

Material No.: Code:
1.4057 X17CrNi16-2

DE - Brand:
R18

Chemical composition:
 (Typical analysis in %)

| | | | | | | | |
|------|-------|------|--|--|--|--|--|
| C | Cr | Ni | | | | | |
| 0,17 | 16,00 | 2,00 | | | | | |

Steel properties:

Stainless martensitic steel. Similar to AISI 431.

Applications:

Shafts, paper working tools, spindles, piston rods, pump and valve parts, swage blocks.

Condition of delivery:

Quenched and tempered

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 |
| | | 10,0 | 10,5 | 10,5 | 10,6 |
| Thermal conductivity | $\left[\frac{\text{W}}{\text{m} \cdot \text{K}} \right]$ | 20°C | | | |
| | | 25,0 | | | |

Heat treatment:

Soft annealing
 Two times annealing can be useful.

| Temperature | Cooling | Hardness |
|-------------|---------|-------------|
| 680 - 800°C | furnace | max. 295 HB |

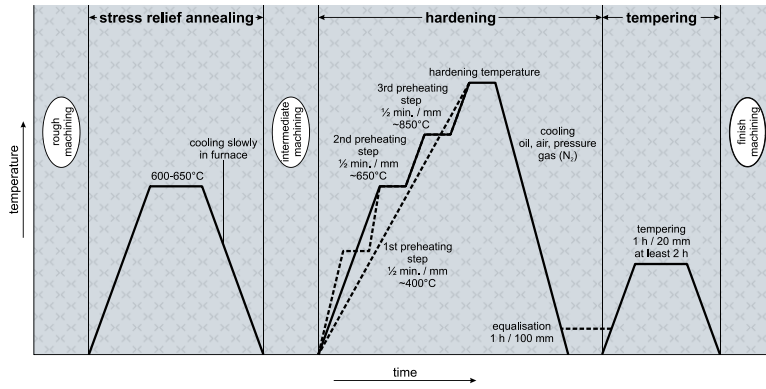
Hardening

| Temperature | Cooling | Tempering |
|--------------|--|-----------------------|
| 950 - 1050°C | oil, pressure gas (N ₂) or air | see tempering diagram |

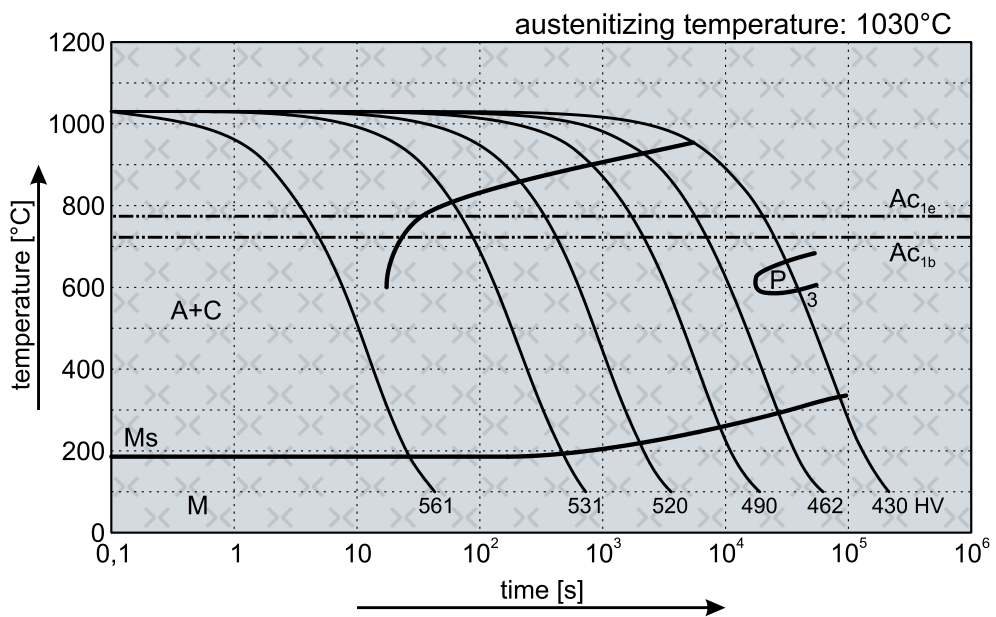
Mechanical properties in quenched and tempered condition (DIN EN 10088-3:2014-12)

| | QT800 | | QT900 | |
|--|------------|------------|------------|------------|
| | ≤ 60 | >60 - 160 | ≤ 60 | >60 - 160 |
| Diameter d [mm] | ≤ 60 | >60 - 160 | ≤ 60 | >60 - 160 |
| 0,2% Proof strength R_{p0,2} [N/mm²] | min. 600 | min. 600 | min. 700 | min. 700 |
| Tensile strength R_m [N/mm²] | 800 - 950 | 800 - 950 | 900 - 1050 | 900 - 1050 |
| Elongation A₅ [%] | L: min. 14 | L: min. 12 | L: min. 12 | L: min. 10 |
| Toughness CVN [J] | L: min. 25 | L: min. 20 | L: min. 16 | L: min. 15 |

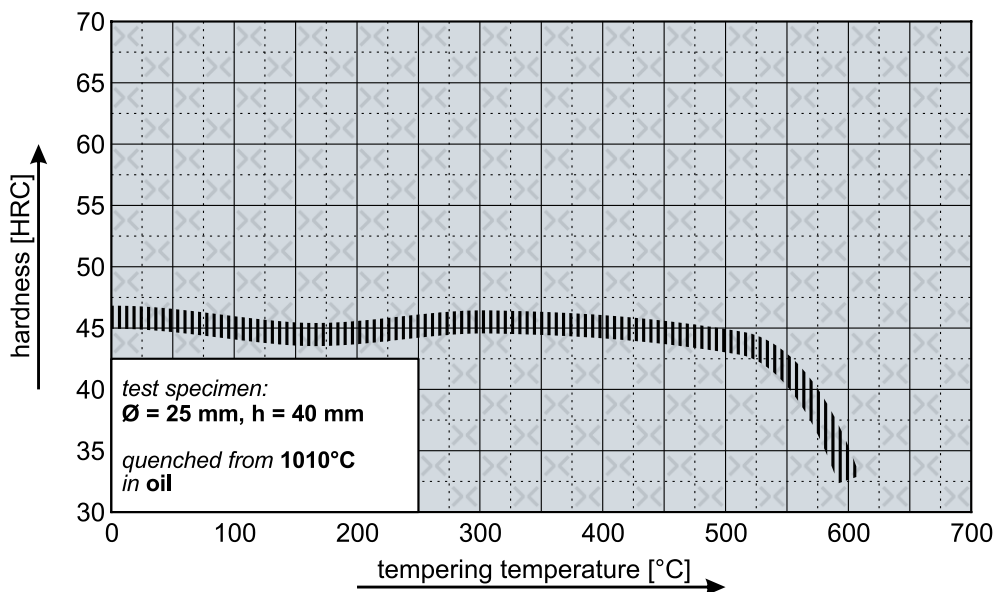
(1.4057) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.