WELDOX 1100 is a general structural steel with a minimum yield strength of 1100 N/mm² intended for applications where its high strength permits weight savings to be made. The plate has very good cold bending properties and very good weldability. WELDOX 1100 can be obtained with guaranteed impact toughness at temperatures down to –60°C (–76°F).

### Applications
Load carrying structures having very high demands on low weight.

### Designation
- WELDOX 1100 E with impact testing at –40°C (–40°F).
- WELDOX 1100 F with impact testing at –60°C (–76°F).

### Chemical composition

<table>
<thead>
<tr>
<th>Element</th>
<th>C*</th>
<th>Si*</th>
<th>Mn*</th>
<th>P</th>
<th>S</th>
<th>B*</th>
<th>Nb*</th>
<th>Cr*</th>
<th>V*</th>
<th>Cu*</th>
<th>Ti*</th>
<th>Al*</th>
<th>Mo*</th>
<th>Ni*</th>
<th>CEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>max</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>0.21</td>
<td>0.50</td>
<td>1.40</td>
<td>0.020</td>
<td>0.010</td>
<td>0.005</td>
<td>0.04</td>
<td>0.80</td>
<td>0.30</td>
<td>0.020</td>
<td>0.70</td>
<td>0.020</td>
<td>0.015</td>
<td>0.70</td>
<td>0.70</td>
<td></td>
</tr>
</tbody>
</table>

* Intentional alloying elements.

### Mechanical properties

| Plate thickness mm | Yield strength R_p0,2 min N/mm² | Tensile strength R_m min N/mm² | Elongation ¹) A₅ min % | A₅, min % ²)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5 – 25</td>
<td>1100</td>
<td>1250–1550</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

¹) For tranverse test pieces.
²) Testing by agreement.

### Impact properties

<table>
<thead>
<tr>
<th>Steel grade</th>
<th>Test temperature °C</th>
<th>Impact energy ¹) for test on transverse Charpy V test pieces min, J</th>
<th>WELDOX 1100F is delivered after specific agreement.</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELDOX 1100 E</td>
<td>–40</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>WELDOX 1100 F</td>
<td>–60</td>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

¹) Average of three tests. Single value min 70% of specified average.
²) For plate thicknesses under 12 mm subsize Charpy V-specimens are used. The specified minimum value is then proportional to the specimen’s cross-section.

### Testing
- Tensile testing in accordance with EN 10 002-1, per plate as heat treated.
- Impact testing in accordance with EN 10 045-1, per plate as heat treated.

### Delivery condition
Quenched, Q.

### Dimensions
WELDOX 1100 is supplied in plate thicknesses of 5–25 mm. More detailed information on dimensions is provided in our brochures E-5, (Int 5) or E-40. Certain width restrictions may apply with respect to E-5, (Int 5) or E-40. Thicker plate than 25 mm or thinner plate than 5 mm only after specific agreement.

### Tolerances
- Tolerances on thickness according to EN 10 029 Class A.
- Tolerances on flatness according to Class N, brochures E-5, (Int 5) or E-40.
  (Fulfills the requirements of EN 10 029 Class N)

### Surface finish
According to EN 10 163-2.
- Requirements according to Class A.
- Repair conditions according to Subclass 1.
  Repair by welding is allowed.
DATA SHEET
WELDOX 1100

<table>
<thead>
<tr>
<th>General technical delivery requirements</th>
<th>According to our brochures E-5, (Int 5) or E-40, General Product Information.</th>
</tr>
</thead>
</table>

Heat treatment and fabrication

WELDOX 1100 has obtained its mechanical properties by a quenching process. WELDOX 1100 is not suited for applications requiring hot working at temperatures above 200°C (390°F) since the material may then lose its good properties.

For information concerning welding and fabrication, see our brochures listed below or consult our Technical Customer Service.

<table>
<thead>
<tr>
<th>Fabrication</th>
<th>Brochure No:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fabrication</td>
<td>E-10</td>
</tr>
<tr>
<td>Welding</td>
<td>E-11</td>
</tr>
<tr>
<td>Bending</td>
<td>E-12</td>
</tr>
<tr>
<td>Shearing</td>
<td></td>
</tr>
<tr>
<td>Flame cutting</td>
<td>E-14</td>
</tr>
</tbody>
</table>

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 Application Engineering Department will provide further information on request.

For further information please contact our Application Engineering Department.

WELDOX® structural steel plate is manufactured by SSAB Oxelösund AB, Sweden