

COLD-ROLLED FLAT PRODUCTS COATED

Low-carbon steel strip, continuously hot-dip coated steel flat products for cold forming

ARS STOCK

FT11/ANGL/QUAL/October 2022

STEEL GRADE		Types of coating available	Coating Finish	Surface Quality	Protective surface treatment	Thickness
Steel name	Steel number					
DX51D	1.0226	Z275	M	A	C	0.50 to 3.00 mm

Thickness tolerance according to EN 10143 – Special Tolerances

MECHANICAL PROPERTIES AND CHEMICAL COMPOSITION : EN 10346

Steel grade		MECHANICAL PROPERTIES					CHEMICAL COMPOSITION % by mass max.					
Steel name	Steel number	Re ^{a)} MPa	T.S. MPa	A ₈₀ ^{b)} % min.	r ₉₀ min.	η ₉₀ min.	C	Si	Mn	P	S	Ti
DX51D	1.0226	-	270-500	22	-	-	0.18	0.50	1.20	0.12	0.045	0.30
DX52D	1.0350	140-300 ^{c)}	270-420	26	-	-	0.12		0.60	0.10		
DX53D	1.0355	140-260	270-380	30	-	-						
DX54D	1.0306	120-220	260-350	36	1.6 ^{d)}	0.18						

a) If the yield point is not pronounced, the values apply to the 0.2% - proof strength Rp0.2%. If the yield strength is pronounced yield point, the values apply to the lower yield point ReL

b) The minimum elongation A80 values are decreased by 4 units for thicknesses t ≤ 0.50 mm and 2 units for thicknesses between 0.50 mm < t ≤ 0.70 mm.

c) This value only applies to skin-passed products (surface qualities B and C)

d) Decreased minimum r90 values apply for product thickness 1.5 mm < t < 2 mm (minus 0.2)

COATING MASS : EN 10346

Coating Designation	Minimum total coating mass, ^{a)} Both surfaces (g/m ²)		Theoretical guidance values for coating thickness per surface in the single spot test (μm)		Density g/cm ³
	Triple spot test	Single spot test	Typical Value ^{b)}	Range ^{c)}	
Z100	100	85	7	5 à 12	7.1
Z140	140	120	10	7 à 15	
Z200	200	170	14	10 à 20	
Z225	225	195	16	11 à 22	
Z275	275	235	20	15 à 27	

a) The coating mass is not always equally distributed on both the products surfaces. However, it may be assumed that a coating mass of at least 40% of the value given in table for the single spot test exists on each surface of the product (see § 7.9 of the standard to EN 10346).

b) Coating thicknesses can be calculated from the coating masses (see § 7.9 of the standard to EN 10346).

c) The user can expect that these limit values will be obtained on the upper side and on the other side.

FINISH & PROTECTIVE SURFACE TREATMENT : EN 10346

Coating finish			Surface quality			Protective surface treatment	
Symbol	Quality	Description	Symbol	Quality	Description	Symbol	Finish
N	Normal spangle	Either no spangle or zinc crystals of different sizes and brightness appear depending on the galvanizing conditions. The quality of the coating is not affected by this.	A	As coated surface	Imperfections such as a grainy surface, marks, grooves, pitting, variations in the surface appearance, dark spot, scratch marks, and small passivation defects are allowed. Defects may appear due to tension gradient or local excess thickness. Ribbing may also appear on the coils and yield lines.	C	Chemical passivated
M	Minimized spangle	The surface will have reduced spangles, in some cases, not visible to the unaided eye. The finish may be ordered if the normal spangle (N) does not satisfy the surface appearance requirements.	C	Best quality surface	Surface quality C is obtained by skin passing. The controlled surface shall make it possible to apply a uniform high-class paint finish. The other surface shall at least have the characteristics of surface quality B	CO	Chemical passivation and oiled
						P	Phosphated
						PO	Phosphated and oiled
						S	Sealed

Note : Usually the products are delivered with surface protection by chemically passivated and / or oiled.