

Strenx® 1300 E/F

General Product Description

Strenx® 1300 E/F is an ultra-high-strength structural steel with a minimum yield strength of 1300 MPa.

Typical applications include load-carrying structures that place very high demands on low weight. SSAB developed Strenx® 1300 for building the lightest possible steel solutions or providing an alternative to other materials.

Strenx® 1300 E/F benefits include:

- Good weldability with excellent HAZ strength and toughness
- Exceptional consistency within a plate guaranteed by close tolerances
- High impact toughness which provides for good resistance to fractures
- Superior bendability and surface quality

Dimension Range

Strenx® 1300 E/F is available in plate thicknesses of 4 – 15 mm. Strenx® 1300 E/F is available in widths up to 2900 mm and lengths up to 14630 mm depending on thickness. More detailed information on dimensions is provided in the dimension program.

Mechanical Properties

Thickness (mm)	Yield strength R _{p0.2} (min MPa)	Tensile strength R _m (min MPa)	Elongation A ₅ (min %)
4.0 - 15.0	1300	1400 - 1700	8

For transverse test pieces.

Impact Properties

Grade	Min transverse test, impact energy, Charpy V 10x10 mm tests specimens ¹⁾
Strenx® 1300 E	27 J/ - 40 °C
Strenx® 1300 F	27 J/ - 60 °C

¹⁾ For thicknesses between 6 - 10 mm, sub-size Charpy V-specimens are used. The specified min 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 %)
0.25	0.50	1.40	0.010	0.003	0.80	0.30	3.0	0.70	0.005

The steel is grain refined. ^{*)} Intentional alloying elements.

Maximum Carbon equivalent CET(CEV)

Thickness (mm)	4.0 - 15.0
1300 E CET(CEV)	0.43 (0.67)
1300 F CET(CEV)	0.43 (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 41-General product information Strenx®, Hardox®, Armax 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 conforms with EN 10 029.

Shape

SSAB offers tolerances according to EN 10 029.

Flatness

Tolerances according to Strenx® Flatness Guarantee Class D, which are narrower than EN 10 029 Class N.

Surface Properties

According to EN 10 163-2 Class A, Subclass 3.

Bending

Tolerances according to Strenx® Bending Guarantee Class D.

Delivery Conditions

The delivery condition is Quenched or Quenched and Tempered at our discretion. 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 on www.ssab.com or consult Tech Support, techsupport@ssab.com.

Strenx® 1300 E/F has obtained its mechanical properties by quenching, and at our discretion, subsequent tempering. The properties of the delivery condition cannot be retained after exposure to temperatures in excess of 200°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 Information

www.ssab.com/contact