

The benefits of high yield strength

Upgrading to a steel with higher yield strength leaves room for more high performing designs with increased load bearing capacity. The stresses can be higher which allows for the use of thinner steel. This adds several advantages:

- Depending on the starting point, designers can cut up to 40 percent weight off steel structures
- If the parts are welded, welding time and the amount of welding consumables will be significantly reduced

Yield strength defines the stress the steel can take before it becomes plastically deformed. Below the yield point the steel will return to its original shape when the load is released.

Equalizer – Striking a balance



The Equalizer 36 row planter uses Strenx® 700 Tube to become as light and strong as possible.

QUANTIFIED BENEFITS

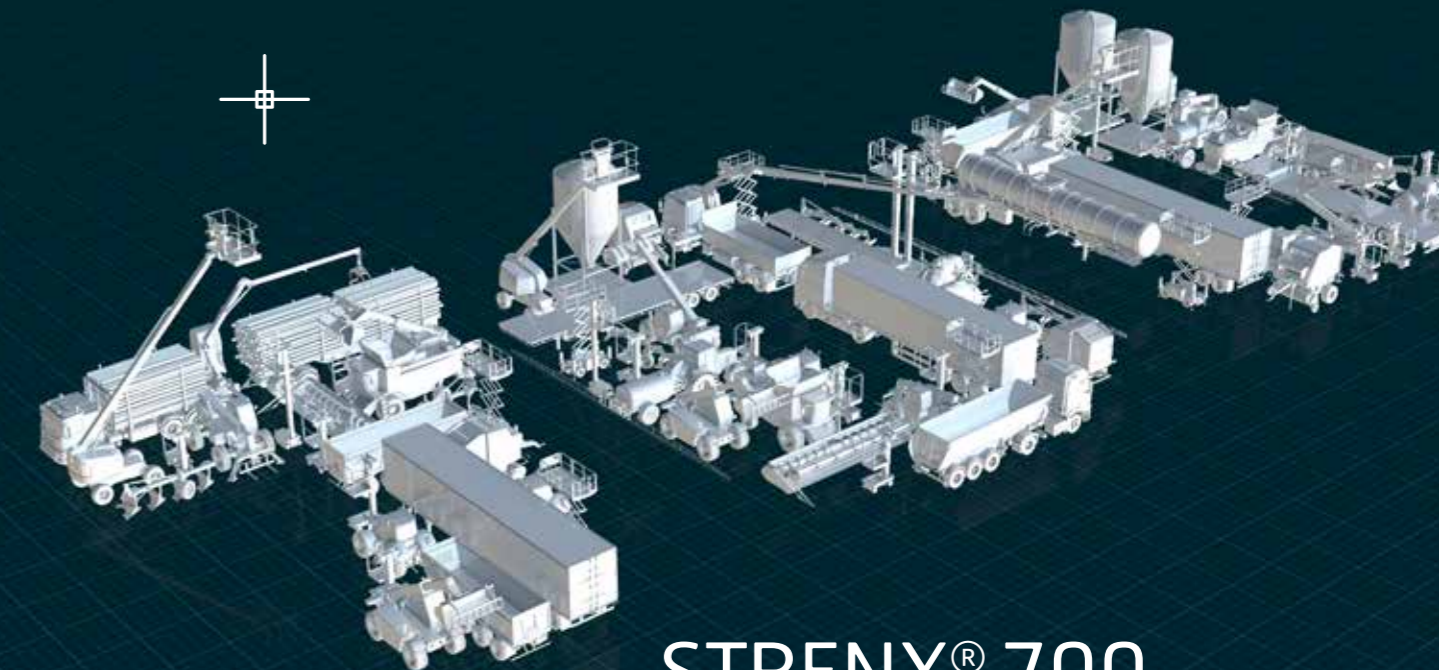
- A farmer can plant 5 hectares more per hour
- Possible to save more than 400 liters of diesel during the planting season
- Weight reduced by about 40% from the original design with a S355 mild steel

“You cannot just add weight because you will end up with a very impractical machine that needs a lot of horsepower to simply get through the soil. You want the machine to do the work that it is built for, so you need to keep it as light as possible, but also as strong as possible.”

Gideon Schreuder,
Managing Director at Equalizer.

