1. Main characteristics and applications

Surface hardenable tool steel with hard surface and tough core.
Used for cold heading dies, top and bottom plates for plastic
die casting, die casting tools, hand tools, tongs, agricultural
tools, blanking tools, leather knives.

2. Comparable standards

<table>
<thead>
<tr>
<th>UNI</th>
<th>WNr</th>
<th>DIN</th>
<th>AFNOR</th>
<th>AISI/SAE</th>
<th>BS</th>
</tr>
</thead>
<tbody>
<tr>
<td>C45U</td>
<td>1.1730</td>
<td>C45U</td>
<td>XC48</td>
<td>~1045</td>
<td>-</td>
</tr>
</tbody>
</table>

3. Chemical analysis

<table>
<thead>
<tr>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>P</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,42&gt;0,50</td>
<td>Max 0,40</td>
<td>0,60&gt;0,80</td>
<td>&lt;=0,030</td>
<td>&lt;=0,030</td>
</tr>
</tbody>
</table>

4. Critical points

Ac1  730 °C
Ms   340 °C

5. Supply Conditions

Annealed to max 207 HB

6. Heat treatments

Annealing
- Heat to 680 - 710 °C
- Furnace cooling

Stress relieving
- Heat to 600 - 650 °C
- Furnace cooling

Hardening
- Preheating to 600 - 650 °C
- Heat to hardening temperature 800 - 830 °C
  and hold at temperature
- Cooling in water
- Hardness after quenching: HRC 57

Tempering
- To be carried out after hardening in the range of 300 - 350 °C
  for 1 hour for 20mm of thickness minimum 2 h
7 C.C.T. curve

Austenitizing temperature: 850°C

8 Tempering curve