

# ISO 12944:2018

international standards Corrosion protection of steel structures  
by protective coating systems



# SELECT THE RIGHT ANTICORROSIVE SYSTEM

## -Classification of environments\*

Select the environment where your product will be used A / For steel and galvanized steel, the ISO 12944-2 standard defines 6 corrosive levels (C1 category is an "indoor" class)

Corrosivity Category	Exterior	Interior	Corrosivity	Type
C1		Heated buildings with clean atmospheres e.g. Schools, Offices, Hotels, Malls	Very Low	Residential
C2	Atmospheres with low pollution i.e. Rural Areas	Unheated building where condensation occur e.g. Storage Room, Sport club	Low	Residential
C3	Industrial atmospheres e.g. Moderate NOx, SOx	Production area with high humidity and air pollution e.g. Food Industry, Laundries, Breweries, Dairies etc.	Medium	Industrial
C4	Industrial areas and shoreline areas with moderate brininess. Seaside, >3 km from shoreline.	Chemical plants, swimming pools, Coastal ship and boatyards	High	Industrial
C5	Industrial areas with high humidity, aggressive atmosphere and coastal areas with high salinity	Structure or areas with almost permanent condensation and with high pollution levels e.g. Closed swimming pool, Chemical industry, Industrial refrigerator	Very High	Onshore
CX	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	Extreme	Offshore

(1) With scribe on steel substrate and without scribe on galvanized steel according to ISO 12944:2018 standard \*Durability: low: < 7 years; medium: 15-25 years; high: > 25 years

# SELECT THE RIGHT ANTICORROSIVE SYSTEM

-Categories for water and soil\*

Category	Environment	Environment Examples of environments and structure
IM1	Fresh water	River installations, Hydro-electric power plants
IM2	Seas or brackish water	"Immersed structures without cathodic protection e.g. Harbour areas with structures like sluice gates, locks or jetties"
IM3	Soil	Buried tanks, steel piles, steel pipes
IM4	Seas or brackish water	"Immersed structures with cathodic protection e.g. Offshore structures"

Durability	Years to first major maintenance
LOW	Up to 7 years
MEDIUM	7 years to 15 years
HIGH	15 years to 25 years
VERY HIGH	More than 25 years



\*\* The durability range is not a "guarantee time." Durability is a technical consideration/planning parameter that was developed by the ISO 12944 Standards Committee that can help the owner set up a maintenance program.

# SELECT THE COATING SYSTEM FOR CORROSIVE CATEGORY

## -Corrosive Category C2\*

System No	PRIMER COAT				SUBSEQUENT COAT			PAINT SYSTEM		DURABILITY			
	Product	Type of Product	No of Coats	DFT (µm)	Product	Type of Product	No of Coats	Total DFT (µm)	Total No of Coats	Low	Med	High	Very High
1	SynPURE	AK	1	40	SynPURE	AK	1	80	2	✓			
2	SynPURE	AK	1	60	SynPURE	AK	1	100	2	✓	✓	✓	
3	N/A	N/A	N/A	N/A	SynPUREDTM	AK	1	160	2	✓	✓	✓	✓
4	SynPURE	AK	2	80	SynPURE	AK	1	200	3	✓	✓	✓	✓
5	SynPURE	EP	1	70	SynPURE	PUR	1	120	2	✓	✓	✓	
6	Inception E	ZnR	1	50	Inception	PUR	1	120	2	✓	✓	✓	
7	Inception E	ZnR	1	80	Inception	PUR	1	180	2	✓	✓	✓	✓
8	Inception E	EP	1	120	Inception	PUR	1	180	2	✓	✓	✓	✓
9	Inception E	ZnR	1	60	N/A	N/A	N/A	60	1	✓	✓	✓	
10	N/A	N/A	N/A	N/A	Inception EDTM	PUR	1	160	2	✓	✓	✓	✓

## -Corrosive Category C2\* -Low

Example exterior environments include: atmospheres with low levels of pollution, mostly rural areas

