

ISO 12944

RAMCOAT PAINTS & COATINGS PVT. LTD. SINCE 1999



Right Coating System Selection
Guide in Accordance with **ISO 12944 : 2018**

COATINGS SELECTION GUIDE



ISO 12944

GLOBAL CORROSION SHIELD

ISO 12944:2018 - The Global Benchmark for Corrosion Protection

The ISO 12944 standard serves as a comprehensive guide for engineers and corrosion specialists in implementing effective corrosion protection measures for structural steel in new constructions. Widely recognized and embraced across the globe, this standard is endorsed by professionals worldwide.

Whether steel is exposed to the elements, submerged in water, or buried in soil, corrosion poses a significant threat to its structural integrity over time. By adhering to the principles outlined in ISO 12944, corrosion protection measures can be optimized, thereby enhancing the performance and extending the lifespan of steel structures.

Choosing a coating system that aligns with ISO 12944:2018 ensures confidence that the specified corrosion protection meets project requirements and objectives. To determine the most suitable coating system for a specific project, careful consideration of the environmental conditions and desired longevity is essential.



Our Coating
Selection Process As Per

ISO 12944:2018

ENVIRONMENT

CLASSIFICATION

The environment can be categorized into **atmospheric and immersed conditions**. While the examples provided are informative, they may occasionally be misleading. Accurate classification can only be achieved through actual measurements of mass or thickness loss.

Table - 01: Atmospheric Corrosivity Categories And Examples Of Typical Environments

EXTERIOR (ENVIRONMENT EXAMPLES)	CORROSIVITY CATEGORY	INTERIOR (ENVIRONMENT EXAMPLES)
-	C1 Very Low	Heated buildings with clean atmospheres, e.g. offices, shops, schools, hotels
Atmospheres with low level of pollution: mostly rural areas	C2 Low	Unheated buildings where condensation can occur, e.g. depots, sports halls
Urban and industrial atmospheres, moderate sulfur dioxide pollution; coastal areas with low salinity	C3 Medium	Production rooms with high humidity and some air pollution, e.g. food-processing plants, laundries, breweries, dairies
Industrial areas and coastal areas with moderate salinity	C4 High	Chemical plants, swimming pools, coastal ships and boatyards
Industrial areas with high humidity and aggressive atmosphere and coastal areas with high salinity	C5 Very High	Buildings or areas with almost permanent condensation and with high pollution
Offshore areas with high salinity and industrial areas with extreme humidity and aggressive atmosphere	CX* Extreme	Industrial areas with extreme humidity and aggressive atmosphere

NOTE:

Corrosivity categories can also be estimated by considering the combined effect of the following environment factors: yearly time of wetness, yearly mean concentration of sulfur dioxide and yearly mean deposition of chloride (see ISO 9223). The loss values used for the corrosivity categories are identical to those given in ISO 9223. New category that covers offshore Part 9.

SELECT ENVIRONMENT

For structures immersed in water or buried in soil, corrosion is normally local in nature and corrosivity categories are difficult to define. However, for the purpose of this document, various environments can be described. In table 2, four different environments are given together with their designations.

TABLE 02: CATEGORIES FOR WATER AND SOIL

CORROSIVITY CATEGORY	EXTERIOR (ENVIRONMENT EXAMPLES)	INTERIOR (ENVIRONMENT EXAMPLES)
Im1	 Fresh water schools, hotels	 Heated buildings with clean atmospheres, e.g. offices, shops, schools, hotels
Im2	 Sea 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*	 Sea or brackish water	 Immersed structures with cathodic protection (e.g. offshore structures)

NOTE:

For corrosivity category IM1 and IM3, cathodic protection can be used with a point system tested accordingly. *New category that covers offshore Part 9.

