Steel

General Product Range

thyssenkrupp

Contents

01 Uncoated hot strip

02 Precision strip

03 Heavy plate

04 Sheet and coated products

05 Organic coated strip and sheet

06 Electrical steel

07 Packaging steel

08 Composite material

Legend

Availability
- ● In stock
- ◉ Available, surface in outer skin quality (O5)
- ▣ Series-manufactured exterior components in primetex® grade
- ○ On request

Surface finishing

-/UC	Uncoated
ZE/EG	Electrolytically galvanized
Z/GI	Hot-dip galvanized
ZF/GA	Galvannealed
ZM	ZM Ecoprotect®
AS	Aluminum-silicon coated
ZA	galfan®
AZ	galvalume®

1 Not all thickness and width combinations possible
2 Supplied in the condition +AR (as rolled) or +N (normalized rolled)
3 Acc. to DIN EN 10111 only up to t = 11.00 mm, for t > 11.00 mm based on DIN EN 10111
4 Further thicknesses/dimensions on request
5 On request
6 Acc. to DIN EN 10025-5 only up to t = 12.00 mm, for t > 12.00 mm based on DIN EN 10025-5
7 Acc. to DIN EN 10120 only up to t = 5.00 mm, for t > 5.00 mm based on DIN EN 10120

Information regarding standards refers to the latest version as of the printing date.

High-Quality Steel Products. Hold Us to Our Word.

For as long as steel has been one of the most important materials of our industrial society, thyssenkrupp has been a leader in the production, finishing and processing of steel.

Our Products and Services

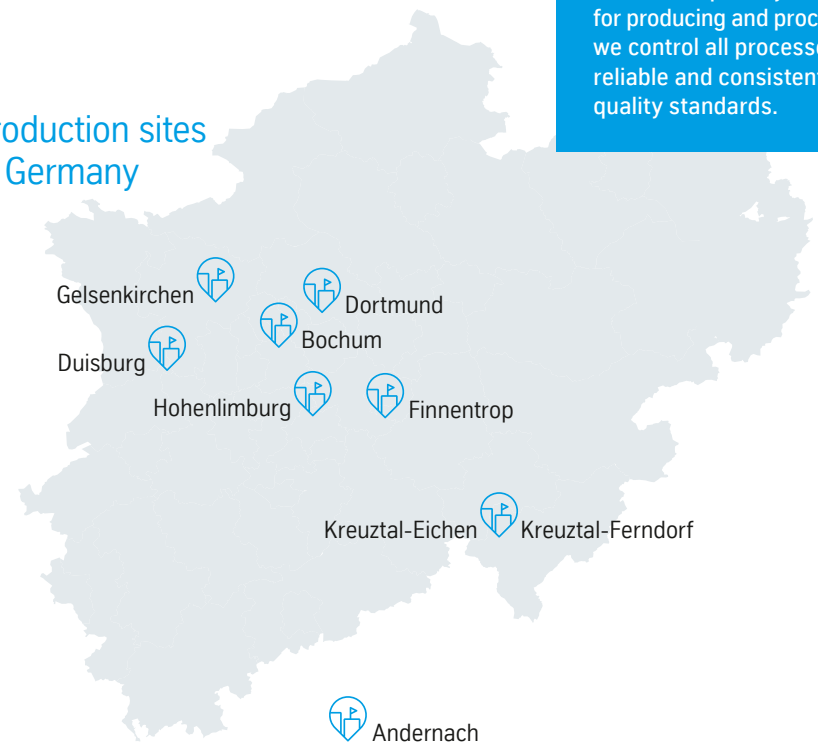
Building on a tradition of excellence reaching back over 200 years and the wealth of experience we've gathered, we use leading-edge technologies to develop and manufacture high-quality, efficient and innovative steel products for a wide range of uses.

Everything we do at our Steel division, and how we do it, is for one purpose only: to develop and manufacture, in partnership with our customers, high-quality, environmentally-friendly and cost-effective steel products that enable them to attain their business objectives.

Working together for top quality.

From our own Rhine port facility for efficient raw-material supply to the world's cleanest and most modern coke plant. From advanced blast furnaces for pig iron production to numerous specially-erected plants for producing and processing steel: we control all processes to ensure reliable and consistent product quality standards.

Production sites in Germany



Other international sites

- Antwerp, Belgium
- Isbergues, France
- Nashik, India
- Sagunto, Spain

High-quality steel products

Base material in various grades for a wide range of grades supplied as coils, plates or strips.

Customer-specific material solutions

Materials and components with optimized properties that not only enhance customer products but also contribute to holistic process optimization.

Comprehensive service

Consultation over the entire project, partner-based customer support with optimization, material testing and processing test phases as well as training programs and ongoing total quality management.

Innovation & Cooperation

1
Discovering ideas

On the basis of trends and customer needs, using the skills of all employees – even those not directly attached to Technology and Innovation.

2
Evaluating ideas

Taking feasibility, customer benefit and relevance into account, often in collaboration with customers.

With the high-tech material steel, successful innovations most often occur when the boundaries of individual disciplines are transcended.

Our products emerge both through intensive communication between Sales, Development and Production and our close partnering relationships with our customers. Our proactive network also includes universities, institutes and industry partners.

In this interplay of various types of expertise, we utilize modern laboratory and pilot plants as well as simulation tools to advance the development of high-tech steels, materials, coatings and processes. For example, in cooperation with the Ruhr University, Bochum we founded the Interdisciplinary Center for Advanced Materials Simulation (ICAMS), where researchers are employing a novel key technology that will enable us to bring improved materials to market even more rapidly and with greater customer focus.

A further instrument that helps us stay ahead of the state of the art is our systematic quality management. We also involve our suppliers in this system to enable us so that we can optimally implement our extremely demanding standards and those of our customers and business partners.

Mindful of our responsibility at all times.

We are committed to environmental compatibility and sustainability in everything we do. From the systematic reuse of water in our production and the use of process gases for our own heating and electrical generation needs to the resource-conserving utilization of all raw materials and the efficient recyclability of our products.

3
Developing ideas

Evaluation of potential, development of prototypes, calculation of the necessary data in simulation tests as preparation for laboratory experiments.

4
Preparing the product concept

Performance of laboratory experiments and production of sample coils, interdisciplinary testing of technical and economic feasibility, ideally on a pilot plant.

5
Developing the product

After being successfully tested, products are developed to production maturity through further operating trials, also involving the preparation of production equipment.

6
Market rollout

Series production commences following preparation of a detailed marketing concept, implementation of all necessary further-developed product and production features, and customer approval.

Envisioning Tomorrow Today. How Steel Advances Industries.

- Automotive / Truck
- Construction
- Engineering
- Energy
- Special Vehicles
- Packaging
- Appliances

Thin, thick, wide, narrow, rigid, elastic, flexible, strong, single-layer, double-layer, single-color, multi-colored, unassuming, flashy – the list of the many – and often contradictory – properties with which quality steel products play a role in our modern world could be extended indefinitely. And we at thyssenkrupp are doing everything to improve this quality even further and make their functionalities even more varied, so as to open up ever more areas of application. For instance through composite materials that unite steel's high strength with the light weight of plastic.

With our comprehensive industry-specific material and technology competence, we are ideally positioned to meet our customers' requirements as a reliable long-term partner.

Industries

Automotive / Trucks

Innovations for sustainable mobility

Greater environmental friendliness, safety and cost efficiency are key issues in the automotive industry. As a partner of many years standing, thyssenkrupp's steel division understands these needs and offers comprehensive industry-specific material and technology know-how.

Whether we are talking about the body, chassis or drive train – we support car-makers around the globe in building lightweight, safe and affordable vehicles. Examples include our strong and ultra-strong lightweight steel materials for safety-relevant structural components and our quality flat steel, along with our premium surfaces such as primetex® for body outer surfaces. Innovative hybrid materials for even greater weight reduction and non oriented electrical steel for hybrid and electric drive systems are modern materials that make a further contribution to automotive efficiency.

Commercial vehicle manufacturers also benefit from the know-how of thyssenkrupp's steel division. Among other things, the hot-rolled products of our perform® family and the innovative scalur® grades are extremely well-suited to particularly close tolerances and low thicknesses in truck production. Our organic coil-coated pladur® quality steel opens up a wide range of possibilities for truck superstructures. A broad assortment of product versions using pladur® is already replacing in-house painting at the OEMs.

Construction

Organic color

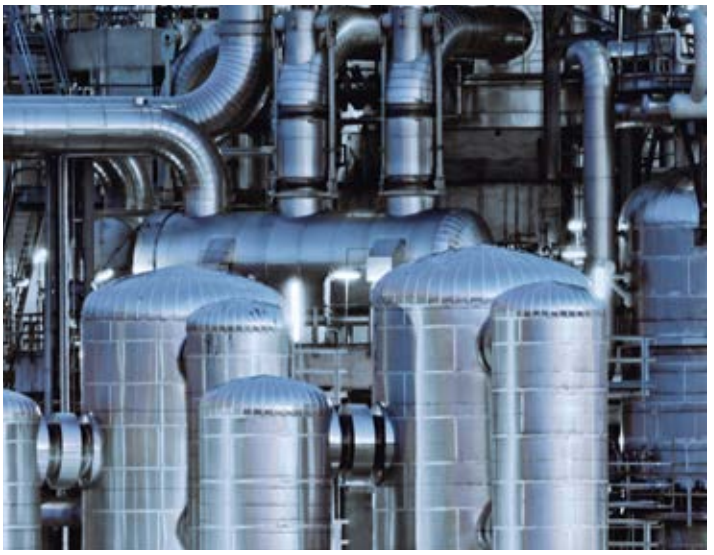
A wide range of surfaces, a broad spectrum of colors, good working characteristics and optimum corrosion protection – this is the broad foundation offered by pladur®, the organic coil-coated quality flat steel. It opens up new prospects for engineers, architects, planners and project developers: from roofs and walls to garage doors, from air-conditioning and sanitary facilities to interiors and steel structures. Together with our customers, we are rapidly developing customer- and application-specific pladur® innovations. Our walls with anti-graffiti coatings and the reflections One color series are just two of our new products that open up exciting possibilities. Our innovative zinc-magnesium coatings round out this product range.

Engineering

Light, strong and extremely durable

Today's machine tool and plant equipment industry needs both innovative technologies and dependable, high-quality steel products. thyssenkrupp is developing and manufacturing some of the best-performing products available today – seen both from a technological and a commercial angle. Whether for production machinery, process technology systems or other machine and plant engineering purposes – our product range offers a broad spectrum of non-alloy structural steels, including high-performance, ultra-hard special steel grades.

Our wear-resistant XAR® steels are available in a range of grades and sheet thicknesses and offer innovative solutions e.g. in mining applications or in steel and cement plants. In addition to non-alloy and alloy steels, our product range includes X-COR®-brand sour gas-resistant pressure vessel steels. These are used where the focus is on high pressures and temperatures.



Energy

Intelligent, environmentally friendly high-tech materials

Energy demand is increasing worldwide. The energy supply of the future requires among other things intelligent materials that allow responsible handling during the generation, distribution and use of energy. Our steel is an ideal material for the many and varied sectors of this industry – one that meets the stringent technical material requirements with respect to temperature, pressure and surface resistance.

With our high-quality product portfolio, we offer the right solutions for renewable and fossil energy generation, and for the transportation, storage and transformation of energy. Whether it is a question of non oriented electrical steel for solar-power systems, hot-rolled strip for pipelines or nickel steel for liquefied-gas tanks with low-temperature applications – we develop solutions to meet the increasingly stringent requirements of the energy industry.

Special vehicles

Modern solutions for demanding tasks

Cranes, civil protection vehicles or ships – special-purpose vehicles are used wherever there are demanding tasks to be performed. We offer high-performance solutions for each application that sets new standards for the market.

For a wide variety of vehicles, we produce materials that deliver maximum robustness, durability and load-bearing capacity. For example, the wear-resistant special structural steel XAR® is particularly suitable for heavy construction machinery. Materials like N-A-XTRA®, XABO® and perform® combine low weight with enhanced load-bearing capacity – features especially suitable for mobile cranes. The SECURE ballistic steels offer not only options for weight reduction in special vehicles, but also excellent protective properties.

Packaging

Power pack for multifaceted application options

Packaging is important: our Packaging Steel Business Unit is Germany's only innovative manufacturer of steel specifically for packaging applications. The wide and diverse field of application for the materials ranges from food packaging and beverage cans to chemical-technical products such as aerosol or paint cans.

We supply material grades for all applications. The rasselstein® product range includes tin-coated as well as chromium-coated black plate – cold-rolled steel sheet with thicknesses of 0.100 to 0.499 mm – and tinplate with and without an organic coating such as paint or film. Packaging Steel works continuously to reduce the thickness of packaging steel. For instance, rasselstein® Thinplate is a reliable high-end material in thinner gauges that nonetheless offers consistent material properties.

Appliances

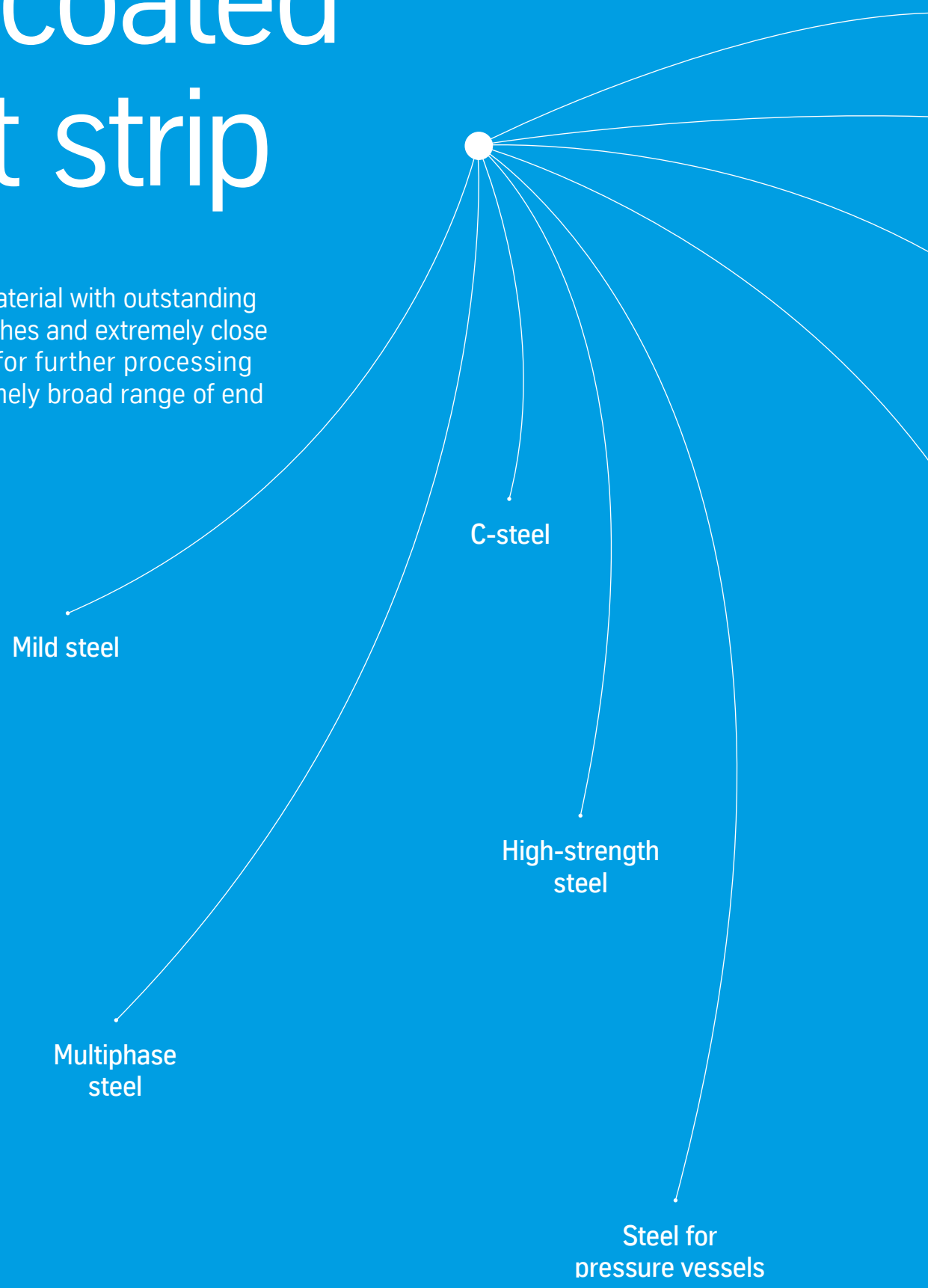
Formability, functionality and attractiveness

Whether we are talking about soft-close drawers or modern coffee-makers – our materials for household appliances are designers' first choice when it comes to uncompromising style coupled with cost-effectiveness. The demands placed on household products are constantly increasing, as is price-consciousness.

We supply the right starting materials for white goods and brown goods, furniture and other household-goods industries. For example galfan® and galvalume®, surface finishes for corrosion-resistant sheet with excellent forming characteristics. Or pladur®, the product family with the unique color and appearance variants that make expensive batch coating a thing of the past, and with pladur® Aesthetic Print make it possible to individually print e.g. washing machines.

Uncoated hot strip

Premium material with outstanding surface finishes and extremely close tolerances for further processing to an extremely broad range of end products.



Your contacts

Automotive
P: +49 203 52 - 41095

Industry
P: +49 203 52 - 41048
F: +49 203 52 - 26667

thyssenkrupp Steel Europe AG
Kaiser-Wilhelm-Strasse 100
47166 Duisburg, Germany
Postal address:
47161 Duisburg, Germany

Pipelinestahl

Mangan-Bor-Stahl zum Warmumformhärten

scalur®

Baustahl

01

About our uncoated hot strip.

We offer an extensive portfolio of steels in a broad range of dimensions and grades to meet specific customer needs in terms of strength, formability and toughness. One such material is perform®, which demonstrates high strength but is readily cold-formable.

Our range is further enhanced by numerous special products. Such as scalur®, the pickled hot-rolled strip from our casting-rolling plant with extremely close thickness tolerances, ideal for deep-drawn products: our HIC-resistant pipeline steel, or our manganese-boron steels for hot forming.

