

Martensitic Steels

Clearly classic among high-strength grades with tensile strengths up to 1500 MPa

Martensitic steels made by voestalpine are part of the ultralights field of expertise. The property profile of martensitic steels is characterized by highest strengths without any compromise of excellent formability during bending and roll forming. The very high resistance to edge cracking during the forming of stamped edges is a result of the single-phase martensitic microstructure. The special annealing and cooling technologies of voestalpine result in excellent strip flatness in martensitic steels. The unique property profile of martensitic steels makes them highly suitable for applications in light-weight automotive design and the manufacture of safety parts and crash-relevant components. Depending on the specific corrosion resistance requirements, martensitic steels are available as uncoated (UC) and electrolytically galvanized (EG).

Convincing advantages

- » Available with minimum tensile strengths from 1100 to 1500 MPa
- » High ratio of yield to tensile strength
- » Excellent cold formability in bending and roll-forming operations
- » Best forming properties of punched edges based on high resistance to edge cracking
- » Best strip flatness
- » Good weldability
- » High crash energy absorption
- » Corrosion-resistant based on electrogalvanizing



Premium quality with reduced carbon footprint

Cold-rolled steel strip – greentec steel Edition

Max. carbon footprint 1.97 kg CO₂e per kg of steel ¹⁾

Electrogalvanized steel strip – greentec steel Edition

Max. carbon footprint 2.19 kg CO₂e per kg of steel ¹⁾

¹⁾ per EN 15804+A2 (EPD methodology) cradle to gate

All products, dimensions and steel grades listed in each voestalpine supply range are available as greentec steel Edition.

Chemical composition

Heat analysis in mass %

Steel grade	C max.	Si max.	Mn max.	P max.	S max.	Al min.	Cr + Mo max.	Ti + Nb max.	B max.	Cu max.
Pursuant to VDA 239-100										
CR860Y1100T-MS	0.20	0.50	2.00	0.020	0.025	0.010	1.00	0.15	0.010	0.20
CR1030Y1300T-MS	0.28	1.00	2.20	0.020	0.025	0.010	1.00	0.15	0.010	0.20
CR1220Y1500T-MS	0.30	1.00	2.50	0.020	0.025	0.010	1.00	0.15	0.010	0.20

Mechanical properties: Tensile test

Testing longitudinal to rolling direction

Steel grade	0.2 % yield strength $R_{p0.2}$ [MPa]	Tensile strength R_m min. [MPa]	Total elongation A_{80} min. ¹⁾ [%]
Pursuant to VDA 239-100			
CR860Y1100T-MS	860 - 1120	1100 - 1320	3
CR1030Y1300T-MS	1030 - 1360	1300 - 1550	3
CR1220Y1500T-MS	1220 - 1570	1500 - 1770	3

¹⁾ Thickness and coating limitations pursuant to VDA 239-100

Coatings and available dimensions

Available thicknesses [mm] per coating

Steel grade	UC	EG
Pursuant to VDA 239-100		
CR860Y1100T-MS	1.0 - 1.9	1.0 - 1.80 ²⁾
CR1030Y1300T-MS	1.0 - 2.0	1.0 - 1.50 ²⁾
CR1220Y1500T-MS	1.0 - 2.0	1.0 - 1.50 ²⁾

²⁾ Further dimensions upon request.

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