

Let your ideas fly!



Complex-phase steels

The classical steel with tensile strengths of up to 1200 MPa and superb bending properties

Complex-phase steels are part of the ahss classic product line of voestalpine in the field of ultralights. Complex-phase steels were specially developed for roll-profiling, bending and edging processes. These steels have proven themselves in large-scale serial production and are recommended in innovative light-weight automotive applications such as stiffeners, sills, door impact bars, seat mounting rails and auto chassis components. A fine microstructure consisting of high-strength constituents leads to high yield strength and high resistance to edge cracking. Excellent bending properties and good weldability are achieved at the same time. As a result of this balanced property profile, complex-phase steels are predestined for applications containing crash components with a high potential for light-weight design.

Convincing advantages

- » Available with minimum tensile strengths of 590, 780, 980 and 1180 MPa
- » High ratio of yield to tensile strength
- » High yield strength, even in non-formed zones
- » Best formability of punched edges based on high resistance to edge cracking
- » Achievement of very narrow bending radii
- » High crash energy absorption
- » Corrosion resistance based on ZE/EG, Z/GI or ZF/GA coatings



Premium quality
with reduced carbon footprint

ahss classic
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.	V max.	B max.
Pursuant to EN 10346 and/or EN 10338 and voestalpine special grades										
HCT600C	0.18	0.80	2.20	0.080	0.015	0.015 - 2.0	1.00	0.15	0.20	0.005
HCT780C	0.18	1.00	2.50	0.080	0.015	0.015 - 2.0	1.00	0.15	0.20	0.005
HCT980C	0.23	1.00	2.70	0.080	0.015	0.015 - 2.0	1.00	0.15	0.22	0.005
HCT1180C	0.23	1.20	2.90	0.080	0.015	0.015 - 1.4	1.20	0.15	0.20	0.005
HDT750C	0.18	0.80	2.20	0.080	0.015	0.015 - 2.0	1.00	0.15	0.20	0.005
HDT760C	0.18	1.00	2.50	0.080	0.015	0.015 - 2.0	1.00	0.25	0.20	0.005

Steel grade	Standard	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 and voestalpine special grades											
CR400Y590T-CP	voestalpine	0.18	0.80	2.20	0.080	0.015	0.015 - 2.0	1.00	0.15	0.005	0.20
CR570Y780T-CP	VDA 239-100	0.18	1.00	2.50	0.050	0.010	0.015 - 1.0	1.00	0.15	0.005	0.20
CR660Y780T-CP	voestalpine	0.18	1.00	2.50	0.050	0.010	0.015 - 1.0	1.00	0.15	0.005	0.20
CR780Y980T-CP	VDA 239-100	0.23	1.00	2.70	0.050	0.010	0.015 - 1.0	1.00	0.15	0.005	0.20
CR800Y1180T-CP	voestalpine	0.23	1.00	2.90	0.050	0.010	0.015 - 1.0	1.00	0.15	0.005	0.20
CR900Y1180T-CP	VDA 239-100	0.23	1.00	2.90	0.050	0.010	0.015 - 1.0	1.00	0.15	0.005	0.20
CR950Y1180T-CP	voestalpine	0.23	1.00	2.90	0.050	0.010	0.015 - 1.0	1.00	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-UE} min.	BH ₂ min. [MPa]
Pursuant to EN 10346 and/or EN 10338 and voestalpine special grades					
HCT600C	350 - 500	600	16	-	30
HCT780C	570 - 720	780	10	-	30
HCT980C	780 - 950	980	6	-	30
HCT1180C	900 - 1150	1180	5	-	-
HDT750C	620 - 760	750	10	-	-
HDT760C	660 - 830	760	10	-	-

Steel grade	Standard	0.2 % yield strength $R_{p0.2}$ [MPa]	Tensile strength R_m [MPa]	Total elongation A_{80} min. ¹⁾ [%]	n-value $n_{10-20/Ag}$ min.	BH ₂ min. [MPa]
Pursuant to VDA 239-100 and voestalpine special grades						
CR400Y590T-CP	voestalpine	400 - 550	590 - 700	16	-	30
CR570Y780T-CP	VDA 239-100	570 - 720	780 - 920	10	-	30
CR660Y780T-CP	voestalpine	660 - 830	780 - 980	10	-	30
CR780Y980T-CP	VDA 239-100	780 - 950	980 - 1140	6	-	- ²⁾
CR800Y1180T-CP	voestalpine	800 - 1050	1180 - 1350	6	-	- ²⁾
CR900Y1180T-CP	VDA 239-100	900 - 1100	1180 - 1350	5	-	- ²⁾
CR950Y1180T-CP	voestalpine	950 - 1150	1180 - 1350	5	-	- ²⁾

¹⁾ Restrictions based on thicknesses and coatings pursuant to EN 10346, EN 10338, VDA 239-100 and special voestalpine grades.

²⁾ The BH₂ 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	ZE	Z	ZF
Pursuant to EN 10346 and/or EN 10338				
HCT600C	Not available	Not available	Under development	Not available
HCT780C	0.8 – 1.7	0.8 – 1.7	0.8 – 2.2	Under development
HCT980C	0.8 – 1.7	0.8 – 1.7	0.9 – 2.2	Under development
HCT1180C	0.9 – 2.0	0.9 – 1.9	1.0 – 2.0	Not available
HDT750C	Not available	Not available	2.0 – 3.5	Not available
HDT760C	2.0 – 6.0	Not available	2.0 – 3.5	Not available

Steel grade	Standard	UC	EG	GI	GA
Pursuant to VDA 239-100 and voestalpine special grades					
CR400Y590T-CP	voestalpine	Upon request	Upon request	Under development	Not available
CR570Y780T-CP	VDA 239-100	0.8 – 1.7	0.8 – 1.7	0.8 – 2.2	Under development
CR660Y780T-CP	voestalpine	1.0 – 1.7	1.0 – 1.7	0.8 – 2.2	Under development
CR780Y980T-CP	VDA 239-100	0.8 – 1.7	0.8 – 1.7	0.9 – 2.2	Under development
CR800Y1180T-CP	voestalpine	Not available	Not available	Not available	1.0 – 2.3
CR900Y1180T-CP	VDA 239-100	0.9 – 1.9	0.9 – 1.9	1.0 – 2.0	Not available
CR950Y1180T-CP	voestalpine	0.9 – 1.9	0.9 – 1.9	Not available	Not available

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

Please find available dimensions at www.voestalpine.com/Produktinformationsportal or contact us directly.



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⁾

Hot-dip galvanized steel strip – greentec steel Edition

Max. carbon footprint 2.13 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.

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