

Let your
ideas
fly!



Complex-phase high-ductility steels

The benchmark for high-strength steels with exceptional bending properties

Complex-phase high-ductility steels are an innovation of voestalpine in the field of ultralights. They are characterized by substantially improved forming properties when compared to classical complex-phase steels. The precisely defined, very fine and high-strength microstructure leads to high yield strength, high resistance to edge cracking, improved deep-drawing characteristics and unique bending properties. The microstructure consists of bainite, martensite, tempered martensite and residual austenite. Based on their unique properties, complex-phase high-ductility steels make a substantial contribution to innovative light-weight design in safety-related and crash-relevant components.

Convincing advantages

- » Available with minimum tensile strengths from 980 to 1370 MPa
- » Unique bending properties at high yield strengths
- » Best forming properties of punched edges based on high resistance to edge cracking
- » High crash energy absorption
- » Corrosion resistance based on EG and GI coatings



Premium quality
with reduced carbon footprint

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. |
|-----------------|--------|---------|---------|--------|--------|-------------|--------------|--------------|--------|---------|
| CR780Y980T-CH | 0.23 | 1.8 | 3.00 | 0.050 | 0.010 | 0.015 - 1.0 | 1.0 | 0.15 | 0.005 | 0.2 |
| CR900Y1180T-CH | 0.23 | 2.0 | 3.00 | 0.050 | 0.010 | 0.015 - 2.0 | 1.0 | 0.15 | 0.005 | 0.2 |
| CR1000Y1370T-CH | 0.23 | 2.0 | 3.00 | 0.050 | 0.010 | 0.015 - 2.0 | 1.0 | 0.15 | 0.005 | 0.2 |

Mechanical properties: Tensile test

Longitudinal to rolling direction

| Steel grade | 0.2 % yield strength $R_{p0.2}$ [MPa] | Tensile strength R_m [MPa] | Total elongation A_{80} min. ¹⁾ [%] | n-value n_{10-UE} min. | BH ₂ min. [MPa] |
|-----------------|---|------------------------------------|--|--------------------------------|----------------------------------|
| CR780Y980T-CH | 780 - 950 | 980 - 1140 | 10 | - | 30 |
| CR900Y1180T-CH | 900 - 1150 | 1180 - 1350 | 7 | - | 30 |
| CR1000Y1370T-CH | 1000 - 1250 | 1370 - 1550 | 5 | - | 30 |

¹⁾ Restrictions based on thickness and coatings are possible

Coatings and available dimensions

Available thicknesses [mm] per coating

| Steel grade | Uncoated UC | EG - ZE | GI - Z | GA - ZF |
|-----------------|-------------|------------|-------------------|-------------------|
| CR780Y980T-CH | 0.8 - 1.7 | 0.8 - 1.7 | Upon request | Under development |
| CR900Y1180T-CH | 1.0 - 1.9 | 1.0 - 1.75 | Under development | Under development |
| CR1000Y1370T-CH | 1.0 - 1.4 | 1.0 - 1.4 | Under development | Under development |

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 CO₂ 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.



Premium quality with reduced carbon footprint

ahss high-ductility
greentec steel

Cold-rolled steel strip – greentec steel Edition

Max. carbon footprint 2.15 kg CO₂e per kg of steel ¹⁾

Hot-dip galvanized steel strip – greentec steel Edition

Max. carbon footprint 2.30 kg CO₂e per kg of steel ¹⁾

Electrogalvanized steel strip – greentec steel Edition

Max. carbon footprint 2.30 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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