Production sites in Germany

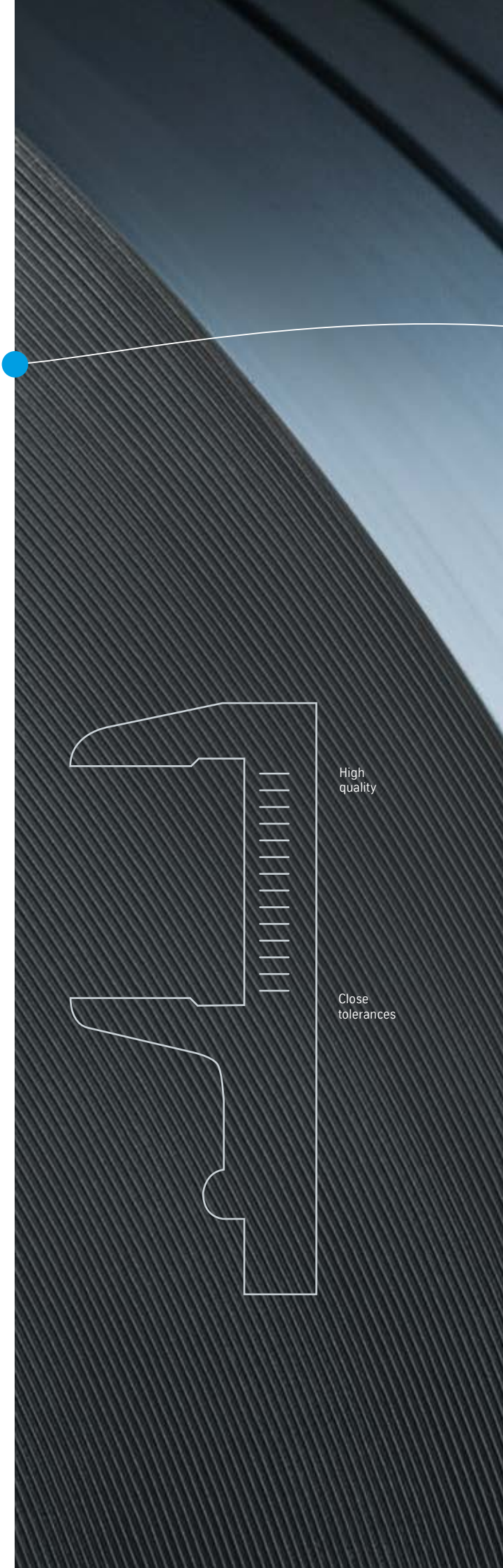
Duisburg

Hot strip lines
Casting-rolling line

Bochum

Hot strip line

Thanks to innovative technologies and specialized plant equipment, we can meet our customers' demanding quality requirements every time. For instance, our three state-of-the-art hot strip lines and our casting-rolling line enable us to consistently produce even thinner and also higher-strength sheet steel to close tolerances.



Ultra-thin dimensions

Investments in plant modernization have enabled us to offer high-strength grades with an even greater range of dimensions. At the same time, we've improved the tolerances of our hot-rolled products even further.

Mild steel

		Thickness[1] from_to in mm	Width[1] from_to in mm
Mild non-alloy steel for cold rolling			
DIN 1614-1			
Steel grade designation	Standard designation		
St22	St22	1.50 – 16.00	50 – 2,030
RRSt23	RRSt23	1.50 – 16.00	50 – 2,030
St24	St24	1.50 – 16.00	50 – 2,030
Mild non-alloy steel for cold forming			
DIN EN 10111			
Steel grade designation	Standard designation		
DD11	DD11	1.50 – 16.00[3]	50 – 2,030
DD12	DD12	1.50 – 16.00[3]	50 – 2,030
DD13	DD13	1.50 – 16.00[3]	50 – 2,030
DD14	DD14	1.50 – 16.00[3]	50 – 2,030
Deep-drawing steel			
VDA 239-100			
Steel grade designation	Standard designation		
HR2	HR2	1.60 – 6.00	50 – 2,030

Structural steel

		Thickness[1] from_to in mm	Width[1] from_to in mm
Non-alloy / general structural steel			
DIN EN 10025-2			
Steel grade designation	Standard designation		
S235	S235	1.50 – 25.00	50 – 2,030
S275	S275	1.50 – 25.00	50 – 2,030
S355	S355	1.50 – 25.00	50 – 2,030
Normalized rolled fine-grain structural steel			
DIN EN 10025-3			
Steel grade designation	Standard designation		
S275N / NL	S275N / NL	○	○
S355N / NL	S355N / NL	○	○

Structural steel _ continued

Structural steel with improved atmospheric corrosion resistance

DIN EN 10025-5

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
patinax® 355P	S355J2WP	2.00 – 12.00	600 – 2,030
patinax® 355	S355J2W	2.00 – 13.00	600 – 2,030

Structural steel with teardrop pattern

DIN 59220

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
S235	S235	3.00 – 12.00	1,000 – 2,030
S275	S275	4.00 – 12.00	1,000 – 2,030

Steel for pressure vessels

Steel for welded gas cylinders

DIN EN 10120

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
P245NB	P245NB	3.00 – 10.00[7]	50 – 2,030
P265NB	P265NB	3.00 – 10.00[7]	50 – 2,030
P310NB	P310NB	3.00 – 10.00[7]	50 – 2,030
P355NB	P355NB	3.00 – 10.00[7]	50 – 2,030

Weldable fine-grain structural steel for pressure vessels

DIN EN 10028-2

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
P275NH	P275NH	3.00 – 10.00	50 – 2,030
P355N / P355NH	P355N / P355NH	3.00 – 10.00	50 – 2,030
P...NL / P...NL2	P...NL / P...NL2	○	○

Steel for simple pressure vessels

DIN EN 10207

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
P235S	P235S	3.00 – 10.00	50 – 2,030
P265S	P265S	3.00 – 10.00	50 – 2,030
P275SL	P275SL	○	○

C-steel

Non-alloy steel for quenching and tempering and case hardening

DIN EN 10083, DIN EN 10084

Steel grade designation	Standard designation	Thickness[1] from_to in mm	Width[1] from_to in mm
C10	C10	1.50 – 16.00	50 – 2,000
C15	C15	1.50 – 16.00	50 – 2,000
C22	C22	2.00 – 12.00	50 – 2,000
C35	C35	2.00 – 10.00	50 – 2,000
C40	C40	2.00 – 10.00	50 – 1,600
C45	C45	2.00 – 10.00	50 – 1,600
C50	C50	2.00 – 8.00	50 – 1,600
C55	C55	2.00 – 8.00	50 – 1,600
C60	C60	2.00 – 8.00	50 – 1,600
C67*	Special mill grade	2.00 – 6.00	60 – 1,600
C70*	Special mill grade	2.00 – 6.00	60 – 1,600
C75*	Special mill grade	2.00 – 6.00	60 – 1,600
C85*	Special mill grade	2.00 – 4.00	80 – 1,600
C90*	Special mill grade	2.00 – 4.00	80 – 1,600
C100*	Special mill grade	2.00 – 4.00	80 – 1,600

Alloy steel for quenching and tempering and spring steel

DIN EN 10083, DIN EN 10084

Steel grade designation	Standard designation		
16MnCr5	16MnCr5	2.00 – 10.00	50 – 1,600
20MnCr5	20MnCr5	2.00 – 10.00	50 – 1,600
34CrMo4	34CrMo4	2.00 – 8.00	100 – 1,600
42CrMo4	42CrMo4	2.00 – 8.00	100 – 1,600
51CrV4	51CrV4	2.00 – 8.00	100 – 1,600
58CrV4	Special mill grade	2.00 – 8.00	100 – 1,600
80CrV2*	Special mill grade	2.00 – 8.00	100 – 1,600
75Cr1	Special mill grade	2.00 – 8.00	100 – 1,600
74NiCr2	Special mill grade	2.00 – 8.00	100 – 1,600

* Analytically based on DIN EN 10132-4.

C-steel _ continued

Manganese-boron steel

DIN EN 10083

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
20MnB5	20MnB5	2.00 – 8.00	70 – 2,000
22MnB5	Special mill grade	2.00 – 8.00	70 – 2,000
26MnB5	Special mill grade	2.00 – 8.00	70 – 2,000
30MnB5	30MnB5	2.00 – 8.00	70 – 2,000
34MnB5	Special mill grade	2.00 – 8.00	70 – 2,000
38MnB5	38MnB5	2.00 – 8.00	70 – 2,000
27MnCrB5-2	27MnCrB5-2	2.00 – 8.00	70 – 2,000
33MnCrB5-2	33MnCrB5-2	2.00 – 8.00	70 – 2,000
39MnCrB6-2	39MnCrB6-2	2.00 – 8.00	70 – 2,000

High-strength steel

Thermomechanically rolled steel for cold forming

DIN EN 10149-2

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
perform® 300	Special mill grade	2.00 – 20.00	50 – 2,030
perform® 315	S315MC	1.50 – 20.00	50 – 2,030
perform® 340	Special mill grade	1.50 – 20.00	50 – 2,030
perform® 355	S355MC	1.50 – 20.00	50 – 2,030
perform® 380	Special mill grade	1.50 – 20.00	50 – 2,030
perform® 420	S420MC	1.75 – 20.00	50 – 2,030
perform® 460	S460MC	1.75 – 20.00	50 – 2,030
perform® 500	S500MC	1.75 – 16.00	50 – 2,030
perform® 550	S550MC	2.00 – 8.50	60 – 1,850
perform® 600	S600MC	3.00 – 9.50	80 – 1,750
perform® 650	S650MC	3.00 – 10.50	80 – 1,750
perform® 700	S700MC	3.00 – 12.00	80 – 1,750

scalur®

scalur® – pickled hot strip with very close tolerances

DIN EN 10111, DIN EN 10025, DIN EN 10149-2

Steel grade designation	Standard designation	Thickness[1] from_to in mm	Width[1] from_to in mm
scalur® DD11	DD11	1.20 – 9.00	900 – 1,600
scalur® DD12	DD12	1.20 – 9.00	900 – 1,600
scalur® DD13	DD13	1.20 – 9.00	900 – 1,600
scalur® DD14	DD14	1.20 – 9.00	900 – 1,600
scalur® S235*	S235	1.20 – 7.00	900 – 1,600
scalur® S315MC	S315MC	1.40 – 9.00	900 – 1,600
scalur® S355MC	S355MC	1.50 – 9.00	900 – 1,600
scalur® S420MC	S420MC	1.50 – 9.00	900 – 1,600
scalur® S460MC	S460MC	1.50 – 9.00	900 – 1,600
scalur® S500MC	S500MC	1.50 – 9.00	900 – 1,600
scalur® S550MC	S550MC	1.50 – 6.00	900 – 1,600
scalur® S600MC	S600MC	2.00 – 5.00	900 – 1,600
scalur® S650MC	S650MC	2.00 – 4.00	900 – 1,600
scalur® S700MC	S700MC	2.00 – 5.00	900 – 1,350
scalur® CP-W 800	Special mill grade	1.60 – 4.50	900 – 1,600

* Delivery condition: as rolled.

Pipeline steel

Pipeline steel PSL 1

DIN EN ISO 3183 / API 5L

Steel grade designation	Standard designation	Thickness[1] from_to in mm	Width[1] from_to in mm
L245 or Grade B	L245 or Grade B	3.00 – 25.40	1,000 – 2,000
L290 or X42	L290 or X42	3.00 – 25.40	1,000 – 2,000
L360 or X52	L360 or X52	3.00 – 25.40	1,000 – 2,000
L390 or X56	L390 or X56	3.00 – 25.40	1,000 – 2,000
L415 or X60	L415 or X60	3.00 – 25.40	1,000 – 1,800
L450 or X65	L450 or X65	3.00 – 25.40	1,000 – 1,800
L485 or X70	L485 or X70	3.00 – 23.00	1,000 – 1,800
L555 or X80	L555 or X80	○	○

Pipeline steel _ continued

Pipeline steel PSL 2

DIN EN ISO 3183 / API 5L

Steel grade designation	Standard designation	Thickness[1] from _ to in mm	Width[1] from _ to in mm
L245N / M or Grade BN / M	L245N / M or Grade BN / M	3.00 – 25.40	1,000 – 2,000
L290N / M or X42N / M	L290N / M or X42N / M	3.00 – 25.40	1,000 – 2,000
L360N / M or X52N / M	L360N / M or X52N / M	3.00 – 25.40	1,000 – 2,000
L390M or X56M	L390M or X56M	3.00 – 20.00	1,000 – 1,600
L415M or X60M	L415M or X60M	3.00 – 20.00	1,000 – 1,600
L450M or X65M	L450M or X65M	3.00 – 18.00	1,000 – 1,600
L485M or X70M	L485M or X70M	3.00 – 18.00	1,000 – 1,600
L555M or X80M	L555M or X80M	○	○

Pipeline steel with requirements for HIC resistance (sour)

DIN EN ISO 3183 / API 5L

Steel grade designation	Standard designation		
L245MS or Grade BMS	L245MS or Grade BMS	3.00 – 25.40	1,000 – 2,000
L290MS or X42MS	L290MS or X42MS	3.00 – 25.40	1,000 – 2,000
L360MS or X52MS	L360MS or X52MS	3.00 – 25.40	1,000 – 2,000
L390MS or X56MS	L390MS or X56MS	3.00 – 18.00	1,000 – 1,600
L415MS or X60MS	L415MS or X60MS	3.00 – 18.00	1,000 – 1,600
L450MS or X65MS	L450MS or X65MS	3.00 – 16.00	1,000 – 1,600
L485MS or X70MS	L485MS or X70MS	○	○

Steel for OCTG applications (oil country tubular goods)

API 5CT

Steel grade designation	Standard designation		
H40	H40	5.00 – 25.40	1,000 – 1,600
J55	J55	5.00 – 25.40	1,000 – 1,600
K55	K55	○	○
N80	N80	○	○

Dual-phase steel

	Comparable grade		Thickness[1] from _ to in mm	Width[1] from _ to in mm
Dual-phase steel				
DIN EN 10338 VDA 239-100				
Steel grade designation	DIN EN	VDA		
DP-W® 300Y530T	–	–	1.70 – 5.50	70 – 1,630
DP-W® 330Y580T	HDT580X	HR330Y580T-DP	1.70 – 5.50	70 – 1,630
DP-W® 300Y580T	–	–	1.70 – 5.50	70 – 1,630
DP-W® 700	–	–	1.70 – 4.00	70 – 1,550
Complex-phase steel				
DIN EN 10338 VDA 239-100				
Steel grade designation	DIN EN	VDA		
CP-W® 660Y760T	HDT760C	HR660Y760T-CP	1.70 – 5.00	70 – 1,400
CP-W® 800	–	–	1.70 – 5.00	70 – 1,400
CP-W® 1000	–	–	1.70 – 4.50	70 – 1,400
Ferrite-bainite-phase steel				
DIN EN 10338 VDA 239-100				
Steel grade designation	DIN EN	VDA		
FB-W® 300Y450T	HDT450F	HR300Y450T-FB	1.80 – 6.00	70 – 1,500
FB-W® 460Y580T	HDT560F	HR440Y580T-FB	1.80 – 4.00	70 – 1,500
Martensite-phase steel				
DIN EN 10338 VDA 239-100				
Steel grade designation	DIN EN	VDA		
MS-W® 900Y1180T	HDT1180GI	HR900Y1180T-MS	1.70 – 3.00	70 – 1,500

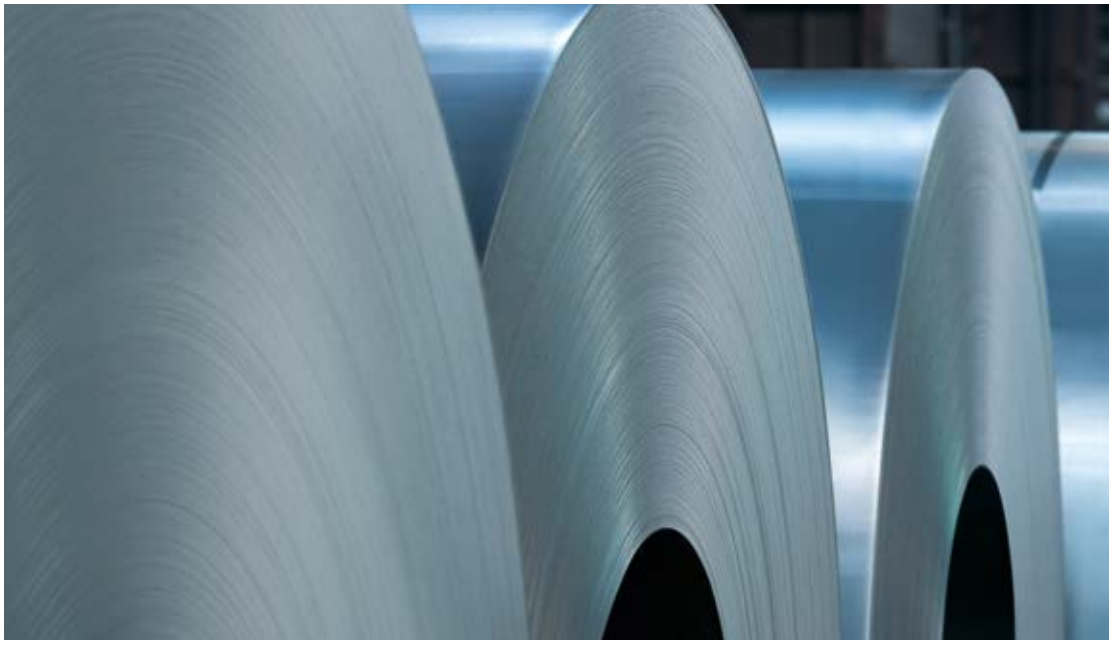
Manganese-boron steel for hot forming

		Thickness[1] from_to in mm	Width[1] from_to in mm
According to VDA 239-100			
Steel grade designation	Standard designation		
MBW-W® 1500	Special mill grade	1.75–6.00	70–2,000

Overview of delivery options

	Thickness[1] from_to in mm	Width[1] from_to in mm	Coil inside diameter in mm
Pickled hot strip			
Tolerances according to DIN EN 10051			
Strip	1.20–12.50	600–1,650	610 (+/– 20 mm)
Slit strip	1.20–7.00	50–600	○
Unpickled hot strip			
Tolerances according to DIN EN 10051			
Strip	1.50–25.40	600–2,030	762 (+/– 7%)
Slit strip	2.00–12.00	50–600	○

Sheet/plate on request.



Precision strip

Hot-rolled steel strip with exceptionally close thickness tolerances, optimum surface finishes, uniform material properties and excellent forming characteristics.

Precision strip

Your contacts

Precision Steel
P: +49 2334 91 - 0
info.precision-steel@thyssenkrupp.com

thyssenkrupp Hohenlimburg GmbH
Oeger Strasse 120
58119 Hagen, Germany

02

About our precision strip.

