

Weldox 700

General Product Description

Weldox 700 is a general structural steel with a minimum yield strength of 650 - 700 MPa depending on thickness. Weldox 700 meets the requirements of EN 10025 for the corresponding grades. Typical applications are demanding loadbearing structures.

Available dimensions

Weldox 700 E is available in plate thicknesses of 4 – 160 mm and Weldox 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. For thicknesses over 100 mm preferred width is 1650 mm with untrimmed edge.

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 %	Typical hardness HBW
4 - 53	700	780 - 930	14	260 - 310
(53) - 100	650	780 - 930	14	260 - 310
(100) - 160	650	710 - 900	14	240 - 290

¹⁾ For transverse test pieces according to EN 10025.

Impact properties	E -40°C	F -60°C
Min. impact energy (J) for transverse tests 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 10025-6 option 30 will apply. For thicknesses between 6 - 11.9 mm, subsize Charpy V-specimens are used. The specified minimum value is then proportional to the cross-sectional area of the specimen compare to a fullsize specimen (10 x 10 mm).

Chemical Composition (heat 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	0.70	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) - (10)	10 - (20)	20 - (40)	40 - (80)	80 - (100)	100 - 160
Weldox 700E: CET (CEV)	0.34 (0.48)	0.31 (0.48)	0.31 (0.48)	0.36 (0.52)	0.39 (0.58)	0.39 (0.58)	0.41 (0.67)
Weldox 700F: CET (CEV)	0.38 (0.57)	0.38 (0.57)	0.38 (0.57)	0.38 (0.57)	0.39 (0.58)	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 brochure 41-General product information Weldox, Hardox, Armox and Toolox-UK or on www.ssab.com.

Thickness

Tolerances according to SSAB's thickness precision guarantee AccRollTech. AccuRollTech meets the requirements of EN 10 029 Class A, but offers narrower tolerances.

Length and width

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

Shape

SSAB's offers tolerances according to EN 10 029

Flatness

According to SSAB's flatness tolerances, which are more narrow than EN 10 029 Class N (steel type L).

Surface Properties

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

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 Weldox, Hardox, Armox and Toolox-UK.

Fabrication and Other Recommendations

Welding, bending and machining

Recommendations are found in SSAB's brochures on www.weldox.com or consult Tech Support, help@ssab.com.

Weldox 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, help@ssab.com.