Strenx® 960

General Product Description

Strenx® 960 is a structural steel that guarantees a minimum yield strength of up to 960 MPa depending on thickness.

Strenx® 960 meets the requirements of EN 10 025-6 for the S960QL grade and thicknesses. Typical applications include demanding load-bearing structures.

Strenx® 960 benefits include:

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

Dimension Range

Strenx® 960 is available in plate thicknesses of 4 – 100 mm. Strenx® 960 is 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

Mechanical Properties

Thickness (mm)	Yield strength $R_{p0.2}$ (min MPa)	Tensile strength R_m (MPa)	Elongation A_5 (min %)
4.0- 53.0	960	980- 1150	12
53.1- 100	850	900- 1100	10

For transverse test pieces.

Impact Properties

Grade	Min transverse test, impact energy, Charpy V 10x10 mm tests specimens[2)]	Exceeds the requirements for
Strenx® 960 E	40 J/- 40 °C	S960QL

[2)] Unless otherwise agreed, transverse impact testing according to EN 10025-6 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	0.50	1.60	0.020	0.010	0.80	0.3	2.0	0.70	0.005

The steel is grain refined. *) Intentional alloying elements.

Maximum Carbon equivalent CET(CEV)

Thickness (mm)	4.0 - 34.9	35.0 - 100.0
CET(CEV)	0.38 (0.58)	0.41 (0.67)

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

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 meets 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.

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 3.

Bending

Tolerances according to Strenx® Bending Guarantee Class B.

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® 960 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 550ºC.

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