The ideal precursor material for products which must meet the most exacting processing and forming requirements. Such as ultra-close thickness tolerances and special profiles for direct-forming processors and mill-edge strip with no burrs or micro-cracks for further processing in the cold rolling industry. This is the precision strip of our Precision Steel Business Unit.

Excellent surface qualities and exceptionally uniform properties characterize this material, which is manufactured in widths of up to 720 mm and thicknesses of 1.5 to 16 mm. Additionally, it can be produced with a fine pearlite structure over the entire length and width of the strip. Precision strip offers ideal processing characteristics – even for stronger steels – and is also suitable for direct use thanks to its optimum grain structure. Whether pickled or unpickled, roll-hard and annealed – precision strip always offers the right solution when it comes to surface and material properties for further processing.

Production site in Germany

Hohenlimburg

Narrow strip mill

Max.

720

mm width

1.5 – 16

mm thickness

Stands up to dynamic loads

Precision strip is ideal for exceptionally difficult direct forming processes and for manufacturing components that are subjected to high dynamic loads.

Precision strip

		Thickness[1] from_to in mm	Width[1] from_to in mm

Mild, non-alloy steel

DIN EN 10111

Steel grade designation	Standard designation		
STW 22	DD11	1.50 – 16.00	50 – 720
RR STW 23	DD12	1.50 – 16.00	50 – 720
STW 24	DD13	1.50 – 16.00	50 – 720
STW 24 W	DD14	1.50 – 16.00	50 – 720

General structural steel

DIN EN 10025

Steel grade designation	Standard designation		
R ST 37-2	S235JEG2	1.50 – 16.00	50 – 720
ST 44-2	S275JR	1.50 – 16.00	50 – 720
ST 52-3	S355J2G3	1.50 – 16.00	50 – 720

Micro-alloyed fine-grain structural steel

DIN EN 10149-2

Steel grade designation	Standard designation		
HSM 260	S260MC	1.50 – 16.00	50 – 720
HSM 315	S315MC	1.50 – 16.00	50 – 720
HSM 355	S355MC	1.50 – 16.00	50 – 720
HSM 380	S380MC	1.50 – 16.00	50 – 720
HSM 420	S420MC	1.50 – 16.00	50 – 720
HSM 460	S460MC	1.50 – 16.00	50 – 720
HSM 500	S500MC	1.50 – 16.00	50 – 720
HSM 550	S550MC	1.50 – 16.00	50 – 720
HSM 600	S600MC	1.50 – 16.00	50 – 720
HSM 650	S650MC	1.50 – 16.00	50 – 720
HSM 700	S700MC	1.50 – 16.00	50 – 720
HSM 760	S760MC	1.50 – 16.00	50 – 720

Micro-alloyed fine-grain structural steel / HD steel grades (high ductility)

DIN EN 10149-2

Steel grade designation	Standard designation		
HSM 550 HD	S550MC	1.50 – 16.00	50 – 720
HSM 600 HD	S600MC	1.50 – 16.00	50 – 720
HSM 650 HD	S650MC	1.50 – 16.00	50 – 720
HSM 700 HD	S700MC	1.50 – 16.00	50 – 720

Precision strip _ continued

		Thickness[1] from _ to in mm	Width[1] from _ to in mm

Bainitic rolled micro-alloyed fine-grain structural steel

Steel grade designation	Standard designation		
BS 600	Special mill grade	1.50 – 16.00	50 – 720
BS 900	Special mill grade	1.50 – 16.00	50 – 720

Heat-treatable steel, case hardening steel

DIN EN 10083-2, DIN EN 10016-2, DIN 17222, DIN 17210

Steel grade designation	Standard designation		
C10	Special mill grade	1.50 – 16.00	50 – 720
C15	Special mill grade	1.50 – 16.00	50 – 720
C22	C22	1.50 – 16.00	50 – 720
C35	C35	1.50 – 16.00	50 – 720
C45	C45	1.50 – 16.00	50 – 720
C60	C60	1.50 – 16.00	50 – 720
C67	Special mill grade	1.50 – 16.00	50 – 720
C75	Special mill grade	1.50 – 16.00	50 – 720
M75	C75S	1.50 – 16.00	50 – 720
M85	C85S	1.50 – 16.00	50 – 720

Boron-alloyed special structural steel according to the “Stahl-Eisen” list

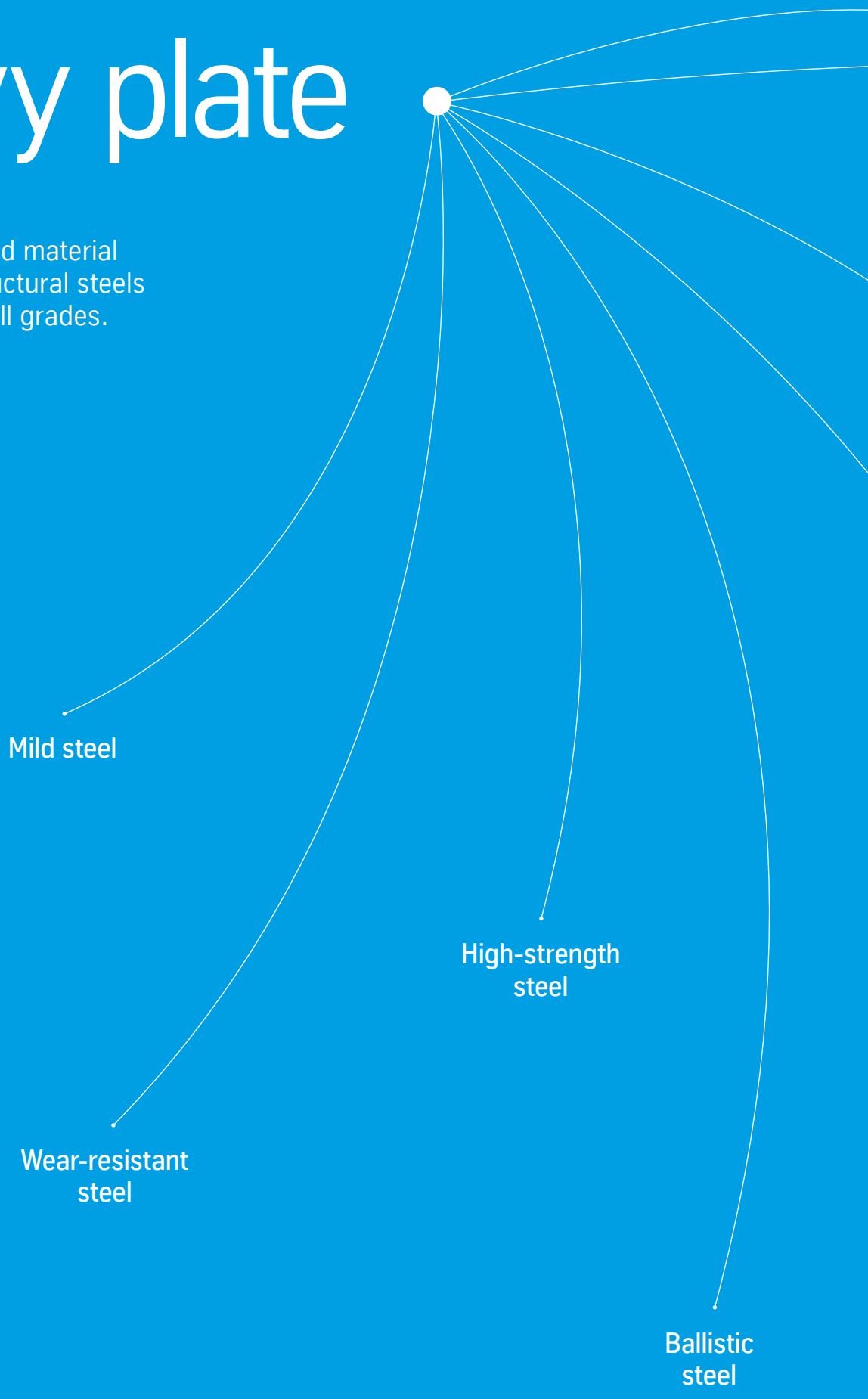
Steel grade designation	Standard designation		
HLB 8	8MnCrB3	1.50 – 16.00	50 – 720
HLB 17 modified	17MnB3	1.50 – 16.00	50 – 720
HLB 20 modified	20MnB5	1.50 – 16.00	50 – 720
HLB 22	22MnB5	1.50 – 16.00	50 – 720
HLB 27	27MnCrB5-2	1.50 – 16.00	50 – 720
HLB 30 modified	30MnB5	1.50 – 16.00	50 – 720
HLB 37	37MnB4	1.50 – 16.00	50 – 720
HLB 37 modified	37MnB5	1.50 – 16.00	50 – 720
HLB 42	40MnB4	1.50 – 16.00	50 – 720

Precision strip _ continued

		Thickness[1] from _ to in mm	Width[1] from _ to in mm
Alloyed heat-treatable steel according to the "Stahl-Eisen" list			
Steel grade designation	Standard designation		
16MnCr5	16MnCr5	1.50 – 16.00	50 – 720
51CrV4	51CrV4	1.50 – 16.00	50 – 720
54CrV4	54CrV4	1.50 – 16.00	50 – 720
42CrMo4	42CrMo4	1.50 – 16.00	50 – 720
Alloyed stainless steels / heat-treatable steels			
Steel grade designation	Standard designation		
28NiCrMo5	Special mill grade	1.50 – 16.00	50 – 720
32CrMoV12-10	Special mill grade	1.50 – 16.00	50 – 720
X32CrMoV4	Special mill grade	1.50 – 16.00	50 – 720
X32CrMoV4 modified	Special mill grade	1.50 – 16.00	50 – 720
35CrMoV12-10	Special mill grade	1.50 – 16.00	50 – 720
48CrMoNiV4-4	Special mill grade	1.50 – 16.00	50 – 720
51CrMoV4	Special mill grade	1.50 – 16.00	50 – 720
TWIP steel (Twinning Induced Plasticity)			
Steel grade designation	Standard designation		
H-Mn (X40MnCrVAl19-2)	Special mill grade	○	○
Composite material			
Steel grade designation	Standard designation		
duobond®	Special mill grade	○	○
tribond®	Special mill grade	○	○
multibond®	Special mill grade	○	○

Heavy plate

Alloyed or non-alloyed material basis for general structural steels as well as specific mill grades.



Ballistic steel

Pipeline steel

Structural steel

Steel for laser cutting

03

Your contacts

Heavy Plate
info.plate@thyssenkrupp.com

Sales National
P: +49 203 52-75617
F: +49 203 52-75653

Sales International
P: +49 203 52-40159
F: +49 203 52-75653

Technical Customer Service
P: +49 203 52-75503
F: +49 203 52-75653

thyssenkrupp Steel Europe AG
Kaiser-Wilhelm-Strasse 100
47166 Duisburg, Germany
Postal address:
47161 Duisburg, Germany

About our heavy plate.

Whether we are talking about water-quenched and tempered heavy plates with reduced thickness and lower weight, high-strength steels, wear-resistant steels or special ballistic steels – our products can meet a wide range of customer requirements.

In mobile crane construction, for instance, our N-A-XTRA® and XABO® heavy plate products can be used to build highly-stressed structures which are low in weight and offer increased load-bearing capacity. In the special-vehicle segment, our SECURE ballistic steels play an increasingly important role thanks to their excellent protective properties and their weight reduction potential. Our high-strength perform® steels are the material of choice for lightweight structures for commercial vehicles, while wear-resistant XAR® steels have earned a firm place in mining and construction machinery applications.

Production sites in Germany

Bochum

Cut-to-length line

Duisburg

Hot strip line
Cut-to-length line

Other international sites

Antwerp, Belgium

With our four-high mill, two hot strip cut-to-length lines and quenching/tempering and direct hardening facilities, we can manufacture customized products for a wide range of uses.

Ideal technical setup

State-of-the-art rolling and heat-treatment processes, intensive cooling, water-air quenching and direct hardening offer the ideal technical capabilities for endowing products with precisely the properties required.

Mild steel

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from_to in mm	Width[1] max. in mm	Thickness[1] from_to in mm	Width[1] max. in mm
Mild non-alloy steel for cold forming					
DIN EN 10111					
Steel grade designation	Standard designation				
DD11	DD11	–	–	2.0 – 11.0	2,000
DD12	DD12	–	–	2.0 – 11.0	2,000
DD13	DD13	–	–	2.0 – 11.0	2,000
DD14	DD14	–	–	2.0 – 11.0	2,000

Structural steel

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from_to in mm	Width[1] max. in mm	Thickness[1] from_to in mm	Width[1] max. in mm
Non-alloy / general structural steel					
DIN EN 10025-2					
Steel grade designation	Standard designation				
S235[2]	S235[2]	4.0 – 125.0	3,600	3.0 – 20.0	2,000
S275[2]	S275[2]	4.0 – 125.0	3,600	3.0 – 20.0	2,000
S355[2]	S355[2]	4.0 – 125.0	3,600	3.0 – 20.0	2,000
Normalized rolled fine grain structural steel					
DIN EN 10025-3					
Steel grade designation	Standard designation				
S275N	S275N	4.0 – 125.0	3,600	○	○
S275NL	S275NL	4.0 – 100.0	3,600	–	–
S355N	S355N	4.0 – 125.0	3,600	3.0 – 13.0	2,000
S355NL	S355NL	4.0 – 100.0	3,600	3.0 – 13.0	2,000
S420N	S420N	4.0 – 125.0	3,600	○	○
S420NL	S420NL	4.0 – 100.0	3,600	○	○
S460N	S460N	4.0 – 125.0	3,600	○	○
S460NL	S460NL	4.0 – 100.0	3,600	○	○

Structural steel _ continued

		Four-high mill plates		Cut-to-length plates	
		Thickness [1] from _ to in mm	Width [1] max. in mm	Thickness [1] from _ to in mm	Width [1] max. in mm
Structural steel with improved atmospheric corrosion resistance					
DIN EN 10025-5					
Steel grade designation	Standard designation				
patinax® 355P	S355J2WP [2]	4.0 – 12.5 [6]	3,600	3.0 – 12.0	2,000
patinax® 355	S355J2W [2]	4.0 – 50.0 [4]	3,600	3.0 – 13.0	2,000
Structural steel with teardrop pattern					
DIN EN 59220					
Steel grade designation	Standard designation				
S235	S235	–	–	3.0 – 16.0	2,000
S275	S275	–	–	3.0 – 16.0	2,000
Steel for enameling processes					
Steel grade designation	Standard designation				
EH 26 Ti	Special mill grade	○	○	–	–
Steel for galvanizing pots					
Steel grade designation	Standard designation				
VZH	Special mill grade	○	○	○	○

Structural steel _ continued

		Four-high mill plates		Cut-to-length plates	
		Thickness [1] from _ to in mm	Width [1] max. in mm	Thickness [1] from _ to in mm	Width [1] max. in mm
Structural steel					
ASTM / ASME					
Steel grade designation	Standard designation				
(S)A 36	(S)A 36	4.0 – 125.0	3,600	3.0 – 13.0	2,000
(S)A 283 Gr.C	(S)A 283 Gr.C	4.0 – 100.0	3,600	3.0 – 13.0	2,000
(S)A 514 Gr.B	(S)A 514 Gr.B	○	○	–	–
(S)A 514 Gr.F	(S)A 514 Gr.F	4.0 – 65.0	3,300	–	–
(S)A 514 Gr.Q	(S)A 514 Gr.Q	○	○	–	–
(S)A 656 Gr.80	(S)A 656 Gr.80	–	–	3.0 – 10.0	1,870
(S)A 1011 Gr.50 Cl.2	(S)A 1011 Gr.50 Cl.2	–	–	3.0 – 13.0	2,000
(S)A 1011 Gr.80	(S)A 1011 Gr.80	–	–	3.0 – 10.0	1,870
Shipbuilding steel					
ABS, BV, DNV-GL, LR, RINA, RMRoS					
Steel grade designation	Standard designation				
Grade A	Grade A	4.0 – 125.0*	○	3.0 – 15.0	2,000
Grade B	Grade B	4.0 – 125.0*	○	3.0 – 15.0	2,000
Grade D	Grade D	4.0 – 125.0*	○	3.0 – 15.0	2,000
Grade E	Grade E	4.0 – 125.0*	○	–	–
Grade A(H)32	Grade A(H)32	4.0 – 100.0*	○	3.0 – 15.0	2,000
Grade A(H)36	Grade A(H)36	4.0 – 100.0*	○	3.0 – 15.0	2,000
Grade D(H)32	Grade D(H)32	4.0 – 100.0*	○	3.0 – 15.0	2,000
Grade D(H)36	Grade D(H)36	4.0 – 100.0*	○	3.0 – 15.0	2,000
Grade E(H)32	Grade E(H)32	4.0 – 100.0*	○	○	○
Grade E(H)36	Grade E(H)36	4.0 – 100.0*	○	○	○
Grade F(H)32	Grade F(H)32	4.0 – 100.0*	○	–	–
Grade F(H)36	Grade F(H)36	4.0 – 100.0*	○	–	–
Grade A(H)40	Grade A(H)40	4.0 – 100.0*	○	–	–
Grade D(H)40	Grade D(H)40	4.0 – 100.0*	○	–	–

* Maximum thickness depends on certification.