Example interior environments include: unheated buildings where condensation may occur such as depots or sports halls



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# SELECT THE COATING SYSTEM FOR CORROSIVE CATEGORY

## -Corrosive Category C3\*



### -Corrosive Category C3\*- Medium

Interior refers to production rooms with high humidity and some air pollution, e.g. food-processing plants, laundries, breweries, dairies  
 Exterior refers to urban and industrial atmospheres, moderate sulfur dioxide pollution; coastal areas with low salinity

System No	PRIMER COAT				INTERMEDIATE COATS				SUBSEQUENT COAT			PAINT SYSTEM		DURABILITY			
	Product	Type of Product	No of Coats	DFT (µm)	Product	Type of Product	No of Coats	DFT (µm)	Product	Type of Product	DFT (µm)	Total DFT (µm)	Total No of Coats	Low	Med	High	Very High
1	SynPURE	AK	1	60	N/A	N/A	N/A	N/A	SynPURE	AK	40	100	2	✓			
2	SynPURE	AK	1	120	N/A	N/A	N/A	N/A	SynPURE	AK	40	160	2	✓	✓		
3	SynPURE	AK	2	80	N/A	N/A	N/A	N/A	SynPURE	AK	40	200	3	✓	✓	✓	
4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SynPURE DTM	AK	60	120	3	✓	✓		
5	SynPURE	AK	2	100	N/A	N/A	N/A	N/A	SynPURE	AK	60	260	3	✓	✓	✓	✓
6	Inception E	EP	1	70	N/A	N/A	N/A	N/A	Inception	PUR	50	120	2	✓	✓		
7	Inception E	ZnR	1	50	N/A	N/A	N/A	N/A	Inception	PUR	70	120	2	✓	✓		
8	Inception E	ZnR	1	80	N/A	N/A	N/A	N/A	Inception	PUR	100	180	2	✓	✓	✓	
9	Inception E	EP	1	120	N/A	N/A	N/A	N/A	Inception	PUR	60	180	2	✓	✓	✓	
10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inception E DTM	EP	60	180	3	✓	✓	✓	
11	Inception E	ZnR	1	60	Inception E	EP	1	120	Inception	PUR	60	240	3	✓	✓	✓	✓
12	Inception E	EP	1	180	N/A	N/A	N/A	N/A	Inception	PUR	60	240	2	✓	✓	✓	✓
13	Inception E	ZnR	1	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	1	✓	✓		
14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inception DTM	PUR	60	180	3	✓	✓	✓	
15	Inception E	ZnR	1	60	Inception E	EP	1	80	Inception	PUR	60	200	3	✓	✓	✓	✓

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# SELECT THE COATING SYSTEM FOR CORROSIVE CATEGORY

## -Corrosive Category C4\*



### -Corrosive Category C4\* - High

Example exterior environments include: industrial areas and coastal areas with moderate salinity  
 Example interior environments include: chemical plants, swimming pools, coastal ship and boat yards

