



Material No.: Code:
1.2083 X40Cr14

DE - Brand:
HC50

Chemical composition:
(Typical analysis in %)

| | | | | | | | |
|------|-------|--|--|--|--|--|--|
| C | Cr | | | | | | |
| 0,40 | 13,50 | | | | | | |

Steel properties:

Tool steel with high dissolved Cr-content in the steel matrix, corrosion resistant in hardened condition, good polishability.

Applications:

Mould and pressure tools, tooling and inserts for corrosive plastics and polymers.

Condition of delivery:

Soft annealed to max. 241 HB

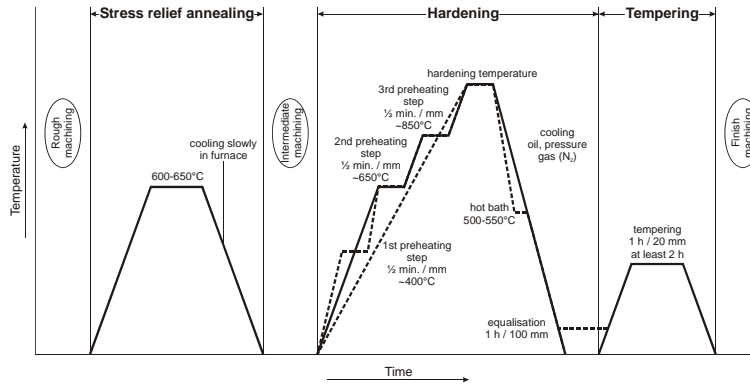
Physical properties:

| | | | | | |
|-------------------------------|---|----------|----------|----------|----------|
| Thermal expansion coefficient | $\left[\frac{10^{-6} \cdot \text{m}}{\text{m} \cdot \text{K}} \right]$ | 20-100°C | 20-200°C | 20-300°C | 20-400°C |
| | | 10,5 | 10,9 | 11,3 | 11,6 |
| Thermal conductivity | $\left[\frac{\text{W}}{\text{m} \cdot \text{K}} \right]$ | 20°C | 350°C | 700°C | |
| | | 24,6 | 25,3 | 26,2 | |

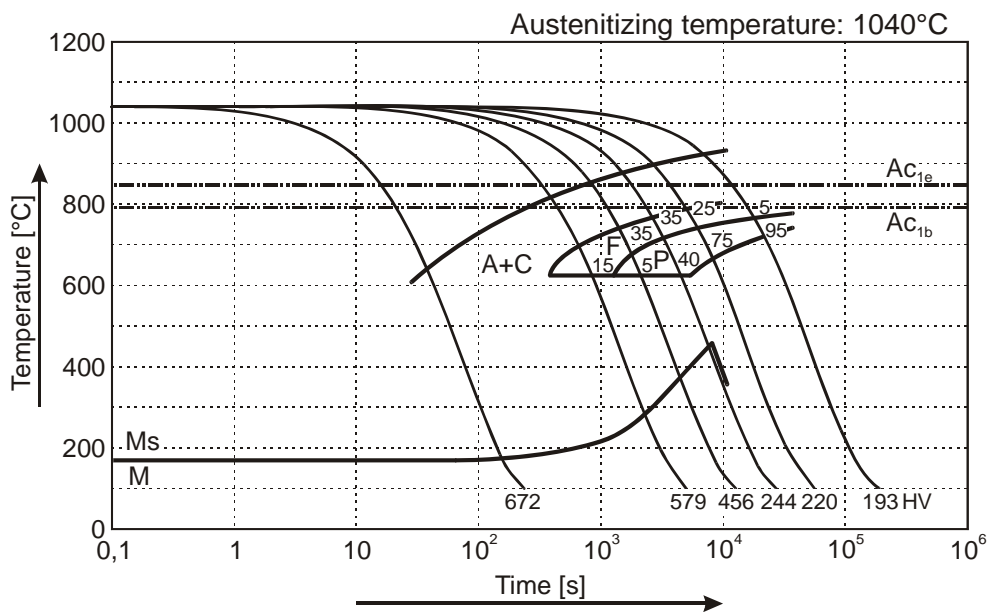
Heat treatment:

| Soft annealing | <table border="1"><tr><th>Temperature</th><th>Cooling</th><th>Hardness</th></tr><tr><td>760 - 800°C</td><td>furnace</td><td>max. 241 HB</td></tr></table> | Temperature | Cooling | Hardness | 760 - 800°C | furnace | max. 241 HB |
|-------------------------|---|--------------------------|---------|-----------|---------------|--|--------------------------|
| Temperature | Cooling | Hardness | | | | | |
| 760 - 800°C | furnace | max. 241 HB | | | | | |
| Stress relief annealing | <table border="1"><tr><th>Temperature</th><th>Cooling</th><th></th></tr><tr><td>600 - 650°C</td><td>furnace</td><td></td></tr></table> | Temperature | Cooling | | 600 - 650°C | furnace | |
| Temperature | Cooling | | | | | | |
| 600 - 650°C | furnace | | | | | | |
| Hardening | <table border="1"><tr><th>Temperature</th><th>Cooling</th><th>Tempering</th></tr><tr><td>1000 - 1050°C</td><td>oil, pressure gas (N₂), air or hot bath 500 - 550°C</td><td>see tempering diagram</td></tr></table> | Temperature | Cooling | Tempering | 1000 - 1050°C | oil, pressure gas (N ₂), air or hot bath 500 - 550°C | see tempering diagram |
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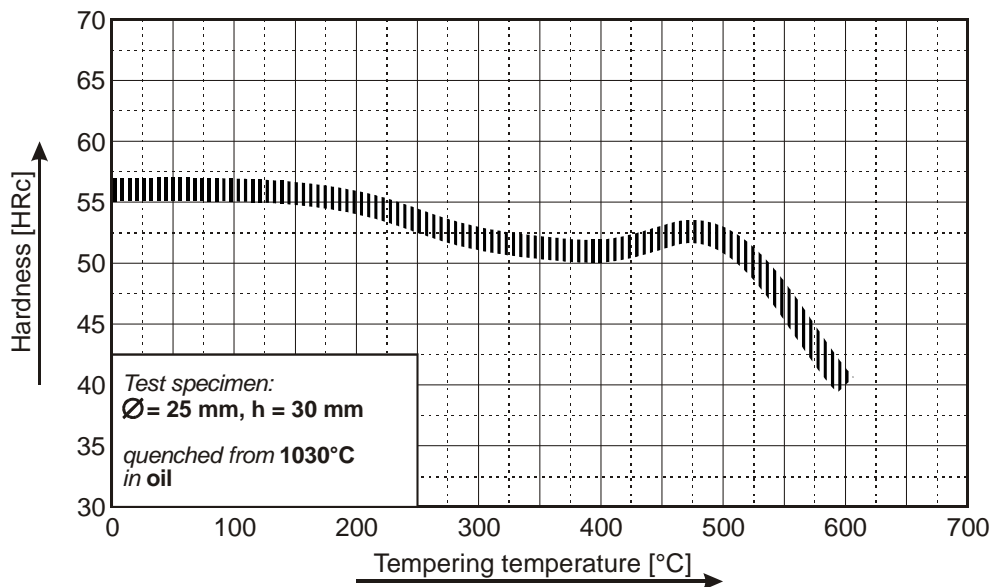
(1.2083) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.