

## Toolox<sup>®</sup> 44

### General Product Description

Toolox<sup>®</sup> 44 is a steel already heat treated to the final properties. Thus saving time, costs and risks associated with heat treatment.

The very high strength is combined with a high and guaranteed toughness as well as an excellent fatigue resistance. Making Toolox<sup>®</sup> 44 the ideal choice for the most demanding engineering and mould and die applications.

Toolox<sup>®</sup> 44 can be surface hardened with methods like nitriding, laser and induction. Giving the possibilities to even further improve the performance.

### Dimension Range

Toolox<sup>®</sup> 44 is available as plates in thicknesses between 6.0 - 130.0 mm. Other dimensions can be available on request.

### Mechanical Properties

| Thickness (mm) | Hardness <sup>1)</sup> (HBW) | Yield strength R <sub>p0.2</sub> (min MPa) | Tensile strength R <sub>m</sub> (min MPa) | Elongation A <sub>5</sub> (min %) |
|----------------|------------------------------|--------------------------------------------|-------------------------------------------|-----------------------------------|
| 6.0 - 130.0    | 410 - 475                    | 1150                                       | 1300                                      | 8                                 |

<sup>1)</sup> Hardness is measured, according to EN ISO 6506-1, on a milled surface 0.5 - 2 mm below the plate surface.

### Impact Properties

| Thickness (mm) | Min impact energy for transversal testing, Charpy V 10x10 mm test specimen <sup>1)</sup> |
|----------------|------------------------------------------------------------------------------------------|
| 6.0 - 130.0    | 18 J / 20 °C                                                                             |

<sup>1)</sup> Unless otherwise agreed, transverse impact testing according to EN 10025-6 option 30 will apply. For thicknesses between 6 - 11.9 mm, sub-size Charpy V-specimens are used. The specified minimum value is then proportional to the cross-sectional area of the specimen compared to a full-size specimen (10 x 10 mm).

### Ultrasonic testing

Ultrasonic inspection is carried out according to : EN 10 160 with extra demands according to specification SSAB V6.

## Tolerances

More details are given in SSAB's brochure Toolox® Guarantees and on [www.toolox.com](http://www.toolox.com).

## Thickness

Tolerances according to Toolox® Thickness Guarantee.

Toolox® Guarantees meets the requirements of EN 10029 Class C but offers more narrow tolerances.

## Length and Width

Tolerances according to EN 10029.

## Flatness

Tolerances are according to Toolox® Flatness Guarantees, which are more restrictive than EN 10029 Class N (steel type L).

## Surface Properties

According to EN 10163-2 Class B Subclass 3.

## Delivery Conditions

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

On delivery from SSAB the plates meet the following specifications:

- Free from mill scale
- Not repair welded

Delivery requirements can be found in SSAB's brochure Toolox® Guarantees or at [www.toolox.com](http://www.toolox.com).

## Fabrication and Other Recommendations

Toolox® products is not intended for further heat treatment. If Toolox 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.

### Welding, bending and machining

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

## Contact Information

[www.ssab.com/contact](http://www.ssab.com/contact)