

Strenx[®] 100

General Product Description

Strenx[®] 100 is a structural steel with a minimum yield strength of 100 ksi. Strenx[®] 100 meets the requirements of ASTM A514, Grade S, for thicknesses up to 2 1/2 inch.

Available dimensions

Strenx[®] 100 is supplied in plate thicknesses of 3/16 – 5 inches. More detailed information on dimensions is provided in the dimension program at www.ssab.com.

Mechanical Properties

Thickness inch	Yield strength R _{p0.2} ¹⁾ Min ksi	Tensile strength R _m ksi	Elongation ¹⁾ A ₅₀ Min %	Reduction ¹⁾ of area Min %
3/16 – 3/4	100	110 - 130	16	35
(3/4) – 2-1/2"	100	110 - 130	16	35 ²⁾
(2 1/2) - 4	94	110-130	14	35 ²⁾
(4) - 5	94	102-130	14	35 ²⁾

¹⁾For transverse test pieces according to ASTM A6 and A370.

²⁾For 1-1/2" wide tension test samples. If 1/2" round samples are used, the minimum RA is 45%.

Impact properties	-40°F
Min. impact energy ¹⁾ (ft-lbs) for transverse testing Charpy - V, 10x10 mm tests specimens ²⁾	50 ft-lbs

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

²⁾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.

Maximum carbon equivalent CET (CEV)

Thickness inch	(3/16) - 1-1/4	(1 -1/4) - 2	(2) - 4	(4) - 5
Strenx [®] 100 CET(CEV)	0.32 (0.49)	0.36 (0.52)	0.39 (0.58)	0.41 (0.67)

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15} \quad CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

Tolerances

More details are given in SSAB's brochures Strenx[®] Guarantees or on 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.

Delivery Conditions

The delivery condition is 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[®], Armax and Toolox-UK.

Fabrication and Other Recommendations

Welding, bending and machining

Recommendations are found in SSAB's brochures at www.ssab.com or consult Tech Support, techsupport@ssab.com.

Workshop guidelines for Strenx 100 refer to the same recommendations as for Strenx[®] 700. Bending guarantees according to Strenx[®] bending guarantees class A

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 and Information

For information, see SSAB's brochures on www.ssab.com or consult Tech Support, techsupport@ssab.com.