System No	PRIMER COAT				INTERMEDIATE COATS				SUBSEQUENT COAT				PAINT SYSTEM		DURABILITY			
	Product	Type of Product	No of Coats	DFT (µm)	Product	Type of Product	No of Coats	DFT (µm)	Product	Type of Product	No of Coats	DFT (µm)	Total DFT (µm)	Total No of Coats	Low	Med	High	Very High
1	SynPURE	AK	1	120	N/A	N/A	N/A	N/A	SynPURE	AK	1	40	160	2	✓			
	SynPURE	AK	2	80	N/A	N/A	N/A	N/A	SynPURE	AK	1	40	200	3	✓	✓		
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SynPURE DTM	AK	1	60	180	3	✓	✓		
2	SynPURE	AK	2	100	N/A	N/A	N/A	N/A	SynPURE	AK	1	60	260	3	✓	✓	✓	
3	Inception E	EP	1	70	N/A	N/A	N/A	N/A	Inception	PUR	1	50	120	2	✓			
4	Inception E	ZnR	1	50	N/A	N/A	N/A	N/A	Inception	PUR	1	70	120	2	✓			
5	Inception E	ZnR	1	80	N/A	N/A	N/A	N/A	Inception	PUR	1	100	180	2	✓	✓		
6	Inception E HB	EP	1	70	Inception E MIO	EP	1	100	Inception	PUR	1	60	230	3	✓	✓	✓	
7	Inception E	ZnR	1	60	Inception E HB	EP	1	120	Inception	PUR	1	60	240	3	✓	✓	✓	
8	Inception E HB	EP	1	180	N/A	N/A	N/A	N/A	Inception	PUR	1	60	240	2	✓	✓	✓	
9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inception E DTM	PUR	2	120	240	2	✓	✓	✓	
10	Inception E	ZnR	1	60	Inception E HB	EP	1	180	Inception	PUR	1	60	300	3	✓	✓	✓	✓
11	Inception E HB	EP	1	120	Inception E HB	EP	2	120	Inception	PUR	2	60	300	3	✓	✓	✓	✓
12	Inception E	ZnR	1	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	1	✓			
13	Inception E	ZnR	1	60	N/A	N/A	N/A	N/A	Inception	PUR	1	100	160	2	✓	✓		
14	Inception E	ZnR	1	60	Inception E HB	EP	1	80	Inception	PUR	1	60	200	3	✓	✓	✓	
15	Inception E	ZnR	1	60	Inception E HB	EP	1	140	Inception	PUR	1	60	260	3	✓	✓	✓	✓

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# SELECT THE COATING SYSTEM FOR CORROSIVE CATEGORY

## -Corrosive Category C5\*



### -Corrosive Category C5\* - Very High:

Interior -Structure or areas with almost permanent condensation and with high pollution levels  
e.g. Closed swimming pool, Chemical industry, Industrial refrigerator

Exterior- Industrial areas with high humidity, aggressive atmosphere and coastal areas with high salinity

System No	PRIMER COAT				INTERMEDIATE COATS				SUBSEQUENT COAT				PAINT SYSTEM		DURABILITY			
	Product	Type of Product	No of Coats	DFT (µm)	Product	Type of Product	No of Coats	DFT (µm)	Product	Type of Product	No of Coats	DFT (µm)	Total DFT (µm)	Total No of Coats	Low	Med	High	Very High
1	Inception E	ZnR	1	80	N/A	N/A	N/A	N/A	Inception	PUR	1	100	180	2	🔴			
2	Inception E HB	EP	1	120	N/A	N/A	N/A	N/A	Inception	PUR	1	60	180	2	🔴			
3	Inception E	ZnR	1	60	Inception E MIO	EP	1	120	Inception	PUR	1	60	240	3	🔴	🟡		
4	Inception E MIO	EP	1	180	N/A	N/A	N/A	N/A	Inception	PUR	1	60	240	2	🔴	🟡		
5	Inception E	ZnR	1	60	Inception E MIO	EP	1	180	Inception	PUR	1	60	300	3	🔴	🟡	🟢	
6	Inception E	ZnR	1	80	Inception E MIO	EP	1	200	Inception	PUR	1	80	360	3	🔴	🟡	🟢	🔵
7	Inception E HB	EP	1	150	Inception E MIO	EP	1	150	Inception	PUR	1	60	360	3	🔴	🟡	🟢	🔵
8	Inception E	ZnR	1	60	N/A	N/A	N/A	N/A	Inception	PUR	1	100	160	2	🔴			
9	Inception E	ZnR	1	60	Inception E HB	EP	1	80	Inception	PUR	1	60	200	3	🔴	🟡		
10	Inception E	ZnR	1	60	Inception E HB	EP	1	140	Inception	PUR	1	60	260	3	🔴	🟡	🟢	
11	Inception E	ZnR	1	60	Inception E HB	EP	1	200	Inception	PUR	1	60	320	3	🔴	🟡	🟢	🔵

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