

Strenx 700

General Product Description

Strenx 700 is a general structural steel with a minimum yield strength of 650 - 700 MPa depending on thickness. Strenx 700 meets the requirements of EN 10 025-6 for the S 690 grade and thicknesses. Typical applications are demanding load-bearing structures.

Available dimensions

Strenx 700 E is available in plate thicknesses of 4 – 160 mm and Strenx 700 F is available in plate thicknesses of 4 - 130 mm. Both grades are available in widths up to 3350 mm and lengths up to 14630 mm depending on thickness. More detailed information on dimensions is provided in the dimension program at www.ssab.com.

Mechanical Properties

Thickness mm	Yield strength ¹⁾ R _{p0.2} Min MPa	Tensile strength ¹⁾ R _m MPa	Elongation A ₅ Min %
4 - 53	700	780 - 930	14
(53) - 100	650	780 - 930	14
(100) - 160	650	710 - 900	14

¹⁾ For transverse test pieces according to EN 10 025.

Impact properties	E -40°C	F -60°C
Min. impact energy (J) for transverse testing Charpy V 10x10 mm tests specimens ²⁾	69 J	27 J
Meet the requirements for	S 690 QL	S 690 QL1

²⁾ Unless otherwise agreed, transverse impact testing according to EN 10 025-6 option 30 will apply. For thicknesses between 6 - 11.9 mm, sub-size Charpy V-specimens are used. The specified minimum value is then proportional to the cross-sectional area of the specimen compared to a full-size specimen (10 x 10 mm).

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 mm	- 5	(5) - 30	(30) - 60	(60) - 100	(100) - 130	(130) - 160
Strenx 700E: CET (CEV)	0.34 (0.48)	0.32 (0.49)	0.36 (0.52)	0.39 (0.58)	0.41 (0.67)	0.43 (0.73)
Strenx 700F: CET (CEV)	0.38 (0.57)	0.38 (0.57)	0.39 (0.58)	0.39 (0.58)	0.41 (0.67)	0.43 (0.73)

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

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

Tolerances

More details are given in SSAB's brochures 41-General product information Strenx, Hardox, Armox and Toolox-UK and Strenx Guarantees or on www.ssab.com.

Thickness

Tolerances according to Strenx Thickness Guarantees.

Strenx Guarantees meet the requirements of EN 10 029 Class A, but offers narrower tolerances.

Length and width

According to SSAB's dimension program. Tolerances conform with EN 10 029 or to SSAB's standard after agreement.

Shape

SSAB offers tolerances according to EN 10 029

Flatness

Tolerances according to Strenx Flatness Guarantee Class C, which are more narrow than EN 10 029 Class N.

Surface Properties

According to EN 10 163-2 Class A, Subclass 1.

Bending

Tolerances according to Strenx Bending Radius 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 or on www.ssab.com.

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.

Strenx 700 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 580°C.

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.