

Corrosion protection: General information



Corrosion protection measures

Constructive measures

e.g. isolation, avoidance of crevices . . .

Electrochemical measures

e.g. cathodic protection, ventilation

Surface measures

Table 3:

Measures	Procedures	Coatings	Coat-thicknesses µm	Standards Brand names
• Non-metallic coatings (inorganic/ *organic coatings)	Lubrication	Oil	–	ISO 8992
	Browning, oxidising	Iron oxide coat	0.5 – 2	DIN 50938
	Phosphate-coating	Phosphate coat	–	EN 12476 (DIN 50942)
	Thin-layer coats of lacquer*	Lacquer / Plastic / Resin (Fluoropolymer/TEFLON)	3 – 20	DELTA-SEAL, IRCO-SEAL, KLEVER-COL, XYLAN, PTFE, STAND-COTE
	Dip coating*	Epoxide resin / Polyester / Phenolic resin	10 – 20	KTL-KATAPHORESE, ECO 2000
	Powder coatings*	Polyester powder	60 – 90	PULVER-COLOR, WEMA-KOR-EX
• Metallic coatings (inorganic coatings)	Electroplated coatings: (electrolytic/chemical/acidic/ alkaline/cyanidic)	Zinc Cadmium Copper Copper-zinc Nickel Nickel-chrome Copper-nickel Copper-nickel-chrome Tin Copper-tin Silver Copper-silver Zinc-nickel Zinc-cobalt Zinc-iron	3 – 25	ISO 4042
	+ Conversion layers (e.g. passivation/ chromating – ISO 4520)			
	Hot dip galvanization tZn	Zinc	min. 40	ISO 10684 (DIN 267-10) ISO 1461
	Mechanical plating (plated coatings)	Zinc powder on sub-layer copper-plating (chromating possible)	6 – 107	ISO 12683
	Diffusion coatings	Zinc power burned in/on	15 – 45	EN 13811: SHERARD galvanising ISO 14713-3
	Zinc flake coatings (dispersion coatings)	Zn/Al flake (argentine)	5 – 20	ISO 10683, DACROMET/GEOMET, DELTA-TONE, ZINCTECH
• Combi/Duplex coatings (inorganic + organic coatings)	Metal/Dispersion coatings* (= inorganic basecoat)	Zn/Al flake + thin lacquer (argentine or coloured)	8 – 15	DELTA-TONE + DELTA-SEAL/DELTA-PRO- TEKT DELTA-PROTEKT KL + VH, GEOMET PLUS VL
	+ Thin-layer lacquering**/** (= organic top-coat)	Zn/Al flake + Thin lacquer (black)	8 – 15	DACROBLACK, GEOBLACK
	* Partial coating possible, lubrication integration possible ** Staining possible			

Material measures

Table 4:

Measures	Procedure	Coatings	Standards	Brand names
• Non-ferrous metals (NF)	Copper (Cu) Brass (CuZn) Bronze (CuNiSi, CuSn)	– Ni plated, Cr plated, browned –	ISO 8839 (DIN 267-18) (galv. coatings ISO 4042 [DIN 267-9])	KURBUS Special brass 59 KUPRODUR
	Aluminium (Al)	anodised	–	–
	Titanium / Titanium alloys	–	ISO 8839 (DIN 267-18)	–
• Non-metallic materials (K)	Plastics PA, POM, PP, PVDF, Nylon	–	VDI 2544 DIN 34810 - 34816	ULTRAMID, DELRIN, HOSTALEN ...
• Stainless steels	Ferritic steels (F) 1.4016, 1.4568	clean and metallic, bright- polished	ISO 3506 (DIN 267-11) EN 10088 (DIN 17224)	–
	Martensite steels (C) 1.4016, 1.4057, 1.4122 ...		ISO 3506 (DIN 267-11) EN 10088 (DIN 17442)	–
	Austenitic steels (A) A 1 = 1.4305 A 2 = 1.4301, 1.4303 A 4 = 1.4401 A 3 = 1.4541 A 5 = 1.4571 FSt = 1.4310		ISO 3506 (DIN 267-11) EN 10088 (DIN 17440, 17244)	NIRO, NIROSTA, INOX, CRONIFER, REMANIT, UNOX, SINOX ... Austenitic / austenitic-ferritic steels with particular resistance against chlorine- induced stress corrosion, e.g. indoor swimming pools → TI-163
• Special materials	Nickel, nickel alloys	metallic, bright-polished	DIN 17740, 17742-44	INCONEL, HASTELLOY, MONEL ...
	Special copper alloys Multi-component bronzes		DIN 17662–17665	Sn/Al bronze, NEUSILBER, RESISTIN, CUNIFER ...
	Special steels		EN 10269 (DIN 17240), SEW 390	URANUS, SICROMAL, MANOX ...