

### ABRASION RESISTANT PLATE

Hardox HiTuf is an abrasion resistant plate with an extremely high crack resistance. Hardox HiTuf has a hardness of about 350 HBW and is intended for applications with extra high demands on the combination of toughness and abrasion resistance.

**Applications** Cutting edges, demolition tools and rippers.

### Chemical Composition

(ladle analysis)

| Plate thickness<br>mm | C<br>max | Si<br>max | Mn<br>max | P<br>max | S<br>max | Cr<br>max | Ni<br>max | Mo<br>max | V<br>max | Nb<br>max | B<br>max | CEV<br>typv. | CET<br>typv. |
|-----------------------|----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|-----------|----------|--------------|--------------|
| 40–70                 | 0,20     | 0,50      | 1,60      | 0,020    | 0,010    | 0,70      | 2,0       | 0,70      | 0,060    | 0,04      | 0,005    | 0,55         | 0,36         |
| (70)–130              | 0,20     | 0,60      | 1,60      | 0,020    | 0,010    | 0,70      | 2,0       | 0,70      | 0,090    | 0,04      | 0,005    | 0,64         | 0,39         |

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

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

The steel is grain refined.

### Hardness

HBW  
310–370

### Mechanical Properties

Typical values

| Plate thickness<br>mm | Yield strength<br>R <sub>p0.2</sub><br>MPa | Tensile strength<br>R <sub>m</sub><br>MPa | Elongation<br>A <sub>5</sub><br>% |
|-----------------------|--------------------------------------------|-------------------------------------------|-----------------------------------|
| 40 – 70               | 950                                        | 980                                       | 16                                |
| (70) – 130            | 850                                        | 900                                       | 16                                |

### Impact Properties

Typical values

| Plate thickness<br>mm | Testing temperature<br>°C | Impact energy 1/4 depth<br>Charpy-V, longitudinal<br>J |
|-----------------------|---------------------------|--------------------------------------------------------|
| 40 – 70               | -40                       | 95                                                     |
| (70) – 130            | -40                       | 70                                                     |

### Testing

Brinell hardness, HBW according to EN ISO 6506-1, on a milled surface 0,5–3 mm below plate surface per heat and 40 tons. The nominal thickness will not deviate more than ±15 mm from that of the tested plate.

### Delivery Conditions

Q.

### Dimensions

Hardox HiTuf is supplied in plate thicknesses of 40–130 mm. More detailed information on dimensions is provided in our brochure 41-General product information Weldox, Hardox, Armax and Toolox-UK.

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tolerances</b>                             | <p>Thickness tolerances according to SSAB thickness precision guarantee AccuRollTech™.</p> <ul style="list-style-type: none"><li>- AccuRollTech™ meets the requirements of EN 10 029 Class A, but offers more narrow tolerances.</li></ul> <p>More detailed information is given in our brochure 41-General product information Weldox, Hardox, ArmoX and Toolox-UK.</p> <p>Tolerances on shape, length and width are according to EN 10 029.</p> <p>Tolerances on flatness is according to SSAB:s flatness tolerances, closer than EN 10 029 Class N (steel type L).</p>                                                                                                                                                                                        |
| <b>Surface Properties</b>                     | <p>According to EN 10 163-2</p> <ul style="list-style-type: none"><li>- Requirements according to Class A.</li><li>- Repair conditions according to Subclass 1.</li></ul> <p>(Repair welding is allowed)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>General Technical Delivery Requirement</b> | <p>According to our brochure 41-General product information Weldox, Hardox, ArmoX and Toolox-UK.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Heat Treatment and Fabrication</b>         | <p>Hardox HiTuf has obtained its mechanical properties by quenching and tempering.</p> <p>The properties of the delivery condition can not be retained after exposure to service temperatures or tempering processes in excess of 450 °C (840 °F).</p> <p>For information concerning welding and fabrication, see our brochures on <a href="http://www.hardox.com">www.hardox.com</a> or consult our Technical Customer Service.</p> <p>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. Our Technical Customer Service Department will provide further information on request.</p> |