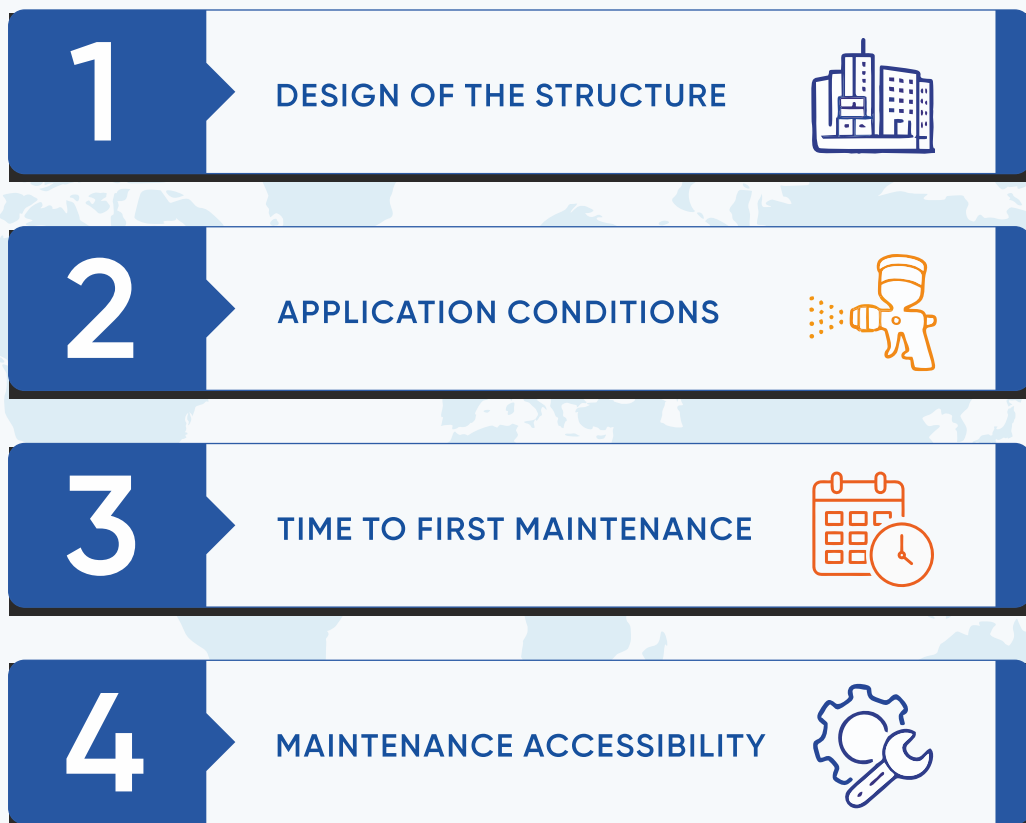
SELECT DURABILITY

Durability vs Years To First Major Maintenance



Durability refers to the performance of the coating system until the first major maintenance is required. Regular minor maintenance is necessary to attain the intended lifespan of the design system up to the first major maintenance (note that durability is not equivalent to a guaranteed timeframe).

Common Durability Considerations



SELECT COATING SYSTEM

TABLE 03: C3 MEDIUM CORROSIVITY CATEGORY

CORROSIVITY CATEGORY	FIRST COAT	DFT (μm)	SECOND COAT	DFT (μm)	THIRD COAT	DFT (μm)	Total DFT (μm)
C3 MEDIUM	RAMCOAT GUARD 555	120	-	-	-	-	120
C3 MEDIUM	RAMCOAT THANE PRO	120	-	-	-	-	120
C3 MEDIUM	RAMCOAT PRIME 105 HB HS	80	RAMCOAT THANE 34101	40	-	-	120

* Also Applies To C2 High And C4 Low Categories

TABLE 04: C3 HIGH CORROSIVITY CATEGORY

CORROSIVITY CATEGORY	FIRST COAT	DFT (μm)	SECOND COAT	DFT (μm)	THIRD COAT	DFT (μm)	Total DFT (μm)
C3 HIGH	RAMCOAT GUARD 555	180	-	-	-	-	180
C3 HIGH	RAMCOAT GUARD 555 AC	100	RAMCOAT THANE 34101	50	-	-	150

* Also Applies To C2 Very High, C4 Medium And C5 Low Categories

TABLE 05: C4 HIGH CORROSIVITY CATEGORY

CORROSIVITY CATEGORY	FIRST COAT	DFT (μm)	SECOND COAT	DFT (μm)	THIRD COAT	DFT (μm)	Total DFT (μm)
C4 HIGH	RAMCOAT PRIME 105 HB HS	130	RAMCOAT THANE 341 HB	50	-	-	180
C4 HIGH	RAMCOAT GUARD 555 AC	180	RAMCOAT THANE 344 HB	60	-	-	240
C4 HIGH	RAMCOAT PRIME 106	60	RAMCOAT GUARD 555	100	RAMCOAT THANE 344 HB	60	220

* Also Applies To C3 Very High And C5 Medium Categories

SELECT COATING SYSTEM

TABLE 06: C5 HIGH CORROSIVITY CATEGORY

CORROSIVITY CATEGORY	FIRST COAT	DFT (μm)	SECOND COAT	DFT (μm)	THIRD COAT	DFT (μm)	Total DFT (μm)
C5 HIGH	RAMCOAT GUARD 555 AC	150	RAMCOAT GUARD 635 HB MIO	100	RAMCOAT THANE 344 HB	60	310
C5 HIGH	RAMCOAT PRIME 106	75	RAMCOAT GUARD 635 HB ZINC MIO	180	RAMCOAT THANE 344 HB	60	315
C5 HIGH	RAMCOAT PRIME 106	75	RAM GUARD 555 AC	180	RAMCOAT THANE 344 HB	60	315

* Also Applies To C4 Very High Categories

TABLE 07: C5 VERY HIGH CORROSIVITY CATEGORY

CORROSIVITY CATEGORY	FIRST COAT	DFT (μm)	SECOND COAT	DFT (μm)	THIRD COAT	DFT (μm)	FOURTH COAT	DFT (μm)	Total DFT (μm)
C5 VERY HIGH	RAMCOAT PRIME 106	75	RAMCOAT GUARD 555	100	RAMCOAT GUARD 635 HB ZINC MIO	100	RAMCOAT THANE 344 HB	60	335
C5 VERY HIGH	RAMCOAT PRIME 111 ZINC	70	RAMCOAT GUARD 555	120	RAMCOAT GUARD 635 HB ZINC MIO	120	RAMCOAT FLUORO 999	50	360

NOTES

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