Preliminary SSAB HR355MC Plus 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 HR355MC Plus Zero is an advanced structural and cold-forming steel for efficient laser cutting with guaranteed flatness both before and after laser cutting.

SSAB HR355MC Plus Zero meets and exceeds the requirements of S355MC in EN 10149-2. Upon agreement, it can be delivered as dual certified. This dual certification will enable producers of steel structures, in accordance with EN 1090, to use SSAB HR355MC Plus Zero in their CE-marked final component or structure.

Dimension Range

SSAB HR355MC Plus Zero is available in thicknesses of 6.00-10.00 mm and widths up to 1610 mm and cut to lengths up to 16 meters. Dimensions to be agreed upon the order.

Mechanical Properties

Yield strength R_{eH} (min MPa)	Tensile strength R_m (MPa)	Elongation A_{80} (min %)	Elongation A_5 [1)] (min %)	Min. inner bending radius for a 90° bend (x t)
355	430 - 550	19	23	0.0

The mechanical properties are tested in the longitudinal direction.

The bending guarantee is valid for both longitudinal and transverse direction.

[1)] A_5 value applies for thicknesses ≥ 3.00 mm.

Impact Properties

Thickness (mm)	Min. impact energy for longitudinal testing, Charpy V 10x10 mm test specimens
6.0 - 10.0	40 J / -60 °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 %)	CEV (max)
0.12	0.10	1.5	0.020	0.015	0.29

Aluminum-killed (Al ≥ 0.015%) and grain-refined. Additionally, niobium (Nb), vanadium (V), titanium (Ti) and/or boron (B) may be used as single alloying element or in any combination.

1) Not suitable for galvanization.

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

Tolerances

Thickness

Tolerances correspond to 2/3 of EN 10051 as default. Tighter tolerances are available upon request.

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

Tolerances according to EN 10051.

Flatness

≤ 3 mm/m flatness deviation for both before and after laser cutting.

Surface Properties

According to EN 10163-2 Class B, 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