High-strength steel

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from _ to in mm	Width[1] max. in mm	Thickness[1] from _ to in mm	Width[1] max. in mm
Thermomechanically rolled steel for cold forming					
DIN EN 10149-2					
Steel grade designation	Standard designation				
perform® 315	S315MC	–	–	3.0 – 20.0	2,000
perform® 355	S355MC	○	○	3.0 – 20.0	2,000
perform® 380	Special mill grade	○	○	3.0 – 20.0	2,000
perform® 420	S420MC	–	–	3.0 – 20.0	2,000
perform® 460	S460MC	–	–	3.0 – 20.0	2,000
perform® 500	S500MC	–	–	3.0 – 20.0	2,000
perform® 550	S550MC	–	–	3.0 – 12.0[4]	1,630[4]
perform® 600	S600MC	–	–	3.0 – 12.0[4]	1,750[4]
perform® 650	S650MC	–	–	3.0 – 12.0[4]	1,750[4]
perform® 700	S700MC	–	–	3.0 – 12.0[4]	1,750[4]
Thermomechanically rolled structural steel					
DIN EN 10025-4					
Steel grade designation	Standard designation				
XABO® 355 (T)	S355M/ML	12.0 – 35.0	3,600	○	○
S420M/ML	S420M/ML	12.0 – 35.0	3,600	○	○
XABO® 460 (T)	S460M/ML	12.0 – 35.0	3,600	○	○
XABO® 500 (T)	Special mill grade	12.0 – 35.0	3,600	○	○
High-strength quenched and tempered structural steel					
DIN EN 10025-6					
Steel grade designation	Standard designation				
N-A-XTRA® 550	S550QL1	4.0 – 100.0	3,300	3.0 – 10.0	2,000
N-A-XTRA® M 550	S550QL	4.0 – 120.0	3,300	3.0 – 10.0	2,000
N-A-XTRA® 620	S620QL1	4.0 – 100.0	3,300	3.0 – 10.0	2,000
N-A-XTRA® M 620	S620QL	4.0 – 120.0	3,300	3.0 – 10.0	2,000
N-A-XTRA® 700	S690QL1	4.0 – 100.0	3,300	3.0 – 10.0	2,000
N-A-XTRA® M 700	S690QL	4.0 – 120.0	3,300	3.0 – 10.0	2,000
XABO® 890	S890QL	4.0 – 100.0	3,300	3.0 – 10.0	2,000
XABO® 960	S960QL	4.0 – 100.0	3,300	3.0 – 10.0	2,000
XABO® 1100	Special mill grade	4.0 – 40.0	3,300	3.0 – 10.0	2,000
XABO® 1300	Special mill grade	4.0 – 10.0[4]	3,300	○	○

Steel for laser cutting

		Four-high mill plates		Cut-to-length plates	
		Thickness [1] from _ to in mm	Width [1] max. in mm	Thickness [1] from _ to in mm	Width [1] max. in mm
According to DIN EN 10111					
Steel grade designation	Standard designation				
DD11 LC	DD11	–	–	3.0 – 10.0	2,000
DD12 LC	DD12	–	–	3.0 – 10.0	2,000
DD13 LC	DD13	–	–	3.0 – 10.0	2,000
DD14 LC	DD14	–	–	3.0 – 10.0	2,000
According to DIN EN 10025-2					
Steel grade designation	Standard designation				
S235 LC	S235	8.0 – 20.0	3,000	3.0 – 10.0	2,000
S275 LC	S275	8.0 – 20.0	3,000	3.0 – 10.0	2,000
S355 LC	S355	8.0 – 20.0	3,000	3.0 – 10.0	2,000
According to DIN EN 10149-2					
Steel grade designation	Standard designation				
perform® 315 LC	S315MC	–	–	3.0 – 10.0	2,000
perform® 355 LC	S355MC	○	○	3.0 – 10.0	2,000
perform® 380 LC	Special mill grade	○	○	3.0 – 10.0	2,000
perform® 420 LC	S420MC	–	–	3.0 – 8.0	2,000

Pipeline steel

		Four-high mill plates		Cut-to-length plates	
		Thickness [1] from _ to in mm	Width [1] max. in mm	Thickness [1] from _ to in mm	Width [1] max. in mm
DIN EN ISO 3183 / API 5L					
Steel grade designation	Standard designation				
Grade A	Grade A	○	○	○	○
Grade B	Grade B	○	○	○	○
X42	X42	○	○	○	○
X52	X52	○	○	○	○
X60	X60	○	○	○	○
X65	X65	○	○	○	○
X70	X70	○	○	○	○
DIN EN 10208-2					
Steel grade designation	Standard designation				
L245	L245	○	○	○	○
L290	L290	○	○	○	○
L360	L360	○	○	○	○
L415	L415	○	○	○	○
L450	L450	○	○	○	○
L485	L485	○	○	○	○

Steel for pressure vessels

		Four-high mill plates		Cut-to-length plates	
		Thickness [1] from _ to in mm	Width [1] max. in mm	Thickness [1] from _ to in mm	Width [1] max. in mm
Steel for pressure vessels, non-alloy and alloy, specific elevated temperature properties					
DIN EN 10028-2					
Steel grade designation	Standard designation				
P235GH	P235GH	○	○	3.0 – 15.0	2,000
P265GH	P265GH	4.0 – 125.0	3,600	3.0 – 15.0	2,000
P295GH	P295GH	4.0 – 125.0	3,600	3.0 – 15.0	2,000
P355GH	P355GH	4.0 – 125.0	3,600	3.0 – 15.0	2,000
16Mo3	16Mo3	4.0 – 100.0	3,600	3.0 – 13.0	2,000
13CrMo4-5	13CrMo4-5	4.0 – 100.0	3,600	○	○
13CrMoSi5-5	13CrMoSi5-5	4.0 – 100.0	3,600	○	○
10CrMo9-10	10CrMo9-10	4.0 – 100.0	3,600	○	○
12CrMo9-10	12CrMo9-10	4.0 – 100.0	3,600	○	○
WB36	15NiCuMoNb5-6-4	○	○	○	○

Steel for pressure vessels_continued

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from_to in mm	Width[1] max. in mm	Thickness[1] from_to in mm	Width[1] max. in mm
Steel for pressure vessels, normalized					
DIN EN 10028-3					
Steel grade designation	Standard designation				
P275N/NH	P275N/NH	4.0–125.0	3,600	○	○
(NL1/NL2)	(NL1/NL2)	(4.0–100.0)	3,600	–	–
P355N/NH	P355N/NH	4.0–125.0	3,600	3.0–15.0	2,000
(NL1/NL2)	(NL1/NL2)	(4.0–100.0)	3,600	–	–
P460N/NH	P460N/NH	4.0–125.0	3,600	–	–
(NL1/NL2)	(NL1/NL2)	(4.0–100.0)	3,600	–	–
VdTÜV material data sheet 531					
Steel grade designation	Standard designation				
P460/630N/NL	Special mill grade	4.0–20.0	3,600	–	–
Steel for pressure vessels, with specified low-temperature properties					
DIN EN 10028-4					
Steel grade designation	Standard designation				
13MnNi6-3	13MnNi6-3	4.0–50.0	3,600	–	–
12Ni14	12Ni14	4.0–50.0	3,300	–	–
X12Ni5	X12Ni5	4.0–50.0	3,300	–	–
X7Ni9	X7Ni9	4.0–50.0	3,300	–	–
X8Ni9	X8Ni9	4.0–50.0	3,300	–	–

Steel for pressure vessels_continued

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from_to in mm	Width[1] max. in mm	Thickness[1] from_to in mm	Width[1] max. in mm
Thermomechanically rolled pressure vessel steel					
DIN EN 10028-5					
Steel grade designation	Standard designation				
P355M/ML1/ML2	P355M/ML1/ML2	12.0–35.0	3,600	○	○
P420M/ML1/ML2	P420M/ML1/ML2	12.0–35.0	3,600	○	○
P460M/ML1/ML2	P460M/ML1/ML2	12.0–35.0	3,600	○	○
Quenched and tempered steel for pressure vessels					
DIN EN 10028-6					
Steel grade designation	Standard designation				
P355Q/QH/QL1/QL2	P355Q/QH/QL1/QL2	4.0–100.0	3,300	○	○
P460Q/QH/QL1/QL2	P460Q/QH/QL1/QL2	4.0–100.0	3,300	○	○
P500Q/QH/QL1/QL2	P500Q/QH/QL1/QL2	4.0–100.0	3,300	○	○
P690Q/QH/QL1/QL2	P690Q/QH/QL1/QL2	4.0–100.0	3,300	3.0–10.0	2,000
Pressure vessel steel for welded gas cylinders					
DIN EN 10120					
Steel grade designation	Standard designation				
P265NB	P265NB	–	–	○	○
P310NB	P310NB	–	–	3.0–5.0	2,000
P355NB	P355NB	–	–	3.0–5.0	2,000
Pressure vessel steel for simple vessels					
DIN EN 10207					
Steel grade designation	Standard designation				
P235S	P235S	4.0–60.0	3,600	3.0–15.0	2,000
P265S	P265S	4.0–60.0	3,600	3.0–15.0	2,000

Steel for pressure vessels_continued

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from_to in mm	Width[1] max. in mm	Thickness[1] from_to in mm	Width[1] max. in mm
Steel for pressure vessels					
ASTM/ASME					
Steel grade designation	Standard designation				
(S)A 203 Gr.D/E/F	(S)A 203 Gr.D/E/F	○	○	○	○
(S)A 285 Gr.B/C	(S)A 285 Gr.B/C	4.0–85.0	3,600	3.0–13.0	2,000
(S)A 299 Gr.A	(S)A 299 Gr.A	4.0–40.0[4]	3,600	3.0–13.0	2,000
(S)A 302 Gr.B/C	(S)A 302 Gr.B/C	○	○	○	○
(S)A 353	(S)A 353	○	○	○	○
(S)A 387 Gr.11 Cl.2	(S)A 387 Gr.11 Cl.2	4.0–85.0	3,600	○	○
(S)A 387 Gr.12 Cl.2	(S)A 387 Gr.12 Cl.2	4.0–85.0	3,600	○	○
(S)A 387 Gr.22 Cl.2	(S)A 387 Gr.22 Cl.2	4.0–85.0	3,600	○	○
(S)A 516 Gr.60/65/70	(S)A 516 Gr.60/65/70	4.0–85.0	3,600	3.0–13.0	2,000
(S)A 517 Gr.B	(S)A 517 Gr.B	○	○	–	–
(S)A 517 Gr.F	(S)A 517 Gr.F	4.0–65.0	3,300	–	–
(S)A 517 Gr.Q	(S)A 517 Gr.Q	○	○	–	–
(S)A 537 Cl.1	(S)A 537 Cl.1	4.0–85.0	3,600	3.0–13.0	2,000
(S)A 537 Cl.2	(S)A 537 Cl.2	4.0–85.0	3,300	–	–
(S)A 553 Type 1	(S)A 553 Type 1	4.0–50.0	3,300	3.0–13.0	2,000
(S)A 724 Gr.B	(S)A 724 Gr.B	4.0–10.0	3,300	–	–
(S)A 738 Gr.B	(S)A 738 Gr.B	○	○	–	–
Steel for pressure vessels, HIC-resistant					
DIN EN 10028-2, DIN EN 10028-3					
Steel grade designation	Standard designation				
P275NH/NL1/NL2 HIC-resistant	P275NH/NL1/NL2 HIC-resistant	○	○	–	–
P295GH HIC-resistant	P295GH HIC-resistant	○	○	–	–
X-COR®	P355NH/NL1/NL2 HIC-resistant	○	○	–	–
ASTM/ASME					
Steel grade designation	Standard designation				
X-COR®	(S)A 516 Gr.60/65/70 HIC-resistant	○	○	–	–
(S)A 537 Cl.1 HIC-resistant	(S)A 537 Cl.1 HIC-resistant	○	○	–	–

Wear-resistant steel

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from _ to in mm	Width[1] max. in mm	Thickness[1] from _ to in mm	Width[1] max. in mm
Wear-resistant special structural steel, normalized					
Steel grade designation	Standard designation				
XAR® 300	Special mill grade	4.0 – 50.0	3,600	–	–
Wear-resistant special structural steel, quenched or quenched and tempered					
Steel grade designation	Standard designation				
XAR® HT	Special mill grade	40.0 – 100.0	3,300	–	–
XAR® 400 W	Special mill grade	4.0 – 40.0	3,300	–	–
XAR® 400	Special mill grade	4.0 – 100.0	3,300	3.0 – 6.0	1,500
XAR® 450	Special mill grade	4.0 – 100.0	3,300	–	–
XAR® 500	Special mill grade	4.0 – 100.0	3,300	–	–
XAR® 600	Special mill grade	4.0 – 50.0	3,300	–	–
Heat-treatable steel, non-alloyed					
DIN EN 10083-2					
Steel grade designation	Standard designation				
C35 (E/R)	C35 (E/R)	○	○	–	–
C45 (E/R)	C45 (E/R)	○	○	–	–
C60 (E/R)	C60 (E/R)	○	○	–	–
Heat-treatable steel, alloyed / boron steel					
DIN EN 10083-3					
Steel grade designation	Standard designation				
42CrMo4	42CrMo4	4.0 – 100.0	3,500	–	–
51CrV4	51CrV4	4.0 – 35.0	3,500	3.0 – 10.0	1,600
TBL	27MnCrB5-2	4.0 – 100.0	3,600	3.0 – 15.0	1,770
TBL PLUS	35MnB5	○	○	3.0 – 15.0	1,770
30MnB5	30MnB5	○	○	○	○
Case hardening steel					
DIN EN 10084					
Steel grade designation	Standard designation				
16MnCr5	16MnCr5	5.0 – 125.0	3,600	–	–
20MnCr5	20MnCr5	4.0 – 125.0	3,600	–	–

Wear-resistant steel _ continued

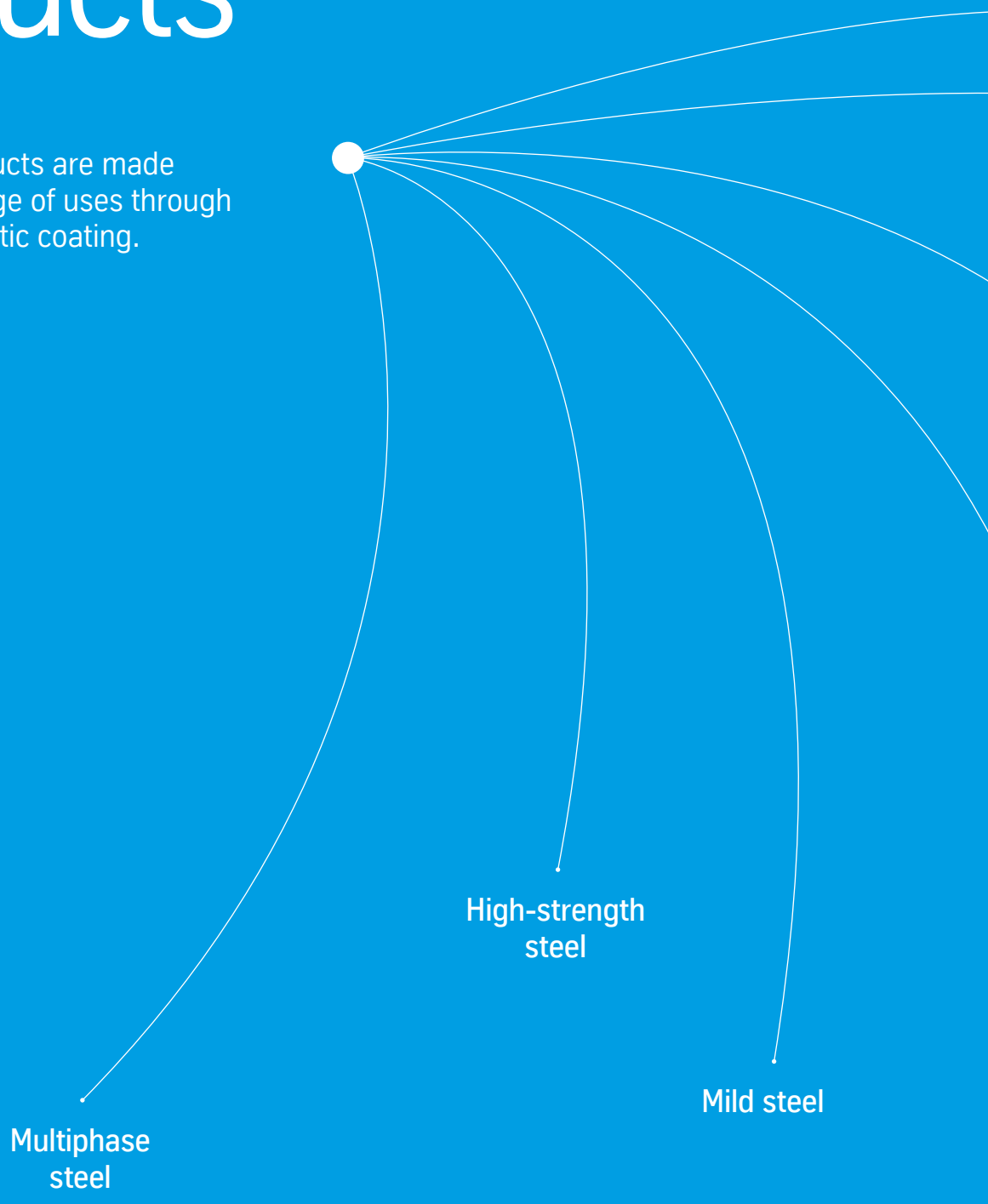
		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from _ to in mm	Width[1] max. in mm	Thickness[1] from _ to in mm	Width[1] max. in mm
Hot-rolled steel for quenched and tempered springs					
DIN EN 10089					
Steel grade designation	Standard designation				
52CrMoV4	52CrMoV4	○	○	–	–

Ballistic steel

		Four-high mill plates		Cut-to-length plates	
		Thickness[1] from _ to in mm	Width[1] max. in mm	Thickness[1] from _ to in mm	Width[1] max. in mm
Ballistic steel for civil applications					
Steel grade designation	Standard designation				
SECURE 400	Special mill grade	4.0 – 50.0[4]	3,300	3.0 – 9.0	1,935
SECURE 450	Special mill grade	4.0 – 20.0	3,300	3.0 – 9.0	1,935
SECURE 500	Special mill grade	4.0 – 50.0[4]	3,300	3.0 – 9.0	1,935
SECURE 600	Special mill grade	4.0 – 40.0	2,500	4.0 – 9.0	1,935

Sheet and coated products

Cold-rolled flat products are made ready for a wide range of uses through hot-dip and electrolytic coating.



Your contacts

Automotive
P: +49 203 52-41095

Industry
P: +49 203 52-41048
F: +49 203 52-26667

thyssenkrupp Steel Europe AG
Kaiser-Wilhelm-Strasse 100
47166 Duisburg, Germany
Postal address:
47161 Duisburg, Germany

Customer Service Color
P: +49 2732 599-4578
F: +49 2732 599-4108

thyssenkrupp Steel Europe AG
Hammerstrasse 11
57223 Kreuztal, Germany

Higher-strength steel

Manganese-boron steel for hot forming

Structural steel

scalur®+Z

04

About our sheet.

Over 80% of our cold-rolled strip steels are finished with a variety of coatings. This creates products with excellent flatness, low layer thicknesses, high corrosion protection and good formability coupled with maximum strength – for instance with metallic coatings of pure zinc, zinc-iron or zinc-magnesium. It is also possible to combine different zinc-aluminum alloys to attain exceptional corrosion resistance, such as in the coating variants galfan® and galvalume®.

