

Surface finish

What surface finish should I choose?

A simple rule says that you can use the surface finishes as follows:

Surface finish		Maximum corrosivity class
Galvanization		C1
Painted sheet metal		C2
Pre-galvanised sheet metal Z275 (Sendzimir process)		C2
Hot-dip galvanizing	SS-EN ISO 1461	C4
Aluzinc	AZ185	C4
Z4		C4
Stainless steel, acid resistant		C5I/C5M

Each corrosivity class has a fairly wide range and lifespan needs may vary. Proceed as set out below to more exactly determine which surface finish your project requires:

1. Use table 1:23a to determine the corrosivity class that the project best corresponds with.
2. Choose the surface finish according to the lifespan requirement in the selected corrosivity class, see table 2.

Example: You need to install cable ladders in an unheated warehouse building.

1. Table 1:23a shows clearly that here we have a C2 environment.
2. The warehouse building will be in service for more than 25 years, we choose pre-galvanised sheet metal Z275.
3. Here the MP code will be S, cable ladders are available with S in the MP-no, we choose it. All parts for installation thus must have an MP-code S or a letter further down in the list below.

In the MP-number the letter represents the following:

Layer thickness

E = Galvanization		10 µm
V = White finish	RAL 9010	60-70 µm
B = Beige paint	NCS 2502-Y	60-70 µm
S = Pre-galvanised sheet metal	Z275 (Sendzimir process)	20 µm
A = Aluzinc	AZ150	20 µm
Z = Hot-dip galvanizing	SS-EN ISO 1461	60 µm
Z4 = Zinc/aluminium	Cl. 8/SS-EN ISO 61537 (equival.)	85 µm
AZ = Aluzinc	AZ185	25 µm
R = Stainless steel/acid resistant		

Table 1:23a

Corrosivity class according to SS-EN ISO 12944-2, taking into account the corrosivity of the atmosphere and environment examples.

Corrosivity class	Environment's corrosivity	Examples of typical environments in the temperate climate zone (informative).	
		Outdoor	Indoor
C1	Very low		Heated areas with dry and insignificant amounts of contamination, for example, offices, shops, schools and hotels.
C2	Low	Atmospheres with low content of air contamination. Rural areas.	Non-heated areas with varying temperatures and humidity. Low frequency air of condensation and low levels of air contamination, for example, sports halls and warehouses.
C3	Moderate	Atmosphere with small quantities of salt or moderate amounts of air contamination. Urban areas and light industrial areas. Areas with some influence from the coast.	Areas with moderate humidity and some air contamination from production processes, for example, breweries, dairies and laundries.
C4	High	Atmosphere with a moderate quantity of salt or tangible quantities of air contamination, in industrial and coastal areas.	Areas with high humidity and large quantities of air contamination from production processes, for example, chemical plants, swimming pools and shipyards.
C5-I	Very high (industrial)	Industrial areas with high humidity and aggressive atmosphere.	Areas with almost permanent moisture condensation and large levels of air contamination.
C5-M	Very high (marine)	Coastal and offshore areas with large amounts of salt.	Areas with almost permanent moisture condensation and large levels of air contamination.

Table 2 – is a calculation of the surface treatment's service life until red rust occurs on the surface.

Corrosivity class	Mean corrosivity per unit area and unilateral thickness reduction – one-year exposure.			
	Steel		Zinc	
	Mean corrosivity (g/m ²)	Thickness reduction μm	Mean corrosivity (g/m ²)	Thickness reduction
C1	≤ 10	≤ 1.3	≤ 0.7	≤ 0.1
C2	> 10 – 200	> 1.3 – 25	> 0.7 – 5	> 0.1 – 0.7
C3	> 200 – 400	> 25 – 50	> 5 – 15	> 0.7 – 2.1
C4	> 400 – 650	> 50 – 80	> 15 – 30	> 2.1 – 4.2
C5-I	> 10 – 1500	> 80 – 200	> 30 – 60	> 4.2 – 8.4
C5-M	> 10 – 1500	> 80 – 200	> 30 – 60	> 4.2 – 8.4

Z4

Less zinc usage saves natural resources in forests and the ground. It also has a lower price than hot-dip galvanized!

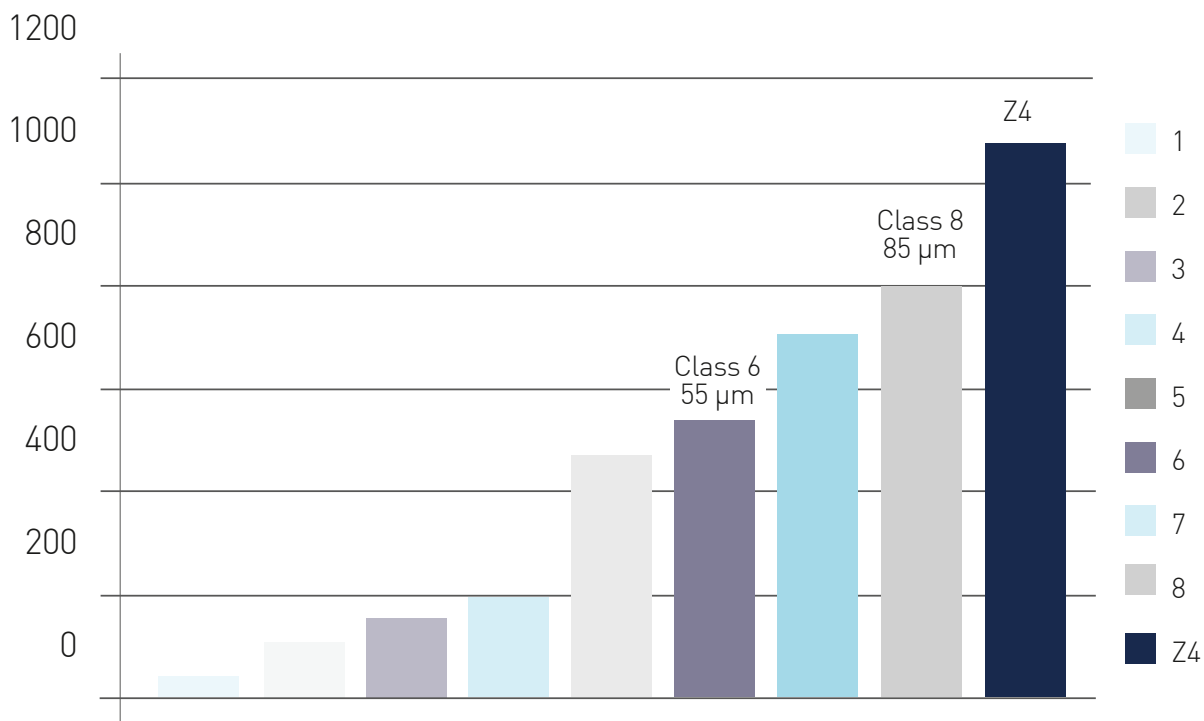
Z4 is a new more environmentally friendly material and meets the requirements for surface treatment class 8 according to SS-EN ISO 61537 – corresponds to min. 85 µm hot dip galvanizing (approved for C4-environments).

After 1050 hours of salt spray testing, only white rust occurred, which does not affect the function or lifespan.

Meets EL AMA's requirements for heavy cable ladders.

For further information - see mpbolagen.se

Hours of exposure salt spray test!



Hot dip galvanized – 1050 h



Z4 – 1050 h

