

Strenx® 1100 Plus

General Product Description

Strenx® 1100 Plus is a hot-rolled structural steel with a minimum yield strength of 1100 MPa. The material feature excellent flatness and surface quality, providing an outstanding finish to the final products. Typical applications include a wide range of parts and components such as demanding load-bearing structures.

Strenx® 1100 Plus benefits include:

- Exceptional weldability with matching strength, elongation and toughness across a weld
- Very good bendability and surface quality
- Superior consistency guaranteed by close tolerances
- High impact toughness which provides for good resistance to fractures

Dimension Range

Strenx® 1100 Plus is available as cut to length sheets in thicknesses of 4.0 - 8.0 mm. Strenx® 1100 Plus is available in widths up to 1600 mm and lengths up to 13 000 mm depending on thickness. Please contact your sales representative for more information regarding dimensions.

Mechanical Properties

Thickness (mm)	Yield strength R _{p02} (min MPa)	Tensile strength R _m (MPa)	Elongation A ₅ (min %)	Min. inner bending radius for a 90° bend
4.0 - 6.0	1100	1130 - 1350	10	3.5 x t
6.1 - 8.0	1100	1130 - 1350	10	4.0 x t

The mechanical properties are tested and guaranteed in both longitudinal and transverse direction.

Impact Properties

Test direction	Min. Impact energy for Charpy V 10x10 mm test specimens
Longitudinal	27 J/ -40°C
Transverse	27 J/ -20°C

Impact testing according to EN ISO 148-1 is performed on thicknesses ≥ 6mm. For thicknesses between 6.0 - 8.0 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 (10x10 mm).

Chemical Composition (ladle analysis)

C ^{*)} (max %)	Si ^{*)} (max %)	Mn ^{*)} (max %)	P (max %)	S (max %)	Al (min %)
0.20	0.50	1.80	0.020	0.005	0.015

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

Carbon equivalent CET(CEV)

Thickness (mm)	4.0 - 8.0
Max CET(CEV)	0.46 (0.89)

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

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

Tolerances

More details are given in Strenx® Guarantees or on www.ssab.com.

Thickness

Tolerances according to Strenx® Thickness Guarantees. Strenx® Guarantees meet the requirements of EN 10 051, but offer considerably narrower tolerances.

Length and Width

Width and length tolerances according to SSAB standard. The SSAB standard meets the requirements of EN 10 029, but offer narrower tolerances.

Shape

Tolerances according to EN 10 029. Narrower tolerances according to the SSAB standard are available on request.

Flatness

Tolerances according to Strenx® Flatness Guarantees Class A, 3 mm/m. Strenx® Flatness Guarantees meet the requirements of EN 10 029, but offer considerably narrower tolerances.

Surface Properties

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

Delivery Conditions

Strenx® 1100 Plus is supplied in as rolled surface condition, primer coated surface is available on request. The delivery condition is Quenched and Tempered.

Delivery requirements can be found in SSAB's brochure Strenx® Guarantees or on www.ssab.com.

Fabrication and Other Recommendations

Welding, bending and machining

Strenx® 1100 Plus has extremely good weldability with the same minimum guarantees for strength, elongation and impact toughness across a weld as in the parent material, as long as our recommendations are followed.

Strenx® 1100 Plus has good forming performance.

Strenx® 1100 Plus 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 400°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.

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

Contact Information

www.ssab.com/contact