

# Toolox 44

## Engineering & Tool Steel

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### General Product Description

Toolox 44 is delivered in as quenched and tempered condition having good impact toughness and very low residual stresses to achieve good dimensional stability after machining.

Toolox 44 is suitable in moulding applications, extrusion dies and in small size die-casting dies. Toolox 44 can also be used in cold stamping dies depending on the characteristics of the sheet to be stamped. Furthermore, Toolox 44 can also be used for engineering components when high strength is required. With use of proper surface engineering methods the service life of tools/components can be prolonged.

### Dimensions

Toolox 44 is available as plates in thicknesses between 6 - 130 mm, or as bars in diameters 21 - 141 mm. Other dimensions can be available on request.

### Mechanical Properties

#### Hardness, Plates and Bars

Hardness HBW  
Min. - Max. <sup>1)</sup>

410 - 475

<sup>1)</sup> Plate hardness is measured, according to EN ISO 6506-1, on a milled surface 0.5 - 2 mm below the plate surface. Bar Hardness is measured on a milled surface, with indents positioned as impact test according to EN 10 083.

#### Impact Toughness, Plate

Test temperature	Impact energy, Charpy-V, transverse direction; Min J <sup>2)</sup>
20°C	18

<sup>2)</sup> Impact testing according to EN 10 025, EN ISO 148.

#### Impact Toughness, Bar

Test temperature	Diameter (mm)	Impact energy, Charpy-V, Min J <sup>3)</sup>
20°C	≤141	18

<sup>3)</sup> Impact testing according to EN 10 083.

#### Ultrasonic Inspection

Ultrasonic inspection is carried out according to :

EN 10 308 (Bars), EN 10 160 (Plates) with extra demands according to specification SSAB V6.

## Tolerances

More details are given in SSAB's brochure 41-General product information Weldox, Hardox, Armax and Toolox-UK, and are available at [www.toolox.com](http://www.toolox.com).

### Plate Thickness

Tolerances according to SSAB's thickness guarantee AccuRollTech - AccuRollTech meets the requirements of EN 10 029 Class C but offers more narrow tolerances.

### Plate Length and Width

Tolerances according to EN 10 029.

### Plate Flatness

Flatness tolerances are according to SSAB's flatness tolerances, which are more restrictive than EN 10 029 Class N (steel type L).

### Plate Surface Properties

Surface properties of Toolox 44 are according to EN 10 163-2 Class B, Subclass 3.

### Bar Diameter and Length

Tolerances according to EN 10 060.

### Bar Straightness

Straightness according to EN 10 060.

### Bar Surface Properties

Peeled surface.

## Delivery Condition

Quenched and Tempered at a minimum temperature of 590 °C.

On delivery from SSAB the plates and bars meet the following specifications:

- free from mill scale
- not repair welded

Delivery requirements can be found in SSAB's brochure 41-General product information Weldox, Hardox, Armax and Toolox-UK at [www.toolox.com](http://www.toolox.com).

## Fabrication and other recommendations

### Welding, bending and machining

For information concerning welding and fabrication, see SSAB's brochures at [www.toolox.com](http://www.toolox.com) or consult Tech Support, [help@ssab.com](mailto:help@ssab.com).

Toolox 44 is not intended for further heat treatment. If Toolox 44 is heated above 590 °C after delivery from SSAB no guarantees for the properties of the steel are given.

Nitriding or surface coating may be carried out if the temperature is below 590 °C.

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

## Contact and Information

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