



## Martensitic steels

### Clearly classic among high-strength grades with tensile strengths up to 1300 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 bright-finished (UC) and electrolytically galvanized (EG).

#### Convincing advantages

- » Available with minimum tensile strengths from 1100 to 1300 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

**martensitic steels**  
greentec steel



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## Chemical composition

Heat analysis in mass %

Steel grade	Standard	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 and voestalpine special grades											
CR860Y1100T-MS	voestalpine	0.20	0.50	2.20	0.020	0.025	0.010	1.00	0.15	0.010	0.20
CR1030Y1300T-MS	VDA 239-100	0.28	1.00	2.00	0.020	0.025	0.010	1.00	0.15	0.010	0.20

## Mechanical properties: Tensile test

Steel grade	Standard	Test direction	0.2 % yield strength $R_{p0.2}$ [MPa]	Tensile strength $R_m$ min. [MPa]	Total elongation $A_{80}$ min. <sup>1)</sup> [%]	n value $n_{10-20/Ag}$ min.	BH <sub>2</sub> min. [MPa]
Pursuant to VDA 239-100 and voestalpine special grades							
CR860Y1100T-MS	voestalpine	longitudinal	860 - 1120	1100 - 1320	3	-	30
CR1030Y1300T-MS	VDA 239-100	longitudinal	1030 - 1330	1300 - 1550	3	-	30

<sup>1)</sup> Thickness and coating limitations pursuant to VDA 239-100 and voestalpine special grades.

## Coatings and available dimensions

Available thicknesses [mm] per coating

Steel grade	Standard	UC	EG
Pursuant to VDA 239-100 and voestalpine special grades			
CR860Y1100T-MS	voestalpine	1.0 - 1.8	1.0 - 1.75
CR1030Y1300T-MS	VDA 239-100	1.0 - 1.6	1.0 - 1.6

Further dimensions upon request.

## Carbon footprint greentec steel product

greentec steel product	Maximum carbon footprint [kg CO <sub>2</sub> e/kg steel] <sup>1)</sup>
Hot-rolled steel strip	2.1
Cold-rolled steel strip	2.2
Electroalvanized steel strip	2.4

<sup>1)</sup> The carbon footprint is calculated pursuant to worldsteel CML 2001-2016 (system expansion) on a cradle-to-gate basis.

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

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