Additionally, we offer galvanized hot-rolled and cold-rolled material as well as special products made of hot-dip aluminized manganese-boron steel and special textures such as primetex®, which form the foundation for excellent painting results.

Production sites in Germany

Dortmund

Cold strip lines
Electrolytic coating lines
Hot-dip coating lines

Duisburg

Cold strip lines
Coil coating lines
Electrolytic coating lines
Hot-dip coating lines

Bochum

Cold strip lines
Electrolytic coating lines
Hot-dip coating lines

Finnentrop

Hot-dip coating lines

Kreuztal-Eichen

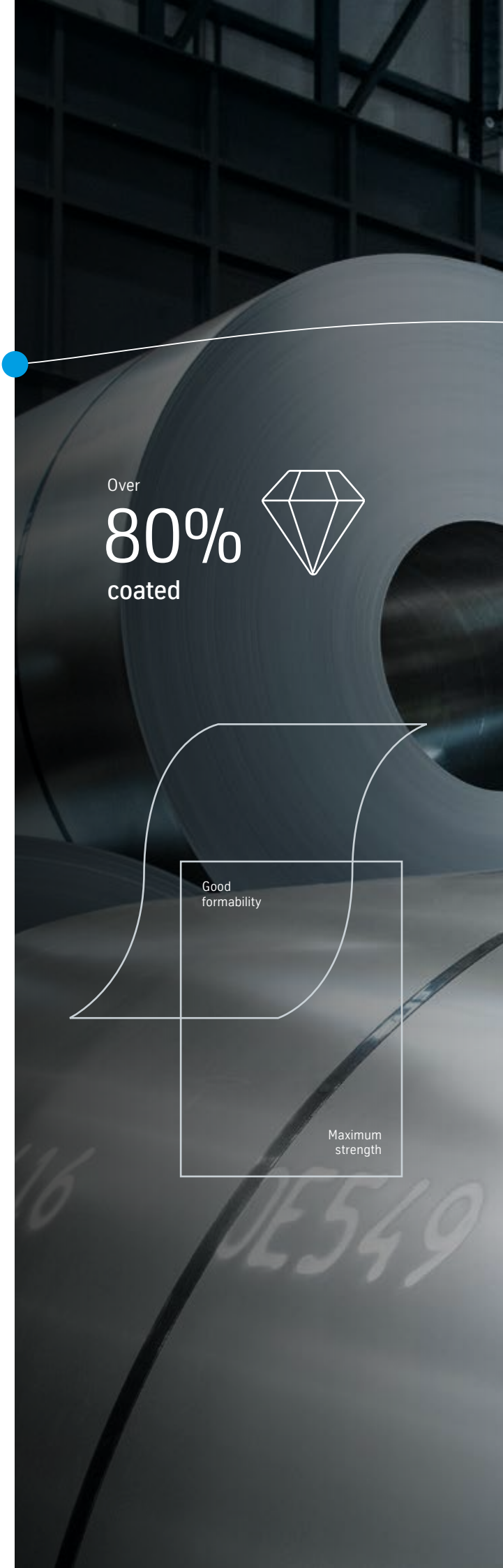
Coil coating lines
Hot-dip coating lines

Kreuztal-Ferndorf

Coil coating lines
Hot-dip coating lines

Other international sites

Sagunto, Spain



Coating spectrum

With more than ten coating lines, we are in the outstanding position of being able to offer the entire spectrum of metal and organic coatings.

Mild steel

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Deep-drawing steel									
DIN EN 10130, DIN EN 10152									
Steel grade designation	Standard designation								
DC01	DC01	●	●						
DC03	DC03	●	●						
DC04	DC04	◉	▣						
DC05	DC05	◉	▣						
DC06	DC06	◉	▣						
DC07	DC07	◉	▣						
DIN EN 10346									
Steel grade designation	Standard designation								
DX51D	DX51D			◉	◉	◉	●	●	●
DX52D	DX52D			◉	◉	◉	●	●	●
DX53D	DX53D			◉	◉	◉	●	●	○
DX54D	DX54D			▣	◉	▣	●	●	○
DX55D	DX55D						●		
DX56D	DX56D			▣	◉	▣	●	○	
DX57D	DX57D			▣	●	▣			
DX58D	Special mill grade			●					
VDA 239-100									
Steel grade designation	Standard designation								
CR1	CR1	●	●	●	●	●	●		
CR2	CR2	●	●	●	●	●	●		
CR3	CR3	◉	◉	▣	◉	▣	●		
CR4	CR4	◉	◉	▣	◉	▣	●		
CR5	CR5	◉	◉	▣	●	▣			
DIN EN 10346									
Steel grade designation	Standard designation								
lightprotect® AS DX52D	DX52D						●		
lightprotect® AS DX53D	DX53D						●		
lightprotect® AS DX54D	DX54D						●		
lightprotect® AS DX56D	DX56D						●		

Mild steel

Steel for enameling processes

DIN EN 10209

Steel grade designation	Standard designation	Surface finishing -/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
DC03ED	DC03ED	●							
DC04ED	DC04ED	●							
DC01EK	DC01EK	●							
DC04EK	DC04EK	●							
DC06EK	DC06EK	●							
DC06EK Plus	Special mill grade	●							

Structural steel

Cold-rolled structural steel

DIN 1623

Steel grade designation	Standard designation	Surface finishing -/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
S215G	S215G	●	●						
S245G	S245G	●	●						
S325G	S325G	●	●						

Hot-dip coated structural steel

DIN EN 10346

Steel grade designation	Standard designation	Surface finishing -/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
S220GD	S220GD			●	●	●	●	●	●
S250GD	S250GD			●	●	●	●	●	●
S280GD	S280GD			●	●	●	●	●	●
S320GD	S320GD			●	●	●	●	●	●
S350GD	S350GD			●	●	●	●	●	●
S390GD*	S390GD*			●	●	●	●	●	●
S420GD*	S420GD*			●					
S450GD*	S450GD*			●					

*The quality grades are generally approved by the building inspection authorities in the 0.75 – 4.00 mm thickness range and with zinc films of up to 275 g/m².

Higher-strength steel

	Comparable grade		Surface finishing							
			-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Micro-alloy steel										
DIN EN 10152, DIN EN 10268, DIN EN 10346 VDA 239-100										
Steel grade designation	DIN EN	VDA								
MHZ® 200	–	CR210LA	●	●	●	●	●	●	●	●
MHZ® 260	HC260LA/HX260LAD	CR240LA	●	●	●	●	●	●	●	●
MHZ® 300	HC300LA/HX300LAD	CR270LA	●	●	●	●	●	●	●	●
MHZ® 340	HC340LA/HX340LAD	CR300LA	●	●	●	●	●	●	●	●
MHZ® 380	HC380LA/HX380LAD	CR340LA	●	●	●	●	●	●	●	●
MHZ® 420	HC420LA/HX420LAD	CR380LA	●	●	●	●	●	●	●	●
MHZ® 460	HC460LA/HX460LAD	CR420LA			●		●			
MHZ® 500	HC500LA/HX500LAD	CR460LA			●		●			
Work hardening steel										
Steel grade designation										
WHZ 300	–	–	◉	◉	◉	●				
WHZ 420	–	–	●	●	●	●				
Higher-strength steel										
Steel grade designation										
EHZ® 550	–	–			○		●			

Higher-strength steel

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
High-strength IF steel									
DIN EN 10152, DIN EN 10268, DIN EN 10346									
Steel grade designation	Standard designation								
HX 160	–/HX160YD	◉	◉	◉	◉	◉			
HX 180	HC180Y/HX180YD	◉	▣	▣	◉	▣			
HX 220	HC220Y/HX220YD	◉	▣	▣	◉	▣		●	
HX 260	HC260Y/HX260YD	◉	◉	◉	◉	◉			
HX 280	–			●					
VDA 239-100									
Steel grade designation	Standard designation								
CR160IF	CR160IF	◉	◉	◉	●				
CR180IF	CR180IF	◉	▣	▣	◉	▣			
CR210IF	CR210IF	◉	▣	▣	◉	▣			
CR240IF	CR240IF	◉	◉	◉	◉	◉			
Bake hardening steel									
DIN EN 10152, DIN EN 10268, DIN EN 10346									
Steel grade designation	Standard designation								
BHZ 180	HC180B/HX180BD	◉	◉	◉	◉	▣			
BHZ 220	HC220B/HX220BD	◉	◉	◉	◉	▣			
BHZ 260	HC260B/HX260BD	◉	◉	◉	◉	◉			
BHZ 300	HC300B/HX300BD	●	●	●	●				
VDA 239-100									
Steel grade designation	Standard designation								
CR180BH	CR180BH	◉	◉	◉	◉	▣			
CR210BH	CR210BH	◉	◉	◉	◉	▣			
CR240BH	CR240BH	◉	◉	◉	◉	◉			
High-strength stretch-forming steel									
DIN EN 10152, DIN EN 10268									
Steel grade designation	Standard designation								
HSZ 220	HC220I	◉	◉						

scalur®+Z

		Thickness[1] from_to in mm	Width[1] from_to in mm
Hot-dip galvanized product with very tight thickness tolerances			
DIN EN 10346			
Steel grade designation	Standard designation		
scalur®+Z DX51D	DX51D	1.5 – 4.0	900 – 1,550
scalur®+Z DX52D	DX52D	1.5 – 4.0	900 – 1,550
scalur®+Z S220GD	S220GD	1.5 – 4.0	900 – 1,550
scalur®+Z S250GD	S250GD	1.5 – 4.0	900 – 1,550
scalur®+Z S280GD	S280GD	1.5 – 4.0	900 – 1,550
scalur®+Z S320GD	S320GD	1.5 – 4.0	900 – 1,550
scalur®+Z S350GD	S350GD	1.5 – 4.0	900 – 1,550
scalur®+Z S390GD	S390GD	1.5 – 4.0	900 – 1,500
scalur®+Z S420GD	S420GD	1.5 – 4.0	900 – 1,500
scalur®+Z HX260LAD	HX260LAD	1.5 – 4.0	900 – 1,550
scalur®+Z HX300LAD	HX300LAD	1.5 – 4.0	900 – 1,550
scalur®+Z HX340LAD	HX340LAD	1.5 – 4.0	900 – 1,550
scalur®+Z HX380LAD	HX380LAD	1.5 – 4.0	900 – 1,550
scalur®+Z HX420LAD	HX420LAD	1.5 – 4.0	900 – 1,550
scalur®+Z HX460LAD	HX460LAD	1.8 – 3.0	900 – 1,500
scalur®+Z HX500LAD	HX500LAD	1.8 – 3.0	900 – 1,500
scalur®+Z HDT760C	HDT760C	1.8 – 3.0	900 – 1,325

Modern multiphase steels

Dual-phase steel

DIN EN 10152, DIN EN 10338, DIN EN 10346
VDA 239-100

Steel grade designation	Comparable grade: DIN EN	Comparable grade: VDA	Surface finishing: -/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS
DP-W® 300Y530T	–	–	●	●				
DP-W® 330Y580T	HDT580X	HR330Y580T-DP	●	●				
DP-W® 300Y580T	–	–	●					
DP-W® 700	–	–	●	●				
DP-K® 290Y490T	HCT490X	CR290Y490T-DP	◉	◉	●	◉	●	
DP-K® 330Y590T	HCT590X	CR330Y590T-DP	●	●	●	●	●	
DP-K® 330Y590T DH	–	–			●			
DP-K® 34/60 HF	–	–	●	●	●			
DP-K® 420Y590T	–	–			●			
DP-K® 440Y780T	HCT780X	CR440Y780T-DP			●			
DP-K® 440Y780T DH	–	CR440Y780T-DH			●			
DP-K® 590Y980T	HCT980X	CR590Y980T-DP			●	●		
DP-K® 60/98	–	–	●	●				
DP-K® 700Y980T	HCT980XG	CR700Y980T-DP	●	●	●	●		
DP-K® 780Y1180T	–	–			●			
DP-K® 900Y1180T	–	–	●					

Retained-austenite steel (TRIP steel)

DIN EN 10152, DIN EN 10338, DIN EN 10346
VDA 239-100

Steel grade designation	DIN EN	VDA	-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS
RA-K® 400Y690T	HCT690T	CR400Y690T-TR	●		●			

Modern multiphase steels

	Comparable grade		Surface finishing							
			-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Complex-phase steel										
DIN EN 10152, DIN EN 10338, DIN EN 10346 VDA 239-100										
Steel grade designation	DIN EN	VDA								
CP-W® 660Y760T	HDT760C	HR660Y760T-CP	●	●	●					
CP-W® 800	–	–	●	●	●					
CP-W® 1000	–	–	●	●						
CP-K® 570Y780T	HCT780C	CR570Y780T-CP	●	●						
CP-K® 900Y1180T	–	CR900Y1180T-CP	●							
Ferrite-bainite-phase steel										
DIN EN 10152, DIN EN 10338, DIN EN 10346 VDA 239-100										
Steel grade designation	DIN EN	VDA								
FB-W® 300Y450T	HDT450F	HR300Y450T-FB	●	●	●					
FB-W® 460Y580T	HDT580F	HR440Y580T-FB	●	●	●					
Martensite-phase steel										
DIN EN 10152, DIN EN 10338 VDA 239-100										
Steel grade designation	DIN EN	VDA								
MS-W® 900Y1180T	HDT1180G1	HR900Y1180T-MS	●							
MS-W® 900Y1180T	–	–		●						

Manganese-boron steel for hot forming

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Manganese-boron steel for hot forming									
According to VDA 239-100									
Steel grade designation	Standard designation								
MBW® 500	–						●		
MBW® 600	–						●		
MBW® 1500	–						●		
MBW-K® 1500	–	●							
MBW-K® 1900	–	●							

Composite material for hot forming

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Composite material for hot forming									
According to VDA 239-100									
Steel grade designation	Standard designation								
tribond® 1200	–						●		
tribond® 1400	–						●		

Surface finishing

		Nominal coating per side		Single spot test		Single spot test	
		Thickness [µm]	Weight [g/m²]	Weight [g/m²]		Thickness [µm]	Weight [g/m²]
Electrolytically galvanized sheet ZE/EG							
	According to DIN EN				**According to VDA 239-100**		
Position/Type	Designation				Designation		
					EG12/12	1.7–4.5	12–32
	ZE25/25	2.5/2.5	18/18	12/12	EG18/18	2.5–5.4	18–38
Both sides same	ZE50/50	5.0/5.0	36/36	29/29	EG29/29	4.1–6.9	29–49
	ZE75/75	7.5/7.5	54/54	47/47	EG53/53	7.5–10.0	53–73
	ZE100/100	10.0/10.0	72/72	65/65	EG70/70	9.9–13.0	70–90
	ZE25/0	2.5/0.0	18/0	12/0			
One-side	ZE50/0	5.0/0.0	36/0	29/0			
	ZE75/0	7.5/0.0	54/0	47/0			
	ZE100/0	10.0/0.0	72/0	65/0			
	ZE50/25	5.0/2.5	36/18	29/12			
	ZE75/25	7.5/2.5	54/18	47/12			
Two sides different	ZE75/50	7.5/5.0	54/36	47/29			
	ZE100/50	10.0/5.0	72/36	65/29			
	ZE100/75	10.0/7.5	72/36	65/47			

Surface finishing _ continued

Hot-dip coated sheet

	Z/GI		ZF/GA		ZM		AS		ZA	AZ
	DIN EN	**VDA 239-100**	**DIN EN**	**VDA 239-100**	**DIN EN**	**VDA 239-100**	**DIN EN**	**VDA 239-100**	**DIN EN**	**DIN EN**
					70	30/30				
					80					
	100	40/40	100	40/40	100	40/40			95	
			120	50/50	120	50/50				70
					130		50			
	140	60/60			140		60		130	80
					150					
					185					
Coating weight in g/m²*	200	85/85			200		80	30/30	185	100
									200	130
	225									
							100			
	275				275		120	45/45	255	150
									300	165
					300					
	350				350[5]		150			185
	450[5]						200			
	600[5]						250			

* The Triple Spot Test applies to DIN EN and the Single Spot Test applies to VDA 239-100.
Departing from the standards, a Triple Spot Test or Single Spot Test can be ordered according to DIN EN or VDA 239-100.

Surface treatments

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
U	Without surface treatment	●	●	●	●	●	●	●	●
O	Oiled	●	●	●	●	●	●	●	●
C	Chemically passivated		●	●		●	●	●	●
CO	Chemically passivated and oiled		●	●		●	●	●	●
P	Phosphated		●						
PO	Phosphated and oiled		●						
PC	Phosphated and chemically passivated		●						
PCO	Phosphated, chemically passivated and oiled		●						
S	Sealed			●		●	●	●	●
JAZ	JAZ®				●				

Further forming assistance on request.

Sheet _ surface finish _ surface type

	Surface finish				Surface type	
	bright	semi-bright	normal	rough		
Cold-rolled flat products						
UC Uncoated	●	●	●	●	A	Normal surface
					U	Unexposed (interior parts)
					B	Best surface
					E	Exposed (exterior parts)
ZE/EG Electrolytically coated	●	●	●	●	A	Normal surface
					U	Unexposed (interior parts)
					B	Best surface
					E	Exposed (exterior parts)
					primetex®	

A/B/C according to DIN EN.
U/E according to VDA 239-100.

Sheet _ surface finish _ surface type _ continued

	Surface finish		Surface type	
	normal spangle [N]	minimized spangle [M]		
Hot-dip coated strip and sheet				
Z/GI Hot-dip galvanized	●	●	A	Normal surface
			B	Improved surface
			U	Unexposed (interior parts)
			C	Best surface
			E	Exposed (exterior parts)
			primetex®	
ZF/GA Galvannealed			A	Normal surface
			B	Improved surface
			U	Unexposed (interior parts)
			C	Best surface
			E	Exposed (exterior parts)
ZM Ecoprotect®			A	Normal surface
			B	Improved surface
			U	Unexposed (interior parts)
			C	Best surface
			E	Exposed (exterior parts)
			primetex®	
AS Aluminum-silicon coated			A	Normal surface
			B	Improved surface
			U	Unexposed (interior parts)
			C	Best surface
			E	Exposed (exterior parts)
ZA galfan®			A	Normal surface
			B	Improved surface
			U	Unexposed (interior parts)
			C	Best surface
			E	Exposed (exterior parts)
AZ galvalume®			A	Normal surface
			B	Improved surface
			U	Unexposed (interior parts)

A/B/C according to DIN EN.
U/E according to VDA 239-100.

