ISO 12944

- The universally accepted standard for corrosion protection of structural steel
- All unprotected steel is subject to corrosion whether is in the atmosphere, the soil or in water
- The steel needs to be protected from the service environment and also for the proposed life time of a structure
- The ISO 12944 standard is designed as a guideline for architects, engineers, specifiers, contractors and applicators in choosing the correct systems to meet the demands of both environment and service life



Manufacturers of Teamac® and Coo-Var® paints.

Defining the corrosive environment (1)

Corrosion category	Exterior	Interior
C1 Very low		Heated buildings with clean atmosphere, e.g.offices, shops, schools, hotels
C2 Low	Atmospheres with low level of pollution, mostly rural areas	Unheated buildings where condensation can occur, e.g. depots, sports halls
C3. Medium	Haban and industrial atmospheres and and	Dead ation assess with high bounding and assess
C3 Medium	Urban and industrial atmospheres, moderate sulphur dioxide pollution, coastal areas with low salinity	Production rooms with high humidity and some air pollution, e.g. food processing plants, laundries, breweries, dairies
C4 High	Indusrial areas and coastal areas with moderate salinity	Chemical plants, swimming pools, coastal ships and boatyards
C5 Very high	Industrial areas with high humidity and aggressive atmosphere and coastal areas with high salinity	Buildings or areas with almost permanent condensation and with high pollution



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The required lifetime of the coating system

Low (L)	Up to 7 years
Medium (M)	7 years to 15 years
High (H)	15 years to 25 years
Very high (VH)	More than 25 years

So there are 5 levels of corrosive environment and 4 levels of durability – 20 specifications in atmosphere and 12 specifications for immersion in water or soil



Paint syster	ms for carbon steel for cor	rosivity cat	egory	C2														
System No		ER COAT	INTERMED	IATE COA	TS		SUBSEQUENT COAT					SYSTEM	DURABILITY					
	Product	Type of product	No of coats	DFT	Product	Type of product	No of coats	DFT	Product	Type of product	No of coats	DFT	Total DFT um	Total No of	low	med	high	very high
C2.01	Zinc Phosphate P201	AK	1	40	N/A	N/A	N/A	N/A	Metalcote G115	AK	1	40	80	2				
C2.02	Zinc Rich Primer P252	CR	1	70	N/A	N/A	N/A	N/A	Metalcote G115	AK	1	40	110	2				
Alternative	Zinc Phosphate P201	AK	1	35	Zinc Phosphate P201	AK	1	35	Metalcote G115	AK	1	40	110	3				
C2.03	RD Zinc Phosphate P218	AK	1	35	RD Zinc Phosphate P218	AK	2	90	Rapidry G750	AK	1	50	175	3				
Alternative	2K Epoxy Zinc Phos Q113	EP	1	70	N/A	N/A	N/A	N/A	2K PU P101	PUR	1	60	130	2			••	
Alternative	Metaclor P149	CR	1	40	Metaclor P149	CR	1	40	Chlor Rubber G149	CR	3	25	155	5			••	
C2.04	2K Epoxy Zinc Phos Q113	EP	1	60	2K Epoxy Zinc Phos Q113	EP	1	60	2K PU P101	PUR	1	60	180	3				
AK= alkyd		ZR=zinc rich EP=2K ep			poxy CR=Chlorinated rubber							PUR=2K	oolyureth	ane				
		P252 zino	rich only	78.6% zir	nc, typically zinc rich is 90% zi	nc on dry	film (Galv	afroid)										

