# Strenx® 960 MC

## General Product Description

The high-strength structural steel at 960 MPa

Strenx® 960 MC is a hot-rolled structural steel made for cold forming, with a minimum yield strength of 960 MPa.

Strenx® 960 MC meets and exceeds the requirements of S960MC in EN 10149-2. These cut-to-length sheets feature excellent thickness accuracy and surface quality in relation to strength level, providing an outstanding finish to the final products.

Typical applications include advanced lifting devices such as mobile cranes and lighter transport solutions and components.

### Dimension Range

Strenx® 960 MC is available as cut to length with mill edge in thicknesses of 3.00- 10.00 mm, widths up to 1600 mm and lengths up to 13 meters.

## 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- 10 | 960 | 980- 1250 | 7 | 3.5 x t |

The mechanical properties are tested in the longitudinal direction.

[1] If ReH is not applicable then Rp 0,2 is used.

[2] For both longitudinal and transverse direction.

### Impact Properties

| Test direction | Min impact energy for Charpy V 10x10 mm tests specimens |
|---|---|
| Longitudinal | 27 J/-40°C |

Impact testing according to EN 10149-2 (-20 °C /minimum 40J) is available if specified at the time of order.

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 %) | $Al_{tot}$ (min %) | Nb [1] (max %) | V [1] (max %) | Ti [1] (max %) |
|---|---|---|---|---|---|---|---|---|
| 0.12 | 0.25 | 1.30 | 0.020 | 0.010 | 0.015 | 0.05 | 0.05 | 0.07 |

The steel is grain refined.

[1] Sum of Nb, V and Ti = max 0.18%

### Carbon equivalent CET(CEV)

| Thickness (mm) | 3.00 - 7.99 | 8.00 - 10.00 |
|---|---|---|
| Typical CET(CEV) | 0.28 (0.51) | 0.30 (0.57) |

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

## Tolerances

More details are given 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
Strenx® 960 MC is supplied in as rolled surface condition, pickled surface is available in a limited thickness range. The product is thermomechanically rolled.

## Fabrication and Other Recommendations
**Strenx® 960 MC has good welding, cold forming and cutting performance.**

Strenx® 960 MC is not suited for applications requiring hot working or heat treatments at temperatures above 400°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, techsupport@ssab.com.

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

## Contact Information
www.ssab.com/contact