Sheet _ hot-dip galvanized

	Thickness from _ to in mm	Width from _ to in mm	Length from _ to in mm
Hot-dip galvanized corrugated sheet			
Tolerances according to DIN EN 59231			
Profile 18 / 76	0.60 – 2.00	836	max. 4,000
Profile 27 / 100	0.60 – 2.00	800	max. 4,000
Hot-dip galvanized roofing sheet			
Tolerances regarding dimensions and shape according to DIN EN 59231			
Sheet	0.60 – 1.00	850	1,000 – 3,000
Hot-dip galvanized narrow strip galvanized Z150 – Z500			
Tolerances according to DIN EN 10111, DIN EN 10025 Shape tolerances according to DIN EN 10051			
Strip	1.50 – 6.00	15 – 200	–
Bars	1.50 – 6.00	15 – 120	500 – 7,500

The coatings Z150 – Z500 relate to the one-side product.

Sheet _ delivery forms and dimensions

	Thickness[4] from _ to in mm	Width[4]* from _ to in mm	Length from _ to in mm
Cold-rolled			
Tolerances according to DIN EN 10131			
Strip	0.40 – 4.00	600 – 1,950	–
Sheet	0.40 – 4.00	600 – 1,800	500 – 6,500
Slit strip	0.40 – 4.00	20 – 600	–
Electrolytically coated ZE / EG Zinc			
Tolerances according to DIN EN 10131			
Strip	0.40 – 3.00	600 – 1,950	–
Sheet	0.40 – 3.00	600 – 1,800	500 – 6,500
Slit strip	0.40 – 3.00	20 – 600	–
Hot-dip coated Z / GI Zinc			
Tolerances according to DIN EN 10143			
Strip	0.30 – 4.00	600 – 1,950	–
Sheet	0.30 – 4.00	600 – 1,800	500 – 6,000
Slit strip	0.30 – 4.00	20 – 600	–
Hot-dip coated ZF / GA Galvannealed			
Tolerances according to DIN EN 10143			
Strip	0.50 – 2.60	600 – 1,950	–
Sheet	0.50 – 2.60	600 – 1,800	500 – 6,000
Slit strip	0.50 – 2.60	20 – 600	–

* Depending on the steel grade and thickness.

Sheet _ delivery forms and dimensions _ continued

	Thickness[4] from _ to in mm	Width[4]* from _ to in mm	Length from _ to in mm
Hot-dip coated ZA galfan®			
Tolerances according to DIN EN 10131			
Strip	0.40 – 3.00	700 – 1,600	–
Sheet	0.40 – 3.00	700 – 1,600	500 – 6,000
Slit strip	0.40 – 3.00	20 – 600	–
Hot-dip coated AZ galvalume®			
Tolerances according to DIN EN 10131			
Strip	0.40 – 2.00	700 – 1,525	–
Sheet	0.40 – 2.00	700 – 1,525	500 – 6,000
Slit strip	0.40 – 2.00	20 – 600	–
Aluminum-silicon coated AS**			
Tolerances according to DIN EN 10143			
Strip	0.30 – 3.00	600 – 1,600	–
Sheet	0.30 – 3.00	600 – 1,600	500 – 6,000
Slit strip	0.30 – 3.00	20 – 600	–
Hot-dip coated ZM Ecoprotect®			
Tolerances according to DIN EN 10143			
Strip	0.30 – 3.00	600 – 1,650	–
Sheet	0.30 – 3.00	600 – 1,650	500 – 6,000
Slit strip	0.30 – 3.00	20 – 600	–

*Depending on the steel grade and thickness.
**lightprotect® AS can be supplied in thicknesses ranging from 0.26 to 0.39 mm.

Organically coated strip and sheet

Steel with finished surface in a broad range of grades that makes elaborate, expensive batch coating unnecessary.

Your contacts

Industry

Customer Service Color
P: +49 2732 599-4578
F: +49 2732 599-4108

thyssenkrupp Steel Europe AG
Hammerstrasse 11
57223 Kreuztal, Germany

Automotive
P: +49 203 52-41095

thyssenkrupp Steel Europe AG
Kaiser-Wilhelm-Strasse 100
47166 Duisburg, Germany
Postal address:
47161 Duisburg, Germany

pladur®

05

About our organic coated strip and sheet.

With our continuously growing portfolio of organic coated strip and sheet, we cover an enormous range of applications in a wide variety of industries. Depending on the requirement profile, our pladur® coated products can be equipped with a wide range of properties: those of being abrasion-proof, wear-resistant, insensitive to specific aggressive substances, stain-resistant and many more.

There are also no limits to the visual impact of the surface. Along with the colors in our reflections One collection and virtually all colors in the RAL and NSC color ranges, we can also realize wood or stone finishes as well as metallic ones. In addition, the use of pre-painted steel presents major cost advantages in many industries.

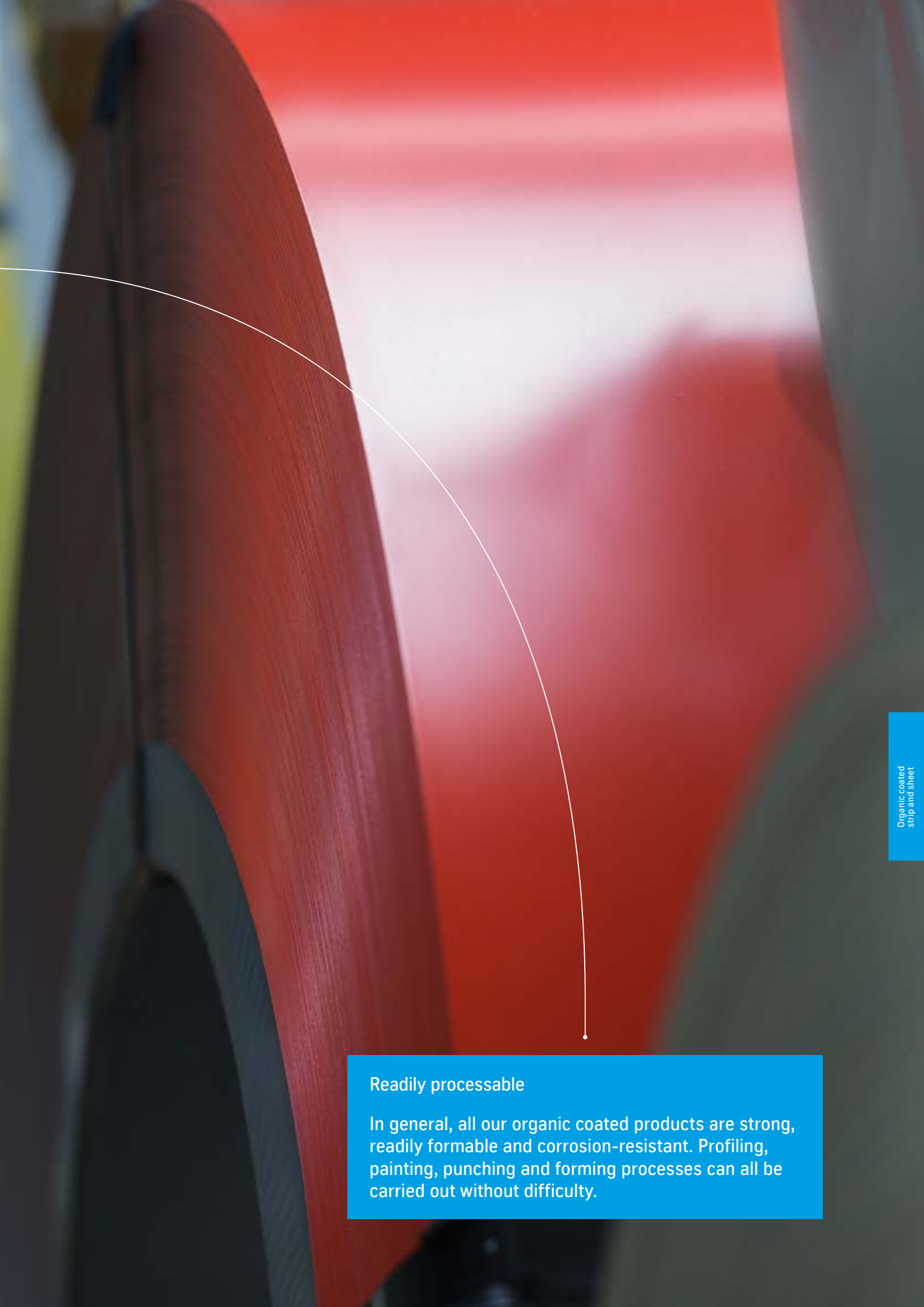
Production sites in Germany

Duisburg
Coil coating lines

Kreuztal-Ferndorf
Coil coating lines

Kreuztal-Eichen
Coil coating lines

All our coil-coated products are produced on three modern coil coating lines with a variety of metallic substrates and paints, and liquid or laminate coatings.



Readily processable

In general, all our organic coated products are strong, readily formable and corrosion-resistant. Profiling, painting, punching and forming processes can all be carried out without difficulty.

The pladur® family

pladur® Aesthetic
pladur® Aesthetic Print
pladur® Anti Condensate
pladur® Basic
pladur® Cool
pladur® Daylight
pladur® Decor
pladur® Deluxe
pladur® Durable
pladur® Flexible
pladur® Impress
pladur® Indoor
pladur® Lotus
pladur® Lumen
pladur® Martitim
pladur® Metal Look
pladur® Multishell
pladur® Nonstick
pladur® Nonstick Plus
pladur® Note
pladur® Primed
pladur® Print
pladur® Prove
pladur® Relief Icecrystal
pladur® Relief Icecrystal Plus
pladur® Relief Stone
pladur® Relief Texture
pladur® Relief Wood
pladur® Resistant
pladur® Robust
pladur® Script
pladur® Shine
pladur® Smooth
pladur® Smooth Plus
pladur® Solid
pladur® Standing Seam
pladur® Stripes
pladur® Strong
pladur® Structured
pladur® Sunlight
pladur® Sunlight Plus
pladur® Thermosafe
pladur® Tough
pladur® Wrinkle
pladur® Wrinkle Plus

The reflections family

reflections Cinc
reflections One
reflections Pearl

Base material for pladur®

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Mild steel									
DIN EN 10130, DIN EN 10152, DIN EN 10346									
Steel grade designation	Standard designation								
DC01	DC01	●	●						
DC03	DC03	●	●						
DC04	DC04	●	●						
DC05	DC05	●	●						
DC06	DC06	●	●						
DX51D	DX51D			●		●	●	●	●
DX52D	DX52D			●		●	●	●	●
DX53D	DX53D			●		●	●	●	●
DX54D	DX54D			●		●	●	●	●
DX55D	DX55D						●		
DX56D	DX56D			●		●	●	●	
DX57D	DX57D			●		●	●	●	

Base material for pladur®

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Structural steel									
DIN EN 10346									
Steel grade designation	Standard designation								
S220GD	S220GD			●		●	●	●	●
S250GD	S250GD			●		●	●	●	●
S280GD	S280GD			●		●	●	●	●
S320GD	S320GD			●		●	●	●	●
S350GD	S350GD			●		●	●	●	●

Delivery forms and dimensions

	Thickness from_to in mm	Width from_to in mm	Length from_to in mm
Strip	0.30–3.00	600–1,650	
Sheet	0.30–3.00	600–1,650	450–6,000
Slit strip	0.40–3.00	20–600	

Special dimensions on request.

Base material for pladur®

	Coating material	Abbreviation
Coating type		
Liquid coatings	Polyester	SP
	Polyamide modified polyester	SP-PA
	Polyurethane	PUR
	Modified polyurethane with polyamide	PUR-PA
	High-durable polymer	HDP
	Polyvinylidene fluoride	PVDF
	Epoxy	EP
Laminate coatings	Polyvinyl chloride	PVC (F)
	Condensation-absorbing fiber fleece made of polyester cellulose	CA (F)
	Combined coating film/paint pladur®	PP
	Polyethylene terephthalate	PET

Electrical steel

Innovative, soft magnetic material for enhancing efficiency in energy transmission and distribution.

Electrical steel grain oriented (GO)

Electrical steel non oriented (NO)

Your contacts

Electrical Steel
P: +49 209 407 - 0
F: +49 209 407 - 50832

thyssenkrupp Electrical Steel GmbH
Kurt-Schumacher-Strasse 95
45881 Gelsenkirchen, Germany

Automotive

Sales NO
P: +49 234 508 - 51210
F: +49 234 508 - 51012

Technical Customer Service NO
P: +49 234 508 - 51210
F: +49 234 508 - 51012

thyssenkrupp Steel Europe AG
Production ElektroStrip Bochum
Castroper Strasse 228
44791 Bochum, Germany

06

About our electrical steel.

Our powercore® electrical steel is designed for extremely demanding efficiency requirements along the entire energy value chain. Grain oriented electrical steel, which is given a special grain structure in a complex production process, is used in transformers. Non oriented electrical steel is used in electric motors and devices as well as generators.

Production sites in Germany

Gelsenkirchen (GO)

Bochum (NO)

Other international sites

- Isbergues, France
- Nashik, India

Higher performance with the same energy consumption

Lower consumption of resources such as copper, oil and insulation materials

True bundles of energy

Electrical steels are used to generate, transmit, distribute and consume electrical energy. The magnetic properties of electrical steels have a major impact on the efficiency of electric machines. Our powercore products provide electric machines with extremely high efficiency ratings – which helps save resources and protect the environment. As high-tech electrical steels, they are characterized by excellent processing properties, outstanding magnetic properties and maximum energy efficiency.

Electrical steel (GO) – Conventional grades

		Thickness	Core loss						Polarization	
		mm [inch]	typical				guaranteed		typical	guaranteed
			at 50 Hz [W/kg]		at 60 Hz [W/lb]		at 50 Hz [W/kg]	at 60 Hz [W/lb]	800 [A/m]	800 [A/m]
			1.5 T	1.7 T	1.5 T	1.7 T	1.7 T	1.7 T	typ. T	min. T
DIN EN 10107										
Steel grade designation	Standard designation									
powercore® C 120-23	M120-23S	0.23 [0.009]	0.77	1.18	0.46	0.71	1.20	0.72	1.83	1.78
powercore® C 120-27	M120-27S	0.27 [0.011]	0.80	1.18	0.48	0.71	1.20	0.72	1.83	1.80
powercore® C 130-27	M130-27S	0.27 [0.011]	0.83	1.23	0.50	0.74	1.30	0.78	1.83	1.78
powercore® C 120-30	M120-30S	0.30 [0.012]	0.82	1.18	0.49	0.71	1.20	0.72	1.83	1.80
powercore® C 130-30	M130-30S	0.30 [0.012]	0.84	1.23	0.50	0.74	1.30	0.78	1.83	1.80
powercore® C 150-30	M150-30S	0.30 [0.012]	0.93	1.43	0.56	0.85	1.50	0.89	1.78	1.75
powercore® C 165-35	M165-35S	0.35 [0.014]	1.00	1.48	0.60	0.88	1.65	0.99	1.78	1.75

All grades may be delivered with laser domain refinement if not agreed otherwise.

Electrical steel (GO) – Highly permeable grades

		Thickness	Core loss						Polarization	
		mm [inch]	typical				guaranteed		typical	guaranteed
			at 50 Hz [W/kg]		at 60 Hz [W/lb]		at 50 Hz [W/kg]	at 60 Hz [W/lb]	800 [A/m]	800 [A/m]
			1.5 T	1.7 T	1.5 T	1.7 T	1.7 T	1.7 T	typ. T	min. T
DIN EN 10107										
Steel grade designation	Standard designation									
powercore® H 18*	Special mill grade	0.18 [0.007]	–	–	–	–	–	–	–	–
powercore® H 075-23 L	Special mill grade	0.23 [0.009]	0.55	0.74	0.33	0.44	0.75	0.45	1.91	1.88
powercore® H 080-23 L	Special mill grade	0.23 [0.009]	0.57	0.78	0.34	0.47	0.80	0.48	1.91	1.88
powercore® H 085-23 L	M85-23P	0.23 [0.009]	0.60	0.83	0.36	0.50	0.85	0.51	1.90	1.88
powercore® H 090-23	M90-23P	0.23 [0.009]	0.62	0.88	0.37	0.53	0.90	0.54	1.90	1.88
powercore® H 100-23	M100-23P	0.23 [0.009]	0.67	0.98	0.40	0.59	1.00	0.60	1.88	1.85
powercore® H 085-27 L	Special mill grade	0.27 [0.011]	0.63	0.83	0.38	0.50	0.85	0.51	1.91	1.88
powercore® H 090-27 L	M90-27P	0.27 [0.011]	0.65	0.88	0.39	0.53	0.90	0.54	1.91	1.88
powercore® H 095-27	M95-27P	0.27 [0.011]	0.68	0.93	0.41	0.56	0.95	0.57	1.91	1.88
powercore® H 100-27	M100-27P	0.27 [0.011]	0.71	0.98	0.43	0.59	1.00	0.60	1.89	1.88
powercore® H 110-27	M110-27P	0.27 [0.011]	0.76	1.08	0.46	0.65	1.10	0.66	1.89	1.88
powercore® H 100-30	M100-30P	0.30 [0.012]	0.72	0.98	0.44	0.59	1.00	0.60	1.91	1.88
powercore® H 105-30	M105-30P	0.30 [0.012]	0.75	1.03	0.45	0.62	1.05	0.63	1.91	1.88
powercore® H 110-30	M110-30P	0.30 [0.012]	0.77	1.08	0.46	0.65	1.10	0.66	1.90	1.88

*H 18 is suitable for distribution and power transformers at industrial frequencies as well as for devices running at medium frequencies.
L = Magnetic domain refined by laser scribing. Other grades may be delivered with laser domain refinement if not agreed otherwise.

