

Steel

perform[®] 700+Z

Product information for high-strength micro-alloyed steel



thyssenkrupp

Issue: December 1, 2022, version 0

Brief portrait

perform[®] 700+Z from thyssenkrupp is a hot-dip galvanized thermo-mechanically rolled hot strip. The zinc coating on both sides provides lasting corrosion protection and is a cost-effective alternative to batch galvanizing. Surface treatments such as oiling and chemical passivation reduce the formation of white rust. For post-treatment by chemical passivation, the warranty period for corrosion is three months if stored and transported properly.

The high-strength micro-alloyed steel with a yield strength of 700 MPa offers an impressive and significantly increased elongation after fracture compared with the VDA 239-100 standard. It can be easily cold formed by means of hemming, edging, profiling and deep-drawing, and has good weldability. It is used in vehicle, truck and trailer construction for cold-formed components such as side members, frame constructions, stampings and profiles.

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Available steel grade

Steel grade designation and surface refinements		Surface refinements				
		UC	EG	GI	GA	ZM
Steel grade	Reference grade VDA 239-100					
perform® 700+Z	HR700LA-GI	●		●		

● Serial production

See perform® product information for delivery conditions for the UC variant.

UC	Uncoated	GA	Galvannealed
EG	Electrogalvanized zinc coating	ZM	ZM Ecoprotect®
GI	Hot-dip zinc coating		

Technical characteristics

Chemical composition											
Mass fractions in ladle analysis	C [%] max.	Si [%] max.	Mn [%] max.	P [%] max.	S [%] max.	Al [%] total	Nb [%] max.	V [%] max.	Ti [%] max.	Mo [%] max.	B [%] max.
Steel grade											
perform® 700+Z	0.10	0.30	2.00	0.025	0.006	0.015	0.0800	0.20	0.200	0.50	0.0050

Mechanical properties						
		Yield strength	Tensile strength	Elongation		
		$R_{p0.2}$ [MPa]	R_m [MPa]	A_{80} [%] min. Thickness < 3 mm	A_{50} [%] min. Thickness ≥ 3 mm	A_{prop} [%] min. Thickness ≥ 3 mm
Steel grade	Test direction					
perform® 700+Z	In rolling direction	700 – 850	750 – 900	14	17	17

$R_{p0.2}$ Proof strength at 0.2% plastic elongation

R_m Tensile strength

A_{80} Percentage elongation after fracture using a specimen with gauge length $L_0 = 80$ mm for sheet thicknesses < 3.0 mm

Surface

Surface refinements, hot-dip zinc coating

Specifications	Minimum coating mass on both sides [g/m ²]		Coating on each side of single spot sample		Informative
	Single spot sample		Mass [g/m ²]	Thickness [μm]	Typical thickness [μm]

Hot-dip zinc coating

Designation

Designation	Specifications	Minimum coating mass on both sides [g/m ²]	Coating on each side of single spot sample	Thickness [μm]	Typical thickness [μm]
Z100	DIN EN 10346	85	–	5 – 12	7
GI40	VDA 239-100	–	40 – 60	5.6 – 8.5	–
GI50	VDA 239-100	–	50 – 70	7.9 – 9.9	–
Z140	DIN EN 10346	120	–	7 – 15	10
GI60	VDA 239-100	–	60 – 90	8.5 – 13	–
GI70	VDA 239-100	–	70 – 100	9.9 – 14.1	–
Z200	DIN EN 10346	170	–	10 – 20	14
GI84	VDA 239-100	–	85 – 115	12.0 – 16.2	–
Z225	DIN EN 10346	195	–	10 – 20	16
GI115	VDA 239-100	–	115 – 155	16.2 – 31.8	–
Z275	DIN EN 10346	235	–	10 – 20	20

Available coatings depending on sheet thickness

Thickness [mm]	-GI VDA 239-100		+Z DIN EN	
	GI40–GI60	GI70–GI115	Z100–Z140	Z200–Z275
1.80–2.59	●	○	●	○
2.60–3.00	○	–	●	○

