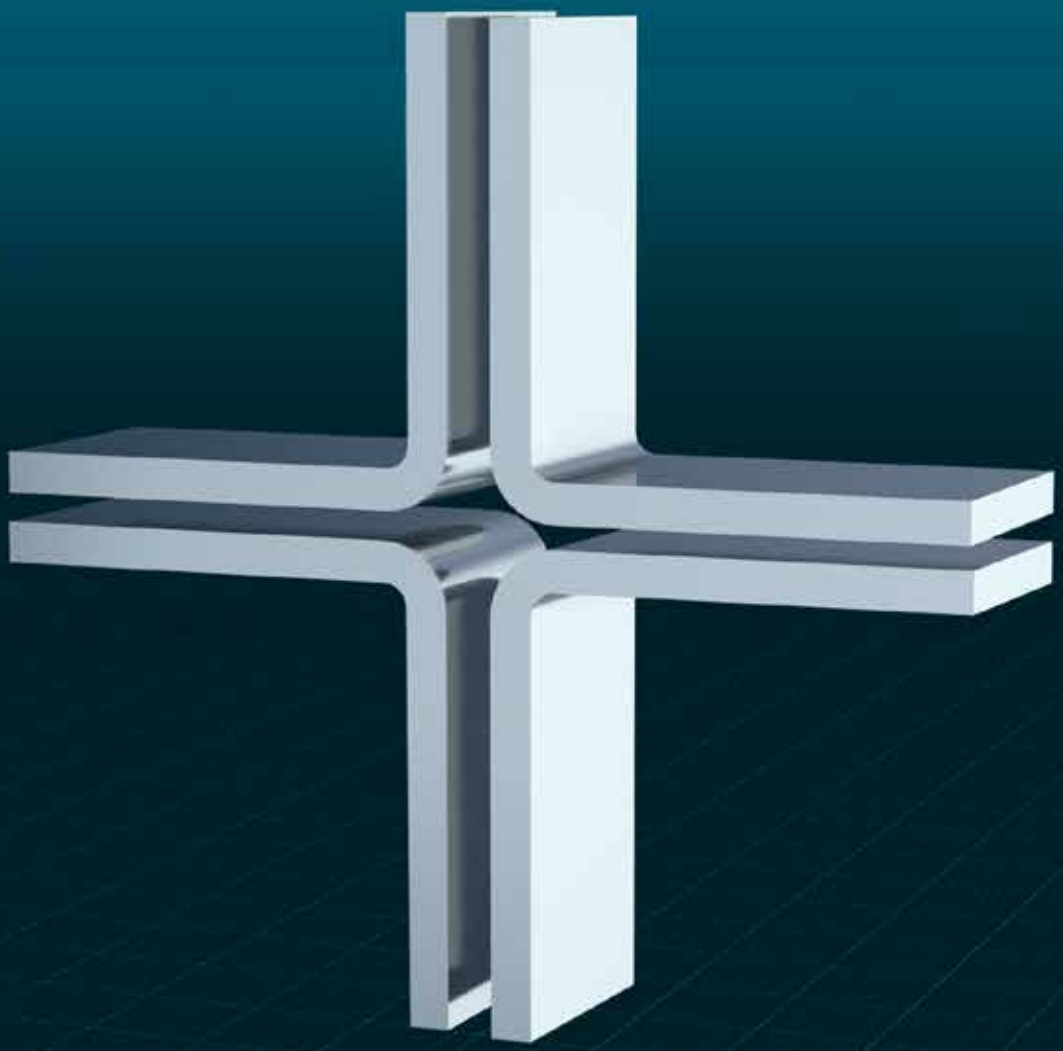
STRENX®
PERFORMANCE STEEL

Strenx® 700MC Plus

A BIG PLUS FOR YOU AND YOUR CUSTOMERS



SSAB

Strenx® 700MC Plus is a high-strength structural steel that allows you to fast-forward the development of new high-performance equipment. All of the steel's relevant performance indicators outperform those of traditional steel, making upgrading a straightforward process.