Electrical steel (GO) – Dimensions

	Inside diameter [mm]	Width [mm]	Thickness [mm]
Full width	508	950 – 1,000	0.23
	508	950 – 1,000	0.27
	508	950 – 1,000	0.30
	508	950 – 1,000	0.35
Slit width	508	≥ 6.00	0.23
	508	≥ 6.00	0.27
	508	≥ 6.00	0.30
	508	≥ 6.00	0.35

Electrical steel (NO) – Standard grades fully finished

		Thickness	Density	Max. Core loss				Min. Polarization		
		[mm]	[kg/dm³]	[W/kg] at		[W/lb] at		[T] at		
				50 Hz		60 Hz		2,500	5,000	10,000
				1.5 T	1.0 T	1.5 T	1.0 T	[A/m]	[A/m]	[A/m]
DIN EN 10106										
Steel grade designation	Standard designation									
powercore® M235-35A	M235-35A	0.35	7.60	2.35	0.95	1.35	0.55	1.49	1.60	1.70
powercore® M250-35A	M250-35A	0.35	7.60	2.50	1.05	1.44	0.59	1.49	1.60	1.70
powercore® M270-35A	M270-35A	0.35	7.65	2.70	1.10	1.55	0.63	1.49	1.60	1.70
powercore® M300-35A	M300-35A	0.35	7.65	3.00	1.20	1.72	0.69	1.49	1.60	1.70
powercore® M330-35A	M330-35A	0.35	7.65	3.30	1.30	1.90	0.75	1.49	1.60	1.70
powercore® M250-50A	M250-50A	0.50	7.60	2.50	1.05	1.44	0.59	1.49	1.60	1.70
powercore® M270-50A	M270-50A	0.50	7.60	2.70	1.10	1.55	0.63	1.49	1.60	1.70
powercore® M290-50A	M290-50A	0.50	7.60	2.90	1.15	1.67	0.66	1.49	1.60	1.70
powercore® M310-50A	M310-50A	0.50	7.65	3.10	1.25	1.78	0.72	1.49	1.60	1.70
powercore® M330-50A	M330-50A	0.50	7.65	3.30	1.35	1.90	0.78	1.49	1.60	1.70
powercore® M350-50A	M350-50A	0.50	7.65	3.50	1.50	2.01	0.86	1.50	1.60	1.70
powercore® M400-50A	M400-50A	0.50	7.70	4.00	1.70	2.30	0.98	1.53	1.63	1.73
powercore® M470-50A	M470-50A	0.50	7.70	4.70	2.00	2.70	1.15	1.54	1.64	1.74
powercore® M530-50A	M530-50A	0.50	7.70	5.30	2.30	3.05	1.32	1.56	1.65	1.75
powercore® M600-50A	M600-50A	0.50	7.75	6.00	2.60	3.45	1.49	1.57	1.66	1.76
powercore® M700-50A	M700-50A	0.50	7.80	7.00	3.00	4.02	1.72	1.60	1.69	1.77
powercore® M800-50A	M800-50A	0.50	7.80	8.00	3.60	4.60	2.07	1.60	1.70	1.78
powercore® M940-50A	M940-50A	0.50	7.85	9.40	4.20	5.40	2.41	1.62	1.72	1.81
powercore® M310-65A	M310-65A	0.65	7.60	3.10	1.25	1.78	0.72	1.49	1.60	1.70
powercore® M330-65A	M330-65A	0.65	7.60	3.30	1.35	1.90	0.78	1.49	1.60	1.70
powercore® M350-65A	M350-65A	0.65	7.60	3.50	1.50	2.01	0.86	1.49	1.60	1.70
powercore® M400-65A	M400-65A	0.65	7.65	4.00	1.70	2.30	1.52	1.52	1.62	1.72
powercore® M470-65A	M470-65A	0.65	7.65	4.70	2.00	2.70	1.15	1.53	1.63	1.73
powercore® M530-65A	M530-65A	0.65	7.70	5.30	2.30	3.05	1.32	1.54	1.64	1.74
powercore® M600-65A	M600-65A	0.65	7.75	6.00	2.60	3.45	1.49	1.56	1.66	1.76
powercore® M700-65A	M700-65A	0.65	7.75	7.00	3.00	4.02	1.72	1.57	1.67	1.76
powercore® M800-65A	M800-65A	0.65	7.80	8.00	3.60	4.60	2.07	1.60	1.70	1.78
powercore® M1000-65A	M1000-65A	0.65	7.80	10.00	4.40	5.75	2.53	1.61	1.71	1.80
powercore® M600-100A	M600-100A	1.00	7.60	6.00	2.60	3.45	1.49	1.53	1.63	1.72
powercore® M700-100A	M700-100A	1.00	7.65	7.00	3.00	4.02	1.72	1.54	1.64	1.73
powercore® M800-100A	M800-100A	1.00	7.70	8.00	3.60	4.60	2.07	1.56	1.66	1.75
powercore® 940-100A	Special mill grade	1.00	7.80	9.40	4.20	5.40	2.41	1.58	1.68	1.78
powercore® M1000-100A	M1000-100A	1.00	7.80	10.00	4.40	5.75	2.53	1.58	1.68	1.76
powercore® M1300-100A	M1300-100A	1.00	7.80	13.00	5.80	7.47	3.33	1.60	1.70	1.78

Electrical steel (NO) – Highly permeable grades fully finished

		Thickness	Density	Max. Core loss				Min. Polarization		
		[mm]	[kg/dm³]	[W/kg] at		[W/lb] at		[T] at		
				50 Hz		60 Hz		2,500	5,000	10,000
				1.5 T	1.0 T	1.5 T	1.0 T	[A/m]	[A/m]	[A/m]
Steel grade designation	Standard designation									
powercore® 330-35AP	Special mill grade	0.35	7.65	3.30	1.30	1.90	0.75	1.55	1.64	1.76
powercore® 440-35AP	Special mill grade	0.35	7.80	4.40	2.10	2.53	1.21	1.62	1.71	1.82
powercore® 330-50AP	Special mill grade	0.50	7.65	3.30	1.35	1.90	0.78	1.75	1.67	1.79
powercore® 400-50AP	Special mill grade	0.50	7.70	4.00	1.70	2.30	0.98	1.61	1.70	1.81
powercore® 530-50AP	Special mill grade	0.50	7.80	5.30	2.30	3.05	1.32	1.65	1.74	1.84
powercore® 700-50AP	Special mill grade	0.50	7.85	7.00	3.00	4.02	1.72	1.68	1.76	1.87
powercore® 350-65AP	Special mill grade	0.65	7.60	3.50	1.50	2.01	0.86	1.57	1.67	1.79
powercore® 470-65AP	Special mill grade	0.65	7.75	4.70	2.20	2.70	1.26	1.61	1.70	1.81
powercore® 600-65AP	Special mill grade	0.65	7.80	6.00	2.60	3.45	1.49	1.67	1.75	1.86
powercore® 800-65AP	Special mill grade	0.65	7.85	8.00	3.60	4.60	2.07	1.68	1.76	1.87
powercore® 1400-100AP	Special mill grade	1.00	7.85	14.00	5.50	8.05	3.16	1.68	1.76	1.87

Electrical steel (NO) – Standard grades semi-finished

		Thickness	Density	Max. Core loss*				Min. Polarization*		
		[mm]	[kg/dm³]	[W/kg] at		[W/lb] at		[T] at		
				50 Hz		60 Hz		2,500	5,000	10,000
				1.5 T	1.0 T	1.5 T	1.0 T	[A/m]	[A/m]	[A/m]
DIN EN 10341										
Steel grade designation	Standard designation									
powercore® M340-50K	M340-50K	0.50	7.65	3.40	1.42	1.95	0.82	1.54	1.62	1.72
powercore® M390-50K	M390-50K	0.50	7.70	3.90	1.62	2.24	0.93	1.56	1.64	1.74
powercore® M450-50K	M450-50K	0.50	7.75	4.50	1.92	2.59	1.10	1.57	1.65	1.75
powercore® M560-50K	M560-50K	0.50	7.80	5.60	2.42	3.22	1.39	1.58	1.66	1.76
powercore® M660-50K	M660-50K	0.50	7.85	6.60	2.80	3.79	1.61	1.62	1.70	1.79
powercore® M890-50K	M890-50K	0.50	7.85	8.90	3.70	5.12	2.13	1.60	1.68	1.78
powercore® M1050-50K	M1050-50K	0.50	7.85	10.50	4.30	6.04	2.47	1.57	1.65	1.77
powercore® M390-65K	M390-65K	0.65	7.65	3.90	1.62	2.24	0.93	1.54	1.62	1.72
powercore® M450-65K	M450-65K	0.65	7.70	4.50	1.92	2.59	1.10	1.56	1.64	1.74
powercore® M520-65K	M520-65K	0.65	7.75	5.20	2.22	2.99	1.28	1.57	1.65	1.75
powercore® M630-65K	M630-65K	0.65	7.80	6.30	2.72	3.62	1.56	1.58	1.66	1.76
powercore® M800-65K	M800-65K	0.65	7.85	8.00	3.30	4.60	1.90	1.62	1.70	1.79
powercore® M1000-65K	M1000-65K	0.65	7.85	10.00	4.20	5.75	2.41	1.60	1.68	1.78

*Following reference annealing on the lines of EN 10341.

Electrical steel (NO) – Highly permeable grades non-fully finished

		Thickness	Density	Max. Core loss*				Min. Polarization*		
		[mm]	[kg/dm³]	[W/kg] at		[W/lb] at		[T] at		
				50 Hz		60 Hz		2,500	5,000	10,000
				1.5 T	1.0 T	1.5 T	1.0 T	[A/m]	[A/m]	[A/m]
Steel grade designation	Standard designation									
powercore® 270-50PP	Special mill grade	0.50	7.70	2.70	1.16	1.55	0.67	1.61	1.70	1.81
powercore® 330-50PP	Special mill grade	0.50	7.75	3.30	1.60	1.90	0.92	1.61	1.70	1.81
powercore® 390-50PP	Special mill grade	0.50	7.70	3.90	1.70	2.24	0.98	1.60	1.68	1.78
powercore® 450-50PP	Special mill grade	0.50	7.80	4.50	2.00	2.58	1.15	1.60	1.68	1.78
powercore® 660-50PP	Special mill grade	0.50	7.85	6.60	3.00	3.79	1.72	1.68	1.76	1.86
powercore® 800-65PP	Special mill grade	0.65	7.85	8.00	3.50	4.60	2.01	1.68	1.75	1.87

* Following reference annealing on the lines of EN 10341.

Electrical steel (NO) – Pole sheet

		Thickness	Density	Min. 0.2%-Yield strength	Min. Tensile strength	Min. Elongation	Min. Polarization	
		[mm]	[kg/dm³]	$R_{p0.2}$ [N/mm²]	R_m [N/mm²]	$A_{L=80}$ [%]	[T] at	
							5,000	15,000
							[A/m]	[A/m]
IEC 404-8-5								
Steel grade designation	Standard designation							
powercore® 400-65TF180	400-65TF180	0.65	7.85	400.00	460.00	12.00	1.56	1.80
powercore® 250-100TF183	250-100TF183	1.00	7.85	250.00	375.00	20.00	1.66	1.86
powercore® 300-100TF182	300-100TF182	1.00	7.85	300.00	390.00	19.00	1.65	1.85
powercore® 350-100TF181	350-100TF181	1.00	7.85	350.00	440.00	15.00	1.60	1.83
powercore® 400-100TF180	400-100TF180	1.00	7.85	400.00	460.00	12.00	1.56	1.80

Electrical steel (NO) – For high frequencies and e-mobility

		Thickness	Density	Max. Core loss	Min. Polarization			Min. yield strength as per DIN EN ISO 6892-1
		[mm]	[kg/dm³]	[W/kg] at	[T] at			$R_{p0.2}$ in the rolling direction at room temperature
				400 Hz	2,500	5,000	10,000	
				1.0 T	[A/m]	[A/m]	[A/m]	[MPa]
According to EN 10303								
Steel grade designation	Standard designation							
powercore® 020-130Y320	NO20-13	0.20	7.60	13	1.48	1.59	1.69	320
powercore® 020-150Y320	NO20-15	0.20	7.60	15	1.48	1.59	1.69	320
powercore® 027-150Y370*	NO27-15	0.27	7.60	15	1.52	1.61	1.73	370**
powercore® 027-180Y370*	NO27-18	0.27	7.60	18	1.52	1.61	1.73	370
powercore® 030-160Y420*	NO30-16	0.30	7.60	16	1.52	1.61	1.73	420
powercore® 035-170Y410*	NO35-19	0.35	7.60	17	1.56	1.65	1.76	410
powercore® 035-190Y330*	NO35-19	0.35	7.65	19	1.55	1.64	1.76	330
powercore® 035-180Y400	NO35-19	0.35	7.60	18	1.52	1.61	1.73	400
powercore® 035-190Y390	NO35-22	0.35	7.60	19	1.52	1.61	1.73	390
powercore® 035-220Y300*	NO35-22	0.35	7.65	22	1.55	1.64	1.76	300

*Steel grades stand out on account of their excellent further processing properties and advantages with regard to their final applications.
**Higher mechanical properties on request.

Electrical steel (NO) – Transformer sheet

		Thickness [mm]	Min. Permeability [μ 16]
IEC 740-2			
Steel grade designation	Standard designation		
powercore® A2*	Special mill grade	0.35	>800

*Corresponds to alloy class C21.

Electrical steel (NO) – High-strength electrical steel

		Thick-ness	Density	Min. 0.2%-Yield strength	Min. Tensile strength	Min. Elongation	Max. Core loss		Min. Polarization		
		[mm]	[kg/dm³]	$R_{p0.2}$ [N/mm²]	R_m [N/mm²]	$A_{L=80}$ [%]	[W/kg] at		[T] at		
							50 Hz		2,500	5,000	10,000
							1.5 T	1.0 T	[A/m]	[A/m]	[A/m]
Steel grade designation	Standard designation										
powercore® 500-65HS	Special mill grade	0.65	7.60	500.00	600.00	15.00	5.00	2.50	1.50	1.60	1.70

Electrical steel (NO) – Insulation type

	Insulation type	Color	Coating thickness per side [µm]	Insulation resistance* [Ω cm²/lamination]
IEC 60 404-1-1				
Designation				
stabolit® 10 EC-3	organic	yellow-green	0.50 – 1.50	> 5
			1.50 – 5.00	> 20
stabolit® 20 EC-5-P	inorganic with organic components	colorless	0.50 – 1.50	> 5
stabolit® 30 EC-5-P	inorganic	light green	0.50 – 1.50	> 5
stabolit® 40 EC-6	organic, pigmented	gray	3.00 – 5.00	> 90
			4.00 – 7.00	> 90
			6.00 – 9.00	> 90
stabolit® 60 EC-5	inorganic with organic components, pigmented	gray	0.50 – 1.50	> 5
			1.00 – 2.00	> 15
			2.00 – 3.50	> 50
stabolit® 70	organic bonding lacquer	colorless	5.00 – 8.00 (containing solvent)	–
			4.00 – 6.00 (soluble in water)	–

*At room temperature in accordance with ASTM A717.

Electrical steel (NO) – Dimensions

	Width [mm]
Narrow strip	
Inside diameter 508 mm	20 – 500
Wide strip	
Inside diameter 508 mm and 610 mm	500 – 1,250

Packaging steel

Thin, cold-rolled steel plate used as an efficient packaging material in tin-coated, special chrome-plated or uncoated form.

electrolytic chromium coated

unmodified

tin-plated

Your contacts

Packaging Steel
P: +49 2632 3097 - 0
F: +49 2632 3097 - 2903

Sales Europe
P: +49 2632 3097 - 2421
F: +49 2632 3097 - 2416

Sales Overseas
P: +49 2632 3097 - 2415
F: +49 2632 3097 - 2416

Technical Customer Service
P: +49 2632 3097 - 2455
F: +49 2632 3097 - 2900

thyssenkrupp Rasselstein GmbH
Koblenzer Strasse 141
56626 Andernach, Germany
Postal address:
56624 Andernach, Germany

07

About our packaging steel.

Packaging steel is not only highly versatile, but also an economical and ecological packaging material. At Andernach, thyssenkrupp produces black plate in thicknesses from 0.100 to 0.499 mm, characterized by high efficiency, stability and safety. One example is rasselstein® Thinplate, a premium material that offers consistently good properties even at very low thicknesses. The black plate is plated with tin or chromium and can additionally be coated with paint or plastic film.

As packaging steel offers optimum protection against light and air, over 90% of the material produced is used for packaging purposes – for foods and beverages as well as for chemical and technical products such as paints or aerosols. But the material is also being used more and more frequently in other areas, for instance in the automotive and electronics industries.

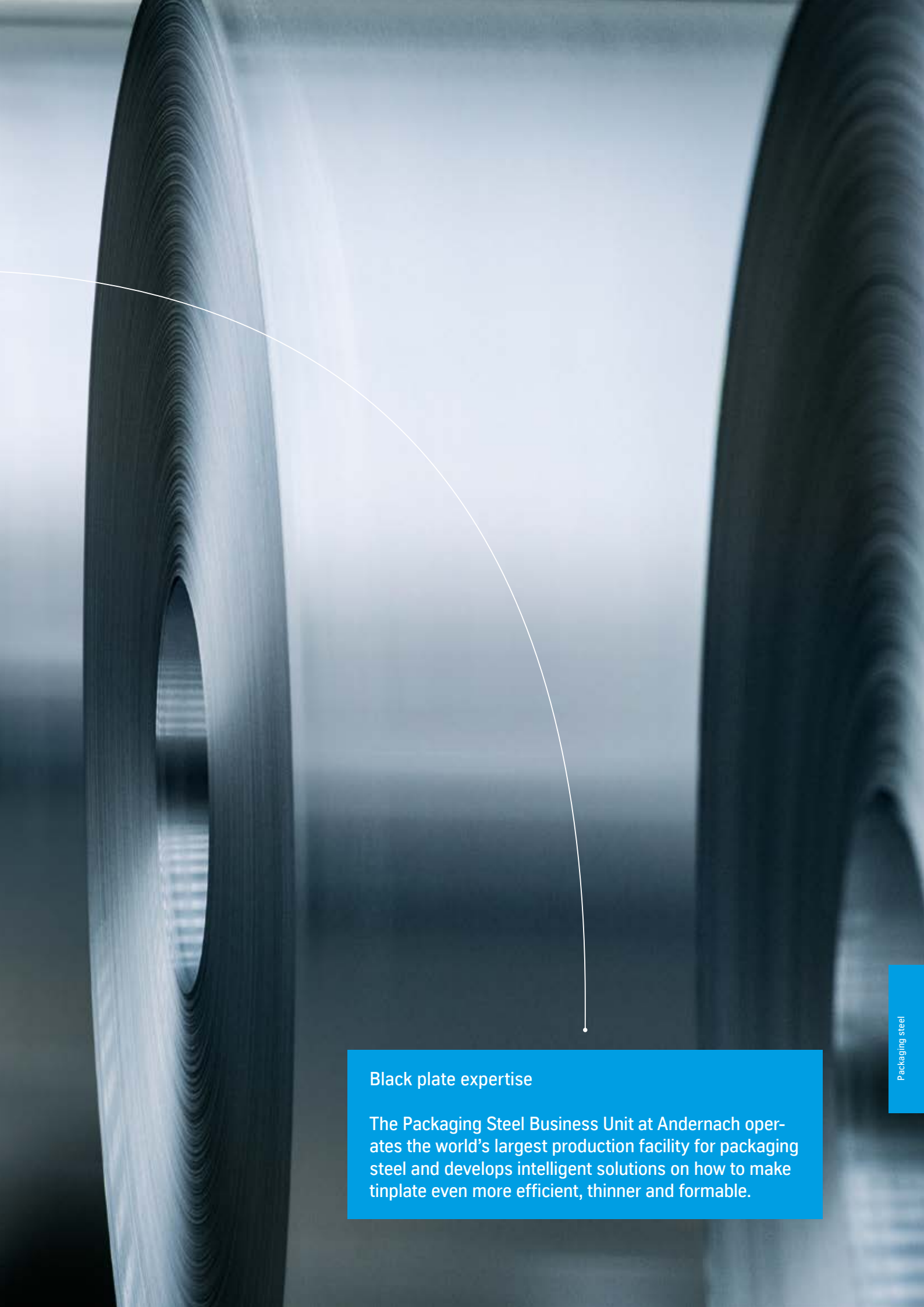
Production site in Germany

Andernach

Versatile protective function

High efficiency

High stability



Black plate expertise

The Packaging Steel Business Unit at Andernach operates the world's largest production facility for packaging steel and develops intelligent solutions on how to make tinplate even more efficient, thinner and formable.

