**STANDARD REFERENCE:**
EN ISO 683-2: 2018 (Hot-rolled products) | EN 10277: 2018 (Bright products)

**RODACCIAl REFERENCES AND COMPARABLE STANDARDS**

<table>
<thead>
<tr>
<th></th>
<th>EUROPE</th>
<th>ITALY</th>
<th>GERMANY</th>
<th>FRANCE</th>
<th>UK</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>EN 10083-3: 2006</td>
<td>(UNI 7845-78)</td>
<td>(DIN 17200-86)</td>
<td>(NF A 35-552-86)</td>
<td>(BS 970 pt.3-96)</td>
<td>ASTM A 29</td>
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<tr>
<td>N°</td>
<td>30CrNiMo8</td>
<td>1.6580</td>
<td>-</td>
<td>30CrNiMo8</td>
<td>1.6580</td>
<td>30KCD8</td>
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</table>

**CHEMICAL COMPOSITION (CAST ANALYSIS) (%)**

<table>
<thead>
<tr>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>P / max</th>
<th>S / max</th>
<th>Cr</th>
<th>Mo</th>
<th>Ni</th>
<th>Cu / max</th>
<th>Al</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,26-0,34</td>
<td>0,10-0,40</td>
<td>0,50-0,80</td>
<td>0,025</td>
<td>0,035</td>
<td>1,80-2,20</td>
<td>0,30-0,50</td>
<td>1,80-2,20</td>
<td>0,40</td>
<td>0,020-0,050</td>
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</table>

**MECHANICAL PROPERTIES - AS ROLLED CONDITION**

<table>
<thead>
<tr>
<th>Size mm</th>
<th>HB max to condition</th>
<th>Quenched and tempered (+QT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Soft annealing (+A)</td>
<td>Rp0,2 (MPa) min</td>
</tr>
<tr>
<td>≤ 16</td>
<td>248</td>
<td>850</td>
</tr>
<tr>
<td>&gt; 16 ≤ 40</td>
<td>248</td>
<td>850</td>
</tr>
<tr>
<td>&gt; 40 ≤ 100</td>
<td>248</td>
<td>800</td>
</tr>
<tr>
<td>&gt; 100 ≤ 160</td>
<td>248</td>
<td>800</td>
</tr>
<tr>
<td>&gt; 160 ≤ 250</td>
<td>248</td>
<td>750</td>
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</table>

**MECHANICAL PROPERTIES OF BRIGHT STEEL**

<table>
<thead>
<tr>
<th>Size mm</th>
<th>as Rolled+Turned (+A+SH)</th>
<th>Quenched+Tempered+Turned (+QT+SH)*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hardness HB max</td>
<td>Rp0,2 (MPa) min</td>
</tr>
<tr>
<td>≥ 5 ≤ 10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>&gt; 10 ≤ 16</td>
<td>-</td>
<td>-</td>
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<tr>
<td>&gt; 16 ≤ 40</td>
<td>248</td>
<td>850</td>
</tr>
<tr>
<td>&gt; 40 ≤ 63</td>
<td>248</td>
<td>800</td>
</tr>
<tr>
<td>&gt; 63 ≤ 100</td>
<td>248</td>
<td>800</td>
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</tbody>
</table>

*This values are valid also for Cold Drawn - Quenched + Tempered Condition (+C +QT)
For size <5 mm the mechanical properties may be agreed at the time of enquiry and order

**WORKING TEMPERATURES RECOMMENDED**

<table>
<thead>
<tr>
<th>Operation</th>
<th>Hot forgings deformation</th>
<th>Isothermal annealing</th>
<th>Normalizing</th>
<th>Quenching in oil or water</th>
<th>Tempering</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>800-1100</td>
<td>800-900 → 650</td>
<td>850-880</td>
<td>830-860</td>
<td>550-660</td>
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</table>

**Rodacciiai QUENCHING AND TEMPERING ALLOYED 30CrNiMo8**
### HARDNESS LIMITS (JOMINY TEST)

<table>
<thead>
<tr>
<th>Limits of range</th>
<th>Hardness HRC at a distance from quenched end of test pieces (mm)</th>
<th>1.5</th>
<th>3</th>
<th>5</th>
<th>7</th>
<th>9</th>
<th>11</th>
<th>13</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
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<th>45</th>
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<tbody>
<tr>
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<td>Max</td>
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<td>56</td>
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<tr>
<td></td>
<td>Min</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>47</td>
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<td>43</td>
<td>43</td>
</tr>
<tr>
<td>+HH</td>
<td>Max</td>
<td>56</td>
<td>56</td>
<td>56</td>
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<td>55</td>
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### TTT

![TTT Diagram](image1)

### CCT

![CCT Diagram](image2)

### TEMPERING CURVE

![Tempering Curve Diagram](image3)