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Extreme toughness

- Impact toughness of 40 J at -60°C
- High impact toughness also after cold forming
- Ensures structural reliability and safety

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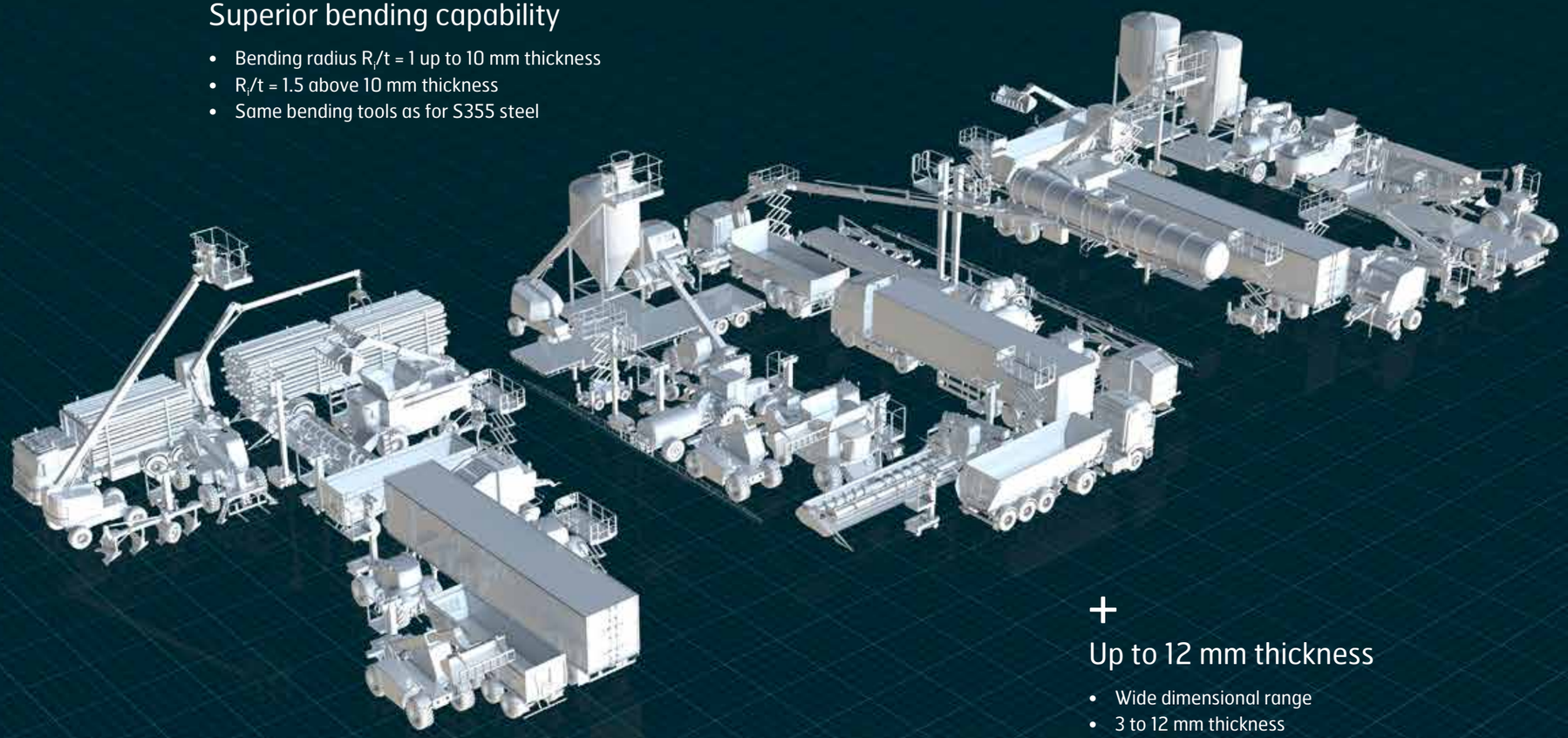
Superior bending capability

- Bending radius R_i/t = 1 up to 10 mm thickness
- R_i/t = 1.5 above 10 mm thickness
- Same bending tools as for S355 steel



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High punching and shearing performance

- Excellent hole expansion performance
- High edge quality in mechanical cutting
- Less sensitive to cutting clearance
- High edge quality improves fatigue resistance

+

Up to 12 mm thickness

- Wide dimensional range
- 3 to 12 mm thickness
- Easy to replace ASTM A514/S690QL steel
- Width up to 1525 mm
- Length up to 12300 mm

A BIG PLUS FOR DESIGN

Strenx® 700MC Plus supports your ambitions to make stronger and lighter products that are cost-efficient to produce and give your customers more value.

