

ISO 12944

Protect your assets in three easy steps



Select your ISO 12944 compliant system in 3 easy steps

Step 1 Select the corrosive environment

Use the following table to select the most appropriate classification for your project:

ISO 12944 CLASSIFICATION	TYPICAL ENVIRONMENTS
C1 C2	Heated buildings/neutral atmosphere Rural areas, low pollution
C3	Urban and industrial atmospheres Moderate sulphur dioxide levels Production areas with high humidity
C4	Industrial and coastal Chemical processing plants
C5I	Industrial areas with high humidity and aggressive atmospheres
C5M	Marine, offshore*, estuaries, coastal areas with high salinity

* Corrosion protection in ISO 12944 C5M - Offshore environments is being addressed via a new standard (ISO 20340) dedicated to this environment

These environments are based on experiments that have measured the rate of metal loss for uncoated steel. The classification of environments applies to structural steel exposed to ambient (less than 120°C/248°F) conditions.



Many city locations could be classified as ISO 12944 C3

Step 2 How long until first major maintenance?

Use the following table to select how durable you want your coating system to be. The higher the durability, the longer the time to first major maintenance:

High Durability	>15 years to first major maintenance
Medium Durability	5-15 years to first major maintenance
Low Durability	<5 years to first major maintenance

Remember, when selecting the most cost effective system for your project, durability does not equate to a guarantee time. Durability relates to the performance duration of the coating system before first major maintenance. Regular minor maintenance should always be anticipated in order to achieve the required life to first major maintenance.



C5M Marine environments present the toughest conditions and require more durable systems

Why is ISO 12944 so important?

ISO 12944 Paints & Varnishes - Corrosion Protection of Steel Structures by protective paint systems (parts 1-8) (1998).

The ISO 12944 standard is intended to assist engineers and corrosion experts in adopting best practice in corrosion protection of structural steel at new construction.

ISO 12944 is progressively superseding regional standards to become a truly global benchmark in corrosion control.

Selecting specifications that comply with ISO 12944 provides you with:

- Confidence that the corrosion protection you specify will be fit for purpose
- An objective approach to coating selection
- A simplified matrix of coating systems to select from
- A meaningful coating design life
- A universally accepted standard

Understanding your ISO environment can help to tailor specifications, ensuring your coatings are not under or over specified and saving you unnecessary cost.



Regular inspection and routine maintenance via our Interplan® service will assist in achieving the required design life for the coating system.

Step 3 Select your ISO 12944 compliant system

The coating systems described in this brochure have been evaluated against ISO and ASTM test standards and self certified to ISO 12944 part 6.

ISO 12944 ENVIRONMENT	DESIGN LIFE/DURABILITY <5 YEARS	DESIGN LIFE/DURABILITY 5-15 YEARS	DESIGN LIFE/DURABILITY >15 YEARS
C1	A	A	A
C2	A	A	B
C3	B or C	B or C	D, E or F
C4	#	G or H	G or H
C5I and C5M	#	I or J	I or J

International Protective Coatings does not routinely recommend systems for Design Lives <5 years in C4 or C5 environments.

REFERENCE	COATING SYSTEM	CONTAINS FREE ISOCYANATE (1)	SYSTEM VOC	AESTHETIC DURABILITY (2)	CORROSION RESISTANCE (3)
A	Interlac 665 or Intergard 345 @ 80µm	No	<40g/m ²	★	★
B	Intergard 345 (4) @ 160µm	No	<73g/m ²	★	★★
C	Intercure 99 (5) @ 160µm	Yes	<40g/m ²	★★★★	★★★↓
D	Intercure 99 (6) @ 200µm	Yes	<50g/m ²	★★★★	★★★
E	Intercure 200HS @ 150µm Interthane 990 (7) @ 50µm	Yes (6)	<80g/m ²	★★★★ (8)	★★★
F	Intercure 200HS @ 150µm Interfine 878 @ 50µm	No	<60g/m ²	★★★★★	★★★
G	Intercure 200HS @ 205µm Interfine 878 @ 75µm	No	<85/m ²	★★★★★	★★★★↓
H	Interzinc 52 @ 75µm Intergard 475HS @ 155µm Interthane 990 (7) @ 50µm	Yes	<112g/m ²	★★★★ (8)	★★★★
I	Interzinc 52 @ 75µm Intergard 475HS @ 200µm Interthane 990 (7) @ 50µm	Yes	<126g/m ²	★★★★★	★★★★★
J	Interzinc 52 @ 75µm Intergard 475HS @ 200µm Interfine 878 @ 60µm	No	<100g/m ²	★★★★★	★★★★★

(1) Isocyanate-containing coatings have known H&S issues during application. Many of our products contain no free isocyanate.

(2) Aesthetic durability is a measure of gloss and colour retention. These results are based on ISO and ASTM testing carried out in an ISO9001 certified laboratory.

(3) Corrosion resistance is a measure of the anti-corrosive performance. These results are based on ISO and ASTM testing carried out in an ISO9001 certified laboratory.

(4) Durability (gloss and colour retention) when exposed to sunlight can be significantly improved by top coating this specification with Interthane 990 @ 50µm. In these instances it is possible to reduce the thickness of Intergard 345 from 160µm to 100-125µm.

(5) Fast dry in 11/2 hours at 25°C (77°F) Intercure 99 will reduce VOC emissions, improve productivity and increase aesthetic durability compared to Intergard 345.

(6) Intercure 99 can be a direct replacement for two coat systems in C3 environments. Fewer coats means improved productivity and Intercure 99 dries fast in 11/2 hours at 25°C (77°F), has excellent aesthetic durability and can reduce overall VOC emissions of your system.

(7) Interthane 990 is a high gloss finish - if a semi-gloss finish is required it can be replaced by Interthane 870 specified at 100µm. In this instance the previous coat can be reduced by 50µm in order to achieve the same total dry film thickness.

(8) As Interfine 878 contains no free isocyanate, replacing Interthane 990 with Interfine 878 will reduce health and safety concerns and will also increase aesthetic durability to 5★.

You can have confidence in our coatings

- Continual investment in state-of-the-art R&D and test facilities
- Testing to industry standards including NACE, ASTM, ISO, Norsok, NSF and more
- Customised testing to meet specific customer and project needs
- Extensive in-house test data
- Independent testing and approvals
- In-field testing and proof of performance track record

Sustainability

As part of AkzoNobel, we are committed to sustainability and are ranked as one of the chemical industry leaders in the Dow Jones Sustainability World Index, demonstrating our commitment to improving our environmental and social performance.

We will work with you to help ensure that your coating specification will meet your overall sustainable design credentials.

Global Organisation

As your global partner we provide consistent solutions, time and time again.

Designing assets, fabricating and constructing in numerous locations across the world? Combining worldwide manufacturing and local distribution networks with our global product range helps to reduce the complexity in specification and the variance in quality. From us, this means one product, one datasheet regardless of location. We supply consistent products and consistent service, when you need it and where you need it. From three global state of the art R&D facilities in the UK, USA & China, we are developing the coatings of tomorrow for your business. Our design and development, marketing, technical and commercial support are accredited to ISO 9001 which means you can have absolute confidence in our products and services.

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