Approximate lifetime in different environments

Table 59 Guideline values for corrosion of zinc coating

Environment	Approximate corrosion		Comment	Environment	Approximate corrosion		Comment
	Limit value g/m² year	µm/year			Limit value g/m² year	µm/year	
Industrial atmosphere				**Indoor atmosphere**		< 0,5	
Europe, US, Sweden (hard)	70– 175	10 – 25		**Rain protected location**			Approx. half the value of corrosion at free exposure
Sweden (normal)	15– 70	2 – 10					
City atmosphere							
Larger cities (Europe, US)	30– 50	4 – 7		**Sea water**			
Larger cities (Sweden)	5– 20	1 – 3		The oceans	70– 630	10 – 90	The water's velocity of flow and the temperature affects heavily
Suburbs (Europe, US)	15– 30	2 – 4		The North sea	85– 320	12 – 46	
Smaller cities (Sweden)	5– 10	0,75 – 1,5		The Baltic sea and the Gulf of Bothnia	approx. 70	approx. 10	
"Örestad" - area	15– 35	2 – 5					
Countryside atmosphere				**Fresh water**			
In temperated climate (Europe)	10– 20	1,5 – 3		Hard	15– 30	2 – 4	Ditto
In temperated climate (Sweden)	3– 10	0,5 – 1,5		Soft	< 140	< 20	
In tropical dry climate	< 15	< 2		Tap water +15°C	< 105	< 15	Strongly dependent on the water's velocity of flow and the percentage of atmospheric oxygen.
In desert climate	< 7	< 1	Erosion risk				
In polar climate	< 7	< 1					
Sea atmosphere							
The oceans	7– 50	1 – 7		Distilled water	350–1400	50 – 200	Ditto
West coast, communities	7– 20	1 – 3		**Soil**	30–3500	4 – 500	Strongly dependent on type of soil
West coast, countryside	5– 15	0,75 – 2	Distance from coast and main direction of wind are of great importance				
East coast, communities	7– 20	1 – 3					
East coast, countryside	3– 15	0,5 – 2					
Near the waterside	15– 20	2 – 3					

Source: SIS Handbook 148.

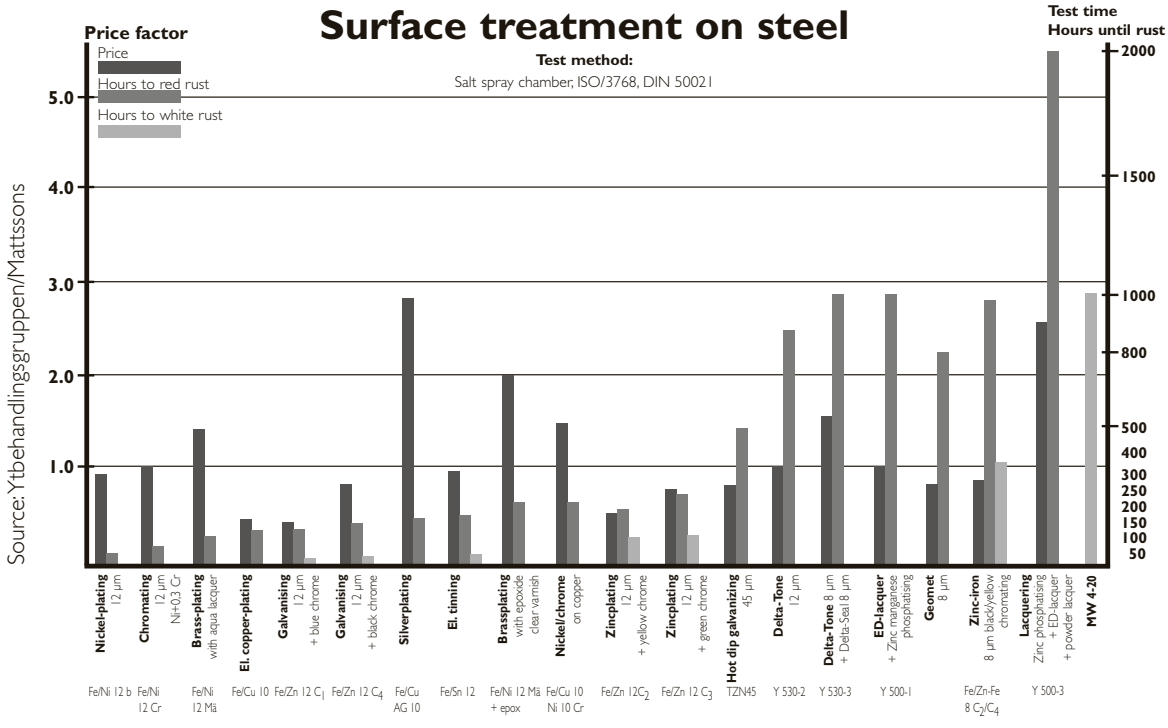
Comparing test Geomet/Hot dip galvanizing

For Geomet there are no present values comparable with table 59. To give you an idea about Geomet's performances, a test was made by Mattssons at three locations in Sweden. One location with sea atmosphere, one with industrial atmosphere and one with countryside atmosphere.

Testing has been made with Scabtest where the samples were sprayed 2 times per week with 5% NaCl-solution. Test material was screw M6S M12X30 and nut M12.

Surface treatment:	Hot dip galvanizing (FZV)	approx. 60 µm
	Geomet 3 layers (D3)	approx. 8 µm
	Geomet 4 layers (D4)	approx. 12 µm
	Geomet 5 layers (D5)	approx. 15 µm
Mounting plates:	Aluminium	
	Cold-rolled, primed	
	Plastics	
	Aluminium-Zinc	
	Stainless	
Testing interval:	26 weeks	

Results:
A=industrial environment B=countryside environment C=sea environment
0=no rust 1=rust

Table 125

	FZV			D3			D4			D5		
	A	B	C	A	B	C	A	B	C	A	B	C
Plastic	1	0	0	0	1	1	0	0	0	0	0	0
Stainless	1	0	1	0	1	1	0	1	1	0	1	1
Aluminium	0	0	0	0	0	0	0	0	0	0	0	0
Aluminium-zinc	0	0	0	0	1	1	0	0	0	0	0	0
Cold-rolled	0	0	0	0	1	0	0	0	0	0	0	0