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- KS80

SURFACE TREATMENTS AND CORROSION CATEGORIES

Selection of the required surface treatment on the basis of the prevailing ambient conditions.

SURFACE TREATMENT OPTIONS							
Marking	Surface treatment	Corrosion category	Galvanization standa	rd			
EG (EZ) Electro-galvanized after manufacturing	Galvanized steel. Coating thickness 5-8 µm	C1, C2	EN ISO 2081	Electro-galvanizing refers to covering the product with a layer of zinc, using electricity. Electroplating is made in an electrolyte bath, after several cleaning and treatment stages.			
PG Pre-galvanized steel	Galvanized steel. Coating thickness approximately 20 µm	C1, C2	EN 10346	Pre-galvanized steel products are made of zinc- coated steel bands. These products are also referred to as sendzimir galvanized products.			
XPG Hot-dip galvanized, specially coated steel	Galvanized steel. Coating thickness approximately 20 μm	C1-C4	EN 10346	XPG products are made of zinc-based special alloy coated steel. The special mixture forms a thin and tight film on the coating, which improves corro- sion protection. Corrosion protection is based on cathodic and mechanical protection.			
HDG Hot-dip galvanized after manufacturing	Galvanized steel. Coating thickness approximately 55 µm	C3, C4	EN ISO 1461	Hot-dip galvanized products are made of steel and finished product, such as a whole cable ladder or a part of it, is pre-treated and dipped in molten zinc. These are also referred to as hot-dip zinc coated products. The zinc coating covers the entire product, including cutting edges and weld seams.			
SS316 Acid-proof stainless steel, AISI 316L	Acid-proof steel AISI 316L	C4, C5	-	Products made of acid-proof stainless steel are used in highly corrosive environments, where hot- dip galvanizing does not provide sufficient corrosion protection.			
M Painted steel	Painted steel. Standard colour white RAL 9010	C1, C2	-	Paint-coated steel products are made of pre-gal- vanized, painted steel band. The surface is covered with polyester paint, which has high resistance against weather, corrosion, and wear.			
PURAL Painted steel	Pural coated steel Standard colour grey RAL 7045	C3, C4	-	Chemical consistency of Pural coating is optimized to tolerate weather conditions. Pural coating has igh resistance against corrosion and UV radiotaion.			

CORROSION CATEGORY

Corrosion category	Usage outdoors	Usage indoors	Required surface treatment	Thickness reduction
C1 Very low	Not for outdoor use.	Heated buildings with a clean at- mosphere, such as offices, schools and hotels.	EG (EZ), PG, XPG, M	0,0 µm - 0,1 µm in a year
C2 Low	Atmospheres with low contamina- tion levels. Mostly rural areas.	Unheated buildings with possible condensation, such as warehouses and sports halls.	EG (EZ), PG, XPG, M	0,1 µm - 0,7 µm in a year
C3 Medium	Urban and industrial atmosphere with medium sulphur dioxide levels. Coastal areas with low salinity levels.	Production premises with high humid- ity levels and some impurities in the air, such as food industry facilities.	XPG, HDG, PURAL	0,7 µm - 2,1 µm in a year
C4 ^{High}	Industrial areas and coastal areas with medium salinity levels.	Chemical industry production plants, coastal shipyards and boatyards.	XPG, HDG, PURAL	2,1 μm - 4,2 μm in a year
C5-I, C5-M Very high (industrial)	Industrial areas with high humidity levels and a corrosive atmosphere. Coastal and other areas with high salinity levels.	Buildings or areas with almost constant condensation and high contamination levels.	55316	4,2 µm - 8,4 µm in a year

C1 - C2 C3 - C4 C5-I, C5-M Hot-dip zinc coated HDG and Pural painted products Acid-proof SS316 products Pre-galvanized PG and electro-galvanized EG products Cable ladders Cable ladders Cable ladders • Wire mesh trays ٠ Wire mesh trays Cable trays ٠ Lighting tracks Lighting tracks Wire mesh trays Lighting tracks

EARTHING AND EQUIPOTENTIAL BONDING

Main equipotential bonding must be carried out in each building. The purpose of main equipotential bonding is to prevent the occurrence of dangerous voltage differences between conductive parts that may be touched at the same time.

In equipotential bonding, exposed conductive parts and other conductive parts are connected to the same potential, to eliminate potential differences between them.

Parts connected to the main equipotential bonding usually include the building's metal pipelines (HVAC), metal constructions, and, where applicable, the main reinforcing steels used in concrete constructions.

Metal cable support systems can also be regarded as structures to be included in the equipotential bonding.

Protective earthing/equipotential bonding

Cable ladders, cable trays and lighting tracks can be regarded as exposed conductive parts, which means that they must be connected to the building's main equipotential bonding rail at least at one point.

