ahss high-ductility

Multi-phase steels high-formability

The standard for high-strength steels with unique deep-drawing properties

Multi-phase steels high-formability are an innovation of voestalpine in the field of ultralights. In contrast with high-ductility steels, dual-phase high-ductility steels feature significantly improved formability with respect to deep drawing. The multi-phase microstructure consists of a combination of tempered martensite, bainite and austenite. Ferrite and martensite may also be present. This results in a high degree of design freedom for components with excellent crash behavior. Their property profile makes a significant contribution to innovative lightweight design.

Convincing advantages

- Available with minimum tensile strengths of 980 and 1180 MPa
- Extraordinary cold formability
- Low susceptibility to edge cracking
- Excellent crash behavior
- Corrosion resistance based on EG coatings

greentec steel

Premiumqualität
mit reduziertem CO_2-Fußabdruck

ahss high-ductility
greentec steel

Chemical composition

Heat analysis in % by mass

Steel grade	C max.	Si max.	Mn max.	P max.	S max.	Al	Cr + Mo max.	Ti + Nb max.	B max.	Cu max.
Pursuant to VDA 239-100										
CR600Y980T-FH	0.26	2.20	2.50	0.050	0.010	0.015 – 2.0	1.40	0.15	0.005	0.20
CR850Y1180T-FH	0.26	2.20	3.00	0.050	0.010	0.015 – 2.0	1.40	0.15	0.005	0.20

Mechanical properties: Tensile test

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] [%]	n-value $n_{10\text{-}UE}$ min.	BH_2 min. [2] [MPa]
Pursuant to VDA 239-100					
CR600Y980T-FH	600 – 750	980 – 1130	19	0.11	-
CR850Y1180T-FH	850 – 1050	1180 – 1350	13	-	-

[1] Restrictions based on thickness and coatings are possible
[2] The BH_2 value cannot be determined using the specified method for grades with tensile strengths ≥ 950 MPa

Coatings and available dimensions

Available thicknesses [mm] per coating

Steel grade	uncoated UC	EG – ZE	GI – Z	GA – ZF
Pursuant to VDA 239-100				
CR600Y980T-FH	Upon request	Upon request	-	-
CR850Y1180T-FH	1.0 – 1.6	1.0 – 1.6	-	-

The above named ahss steel grades are not available with MA, NA or RA surface finishes.

Available dimensions upon request.

OUR PATH TO A GREENER FUTURE

Premium products in the greentec steel Edition

With greentec steel, voestalpine is pursuing an ambitious step-by-step plan in the long-term decarbonization of steel production. The declared objective is to achieve carbon-neutral production by 2050, and the initial steps have already been taken. Process-optimized production operations already prevent up to 10% of the direct CO_2 emissions at the Linz site. The material and processing properties of the steel are not affected in any way in this production route. Each voestalpine steel strip product is available in premium quality in the greentec steel Edition with a reduced carbon footprint and unique benefits.

greentec steel

Premium quality with reduced carbon footprint

ahss high-ductility

greentec steel

Cold-rolled steel strip – greentec steel Edition
Max. carbon footprint 1.97 kg CO_2e per kg of steel [1)]
Hot-dip galvanized steel strip – greentec steel Edition
Max. carbon footprint 2.13 kg CO_2e per kg of steel [1)]
Electrogalvanized steel strip – greentec steel Edition
Max. carbon footprint 2.19 kg CO_2e 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.

Please find further information and downloadable files at
www.voestalpine.com/ultralights

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voestalpine
ONE STEP AHEAD.