Preliminary SSAB HR600MC Zero

Preliminary Product Sheet

Preliminary Product Sheets describe information for products that still are under development or in a trial delivery phase.

SSAB Zero™ steel is made using recycled steel and fossil-free energy.

The SSAB Zero™ EPDs and Certificate of Carbon Emissions is available on ssab.com. The availability of SSAB Zero™ products is subject to limitations and conditions of delivery have to be agreed upon separately.

General Product Description

SSAB HR600MC Zero is a hot-rolled structural steel made for cold forming, with a minimum yield strength of 600 MPa for stronger and lighter structures.

SSAB HR600MC Zero meets or exceeds the requirements of S600MC in EN 10149-2.

Typical applications include a wide range of components and parts, such as demanding load-bearing structures.

Dimension Range

SSAB HR600MC Zero is available in thicknesses of 5.00-8.00 mm and widths up to 1610 mm and cut to lengths up to 16 meters. Dimensions to be agreed upon the order.

Mechanical Properties

Thickness (mm)	Yield strength R_{eH} [1] (min MPa)	Tensile strength R_m (MPa)	Elongation A_5 [2] (min %)	Min. inner bending radius for a 90° bend (x t)
5.00 - 6.00	600	650 - 820	16	1.1
6.01 - 8.00	600	650 - 820	16	1.4

The mechanical properties are tested in the longitudinal direction.

Bending properties for both longitudinal and transversal direction.

[1] If R_{eH} is not applicable then $Rp_{0.2}$ is used.

[2] A_5 value applies for thicknesses ≥ 3.00 mm.

Impact Properties

Product	Min. impact energy for longitudinal testing, Charpy V 10x10 mm test specimens
SSAB HR600MC D Zero	40 J / -20 °C

Impact testing according to EN ISO 148-1 is performed on thicknesses ≥ 6mm. 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 (min %)	Nb (max %)	V (max %)	Ti (max %)
0.12	0.10 [1]	1.90	0.025	0.010	0.015	0.09 [2]	0.20 [2]	0.15 [2]

The steel is grain refined.

[1] Not suitable for galvanization.

[2] The sum of Nb, V and Ti is max 0.22%.

Carbon Equivalent

Thickness (mm)	5.00 - 8.00
Typical CEV (%)	0.34
Typical CET (%)	0.22

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

Tolerances

Thickness

Tolerances according to 1/2 of EN 10051 category D.

Length and Width

Tolerances for width and length are according to SSAB standard and offer narrower width and length tolerances compared to EN 10051.

For coil and sheet with mill edge, the width tolerances are corresponding to -0/+20 mm.

For coil and sheet with cut edge, the width tolerances are corresponding to -0/+2 mm.

For sheet, the length tolerances are corresponding to -0/+8mm as a maximum.

Shape

According to EN 10051. Narrower tolerances are available on request.

Flatness

Tolerances guarantee a maximum flatness deviation of 3 mm/m in addition to the EN 10051 flatness requirements.

Flatness guarantees only apply for cut to length sheets.

Surface Properties

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

Delivery Conditions

Thermomechanically rolled (TM).

Available in as rolled or pickled surface condition with mill edge.

Fabrication and Other Recommendations

Well suited for all common thermal and mechanical cutting processes. Good cold forming properties. Welding can be performed, using all common methods and consumables.

Not suited for heat treatments at temperatures above 580°C, since the material may then 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