2.4 to 3.1	60 to 80				
	Epoxy	83150	3.9 to 5.9	100 to 150				
	Polyurethane	Armour Shield 839 series	3.5 to 6.3	90 to 160				
			12.6	320				
Notes:								
Metal surface preparation requirement: Sa3 (SSPC-SP5)								
*Coating System is UV Durable								

## CORROSIVITY CATEGORY CX EXTREME

ISO 12944 System No.	Generic Type Coating	Product Code	DFT (mils)	DFT (microns)	Expected Durability
CX extreme	Zinc rich epoxy	83003/83005	2 to 3	50 to 75	CX extreme
	Epoxy	83110	5.9 to 9.8	150 to 250	
	Epoxy	83110	5.9 to 9.9	150 to 250	
			≥ 13.8	≥ 350	
Notes:					
Metal surface preparation requirement: Sa3 (SSPC-SP5)					
*Coating System is UV Durable					