Tinplate

Grades

EN 10202-2001

Steel grade designation	Standard designation	Yield strength
rasselstein® TS 230	TS 230	230 +/– 50
rasselstein® TS 245	TS 245	245 +/– 50
rasselstein® TS 260	TS 260	260 +/– 50
rasselstein® TS 275	TS 275	275 +/– 50
rasselstein® TS 290	TS 290	290 +/– 50
rasselstein® TS 340	TS 340	340 +/– 50
rasselstein® TS 480	TS 480	480 +/– 50
rasselstein® TS 520	TS 520	520 +/– 50
rasselstein® TS 550	TS 550	550 +/– 50
rasselstein® TH 330	TH 330	330 +/– 50
rasselstein® TH 340	TH 340	○
rasselstein® TH 415	TH 415	415 +/– 50
rasselstein® TH 435	TH 435	435 +/– 50
rasselstein® TH 450	TH 450	450 +/– 50
rasselstein® TH 480	TH 480	480 +/– 50
rasselstein® TH 520	TH 520	520 +/– 50
rasselstein® TH 550	TH 550	550 +/– 50
rasselstein® TH 580	TH 580	580 +/– 50
rasselstein® TH 620	TH 620	620 +/– 50
rasselstein® TH 650	TH 650	650 +/– 50

AISI / ASTM 623

Steel grade designation	Standard designation
rasselstein® T 1	T 1
rasselstein® T 2	T 2
rasselstein® T 3	T 3
rasselstein® T 4	T 4
rasselstein® T 5	T 5
rasselstein® DR 7	DR 7
rasselstein® DR 7.5	DR 7.5
rasselstein® DR 8	DR 8
rasselstein® DR 8.5	DR 8.5
rasselstein® DR 9	DR 9
rasselstein® DR 9.5	DR 9.5

Tinplate

	[g/m²] one-side	corresponds to [lb/bb] both-sides
Coating weights for tin		
EN		
	1.00	0.089
	1.40	0.125
	2.00	0.179
	2.80	0.250
	4.00	0.357
	5.00	0.446
	5.60	0.500
	8.40	0.750
	11.20	1.000
AISI/ASTM		
	0.60	0.05
	1.10	0.10
	1.70	0.15
	2.20	0.20
	2.80	0.25
	3.90	0.35
	5.60	0.50
	8.40	0.75
	11.20	1.00

The above coating weights are available for equal or differential coating.
Deviations in coating weights are possible in the range 1.00 to 11.20 g/m² (0.100 to 1.000 lb/bb).

One-side tin coatings possible in the range 0.50 to 5.60 g/m²
Marking for differential coatings in accordance with European standard/SEFEL, alternative markings by arrangement.

Other tin coatings on request.

	Code	Chromium-coatin [mg/m²] per side
Passivation for tinned grades		
Dip passivation	300	1–3
Electrochemical passivation	311	3.5–9
Electrochemical passivation	314[5]	> 5

Electrolytic chromium-coated, electrolytic zinc-coated, blackplate

	Average coating weight [mg/m²] per side	
	min.	max.
Coating weights for ECCS (electrolytic chromium-coated steel)		
Chromium metal	50	140
Chromium oxide	7	35

Note: The total chromium is the sum of metallic chromium and chromium oxide.

	Nominal coating weight [g/m²] per side
Special product: Electrolytic zinc-coated steel	
	11 (1.5 µm)

Uncoated blackplate

EN 10205

Oiling

	Tinplate [mg/m²] per side	Chromium-coated steel [mg/m²] per side	Uncoated blackplate [mg/m²] per side
DOS	4 +/– 2	4 +/– 2	–
ATBC	7 +/– 3	–	–
BSO	–	4 +/– 2	–
Anticorit	–	–	min. 300 +/– 100

Other oil weights on request.

Finishes

	Melted	Roughness [µm]
Surface finish		
bright	yes	≤ 0.30
fine stone	yes	0.25 – 0.45
stone	yes	0.30 – 0.65
silver matt	yes	0.40 – 2.25
matt	no	0.40 – 2.25

Different roughness values per side on request.
Closer tolerances within the roughness ranges in accordance with the standards or on request.

Organic coating

	Color	Thickness [µm]	Surface finishing
Coil coating with film			
Film			
PET	transparent	12, 23	ECCS
PET	transparent	15	ECCS
PET	white	23	ECCS
PET B*	white	20	ECCS
PP	transparent	40, 100, 200	tinned / ECCS
PP	white	30, 50	tinned / ECCS

Combinations of coatings, other film thicknesses or colors as well as base materials available on request.
* For subsequent painting on the back side and/or printing.

Coil coating with lacquer

Lacquer		
Single-layered lacquer (one-side or both-sides)	transparent, gold	For example for mounting cups. Coating weights for lacquer or combination options with PP film and base materials available on request.
Lacquer on both-sides	silver, gold	For example for tab stock. Coating weights for lacquer and base material options available on request.

Other applications on request.

Lacquered sheets

Colors and coating weights (one-side or both-sides) available on request.

Dimensions

	Thickness [mm]	SR BA Width [mm]	SR CA Width [mm]	DR BA Width [mm]	DR CA Width [mm]
Coils					
	0.100–0.119	600–950[5]	–	600–1,000[5]	
	0.120–0.129	600–1,000[5]	–	600–1,090	
	0.130–0.139	600–1,000[5]	–	600–1,090	600**–1,090
	0.140–0.149	600–1,050[5]	–	600–1,090	600**–1,090
	0.150–0.179	600–1,090[5]	600**–1,090[5]	600–1,220*	600**–1,090
	0.180–0.199	600–1,170[5]	600**–1,170[5]	600–1,220*	600**–1,220*
	0.200–0.499	600–1,220*	600**–1,220*	600–1,220*	600**–1,220*
	≥0.50[5]	○	○	○	○

Max. width for ECCS: 1,085 mm, additional dimensions on request.

Sheets					
	0.100–0.119	600–950[5]	–	600–1,000[5]	
	0.120–0.129	600–1,000[5]	–	600–1,090	
	0.130–0.139	600–1,000	–	600–1,090	600**–1,090
	0.140–0.149	600–1,050	–	600–1,090	600**–1,090
	0.150–0.179	600–1,090	600**–1,090	600–1,120	600**–1,090
	0.180–0.199	600–1,140	600**–1,140	600–1,140	600**–1,140
	0.200–0.499	600–1,140	600**–1,140	600–1,140	600**–1,140
	≥ 0.50[5]	○	○	○	○

Sheet length: Straight cut: 450–1,200 mm, scroll cut: 560–1,150 mm, lacquered sheets: min. 660 mm x 510 mm, max. 1,120 mm x 980 mm.

*Up to 1,230 mm by arrangement.
**Please consult us regarding widths < 700 mm.

Shipping weights and transport dimensions

	Alignment	Max. Weight [t]	Max. Outside diameter [mm]	Inside diameter [mm]	Inside diameter[5] [mm]
Coils					
	vertical axis	3.0–12.7	1,630	420	450/508
	horizontal axis	3.0–18.0	1,850	508	420/450
Sheets					
	–	2.5	–	–	–

Narrow strip coated

	Thickness [mm]	Width [mm]	Inside diameter [mm]	Coil weight [kg/mm strip width]
Dimensions according EN 10140				
	0.100–0.149 [5]	20–460	400/450/508	2–10
	0.150–0.199	20–540	400/450/508	2–10
	0.200–0.499	20–600	400/450/508	2–10

Max. width for ECCS: 540 mm.

Blackplate strip uncoated

		Delivery conditions	
Grades			
Quality according to EN 10139, Dimensions according to EN 10140			
Steel grade designation	Standard designation		
rasselstein® DC 01	DC 01	LC	C290 – C690
rasselstein® DC 03	DC 03	LC	C290 – C590
rasselstein® DC 04	DC 04	LC	C290 – C590
rasselstein® DC 05	DC 05	LC	○
rasselstein® DC 06 [5]	DC 06	LC	○

Oiling

Anticorit

Oiling weights by arrangement (min. 300 +/– 100 mg/m² – max. 750 +/– 100 mg/m²).

Finishes

Finish	Roughness [µm]
smooth	< 0.35
stone finish fine	0.25 – 0.45
stone finish	0.35 – 0.60
matt fine	0.75 – 1.25
matt	1.00 – 2.00
matt rough	1.75 – 2.25

C590 and C690 only available in “stone finish” surface.

Dimensions

Thickness [mm]	Width [mm]		Inside diameter [mm]	Coil weight [kg / mm coil width]
< 0.150	○	○	400 / 450 / 508	2 – 10 *
0.150 – 0.199	10 – 540	650 – 1,080	400 / 450 / 508	2 – 10 *
0.200 – 0.499	10 – 600	650 – 1,200	400 / 450 / 508	2 – 10 *

Axis: horizontal / vertical.
* Higher coil weights on request.

Composite material

Multilayered products with function-optimized material properties that cannot be realized using monolithic steel materials.

Your contacts

Automotive
P: +49 203 52 - 41095

thyssenkrupp Steel Europe AG
Kaiser-Wilhelm-Strasse 100
47166 Duisburg, Germany
Postal address:
47161 Duisburg, Germany

bondal®

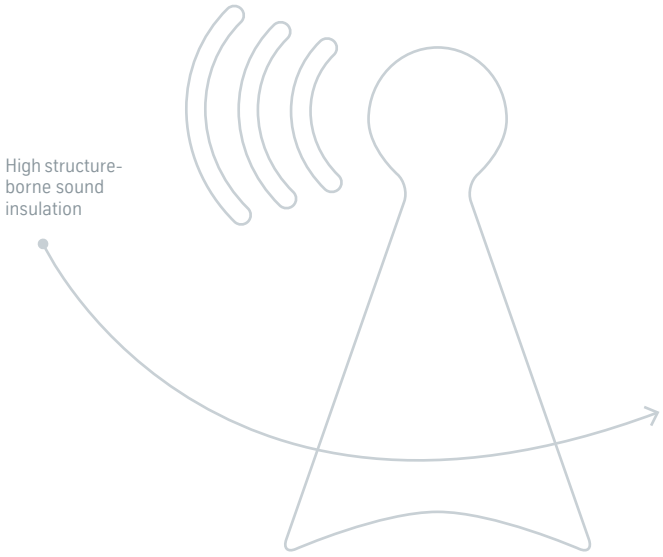
08

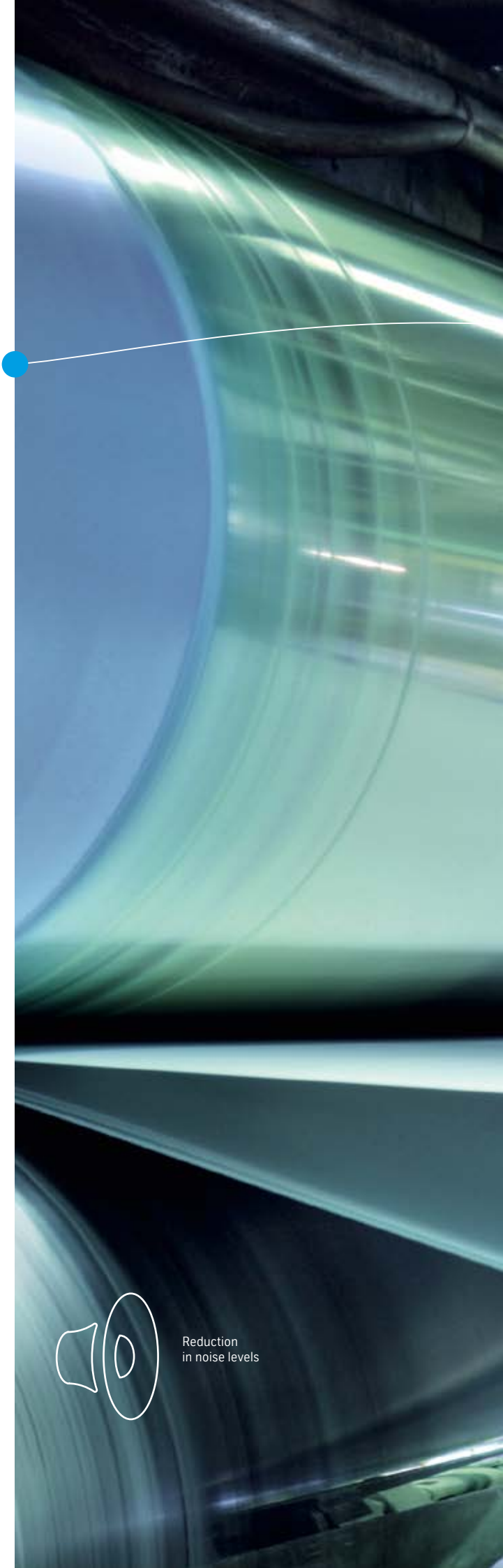
About our composite.

Wherever steel components are subjected to vibrations resulting in structure-borne sound, the vibration-damping properties of bondal® can be used to great effect. bondal® is a sheet steel composite with a viscoelastic core layer characterized by high structure-borne sound insulation and designed to reduce noise levels. Using bondal® makes it possible to reduce structure-borne sound by up to 20 decibels compared with conventional steel. This is particularly advantageous when – for instance in automotive components – cost or design reasons prevent the use of methods to avoid or reduce noise.

Production site in Germany

Kreuztal-Eichen





Steel sandwich sheets as vibration absorbers

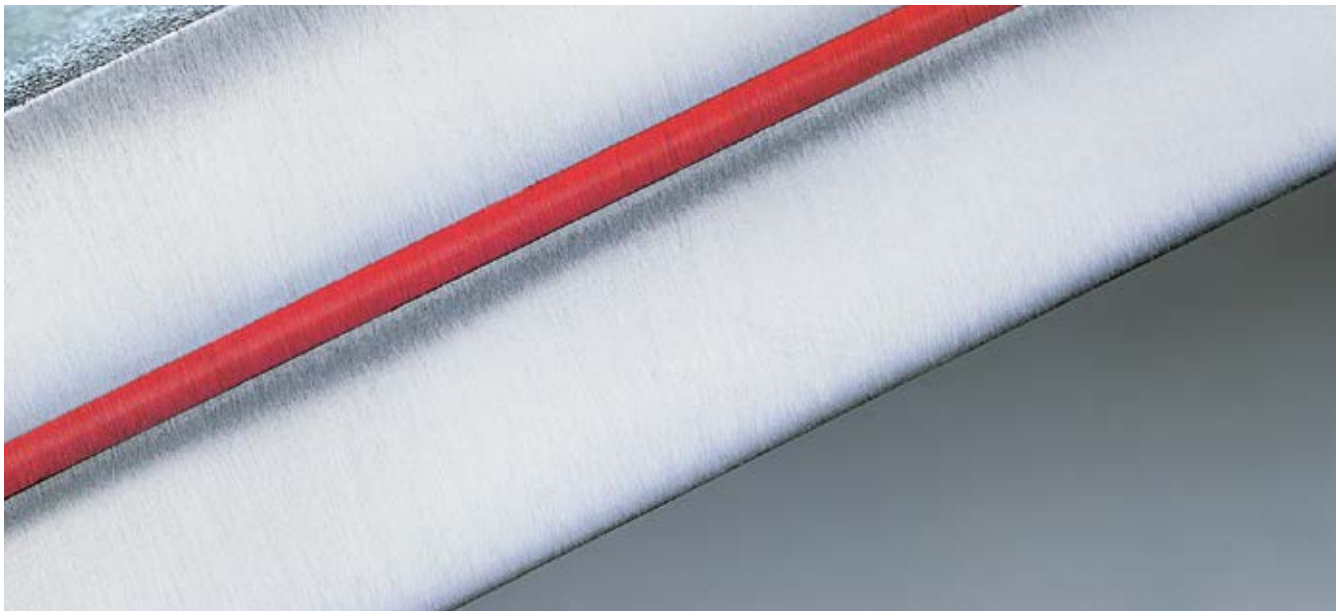
The viscoelastic core layer between the two face sheets allows them to slide minutely against each other. The resulting internal friction in the plastic converts the vibration energy into heat, which in turn reduces vibration.

Composite material _ dimensions

		Thickness[4] from_to in mm	Width from_to in mm
Composite material			
Steel grade designation	Standard designation		
bondal® CPT	Special mill grade	0.5 – 1.0	600 – 1,480
bondal® CB	Special mill grade	0.5 – 1.0	600 – 1,480
bondal® CL	Special mill grade	0.5 – 3.0	1,000
bondal® CLSi	Special mill grade	0.5 – 3.0	1,250

Composite material _ coatings

		Surface finishing							
		-/UC	ZE/EG	Z/GI	ZF/GA	ZM	AS	ZA	AZ
Composite material									
Steel grade designation	Standard designation								
bondal® CPT	Special mill grade	●	●	●			●	●	●
bondal® CB	Special mill grade	●	●	●			●	●	●
bondal® CL	Special mill grade	●	●	●			●	●	●
bondal® CLSi	Special mill grade	●	●	●			●	●	●



For more information, visit us at:

www.thyssenkrupp-steel.com

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

engineering. tomorrow. together.

Issue February 2017 – Order No. 0118 – broschueren.steel@thyssenkrupp.com