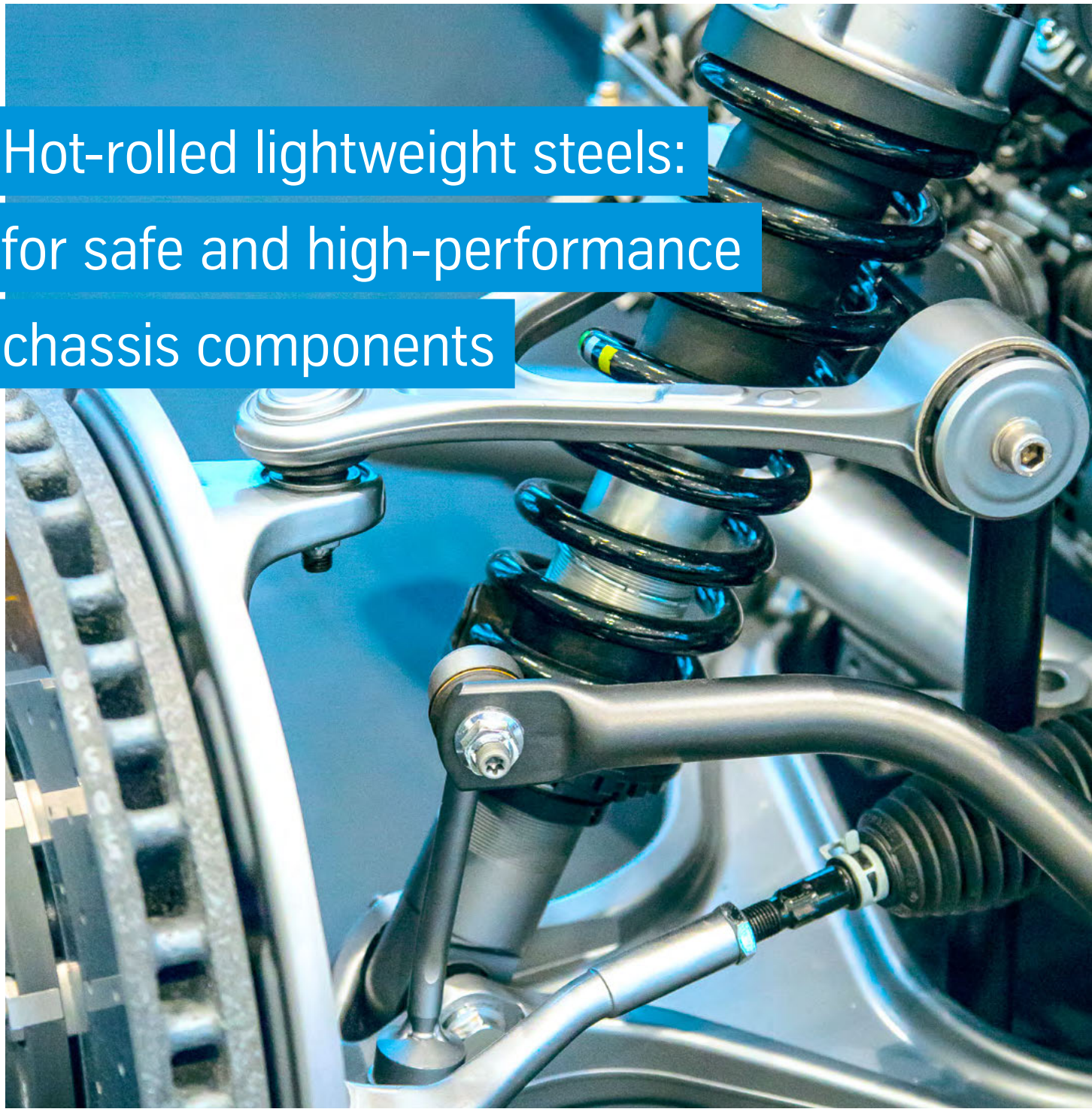
Steel

Hot-rolled light-weight steels with optimum processability

Higher-strength, highly ductile microalloyed steels and high-strength multi-phase steels for complex chassis components

thyssenkrupp

Hot-rolled lightweight steels: for safe and high-performance chassis components



Do you have complex chassis components, high demands on workability, and are you looking for material solutions for sustainable lightweight vehicle construction? Then you've found a partner!

Our hot-rolled steels for chassis components offer you everything that advances modern lightweight construction. Our product range extends from higher-strength, highly ductile microalloyed fine-grained steels with improved formability to high-strength multiphase steels with optimized hole expansion.

And, for added sustainability, we offer a wide range of materials as bluemint® Steel – our CO_2-reduced products with the same material and processing properties.

