

Strenx® 700 HR W

General Product Description

The high-strength, corrosion resistant structural steel at 700 MPa.

Strenx® 700 HR W is a hot-rolled weathering steel made for cold forming, with a minimum yield strength of 700 MPa for stronger and lighter structures.

Strenx® 700 HR W meets or exceeds the requirements of S700MC in EN 10149-2. Typical applications include a wide range of components and parts in demanding load-bearing structures. Strenx® 700 HR W comes in coils, slit coils or cut-to-length sheets.

Dimension Range

Strenx® 700 HR W is available in thicknesses of 3.0 - 6.1 mm and widths up to 1550 mm as coils, slit coils or cut to length sheets in lengths up to 13.6 m.

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⁾
3.0 - 6.0	700	750 - 950	12	1.2 x t
6.1	700	750 - 950	12	1.6 x t

The mechanical properties are tested in the longitudinal direction.

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

²⁾ For both longitudinal and transverse direction.

Impact Properties

Product	Min. impact energy for longitudinal testing, Charpy V 10x10 mm test specimen ¹⁾
Strenx® 700 HR W	40 J / -20 °C

¹⁾ Impact testing according to EN ISO 148-1 is performed on thicknesses ≥ 5 mm. The specified minimum value corresponds to a full-size specimen.

Chemical Composition (ladle analysis)

C (max %)	Si (max %)	Mn (max %)	P (max %)	S (max %)	Cr (max %)	Cu (max %)	Ti (max %)
0.12	0.60	2.10	0.015	0.010	1.25	0.50	0.15

The steel is grain refined.

Carbon Equivalent CET(CEV)

Thickness (mm)	3.0 - 6.1
Typ CET(CEV)	0.26 (0.47)

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

Tolerances

More details are given in SSAB's brochure Strenx® Guarantees or on www.ssab.com.

Thickness

Tolerances according to Strenx® Thickness Guarantee.

Strenx® Guarantees offer considerably narrower thickness tolerances compared to EN 10051.

Length and Width

Width and length tolerances according to SSAB standard.

SSAB standard offer narrower width and length tolerances compared to EN 10051.

Length tolerances only apply for cut to length sheets.

Shape

Tolerances according to EN 10051. Narrower tolerances according to the SSAB standard are available on request.

Flatness

Tolerances according to Strenx® Flatness Guarantee Class A.

Strenx® Flatness Guarantee offer narrower tolerances compared to EN 10051.

Flatness guarantees only apply for cut to length sheets.

Surface Properties

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

Delivery Conditions

Delivery requirements can be found in SSAB's brochure Strenx® Guarantees or www.ssab.com.

Fabrication and Other Recommendations

Welding, bending and machining

Strenx® 700 HR W has good welding, cold forming and cutting performance.

Strenx® 700 HR W is not suited for heat treatments at temperatures above 580°C since the material then may lose its guaranteed properties.

The weldability of Strenx® 700 HR W is good. All the conventional fusion welding methods can be used. To obtain the same corrosion resistance in the weld as in the base metal, special filler metals should be used. Painting of Strenx® weather resistant steel is easy and will result in good paint adhesion. This can further increase the maintenance interval of the component. In order to ensure the uniform colour of the patina, all impurities must be cleaned from the steel surface. Organic impurities such as oil or protective greases must be removed by washing with suitable solvent.

Surface oxidation, oxides or rust can be removed by either shot-blasting or pickling. This will also accelerate the patina formation process. Shot-blasting is not recommended for thicknesses below 4 mm. The surface of a clean weathering steel surface can be pre-patinated by allowing the surface to get wet and dry in repeated intervals.

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