Main characteristics and applications

Stainless martensitic molybdenum-chrome steel with excellent resistance to corrosion, higher than similar Cr grades (i.e. 2083), good polishing and photoengraving properties. Its application are equipments and plastic moulds, particularly for corrosive plastic and/or for the presence of abrasive additives.

Comparable standards

<table>
<thead>
<tr>
<th>UNI</th>
<th>W.Nr</th>
<th>DIN</th>
<th>AFNOR</th>
<th>AISI/SAE</th>
<th>BS</th>
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</thead>
<tbody>
<tr>
<td>-</td>
<td>1.2316</td>
<td>~X36CrMo17</td>
<td>~Z 35CD17</td>
<td>~442</td>
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Chemical analysis

<table>
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<tr>
<th>C</th>
<th>Mn</th>
<th>Si</th>
<th>Cr</th>
<th>Mo</th>
<th>Ni</th>
<th>S</th>
<th>P</th>
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<tbody>
<tr>
<td>0.33</td>
<td>&lt;</td>
<td>&lt;</td>
<td>15.50</td>
<td>0.85</td>
<td>&lt;</td>
<td>0.005</td>
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<td>17.50</td>
<td>1.30</td>
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<td>0.0005</td>
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</table>

Critical points

Ac1 790 °C
Ms  240 °C

Supply Conditions

Hardened and Tempered HB 280 - 325

Heat treatments

Annealing
- Heat to 770 ÷ 820 °C with hold at minimum rate 3 hours
- Furnace cooling to about 600 °C

Stress relieving
- To be carried out after machining and before the final heat treatment
- Heating a 600 ÷ 650 °C for 2 hours

Hardening
- Preheating to 600 - 700 °C
- Austenitizing at 1000 - 1054 °C
- Cooling in air, thermal bath at 500 - 550 °C, according to the steel shape and size
- Quenched hardness 42 - 49 HRC

Tempering
- To be carried out soon after the hardening according to the requested hardness; permanence for at least 2 hours; tempering must be repeated at least twice at temperature 30 °C lower than previous
- Cooling in air
C.C.T. curve

Austenitizing temperature: 1040°C

Tempering curve

Hardness [HRC]

Tempering temperature [°C]