Read the full case study at: www.strenx.com

STRENX®
PERFORMANCE STEEL



STRENX® 700 TAKES PERFORMANCE ABOVE AND BEYOND

Strenx® 700 is the new normal when designing in high-strength steel. But it doesn't end there!

SSAB

That's why we call it performance steel

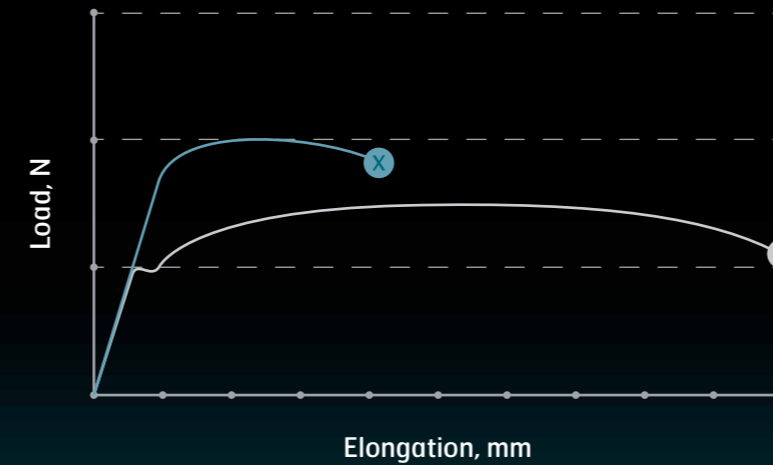
A yield strength of 700 MPa and above is the new normal when designing in high-strength steel. If you are using a steel of lower strength, your products are probably not living up to their potential. Strenx® will make it reach above and beyond the ordinary.



strenx.com

Understanding yield strength

Steel with a yield strength of 700 MPa can be stressed much higher than a S355 steel. This means thinner dimensions can be used at the same load levels or the load level can be higher if the same dimensions are used. Either way, higher yield strength will improve both production and performance.



Ready for a performance upgrade

| Product | Thickness range [mm] | Yield strength R _{p0.2} min [MPa] | Tensile strength R _m [MPa] | Elongation A ₅ min t ≥ 3 mm [%] | Bending min inner radius/t both directions 3 < t ≤ 6 mm | Carbon Equivalent CET/CEV typ t-6 mm [%] | Impact toughness Charpy V min [J/°C] |
|--------------------|----------------------|--|---------------------------------------|--|---|--|--------------------------------------|
| Strenx® 700MC D | 2-8 | 700 | 750-950 | 12 | 1.2 | 0.25/0.39 | 40/-20 |
| Strenx® 700MC D | 8.1-10 | 680 | 750-950 | 12 | * | ... | 40/-20 |
| Strenx® 700MC Plus | 3-8 | 700 | 750-950 | 13 | 1.0 | 0.24/0.38 | 40/-60 |
| Strenx® 700MC Plus | 8.1-12 | 680 | 750-950 | 13 | * | ... | 40/-60 |

| Product | Thickness range [mm] | Yield strength R _{p0.2} min [MPa] | Tensile strength R _m [MPa] | Elongation A ₈₀ min [%] | Bending min inner radius/t both directions [mm] | Carbon Equivalent CET/CEV max [%] |
|----------------|----------------------|--|---------------------------------------|------------------------------------|---|-----------------------------------|
| Strenx® 700 CR | 0.7-2.1 | 700 | 1000-1200 | 7 | 2.0 | 0.29/0.40 |

| Product | Thickness range [mm] | Yield strength R _{p0.2} min [MPa] | Tensile strength R _m min [MPa] | Elongation A ₅ min [%] | Bending min inner radius/t trans/long 8 ≤ t < 15 [mm] | Carbon Equivalent CET/CEV max t=10 mm [%] | Impact toughness Charpy V min [J/°C] |
|---------------|----------------------|--|---|-----------------------------------|---|---|--------------------------------------|
| Strenx® 700 E | 4-53 | 700 | 780-930 | 14 | 1.5/2.0 | 0.32/0.49 | 69/-40 |
| Strenx® 700 E | 53.1-100 | 650 | 780-930 | 14 | * | ... | 69/-40 |
| Strenx® 700 E | 100-160 | 650 | 710-900 | 14 | * | ... | 69/-40 |

* For more bending information of the products please check ssab.com