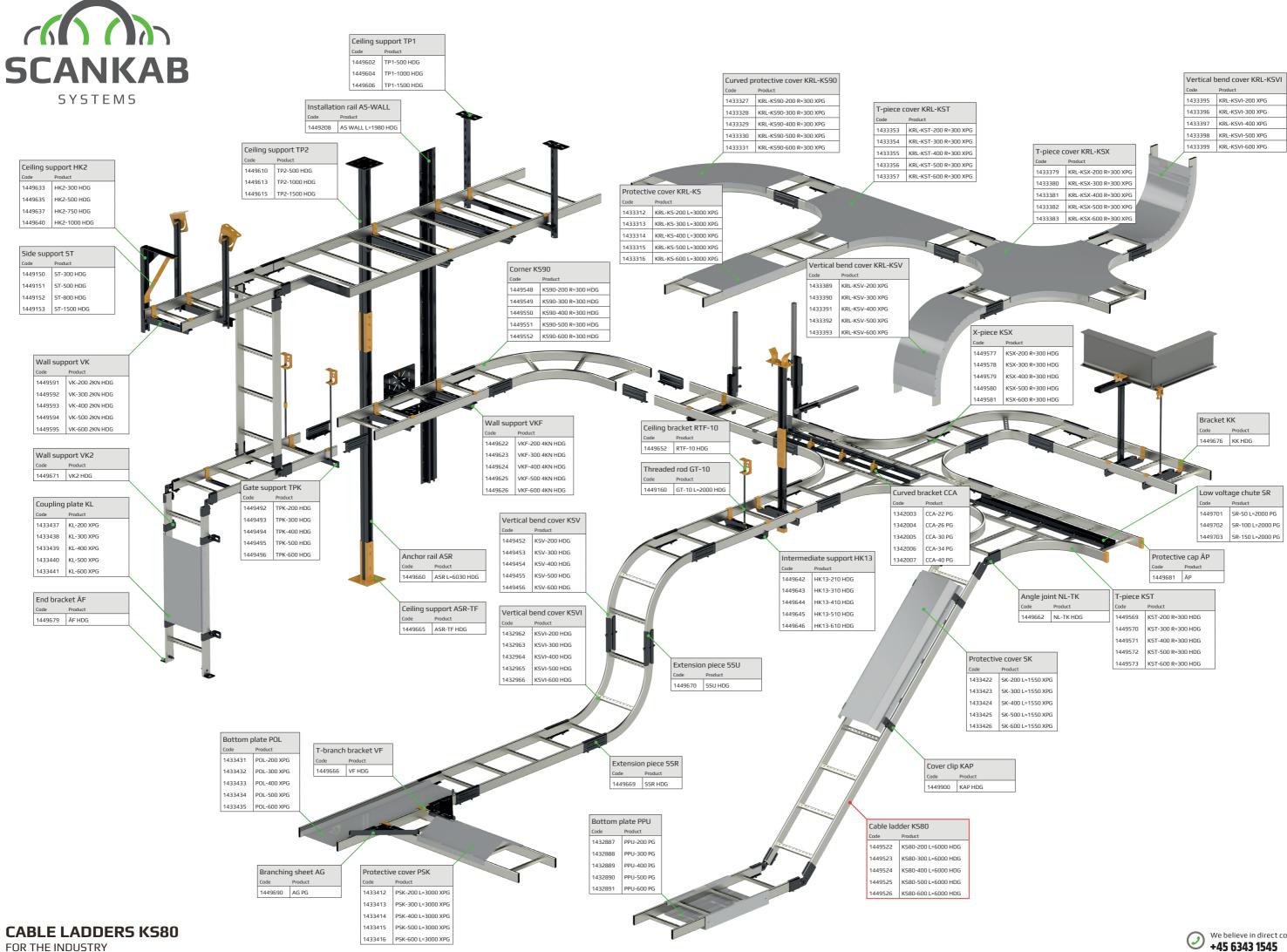
In industrial installations in particular, special attention must be paid to the earthing and reliability of the entire cable ladder system.

In industrial applications, it is recommended that the cable ladder be connected to earth at an interval of 40 m, for example, unless it is reliably connected to a conductive structure (e.g. an earthed steel column).

Extension piece SSR, which is used with cable ladder types KS20 and KS80, provides sufficient electrical connection, so a separate grounding conductor need not be installed across the ladder extension.

Electrical conductivity (cable ladders)				
Product	Impedance mΩ/m			
K520 PG	0,60			
K580 HDG	0,44			
K580 55316	2,48			
KSF80 HDG	0,44			
Product + extension	Impedance mΩ/m			
KS20-300 PG + NL PG	0,24			
KS20-300 PG + SSR PG	0,13			
K520-300 PG + SSC PG	0,24			
K580-300 HDG + NL HDG	0,39			
K580-300 HDG + NL-TK HDG	0,26			
K580-300 HDG + SSR HDG	0,17			
K580-300 HDG + SSU HDG	0,14			
SS316 KS80 + SS316 SSU	0,66			
KSF80-300 HDG + M10 pultit	0,16			
KSF80-300 HDG + KSF-NL HDG	0,30			
Measured at 50 mm from the extension.				







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