

Steel

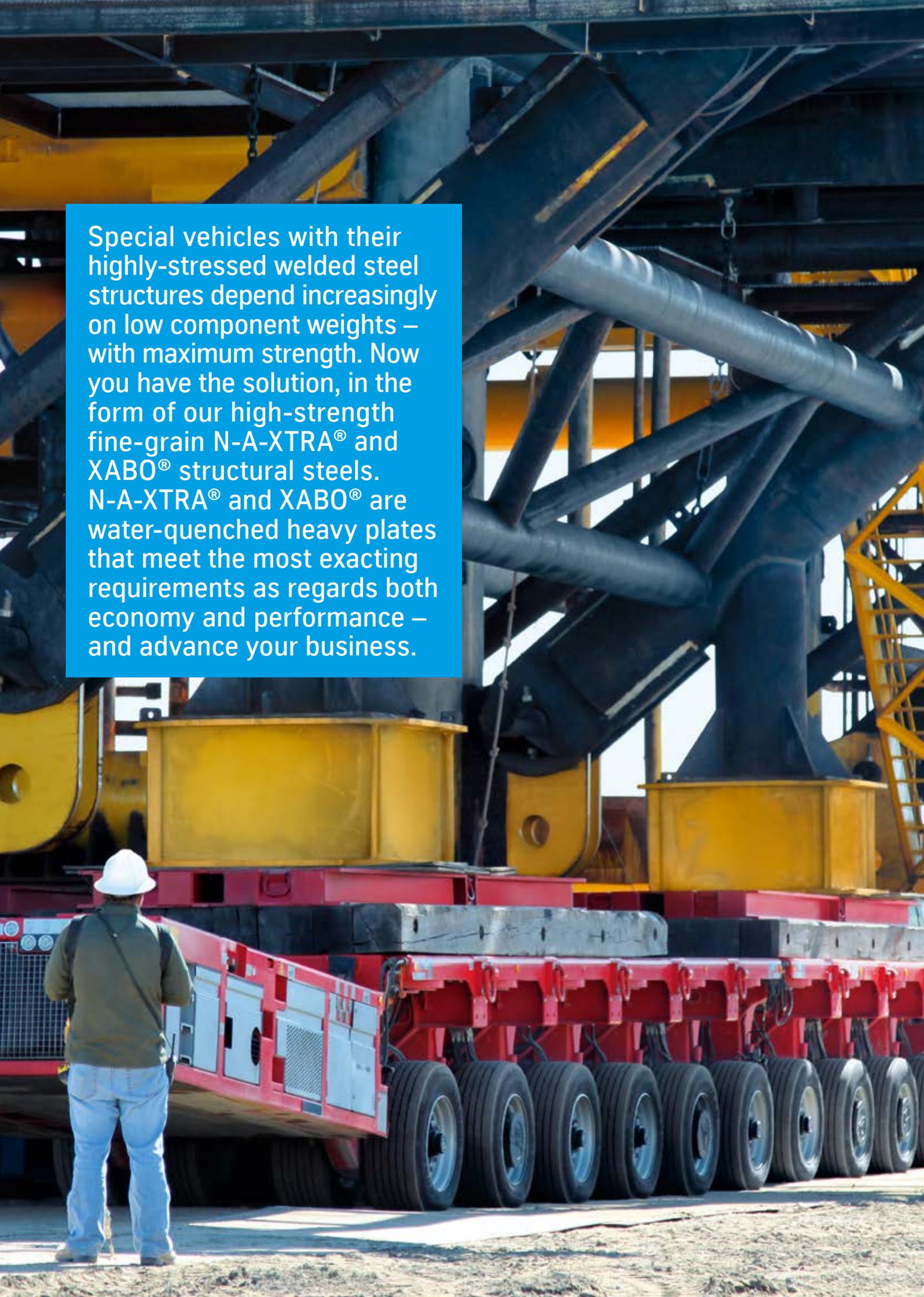
N-A-XTRA® and XABO®

High-strength fine-grain structural steels for new freedom in building lightweight special vehicles.



thyssenkrupp





Special vehicles with their highly-stressed welded steel structures depend increasingly on low component weights – with maximum strength. Now you have the solution, in the form of our high-strength fine-grain N-A-XTRA® and XABO® structural steels. N-A-XTRA® and XABO® are water-quenched heavy plates that meet the most exacting requirements as regards both economy and performance – and advance your business.

