

## General Product Description

The high-strength, high-performance steel

Strenx™ 100 is a structural steel with a minimum yield strength of 100 ksi. It meets the requirements of ASTM A514 Grade S.

Typical applications include demanding load-bearing structures. Thickness measurements in inches can be found in the data sheet.

## Mechanical Properties

Thickness (Inches)	Yield strength R <sub>p0.2</sub> (min ksi)	Tensile Strength R <sub>m</sub> (ksi)	Elongation <sup>1)</sup> A <sub>50</sub> (min %)	Reduction <sup>1)</sup> of area (min %)
3/16- 3/4	100	110- 130	16	35
(3/4)- 2- 1/2"	100	110- 130	16	35 <sup>2)</sup>
(2 1/2)- 4	94	110- 130	14	35 <sup>2)</sup>
(4)- 5	94	102- 130	14	35 <sup>2)</sup>

<sup>1)</sup> For transverse test pieces according to ASTM A6 and A370.

<sup>2)</sup> For 38.1 mm wide tension test samples. If 12.7 mm round samples are used, the minimum RA is 45%.

## Impact Properties

Min. impact energy <sup>1)</sup> (ft-lbs) for transverse testing Charpy - V, 10x10 mm tests specimens <sup>2)</sup>	Test temperature
50 ft-lbs	-40 °F

<sup>1)</sup> Average of three tests. Single value min 2/3 of specified average.

<sup>2)</sup> For plate thicknesses under 12 mm subsize Charpy V-specimens are used. The specified min value is then proportional to the specimen cross-section.

## Testing

Impact testing according to ASTM A6, per heat and 45 metric tons.

## Chemical Composition (ladle analysis)

C (max %)	Si *) (max %)	Mn *) (max %)	P (max %)	S (max %)	Cr *) (max %)	Cu (max %)	Ni *) (max %)	Mo *) (max %)	B *) (max %)
0.20	0.60	1.60	0.020	0.010	0.80	0.30	2.0	0.70	0.005

The steel is grain-refined. \*) Intentional alloying elements.

## Carbon equivalent

Thickness (Inches)	(3/16) - 1-1/4	(1-1/4) - 2	(2) - 4	(4) - 5
CET(CEV)	0.32(0.49)	0.36(0.52)	0.39(0.58)	0.41(0.67)

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

## Tolerances

More details are given in SSAB's brochures Strenx™ Guarantees or on [www.ssab.com](http://www.ssab.com).

## Thickness

Tolerances according to Strenx Thickness Guarantees. Strenx Guarantees meets the requirements of EN 10 029 Class A, but offers narrower tolerances. EN 10 029 meets and exceeds the requirements for ASTM A6.

### Length and Width

Tolerances on length and width according to ASTM A6.

### Shape

Tolerances according to ASTM A6.

### Flatness

Tolerances on flatness according to Strenx Flatness guarantee Class C, which are twice as good as the ASTM A6 flatness requirements.

### Surface Properties

According to ASTM A6.

### Bending

Tolerances according to Strenx Bending Guarantee Class A.

## Delivery Conditions

The delivery condition is Q+T (Quenched and Tempered). The plates are delivered with sheared or thermally cut edges. Untrimmed edges after agreement. Delivery requirements can be found in SSAB's brochure 41-General product information Strenx, Hardox, ArmoX and Toolox-UK.

## Fabrication and Other Recommendations

### **Welding, bending and machining**

Recommendations are found in SSAB's brochures at [www.ssab.com](http://www.ssab.com) or consult Tech Support, [techsupport@ssab.com](mailto:techsupport@ssab.com). Workshop guidelines for Strenx 100 refer to the same recommendations as for Strenx 700.

Strenx 100 has obtained its mechanical properties by quenching and subsequent tempering. The properties of the delivery condition cannot be retained after exposure to temperatures in excess of 1075°F.

Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on this product. Grinding, especially of primer coated plates, may produce dust with a high particle concentration.

## Contact Information

[www.ssab.com/contact](http://www.ssab.com/contact)