

Strenx 600 MC

Advanced High Strength steel

General Product Description

Strenx 600 MC is a hot-rolled structural cold-forming steel with a minimum yield strength of 600 MPa intended to give stronger and lighter structures. Strenx 600 MC meet or exceed the requirements of S600MC in EN 10149-2. Typical applications are a wide range of components and parts for example demanding load bearing structures.

Available dimensions

Strenx 600 MC is available in thicknesses of 2.00-10.00 mm and widths up to 1600 mm as coils, slit coils or cut to length sheets in lengths up to 16 meters.

Mechanical Properties

Yield strength R_{eH} ¹⁾ Min MPa	Tensile strength R_m MPa	Elongation A_{80} Min % Sheet thickness $t < 3$ mm	Elongation A_5 Min % Sheet thickness $t \geq 3$ mm
600	650 - 820	13	16

The mechanical properties are tested in the longitudinal direction.

¹⁾If R_{eH} is not applicable then $R_{p0.2}$ is used.

Impact properties	600 MC D -20°C	600 MC E -40°C
Minimum energy for test on longitudinal Charpy V 10x10 mm test specimens (J)	40	27

Impact testing according to EN ISO 148-1 is performed on thicknesses ≥ 6 mm. The specified minimum value corresponds to a full-size specimen.

Bending properties	$t \leq 3$ mm	$3 \text{ mm} < t \leq 6$ mm	$t > 6$ mm
Min. inner bending radius for a 90° bend	0.7xt	1.1xt	1.4xt

For both longitudinal and transverse direction.

Chemical Composition (ladle analysis)

C % Max	Si % Max	Mn % Max	P % Max	S % Max	Al _{tot} % Min	Nb % Max	V % Max	Ti % Max
0.12	0.21 ¹⁾	1.90	0.025	0.010	0.015	0.09 ²⁾	0.20 ²⁾	0.15 ²⁾

1) If the material is to be hot-dip galvanized according to category A or category B in EN 10149-2 this must be specified at the time of order.

2) Sum of Nb, V and Ti = max 0.22%

The steel is grain refined.

Carbon equivalent

	$2 \text{ mm} \leq t \leq 10 \text{ mm}$
CET / CEV Typical	0.21 / 0.33

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

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

Tolerances

More details are given on www.ssab.com.

Thickness

Tolerances according to Strenx Thickness Guarantees.
Strenx Guarantees offer considerably narrower thickness tolerances compared to EN 10 051.

Length and width

Width and length tolerances according to SSAB standard.
The SSAB standard offer narrower width and length tolerances compared to EN 10 051.
Length tolerances only apply for cut to length sheets.

Shape

Tolerances according to EN 10 051.
Narrower tolerances according to the SSAB standard are available on request.

Flatness

Tolerances according to Strenx Flatness Guarantees™ Class A.
Strenx Flatness Guarantees offer narrower tolerances compared to EN 10 051.
Flatness guarantees only apply for cut to length sheets.

Surface Properties

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

Delivery Conditions

Thermomechanically Rolled. Strenx 600 MC is available in as rolled or pickled surface condition with mill or cut edge.

Fabrication and Other Recommendations

Welding, bending and machining

Strenx 600 MC has good welding, cold forming and cutting performance.

Strenx 600 MC 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 our Tech Support, techsupport@ssab.com.

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

Contact and Information

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