N-A-XTRA[®] and XABO[®].

For lighter, stronger and more economical lightweight construction.

Special vehicle construction is a demanding business. Lighten your load – with the heavyweight advantages of our high-strength fine-grain structural steels.

Advantages at a glance



Reduction of plate thicknesses by up to 73% – for less deadweight



Enhanced minimum yield strengths of up to 1,300 MPa – for greater load-bearing ability



Tight thickness tolerances of ± 0.2 mm – for additional weight savings

High-strength materials keep it together.



Lightweight construction is essential in industries such as commercial vehicle and mobile crane construction. Dimensions, axle loads and overall vehicle weight are limited by law. High-strength fine-grain steels like N-A-XTRA® and XABO® are the first choice for such highly-stressed welded structures. They provide the ideal combination of low component weight and maximum strength. With structural advantages that have enabled the development of mobile cranes with capacities of up to 1,200 tonnes, to name just one example.

Ideal for use in

- ⊕ Commercial vehicle and mobile crane manufacturing.
- ⊕ Mining.
- ⊕ Pressure vessel manufacturing.
- ⊕ Pipes.

Mechanical-technological properties

	Plate thickness [mm]	Yield strength R_e [MPa]	Tensile strength R_m [MPa]	Elongation A [%]	Impact energy $A_v \geq 27$ J at	Bending radius ³⁾ r ($t \leq 6$ mm)
Steel grade						
N-A-XTRA® 550	3–100	≥ 550 ¹⁾	640–820 ¹⁾	≥ 16	–60 °C	≥ 2.0 t
N-A-XTRA® M 550	3–120	≥ 550 ¹⁾	640–820 ¹⁾	≥ 16	–40 °C	≥ 2.0 t
N-A-XTRA® A® 620	3–100	≥ 620 ¹⁾	700–890 ¹⁾	≥ 15	–60 °C	≥ 2.5 t
N-A-XTRA® M 620	3–120	≥ 620 ¹⁾	700–890 ¹⁾	≥ 15	–40 °C	≥ 2.5 t
N-A-XTRA® 700	3–100	≥ 700 ¹⁾	770–940 ¹⁾	≥ 14	–60 °C	≥ 2.5 t
N-A-XTRA® M 700	3–120	≥ 700 ¹⁾	770–940 ¹⁾	≥ 14	–40 °C	≥ 2.5 t
XABO® 890	3–100	≥ 890 ²⁾	940–1,100 ²⁾	≥ 12	–40 °C	≥ 3.5 t
XABO® 960	3–100	≥ 960 ²⁾	980–1,150 ²⁾	≥ 12	–40 °C	≥ 3.5 t
XABO® 1100	3–40	$\geq 1,100$	1,200–1,500	≥ 8	–40 °C	≥ 3.5 t
XABO® 1300	4–10 ⁴⁾	$\geq 1,300$	1,400–1,700	≥ 8	–40 °C	≥ 4.5 t

¹⁾ For thicknesses ≤ 65 mm.

²⁾ For thicknesses ≤ 50 mm.

³⁾ Bending line parallel to rolling direction.

⁴⁾ Other thicknesses on request.

Massive savings.