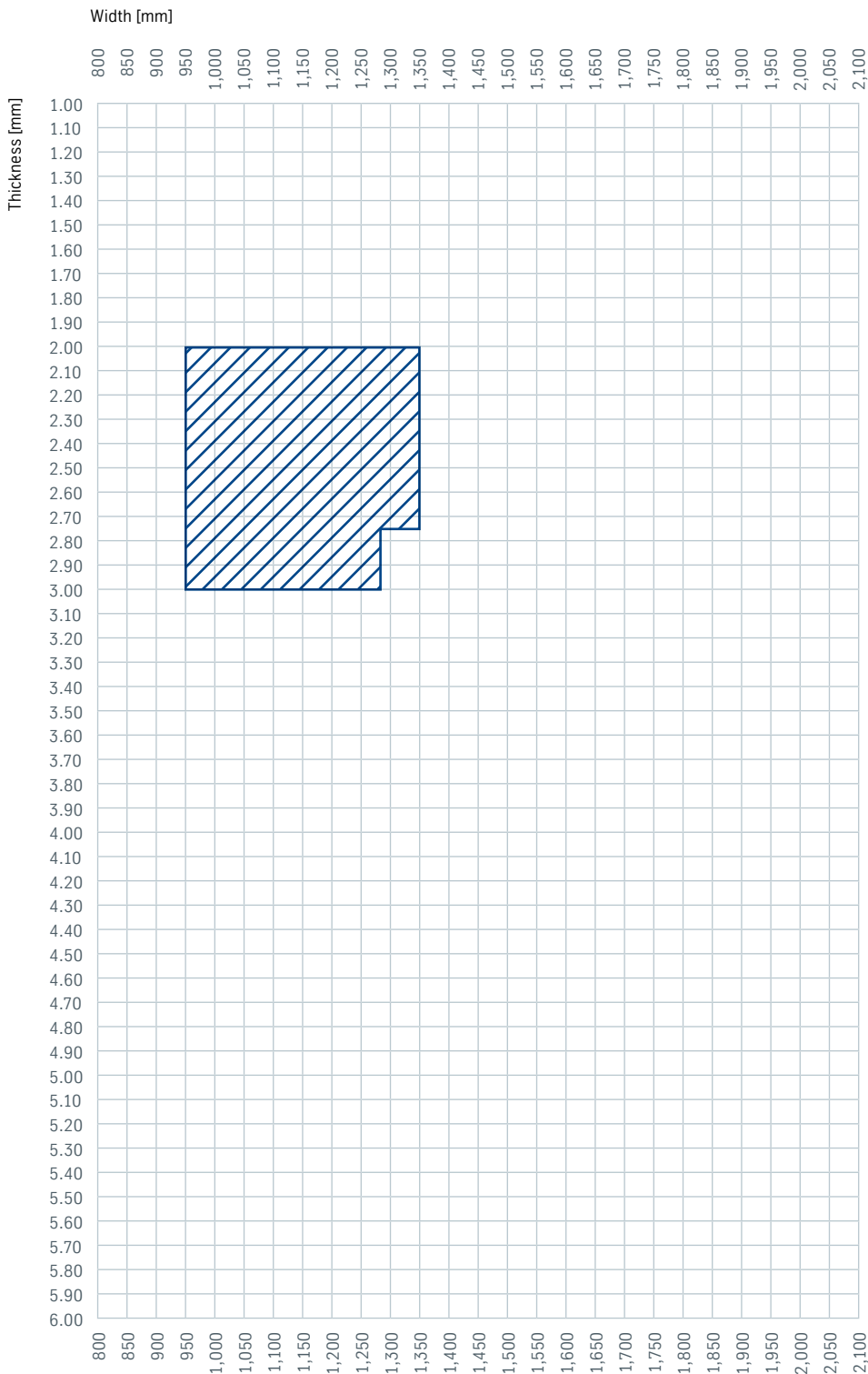
- Serial production
- On request


Surface finishes and surface qualities

Designation	Finish type	Surface quality
Hot-dip coated flat products	Hot-dip zinc coating	A Normal surface – No special surface requirements

Available dimensions

perform® 700+Z



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Other dimensions on request.

Special mill grades are supplied subject to the special conditions of thyssenkrupp. Other delivery conditions not specified here will be based on the applicable specifications. The specifications used will be those valid on the date of issue of this product information brochure.

General information

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