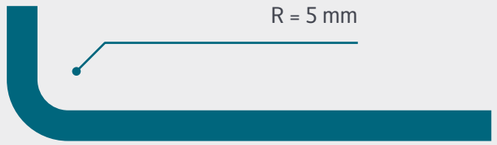
UNIQUE BENDABILITY

Strenx® 700MC Plus has a bendability of R_i/t equal to 1 for thicknesses up to 10 mm. At a thickness above 10 mm the R_i/t value is still as low as 1.5. Bending instead of welding profiles and hollow sections saves production costs and makes the product stronger. Bending an open profile eliminates the need for welding entirely and improves the fatigue resistance. When making a closed beam by bending, for example a crane boom, the weld can be placed in the low stressed area for increased structural strength and safety.

UP TO 12 MM THICKNESS

Strenx® 700MC Plus is available in thicknesses of up to 12 mm. This gives good opportunities for replacing a S690QL steel.

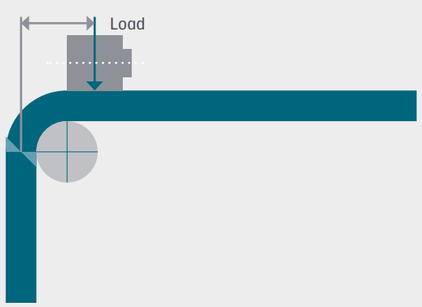
UPGRADED DESIGN – Strenx® 700MC Plus
5 mm thick plate



ORIGINAL DESIGN – S700MC
5 mm thick plate

IMPROVING YOUR BOOMS

The high bendability of Strenx® 700MC Plus allows for more high performing booms. Thanks to the tight bending radius, sliding pads can be wider for reduced contact pressure on the pads. The small radius also makes it possible to place the support rolls closer to the corner. This reduces the stress from local bending, improving fatigue lifetime.



PONSSE SCORPION
Designers were given a free hand to create a new generation of forest harvester. Scan the QR code to find out what they came up with.

A BIG PLUS FOR KESLA AND ITS CUSTOMERS

BENEFITS IN ACTION

+ Increased lifting capacity
+ Reliable performance also in extremely low temperatures
+ Made for high productivity and 24-hour operation
+ Certified My Inner Strenx® product
+ High resale value

BENEFITS IN PRODUCTION

+ High yield strength for lighter designs
+ Excellent bending properties
+ Suitable steel properties for easy cutting and welding
+ Smooth surface quality
+ Tight dimensional tolerances for predictable production
+ Most crane parts made of Strenx® 700MC Plus
+ Higher yield in production by using a single steel grade
+ Simplified logistics and reduced stock

"The quality of the steel is a key factor for our clients, who expect our products to withstand significant loads, constant use and extreme weather conditions."

— Miia Tirkkonen, marketing specialist at Kesla.

INNOVATIVE CRANE DESIGN FOR EXTREME DURABILITY

Crane design often involves a compromise between weight and durability. Strenx® 700MC Plus made it possible for Kesla to design a lighter crane without compromising its durability. The material has a high toughness at temperatures as low as -60°C– making the crane reliable and safe even in harsh locations like Siberia.

ABOUT KESLA

With its roots in agricultural equipment manufacturing, Kesla has been a family-run business for 60 years. The Finnish company manufactures integrated material handling equipment, including mobile and stationary cranes, tractor loaders, forestry cranes, chippers, grapples and harvester heads. The company exports its products to more than 30 countries.

KESLA IN ACTION

Watch Kesla in action by scanning the QR code.

GRAINKING ACHIEVES A 700 KG LIGHTER CHASER BIN WITH STRENX® 700MC PLUS

Grainking's new Nyrex Chaser Bin with a subframe and side and floor panels in Strenx® 700MC Plus has a capacity of up to 62,000 liters with a bin weight 700 kg lighter than the previous solution. This new flexible and lightweight chaser bin requires almost no welding for reduced production costs as well as longer service life and increased efficiency for Grainking's customers.

A BIG PLUS FOR PRODUCTION

PERFECT FOR PUNCHING AND CUTTING

The ductility of Strenx® 700MC Plus is clearly demonstrated by its excellent hole expansion performance.

When Strenx® 700MC Plus was tested against a standard 700 steel, Strenx® 700MC Plus had up to a 40% higher hole expansion (HE) ratio. Also, the quality of the cutting edge and the expanded hole was much better.

Mechanical cutting gives a high edge quality, even if the cutting clearance is not optimal. A high edge quality results in a higher fatigue resistance.

