

Strenx® 700MC Plus

General Product Description

The high-strength structural steel with excellent formability

Strenx® 700MC Plus is a high-strength structural steel with advanced cold formability and impact toughness for highly demanding applications.

Strenx® 700MC Plus meets or exceeds the requirements of S700MC in EN 10149-2. It is typically used in highly demanding applications that require superior bendability, high impact toughness in cold conditions and the ability to cut mechanically. Strenx® 700MC Plus comes in cut-to-length sheets.

Dimension Range

Strenx® 700MC Plus is available as cut to length sheets in thicknesses of 3.0 - 12.0 mm, widths up to 1525 mm and lengths up to 12300 mm.

Mechanical Properties

Thickness (mm)	Yield strength R _{eH} ¹⁾ (min MPa)	Tensile strength R _m (MPa)	Elongation A ₅ (min %)	Min. inner bending radius for a 90° bend ²⁾
3.0 - 10.0	700	750 - 950	13	1.0 x t
10.1 - 12.0	700	750 - 950	13	1.5 x t

The mechanical properties are tested in the longitudinal direction.

¹⁾ If R_{eH} is not applicable then R_{p0.2} is used. On thicknesses >8 mm the minimum yield strength may be 20 MPa lower.

²⁾ For both longitudinal and transverse direction.

Impact Properties

Product	Min. impact energy for longitudinal testing, Charpy V 10x10 mm test specimen ¹⁾
Strenx® 700MC Plus	40 J / -60 °C

¹⁾ Impact testing in the transverse direction is available if specified at the time of the order. Minimum impact energy for transverse testing is 27 J at -40° C.

Impact testing according to EN ISO 148-1 is performed on thicknesses ≥ 5mm. The specified minimum value corresponds to a full-size specimen.

Chemical Composition (ladle analysis)

C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Nb (max %)	V (max %)	Ti (max %)
0.12	0.25	2.10	0.020	0.010	0.09 ¹⁾	0.20 ¹⁾	0.15 ¹⁾

¹⁾ Sum of Nb, V and Ti = max 0.22%.

The steel is grain refined.

Carbon Equivalent CET(CEV)

Thickness (mm)	3.0 - 11.4	11.5 - 12.0
Typ CET(CEV)	0.24 (0.38)	0.26 (0.40)

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

Tolerances

More details are given in SSAB's brochure Strenx® Guarantees or on www.ssab.com.

Thickness

Tolerances according to Strenx® Thickness Guarantee.

Strenx® Guarantees offer considerably narrower thickness tolerances compared to EN 10051.

Length and Width

Width and length tolerances according to SSAB standard.

SSAB standard offer narrower width and length tolerances compared to EN 10051.

Length tolerances only apply for cut to length sheets.

Shape

Tolerances according to EN 10051. Narrower tolerances according to the SSAB standard are available on request.

Flatness

Tolerances according to Strenx® Flatness Guarantee Class A.

Strenx® Flatness Guarantee offer narrower tolerances compared to EN 10051.

Flatness guarantees only apply for cut to length sheets.

Surface Properties

According to EN 10163-2 Class A, Subclass 3.

Delivery Conditions

Thermomechanically Rolled. Strenx® 700MC Plus is available in as rolled or pickled surface condition.

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® 700MC Plus has good welding, cold forming and cutting performance.

Strenx® 700MC Plus is a cold forming steel not suited for heat treatments at temperatures above 580°C since the material then may lose its guaranteed properties.

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

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the products.

Contact Information

www.ssab.com/contact