The steel grades known under the brand names N-A-XTRA® and XABO® were first produced in Europe over 50 years ago: by thyssenkrupp in Duisburg. Since then, these materials have undergone a remarkable development. Today, ultra-high-strength steels with minimum yield strengths of up to 1,300 MPa and plate thicknesses from 3 to 120 mm are available. For example, replacing the structural steel S355 with heat-treated N-A-XTRA® 700 permits a reduction in plate thickness of as much as 50% – depending on the type of load – and 73% for XABO® 1300. In addition there is the advantage of lower filler metal consumption for reduced welding costs. The weight reduction also shortens handling times and allows welding without heavy, massive welding fixtures.



The right solution for every need.

N-A-XTRA® 700

N-A-XTRA® 700 reliably meets expectations as regards high-strength and trouble-free processing. N-A-XTRA® 700 combines a high yield strength of at least 700 MPa with excellent toughness, even when used at temperatures as low as –60 °C. Thanks to continuous improvements in its alloying concept, it is also particularly suitable for cold forming and welding using all standard processes.

XABO® 890/960

XABO® 890 and XABO® 960 are used when even greater minimum yield strength is required. Gas-shielded welding is the method of choice for these steels.

XABO® 1300

XABO® 1300 is the highest-strength grade. In spite of its extremely high minimum yield strength of 1,300 MPa, this heavy plate demonstrates excellent toughness combined with good welding characteristics. A steel grade that can be easily formed in the right geometry for the respective application, for instance through cold forming.

Light and superior.

Weight optimization never stops.

For many structures, weight plays a decisive role. Reduced thickness tolerances are therefore frequently required. thyssenkrupp is able to produce N-A-XTRA® and XABO® steels by two different routes: as cut-to-length plate and as quarto plate. N-A-XTRA® / XABO® cut-to-length plate is available in thicknesses of 3.0–10.0 mm and widths of 820–2,000 mm. Production of cut-to-length plate on the hot strip mill offers the advantage of extremely tight tolerances of ± 0.2 mm, which are lower than the usual tolerances for quarto plate and also lower than standard customer requirements. In addition to weight-saving potential, the extremely uniform thickness of cut-to-length plate offers advantages with regard to cold forming.

Primers for high-quality corrosion protection.

The plates are shot-blasted and primer-coated to meet the most stringent surface quality requirements. We carry out these processes at our state-of-the-art blasting and coating facility at our plant in Duisburg. Here, a silicate shop primer with a low zinc content is evenly applied in a thickness of 12 to 20 μm following shot-blasting. In studies, these primer-coated plates have proven suitable for trouble-free processing with laser cutting machines. Thanks to its inorganic components, the shop primer can be easily welded over, so it generally does not need to be removed before welding.



thyssenkrupp – a partner that understands its business. And yours.

Our mission is to advance your business – through sound advice, individual and innovative solutions and fulfillment of your specific needs. Our extensive technological know-how, gained over many years, makes this possible. As does our ability to see things the way you do. This enables us to develop an in-depth understanding of your business model. Our brand promise says it all: “engineering. tomorrow. together.” Because when it comes to finding successful solutions for tomorrow, the closer we cooperate the better.

Comprehensive advice.

To ensure that you get the best advice on the selection and processing of N-A-XTRA® and XABO® steels, our Technical Customer Service is at your disposal. They are 100% committed to offering you comprehensive assistance with regard to design and processing, answers to structure- and forming-related issues, product training, and of course technical support in optimizing fabrication processes.

Tailored service.

For high-quality logistics and processing, our global distribution network ensures rapid supply and just-in-time delivery of N-A-XTRA® and XABO® steels – in top quality and with excellent value for money. Close cooperation with our steel service centers additionally enables us to offer pre-fabricated, cold-formed or welded parts.

Practical virtual tool.

Naturally, you can find specific information about our special structural steels on our website:



www.thyssenkrupp-steel.com/plate

This includes useful product information, processing recommendations and a direct line to your personal service representatives for sales and technical consulting. You can also access ProWeld, thyssenkrupp’s web-based application for welding calculations. After registering as a user, you can log in and use this tool for your projects at any time, free of charge.



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