	R COAT																
al a.k				INTERMEDIATE COATS SUE					JENT COAT	-		PAINT SYSTEM		DURABILITY			
duct	Type of product	No of coats	DFT	Product	Type of product	No of coats	DFT	Product	Type of product	No of coats	DFT	Total DFT um	Total No of	low	med	high	very high
C Phosphate P201	AK	1	35	Zinc Phosphate P201	AK	1	35	Metalcote G115	AK	1	40	110	3				
Zinc Phosphate 8	AK	1	45	RD Zinc Phosphate P218	AK	2	90	Rapidry G750	AK	1	50	185	4	•••			1
Epoxy Zinc Phos 13	EP	1	70	N/A	N/A	N/A	N/A	2K PU P101	PUR	1	60	130	2				1
taclor P149	CR	1	40	Metaclor P149	CR	1	40	Chlor Rubber G149	CR	3	75	155	5		•		1
Epoxy Zinc Phos 13	EP	1	60	2K Epoxy Zinc Phos Q113	EP	1	60	2K PU P101	PUR	1	60	180	3			••	1
Epoxy Zinc Phos 13	EP	1	70	2K Epoxy Zinc Phos Q113	EP	2	60	2K PU P101	PUR	1	60	250	4				
AK= alkyd	ZR=zinc ri	ich	EP=2K ep	оху	CR=Chlor	inated rul	bber						PUR=2K p	oolyuretha	ine		
	D252 zino	rich only	70 C0/ =im			f:l (C-l.	- f : -1\										
taclor P14 Epoxy Zin 13 Epoxy Zin 13	c Phos	C Phos EP ZR=zinc ri	C Phos EP 1 ZR=zinc rich	A9 CR 1 40 C Phos EP 1 60 C Phos EP 1 70 ZR=zinc rich EP=2K ep	49 CR 1 40 Metaclor P149 c Phos EP 1 60 2K Epoxy Zinc Phos Q113 c Phos EP 1 70 2K Epoxy Zinc Phos Q113 ZR=zinc rich EP=2K epoxy	49 CR 1 40 Metaclor P149 CR c Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP c Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP ZR=zinc rich EP=2K epoxy CR=Chlor	C Phos	C Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 C Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 ZR=zinc rich EP=2K epoxy CR=Chlorinated rubber	49 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 c Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 c Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 2K PU P101 ZR=zinc rich EP=2K epoxy CR=Chlorinated rubber	CPhos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 PUR	49 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 CR 3 c Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 PUR 1 c Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 2K PU P101 PUR 1 ZR=zinc rich EP=2K epoxy CR=Chlorinated rubber CR=Chlorinated rubber	49 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 CR 3 75 c Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 PUR 1 60 c Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 2K PU P101 PUR 1 60	A9 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 CR 3 75 155 CPhos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 PUR 1 60 180 CPhos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 2K PU P101 PUR 1 60 250 ZR=zinc rich EP=2K epoxy CR=Chlorinated rubber	A9 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 CR 3 75 155 5 C Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 PUR 1 60 180 3 C Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 2K PU P101 PUR 1 60 250 4 ZR=zinc rich EP=2K epoxy CR=Chlorinated rubber PUR=2K p	A9 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 CR 3 75 155 5 C C Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 PUR 1 60 180 3 C Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 2K PU P101 PUR 1 60 250 4 C Phos C Phos EP 1 FP 2 F	A9 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 CR 3 75 155 5 C C Phos EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K PU P101 PUR 1 60 180 3 C Phos EP 1 70 2K Epoxy Zinc Phos Q113 EP 2 60 2K PU P101 PUR 1 60 250 4 C PUR 2K Epoxy Zinc Phos Q113 EP 2 FUR 2K Epoxy Zinc Phos Q113 EP 2 FUR 2K PU P101 PUR 1 FUR 2K PUR 2K P	A9 CR 1 40 Metaclor P149 CR 1 40 Chlor Rubber G149 CR 3 75 155 5

ns for carbon steel for cor	rosivity cat	egory	C4														
PRIM	ER COAT	INTERMEDIATE COATS				SUBSEQUENT COAT					SYSTEM	DURABILITY					
Product	Type of product	No of coats	DFT	Product	Type of product	No of coats	DFT	Product	Type of product	No of coats	DFT	Total DFT um	Total No of	low	med	high	very high
RD Zinc Phosphate P218	AK	1	45	RD Zinc Phosphate P218	AK	2	90	Rapidry G750	AK	1	50	185	3				
2K Epoxy Zinc Phos Q113	EP	1	70	N/A	N/A	N/A	N/A	2K PU P101	PUR	1	60	130	2				
Metaclor P149	CR	1	40	Metaclor P149	CR	1	40	Chlor Rubber G149	CR	3	75	155	5				
2K Epoxy Zinc Phos Q113	EP	1	60	2K Epoxy Zinc Phos Q113	EP	1	60	2K PU P101	PUR	1	60	180	3				
2K Epoxy Zinc Phos Q113	EP	1	60	2K Epoxy Zinc Phos Q113	EP	2	120	2K PU P101	PUR	1	60	240	4				
2K Epoxy Zinc Phos Q113	EP	1	75	2K Epoxy Zinc Phos Q113	EP	2	150	2K PU P101	PUR	1	60	285	4				
2K Epoxy Zinc Phos Q113	EP	1	75	2K Epoxy Tie Coat Q115	EP	2	100	2K PU P101	PUR	1	60	335	4				
AK= alkyd	kyd ZR=zinc rich EP=2K ep		poxy CR=Chlorinated rubber							PUR=2K	polyureth	ane					
	P252 zino	rich only	78.6% zir	nc, typically zinc rich is 90% zi	inc on dry	film (Galv	afroid)										
	PRIM Product RD Zinc Phosphate P218 2K Epoxy Zinc Phos Q113 Metaclor P149 2K Epoxy Zinc Phos Q113 2K Epoxy Zinc Phos Q113	PRIMER COAT Product Type of product RD Zinc Phosphate P218 AK 2K Epoxy Zinc Phos Q113 EP Metaclor P149 CR 2K Epoxy Zinc Phos Q113 EP 2K Epoxy Zinc Phos Q113 EP	Product RD Zinc Phosphate P218 2K Epoxy Zinc Phos Q113 Metaclor P149 CR 1 2K Epoxy Zinc Phos Q113 EP 1 AK = alkyd ZR=zinc rich	PRIMER COAT Product Type of product coats DFT RD Zinc Phosphate P218 AK 1 45 2K Epoxy Zinc Phos Q113 EP 1 70 Metaclor P149 CR 1 40 2K Epoxy Zinc Phos Q113 EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 60 2K Epoxy Zinc Phos Q113 EP 1 75 2K Epoxy Zinc Phos Q113 EP 1 75 AK= alkyd ZR=zinc rich EP=2K ep	PRIMER COAT Type of product RD Zinc Phosphate P218 2K Epoxy Zinc Phos Q113 Metaclor P149 CR 1 40 Metaclor P149 2K Epoxy Zinc Phos Q113 EP 1 75 2K Epoxy Tie Coat Q115 AK= alkyd ZR=zinc rich EP=2K epoxy	Product Type of product Coats DFT Product Type of product RD Zinc Phosphate P218 AK 1 45 RD Zinc 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