

# Hardox HiTuf

## General Product Description

Hardox HiTuf is an abrasion resistant steel with a nominal hardness of 350 HBW. Typical applications are components structures with need for high toughness and abrasions resistance . For more information on applications see [www.ssab.com](http://www.ssab.com)

### Available dimensions

Hardox HiTuf is available in thicknesses of 40 – 160 mm. Hardox HiTuf is available in widths up to 3350 mm and lengths up to 14630 mm. For thicknesses over 125 mm preferred width is 1650 mm. More detailed information on dimensions is provided in the dimension program at [www.ssab.com](http://www.ssab.com).

## Mechanical Properties

Thickness mm	Hardness HBW Min - Max <sup>1)</sup>	Typical yield strength MPa, not guaranteed
40 - 160	310 - 370	850

<sup>1)</sup> Brinell hardness, HBW, according to EN ISO 6506-1, on a milled surface 0.5 – 3 mm below surface. At least one test specimen per heat and 40 tons. The nominal material thickness will not deviate more than ±15 mm from that of the test specimen.

The plates are through-hardened to a minimum of 90 % of the guaranteed minimum surface hardness.

Impact properties	Hardox HiTuf
Minimum impact energy (J) for transverse tests Charpy V 10x10 mm test specimen <sup>2)</sup>	40/-40 °C

<sup>2)</sup> Impact testing according to ISO EN 148 per heat and thickness group. Average of three tests. Single value minimum 70% of specified average.

## Chemical Composition (heat analysis)

C <sup>*)</sup> Max %	Si <sup>*)</sup> Max %	Mn <sup>*)</sup> Max %	P Max %	S Max %	Cr <sup>*)</sup> Max %	Ni <sup>*)</sup> Max %	Mo <sup>*)</sup> Max %	B <sup>*)</sup> Max %
0.20	0.60	1.60	0.050	0.020	0.70	2.0	0.70	0.005

The steel is grain refined. <sup>\*)</sup> Intentional alloying elements.

### Maximum carbon equivalent CET (CEV)

Thickness mm	40 - 70	(70) - 160
CET (CEV)	0.38 (0.56)	0.41 (0.66)

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

## Tolerances

More details are given in SSAB's brochure 41-General product information Strenx, Hardox, Armox and Toolox-UK or on [www.ssab.com](http://www.ssab.com).

### Thickness

Tolerances according to SSAB's thickness precision guarantee AccuRollTech.

- AccuRollTech meets the requirements of EN 10 029 Class A, but offers narrower tolerances.

### Length and width

According to SSAB's dimension program. Tolerances conforms to EN 10 029 or to SSAB's standard after agreement.

### Shape

Tolerances according to EN 10 029

### Flatness

Tolerances according to SSAB's flatness tolerances which are narrower than EN 10 029 Class N (steel type L).

### Surface Properties

According to EN 10 163-2, Class A Subclass 1.

## Delivery Condition

The delivery condition is Quenched. The plates are delivered with sheared or thermally cut edges. Untrimmed edges after agreement. Delivery requirements can be found in SSAB's brochure 41-General product information Strenx, Hardox, Armox and Toolox-UK or [www.ssab.com](http://www.ssab.com).

## Fabrication and Other Recommendations

### Welding, bending and machining

Recommendations can be found in SSAB's brochures on [www.hardox.com](http://www.hardox.com) or consult Tech Support, [techsupport@ssab.com](mailto:techsupport@ssab.com).

Hardox HiTuf is not intended for further heat treatment. It has obtained its mechanical properties by quenching and when necessary by means of subsequent tempering. The properties of the delivery condition cannot be retained after exposure to temperatures in excess of 500°C .

Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on this product. Grinding, especially of primer coated plates, may produce dust with a high particle concentration.

## Contact and Information

For information, see SSAB's brochures on [www.ssab.com](http://www.ssab.com) or consult Tech Support, [techsupport@ssab.com](mailto:techsupport@ssab.com).