Strenx® 700MC Plus
5 mm thick plate

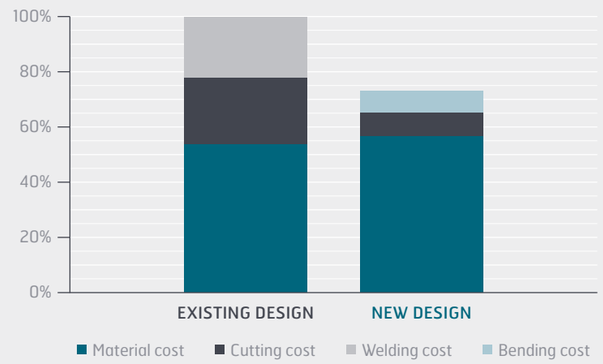
S700MC
5 mm thick plate

The punched hole in Strenx® 700MC Plus showed no cracks, unlike the S700MC steel.

READY FOR THE WORKSHOP

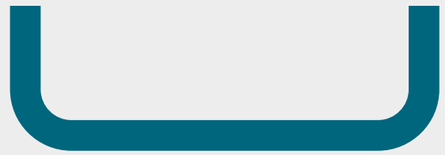
Trouble-free production is key to keeping production costs down and quality up. Strenx® 700MC Plus has all the properties you need for fast and reliable performance in the workshop. It allows for high productivity when bending, machining, cutting and welding, thanks to its special microstructure, tight dimensional tolerances, superior flatness and surface quality, and low residual stresses.

RELATIVE PRODUCTION COSTS



UPGRADED DESIGN – Strenx® 700MC Plus

- 10 mm thick
- 1 bent part



ORIGINAL DESIGN – S355

- 12 mm thick
- 3 parts welded

A BIG PLUS
FOR PERFORMANCE

BENEFITS IN LIFTING
Cranes will become more competitive through increased reach while still keeping the weight of the entire vehicle down.

TYPICAL APPLICATIONS:
+ mobile crane structures
+ loader crane structures
+ offshore crane structures
+ aerial work platforms

BENEFITS IN TRANSPORTATION
Trucks, trailers, trains and buses become lighter without compromising on performance, safety and service life.

TYPICAL APPLICATIONS:
+ chassis longitudinal beams
+ cross beams
+ floor side and cross beams
+ truck subframes
+ kingpin assembly
+ drawbar couplings

BENEFITS IN AGRICULTURE AND FORESTRY
Lighter agriculture equipment such as harvesters can be made wider and use less fuel to bring in more crops per hour.

TYPICAL APPLICATIONS:
+ chassis
+ boom structures
+ harvester heads
+ grapples

Ready for a performance upgrade

Product	Thickness range [mm]	Yield strength Rp_{02} min [MPa]	Tensile strength R_m [MPa]	Elongation A_5 min [%]	Min. inner bending radius for a 90° bend, R_i/t	Carbon equivalent CET/CEV, typical [%]	Impact toughness Charpy V min [J/°C]
Strenx® 700MC Plus Hot Rolled Strip	3.0–8.0	700	750–950	13	1.0	0.24/0.38 (3.0–11.4 mm)	40/–60
	8.1–10.0	680	750–950	13	1.0	0.24/0.38 (3.0–11.4 mm)	40/–60
	10.1–12.0	680	750–950	13	1.5	0.26 (0.40) (11.5–12.0 mm)	40/–60

THE FULL POTENTIAL
When building the new innovative Variable Forward Reach (VFR) hedge cutter, McConnel decided to start from scratch and use Strenx® performance steel. By choosing Strenx® 700MC Plus for the boom and auxiliary structures, the forward reach was extended by 0.5 m and the weight was reduced to from 530 kg to 450 kg for the new solution.

STRONG AND TOUGH IN ALL CLIMATES
Strenx® 700MC Plus has excellent impact toughness, with a minimum Charpy test value of 40 J at -60°C, while a steel according to S700MC in EN 10149-2 has a minimum of 40 J at -20°C. The high impact toughness is a vital safety factor at all temperatures.

The process of cold forming can decrease the impact toughness. The high impact toughness of Strenx® 700MC Plus gives a safety margin after cold forming.

STRENX®
PERFORMANCE STEEL

SSAB is a Nordic and US-based steel company. SSAB offers value added products and services developed in close cooperation with its customers to create a stronger, lighter and more sustainable world. SSAB has employees in over 50 countries. SSAB has production facilities in Sweden, Finland and the US. SSAB is listed on Nasdaq Stockholm and has a secondary listing on Nasdaq Helsinki. www.ssab.com.

strenx.com

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