

Corrosion Protection with Powder Coatings on Steel



Inver SpA
Via di Corticella, 205
40128 Bologna, ITALY

Corrosion Protection with Powder Coatings on Steel



Pretreatment			Primer			Top Coat			System Resume		Expected Protection Level (DIN EN ISO 12944-1)													
Sand Blasted Steel	HDGS + Sand Blast	HDGS + Chrome free	Chem.	Coats Nr.	NDFT	Chem.	Coats Nr.	µm	Coats Nr.	µm	C1 – C3			C4			C5 I			C5 M				
											L	M	H	L	M	H	L	M	H	L	M	H		
	X		None	None	None	PE	1	80	1	80	X	X	X	X										
		X		None	None	None	PE	1	80	1	80	X	X	X	X	X	X							
	X		Epoxy or MP	1	60	PE	1	70	2	130	X	X	X	X	X	X	X	X	X	X	X	X	X	
		X		1	60	None	PE	1	70	2	130	X	X	X	X	X	X	X	X	X	X	X	X	X
X				1	60	None	PE	1	70	2	130	X	X	X	X	X	X	X	X	X	X	X	X	X

HDGS = Hot Dip Galvanised Steel NDFT = nominal dry film thickness L= low (2-5 years), M= medium (5-15 years), H= high (> 15 years)

Test results



All these coatings cycles pass the specification of C5-I (H) according EN ISO 12944-1

Test report: 2-404-2009

Substrate: Hot Dip Galvanised Steel

Pre treatment: chrome free, Fa. Nabutan

Primer : Inverpul 87130

Top Coat : Inverpul PE/P/Q, RAL7042 GL

Test reports: 2-406-2009

Substrate: Steel, Sand blasting Sa 2 ½

Primer: Inverpul 87130

Top Coat: Inverpul PE/P/Q, RAL7042 GL

Test report: 2-405-2009

Substrate: Hot Dip Galvanised Steel

Pre treatment: chrome free, Fa. Nabutan

Primer : Inverpul 92124

Top Coat : Inverpul PE/P/M, RAL 7011

Test report: 2-407-2009

Substrate: Steel, Sand blasting Sa 2 ½

Primer: Inverpul 92124

Top Coat: Inverpul PE/P/Q, RAL 7011

Corrosion Protection Classification According DIN EN ISO 12944 part 6



Corrosion Categories	Duration of protection		Kind of Ambient	Salt spray test DIN EN ISO 9227	Condensation water DIN EN ISO 6270-1	SO2 Atmosphere DIN EN ISO 3231
C2, Low	Short	2 - 5 years	Rural areas with low pollution levels		48 h.	
	Medium	5 – 15 years			48 h.	
	Long	> 15 years			120 h.	
C3, Moderate	Short	2 - 5 years	Urban/industrial atmosphere moderately polluted	120 h.	48 h.	
	Medium	5 – 15 years		240 h.	120 h.	
	Long	> 15 years		480 h.	240 h.	
C4, High	Short	2 - 5 years	Industry, Tunnels, Traffic nodes	240 h.	120 h.	
	Medium	5 – 15 years		480 h.	240 h.	
	Long	> 15 years		720 h.	480 h.	
C5 I, Very High (industry)	Short	2 - 5 years	Industry, high humidity, aggressive atmosphere	480 h.	240 h.	10 cycle (240 h.)
	Medium	5 – 15 years		720 h.	480 h.	20 cycle (480 h.)
	Long	> 15 years		1440 h.	720 h.	30 cycle (720 h.)
C5 M, Very High (marine)	Short	2 - 5 years	Costal regions with high salt exposure	480 h.	240 h.	
	Medium	5 – 15 years		720 h.	480 h.	
	Long	> 15 years		1440 h.	720 h.	

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