Advantages at a glance

Chassis steel CH-W®

- Optimized hole expansion
- High yield strength
- High cut edge resilience
- Good MAG weldability
- Good fatigue strength

Microalloyed steel perform® HD

- Improved cold formability
- Guaranteed narrower range of mechanical parameters compared to the standard
- Significantly increased elongation after fracture
- Particularly suitable for components with critical forming characteristics

CH-W® – ultra-high-strength multiphase steel

Maximum weight saving potential and maximum service life

Further development for the most demanding requirements

With strengths of 800 and 1,000 megapascals, our CH-W® multiphase steels offer impressive and improved formability. As a further development of our proven complex-phase steels, other properties have been preserved comparably well.

Achieve high openings and the tightest radii with CH-W® reliably – the optimized hole expansion also enables critical forming steps. With high yield strength values and reserves in the points of elongation after fracture, our high-strength multiphase steels also perform well in a crash. The deformation resistance – and thus the energy absorption – is high here.

Versatile in application. Robust in process.

Single-skin control arms, axle beams or bumpers are just three examples of possible applications for our chassis steels. In principle, they are suitable for all complex, cold-formed components in the chassis. Hot-dip galvanized CH-W® 660Y760T is an excellent choice for components subject to corrosion.

Speaking of recommended: By coordinating chemical analysis and production in our modern hot strip mills, we have achieved a homogeneous structure that leaves its mark in the stamping shop. In addition, CH-W® offers excellent MAG weldability with extremely low hardening – and your components that are subject to vibration will benefit from this!

Chassis steel with optimized hole expansion: ideally suited for single-skin control arm.

Available steel grades and dimensions

Steel grade	Reference grade VDA 239-100	Reference grade DIN EN 10338, DIN EN 10346	Thickness[1] [mm] from_to	Width[1] [mm] min._max.
CH-W® 660Y760T-UC	HR660Y760T-CP-UC	HDT760C	1.80–5.00	940–1,360
CH-W® 660Y760T+Z	HR660Y760T-CP-GI	HDT760C+Z	1.80–3.00	970–1,330
CH-W® 700Y950T-UC	–	–	2.00–4.00	900–1,400

[1]Not all thickness and width combinations are possible.

perform® HD – higher-strength, highly ductile microalloyed fine-grained steel

Increased forming potential and high reliability on the manufacturing line

Optimized materials for complex component geometries.

Whether in the area of axles or the wheel suspension: Highly ductile microalloyed steels are the answer to increasingly complex component shapes, and more exacting requirements on strength and dimensional stability.

HD steels offer a narrow range of mechanical properties as well as increased elongation after fracture compared to the standard. To put it briefly: Our perform® HD grades are there for you! They meet VDA 239-100 and DIN EN 10149-2 standards, and are available in yield strength variants from 315 to 550 MPa.

Highly ductile microalloyed steel for wheel chassis parts.

Excellent processing properties.

Production reliability comes from alloying. Our special process gives the highly ductile microalloyed steel grades the necessary mechanical properties for this.

In addition, perform® HD offers the designer a high yield strength ratio: Greater freedom in design can ultimately prevent component failure due to overloading. In terms of weldability, the very low carbon equivalents are useful, while the susceptibility to cold cracking is kept low by very good toughness thanks to a fine-grained microstructure. Everything speaks in favor of perform® HD.

Available steel grades and dimensions

			Thickness[1] [mm] from_to	Width[1] [mm] min._max.
Steel grade	Reference grade DIN EN 10149-2	Reference grade VDA 239-100		
perform® 315 HD	S315MC	–	1.50–6.00	50–1,600
perform® 340 HD	–	HR340LA	1.50–6.00	50–1,600
perform® 355 HD	S355MC	–	1.50–6.00	50–1,600
perform® 420 HD	S420MC	HR420LA	1.50–6.00	50–1,600
perform® 460 HD	S460MC	HR460LA	1.80–6.00	50–1,600
perform® 500 HD	S500MC	HR500LA	1.50–5.49	50–1,600
perform® 550 HD	S550MC	HR550LA	1.50–6.00	50–1,600

[1]Not all thickness and width combinations are possible.

Steel

thyssenkrupp Steel Europe AG
Kaiser-Wilhelm-Strasse 100
47166 Duisburg, Germany
P: +49 203 52 - 0
F: +49 203 52 - 25102
www.thyssenkrupp-steel.com
info.steel@thyssenkrupp.com

Industry
P: +49 203 52 41048
info.industry@thyssenkrupp.com

Further information at:
www.thyssenkrupp-steel.com/en/hot_strip_in_motion/

engineering.tomorrow.together.

Issue October 2023 – broschueren.steel@thyssenkrupp.com