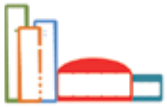
Technical info

SELECTION TABLE : Type of surface treatments related to the corrosion class and risks per type of environment (EN ISO 14713-1/2010)

Corrosion Class - Risk + Average zinc loss per year	Surface treatments	Typical environment - Indoor	Typical environment - Outdoor
C1 - Very low < 0,1 µm	Electro-galvanisation EN ISO 2081	 **Heated buildings with neutral atmospheres :** offices, shops, schools, hotels.	**Dry or cold zone.** Atmosphere with very low impurities.
C2 - Low 0, 1–0,7 µm	Indoor : (SZ) Sendzimir galvanisation EN 10327 - EN 10.143 Outdoor : Hot-dip (HD) galvanisation EN ISO 1461 or equivalent*	 **Unheated buildings where condensation may occur:** warehouses, shops, sports halls.	 **Rural areas.** Atmosphere with low level of pollution.
C3 - Medium 0,7 – 2 µm	Hot-dip galvanisation (HD) EN ISO 1461 or equivalent*	 **Production facilities with high moisture levels and some air impurities :** plants for food production, laundries, breweries, dairies.	 **City and industrial atmosphere**, some impurities from sulphur dioxide, coastal areas with low salt loads.
C4 - High 2 – 4 µm	Duplex: Hot-dip galvanisation (HD) EN ISO 1461 or equivalent* + 1 or 2 layers powder coating	 **Chemical plants, swimming pools,** boathouses above sea water.	 **Industrial areas and coastal** areas with moderate salt oad.
C5-I - Very high (industry) 4 – 8 µm	Duplex : HD galvanization or equivalent* + 2 layers powder coating thickness on demand Stainless steel AISI 316L	 **Buildings or areas with almost constant condensation** and with high pollution.	 **Industrial areas** with high moisture levels and aggressive atmosphere.
C5-M - Very high (sea) 4 – 8 µm	Duplex: HD galvanisation or equivalent* + 2 layers powder coating thickness on demand Stainless steel AISI 316L	 **Buildings or areas with almost constant condensation** and with high pollution.	 **Coastal or offshore areas** with salt load.

* Equal to hot dip galvanization (prefix HD) EN ISO 1461 are Zinc Magnesium (prefix: ZM, sheet) and Zinc Aluminium (prefix: ZA, wire).

SURFACE TREATMENTS

Sendzimir galvanised EN 10..346

Ref. : SZ

Most of the cable trunkings, accessories and threaded rod fixings are made of Sendzimir galvanised steel, also called continuous galvanised steel.

The hot-rolled steel belt goes, after preparation, through a continuous bath with liquid zinc. Through this, a layer of zinc is formed which guarantees the increased corrosion protection. Depending on the product type the thickness of the zinc layer varies from 140 to 275 gr/m2, bilaterally calculated. This corresponds to 10 to 20µm with a tolerance of +/- 4µm.

Through the special Sendzimir zinc process, the steel-engraving can still be very easily carried out even after galvanisation. During the fabrication of the cable trunkings, the steel-engraving and the belt are punched, cut and bent. The exposed steel-edges are cathodically protected till a material thickness of 1.5mm is reached, as far as the zinc-layer had not already been bent over it during manufacturing. Substrate rust does not occur.

For normal interior construction purposes the Sendzimir galvanised materials offer more than adequate protection against corrosion (covered parking areas, various uses indoors etc.).

Hot-dip galvanised EN ISO 1461

Ref. : HD

Many cable ladders, ceiling profiles and brackets are hot-dip galvanised. For this surface treatment, other various terms are used such as fire galvanisation, thermal galvanization etc.

The finished pieces are plunged in a melt-bath with liquid zinc, after pre-treatment, at a temperature ≥ +/- 450°c. A layer of zinc and iron is formed on the steel, which is covered with a pure zinc layer after removal from the zinc bath.

The thickness of the zinc layer depends on the thickness (gauge) of the steel. The guidelines in accordance with EN ISO 1461 are followed:

Material thickness	minimum localized layer thickness (µm)	minimum average layer thickness (µm)
≥ 6 mm	70	85
≥ 3 mm to < 6 mm	55	70
≥ 1.5 mm to < 3 mm	45	55
< 1.5 mm	35	45

Small Items are galvanised and centrifuged. With regard to this the specific guidelines recorded in EN ISO 1461 are followed:

Material thickness	minimum localized layer thickness (µm)	minimum average layer thickness (µm)
≥ 3 mm	45	55
< 3 mm	35	45

The increased thickness of the zinc layer ensures a better resistance against corrosion compared to continuous galvanised steel. Hot dip galvanised steel is also more suited to outdoor applications.

The requirements for hot dipped galvanised products refer to:
the coating thickness of the galvanised layer or to its mass per unit area
the outward appearance of the surface coating

The coating thickness is the deciding factor for the wear life in well-defined operating conditions. The thicker the coating, the longer the expected wear life. For most atmospheric exposures, a near-linear relationship exists between the two.

The second requirement concerns the outward appearance of the coating. On that score, the relevant standard (EN ISO 1461) stipulates the following:

- Products on which darker or lighter grey areas occur, whose surface exhibits some surface roughness or on which white storage stains can be found, will still meet the standard EN ISO 1461, providing the coating thickness remains above the specified minimum value.
- Lumps and zinc ash are permitted in places where they do not affect the intended use of the hot dipped galvanised object or its corrosion resistance requirements

Zinc magnesium galvanisation (EN 10346)

Ref: ZM

Zinc-magnesium is offered as alternative to hot-dip galvanised flat material, where the corrosion resistance is equal or better than the hot-dip treatment. Equal to sendzimir, the zinc-magnesium layer is applied at the rolling stage using a continous bath. Therefore this surface treatment has similar superior formability.

Zinc aluminium galvanisation

Ref: ZA

Zinc-aluminum is offered as alternative to hot-dip galvanised wire material, where the corrosion resistance is equal or better than the hot-dip treatment. Equal to sendzimir, the zinc-aluminum layer is applied at the pulling stage using a continous bath. Therefore this surface treatment has similar superior formability.

Electro zinc plated (EN ISO 2081)

Various mounting systems are electro zinc plated.
During this procedure a thin zinc-layer is precipitated, varying in thickness between 6 and 8 microns, by means of an electrolytic process.
After this the items are passivated and in this way protected against corrosion under normal indoor conditions.

Coated finishes

Our fully automated coating process applies a satin finish as standard. We can apply a high gloss, matt or textured coat on request.

Polyester powder coating (standard)

Ref : PE
The products we supply with a polyester powder coating finish easily meet the required standards. Polyester powder coating is suited to indoor and outdoor applications and offers a very high degree of resistance to all weather conditions.

Epoxy powder coating

Ref: EP
Epoxy coatings are characterised by their great resistance to both corrosion and chemicals. On the other hand epoxy powder coatings are not suitable for outside uses due to their poor resistance to UV light which results in degradation of the coating.

Epoxy powder coating + Polyester powder coating

Ref : EPPE
Epoxy is often used as a primer which will then have a polyester topcoat applied. This double layer coating results in a product that is both chemically and UV resistant.

Duplex System

Ref: DU
The combination of a hot-dip galvanizing and powder coating creates an extremely powerful protection against corrosion.

For technical advice and price inquiries, please consult our sales team. Delivery period of powder coated and duplex coated products is to be agreed upon in respect to volume and specifications.

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