

SSAB Laser[®] 355MC Plus

General Product Description

SSAB Laser[®] 355MC Plus is an advanced high yield strength cold forming steel for laser cutting. The SSAB guarantee for flatness, both before and after laser cutting, is ≤ 3 mm/m deviation.

SSAB Laser[®] 355MC Plus 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 Laser[®] 355MC Plus in their CE-marked final component or structure.

Dimension Range

Delivery form	Thickness (mm)	Width (mm)	Length (mm)
Hot rolled sheet as rolled	3.0 - 15.0	1000 - 1860	1000 - 16000
Hot rolled sheet pickled and oiled	3.0 - 15.0 ¹⁾	1000 - 1830	1000 - 16000

¹⁾ Sheet-by-sheet pickling for thicknesses >12.0 mm possible upon special agreement.

Mechanical Properties

Yield strength R _{eH} (min MPa)	Tensile strength R _m (MPa)	Elongation A ₈₀ ¹⁾ (min %)	Elongation A ₅ ²⁾ (min %)	Min. inner bending radius for a 90° bend ³⁾ (x t)
355	430 - 550	19	23	0.0

The mechanical properties are tested in the longitudinal direction.

¹⁾ A₈₀ value applies for thicknesses < 3.00 mm.

²⁾ A₅ value applies for thicknesses \geq 3.00 mm.

³⁾ The bending guarantee is valid for both longitudinal and transverse direction.

Impact Properties

Thickness (mm)	Min. impact energy for longitudinal testing, Charpy V 10x10 mm test specimens
3.0 - 12.0	40 J / -60 °C
12.1 - 15.0	69 J / -40 °C

Impact testing according to EN ISO 148-1 is performed on thicknesses \geq 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	0.03	1.5	0.020	0.015	0.28

All SSAB Laser[®] steels are aluminum-killed (Al \geq 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.

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

Tolerances

All SSAB Laser[®] products are delivered with SSAB Laser[®] tolerances, which means increased guarantees compared to corresponding EN standards. Detailed information is available on ssab.com.

Thickness

Hot rolled sheet: SSAB Laser[®] tolerances correspond to $\frac{2}{3}$ of EN 10051 as default. Tighter tolerances are available upon request.

Width

Hot rolled sheet: -0/+20 mm for mill edge sheet; -0/+2 mm for cut edge sheet. Tighter tolerances are available upon request.

Length

Nominal length (mm)	Tolerance (mm)
$l \leq 4000$	- 0 / + 3
$4000 < l \leq 6000$	- 0 / + 4
$6000 < l \leq 8000$	- 0 / + 5
$8000 < l \leq 13000$	- 0 / + 6
$13000 < l \leq 16000$	- 0 / + 8

Shape

According to EN 10051.

Flatness

≤ 3 mm/m flatness deviation for both delivery condition and laser cut parts.

Surface Properties

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

Delivery Conditions

Thermomechanically rolled.

Surface and edge condition

SSAB Laser® MC Plus products are available in as rolled or pickled and oiled surface condition with mill edge. Cut edge sheets are available upon request.

Fabrication and Other Recommendations

All SSAB Laser® products have been optimized for laser cutting, cold forming and welding.

SSAB Laser® MC Plus products are cold forming steels 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