



# **Cloverdale Paint**

**INDUSTRIAL DIVISION**

## **ISO 12944 Systems Guide**

## CATEGORIES OF ISO 12944 ATMOSPHERIC-CORROSIVITY ENVIRONMENTS

CORROSIVITY CATEGORY	ENVIRONMENT TYPES	
	EXTERIOR	INTERIOR
<b>C1 very low</b>		Heated buildings with clean atmospheres such as residential buildings
<b>C2 low</b>	Atmospheres with low pollution levels. Usually rural regions	Unheated buildings where condensation may occur, e.g. warehouses
<b>C3 medium</b>	Urban and industrial atmospheres with moderate sulfur dioxide levels. Coastal areas with low salinity	Production areas with high humidity And moderate air pollution, e.g. food processing plants, laundries
<b>C4 high</b>	Industrial and coastal areas with moderate salinity	Chemical plants, swimming pools, coastal shipyards
<b>C5-I very high (Industrial)</b>	Industrial areas with high humidity and aggressive atmosphere	Buildings or areas with high condensation and high pollution
<b>C5-M very high (Marine)</b>	Coastal and offshore areas with high salinity	Buildings or areas with high condensation and high pollution

Each corrosivity class is sub-divided into three durabilities:

Low (L): 2-5 years

Medium (M): 5-15 years

High (H): >15 years

The durabilities represent the approximate service time expectancy

## LABORATORY TEST REQUIREMENTS

CORROSIVITY CATEGORY	DURABILITY	ISO 7253 Salt Spray (hours)	ISO 6270 Condensation (hours)	ISO 2812-1* Chemical Immersion (hours)
<b>C4</b>	Low	240	120	-
	Medium	480	240	-
	High	720	480	-
<b>C5-I</b>	Low	480	240	-
	Medium	720	480	-
	High	1440	720	-
<b>C5-M</b>	Low	480	240	168
	Medium	720	480	168
	High	1440	720	168

\*Three chemicals for immersion test:

- 1) 10% NaOH aqueous solution
- 2) 10% H<sub>2</sub>SO<sub>4</sub> aqueous solution
- 3) Mineral spirits, 18% aromatics

## 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
<b>A4.13*</b>	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>5.5</b>	<b>138</b>			
<b>A4.08*</b>	Epoxy	ClovaPrime 83021	4.0	100			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>7.0</b>	<b>175</b>			
<b>A4.14*</b>	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Epoxy	ClovaPrime 83021	2.0	50			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>7.5</b>	<b>188</b>			
<b>A4.09*</b>	Epoxy	ClovaMastic 83110	6.0	150			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>9.0</b>	<b>225</b>			
<b>A4.15*</b>	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Epoxy	ClovaPrime 83021	3.0	75			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>8.5</b>	<b>213</b>			
<p>Notes:</p> <p>Metal surface preparation requirement: Sa2½ (SSPC SP-10) or Sa3 (SSPC-SP5)</p> <p>*Coating System is UV Durable</p>							

## CORROSIVITY CATEGORY C5-I

ISO 12944 System No.	Generic Type Coating	Product Code	DFT (mils)	DFT (microns)	Expected Durability		
					Low	Medium	High
A5I.03*	Epoxy	ClovaMastic 83110	6.0	150			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>9.0</b>	<b>225</b>			
A5I.04*	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Epoxy	ClovaGuard 83150	4.0	100			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	6.0	150			
			<b>12.5</b>	<b>313</b>			
A5I.02*	Epoxy	ClovaMastic 83110	10.0	250			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>13.0</b>	<b>325</b>			
A5I.05*	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Epoxy	ClovaGuard 83150	6.0	150			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>11.5</b>	<b>288</b>			
Notes:							
Metal surface preparation requirement: Sa3 (SSPC-SP5)							
*Coating System is UV Durable							

## CORROSIVITY CATEGORY C5-M

ISO 12944 System No.	Generic Type Coating	Product Code	DFT (mils)	DFT (microns)	Expected Durability		
					Low	Medium	High
A5M.01*	Epoxy	ClovaMastic 83110	6.0	150			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>9.0</b>	<b>225</b>			
A5M.05*	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Epoxy	ClovaGuard 83150	4.0	100			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>9.5</b>	<b>238</b>			
A5M.08	Epoxy	ClovaLine 83295	8.0	200			
	Epoxy	ClovaLine 83295	8.0	200			
			<b>16.0</b>	<b>400</b>			
A5M.02*	Epoxy	ClovaMastic 83110	10.0	250			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	5.0	125			
			<b>15.0</b>	<b>375</b>			
A5M.04	Epoxy	ClovaMastic 83110	10.0	250			
	Epoxy	ClovaMastic 83110	10.0	250			
			<b>20.0</b>	<b>500</b>			
A5M.06*	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Epoxy	ClovaGuard 83150	6.0	150			
	Polyurethane	Armour Shield 836, 837, 839, 847 Series	3.0	75			
			<b>11.5</b>	<b>288</b>			
A5M.07	Zinc rich epoxy	ClovaZinc 83003	2.5	63			
	Epoxy	ClovaMastic 83110	13.5	337			
			<b>16.0</b>	<b>400</b>			
Notes:							
Metal surface preparation requirement: Sa3 (SSPC-SP5)							
*Coating System is UV Durable							