ISO 12944
Compliant System

ISO 12944

COMPLIANT SYSTEM

ISO 12944 Paint and Vanishes – Corrosion Protection to Steel Structures by protective paint systems.

The ISO 12944 standard is intended to assist engineers and corrosion experts in adopting best practice in corrosion protection of structural steel in new construction. It is a widely adopted industry standard recognised by specifiers.

Selecting specification that complies with ISO 12944 provides you with the confidence that the corrosion protection you specify will be fit for purpose.

Below are generic coating systems recommended by Nippon Paint for different corrosive environments. It serves only as a guide. Please consult your Nippon Paint Representative.

1. SELECT THE ENVIRONMENT

Environment can be classified into the following atmospheric and immersed category.

Environment Category	Corrosivity	Example
C1, C2	Very low to low	• Heated buildings • Neutral atmosphere • Sparsely populated rural areas
C3	Medium	• Urban and industrial areas • Moderate sulphur dioxide levels • Factories and plants with high humidity
C4	High	• Industrial and coastal areas with moderate salinity • Chemical processing plants • Swimming pools
C5I (Industrial)	Very high	• Industrial areas with high humidity and harsh conditions • Buildings and areas with near-permanent condensation and/or heavy pollution
C5M (Marine)	Very high	• Marine, offshore and coastal areas
IM1	Very high	• Immersed in water
IM2	Very high	• Immersed in sea or brackish water
IM3	Very high	• Buried in soil

2. SELECT THE LIFESPAN

Durability relates to the performance of the coating system before first major maintenance. Minor regular maintenance should be carried out in order to achieve the required life of the design system to first major maintenance.

Durability	Design Lifespan
Low	Less than 5 years
Medium	5 to 15 years
High	More than 15 years

3. SELECT THE ISO 12944 COMPLIANT SYSTEM

C1/C2 Environment

Design Lifespan/Durability	System No.	Nippon Paint System	Thickness (Min DFT)	Total (DFT)
< 5 years	1	Zinky 22 Epoxy Zinc Rich	60	60
5 to 15 years	2	Hi-Pon 20-03 Epoxy Hi-Pon 50-01 Polyurethane	80 50	130
> 15 years	3	Hi-Pon 20-03 Epoxy Hi-Pon 50-01 Polyurethane	80 80	160

C3 Environment

Design Lifespan/Durability	System No.	Nippon Paint System	Thickness (Min DFT)	Total (DFT)
< 5 years	4	Hi-Pon 20-03 Epoxy Hi-Pon 50-01 Polyurethane	80 50	130
5 to 15 years	5	Hi-Pon 20-07 Epoxy Zinc Phosphate Hi-Pon 50-01 Polyurethane	100 60	160
> 15 years	6	Zinky 22 Epoxy Zinc Rich Hi-Pon 30-03 Epoxy Hi-Pon 50-01 Polyurethane	50 80 50	180
	7	Hi-Pon 20-03 Epoxy Hi-Pon 30-03 Epoxy Hi-Pon 50-01 Polyurethane	80 80 50	210
	8	Hi-Pon 20-04 Epoxy STE Hi-Pon 20-04 Epoxy STE Hi-Pon 50-01 Polyurethane	80 80 50	210

C4 Environment

Design Lifespan/Durability	System No.	Nippon Paint System	Thickness (Min DFT)	Total (DFT)
< 5 years	9	Zinky 22 Epoxy Zinc Rich Hi-Pon 30-03 Epoxy Hi-Pon 50-01 Polyurethane	50 80 50	180
5 to 15 years	10	Zinky 22 Epoxy Zinc Rich Hi-Pon 30-03 Epoxy Hi-Pon 50-01 Polyurethane	50 100 50	200
	11	Hi-Pon 20-03 Epoxy Hi-Pon 30-03 Epoxy Hi-Pon 50-01 Polyurethane	80 100 60	240
> 15 years	12	Zinky 22 Epoxy Zinc Rich Hi-Pon 30-03 Epoxy Hi-Pon 50-01 Polyurethane	80 100 60	240
	13	Hi-Pon 20-03 Epoxy Hi-Pon 30-02 Epoxy MIO Hi-Pon 50-01 Polyurethane	80 150 50	280

C5I/C5M Environment

Design Lifespan/Durability	System No.	Nippon Paint System	Thickness (Min DFT)	Total (DFT)
5 to 15 years	14	Hi-Pon 20-07 Epoxy Zinc Phosphate Hi-Pon 30-02 Epoxy MIO Hi-Pon 50-01 Polyurethane	100 150 50	300
> 15 years	15	Zinky 13 Inorganic Zinc Rich Hi-Pon 20-04 Epoxy STE Hi-Pon 50-01 Polyurethane	80 180 60	320
	16	Hi-Pon 20-07 Epoxy Zinc Phosphate Hi-Pon 30-03 Epoxy Hi-Pon 50-01 Polyurethane	110 150 60	320
	17	Hi-Pon 20-04 Epoxy STE Hi-Pon 20-04 Epoxy STE Hi-Pon 50-01 Polyurethane	130 130 70	320

IM1/IM2/IM3 Environment

Design Lifespan/Durability	System No.	Nippon Paint System	Thickness (Min DFT)	Total (DFT)
5 to 15 years	18	Hi-Pon 20-04 Epoxy AL Hi-Pon 20-04 Epoxy AL	170 170	340
> 15 years	19	Hi-Pon 90-01 Epoxy GF Hi-Pon 90-01 Epoxy GF	400 400	800

Immersed in Potable Water (Drinking Water)

Design Lifespan/Durability	System No.	Nippon Paint System	Thickness (Min DFT)	Total (DFT)
5 to 15 years	20	Hi-Pon 40-02 Epoxy Hi-Pon 40-02 Epoxy	150 150	300

Notes:
The above coating scheme serves only as a guide for ISO 12944-5. Please consult your Nippon Paint representative regarding other coating schemes not mentioned herein. The above coating schemes are based on a minimum dry film thickness (DFT) in microns.

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