



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

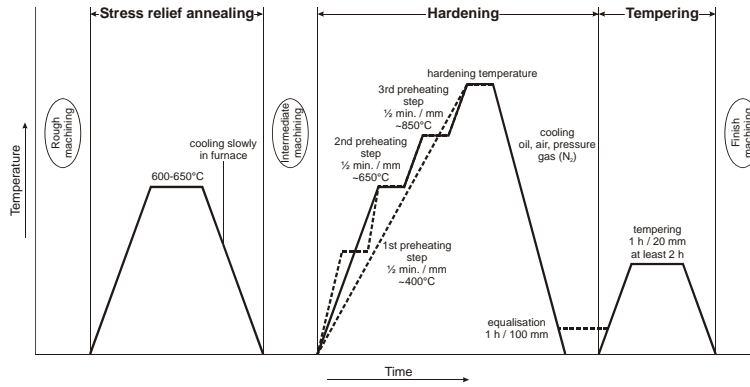
Hardening

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

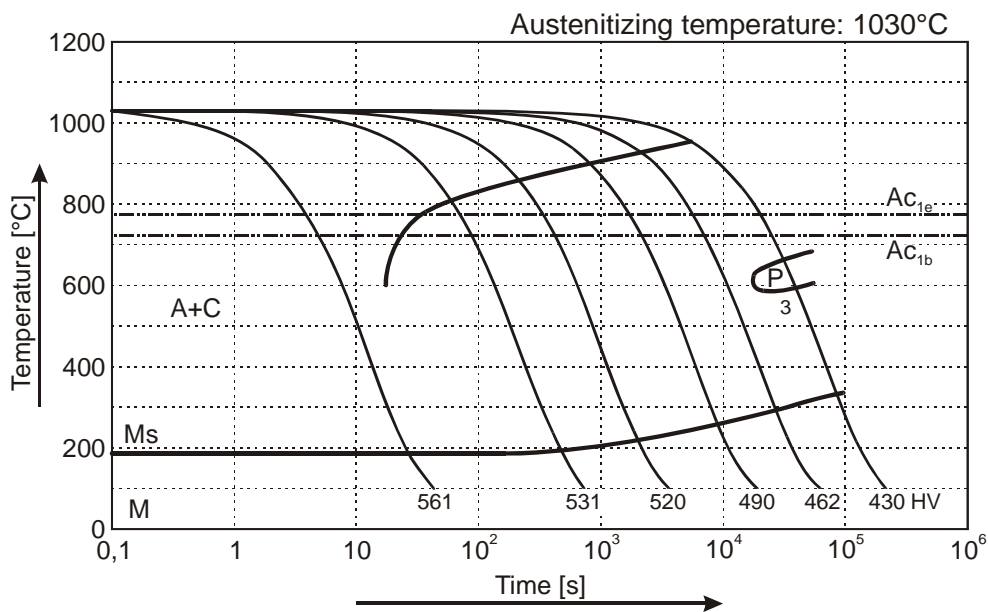
Mechanical properties in quenched and tempered condition (DIN EN 10088-3:2014-12)

	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

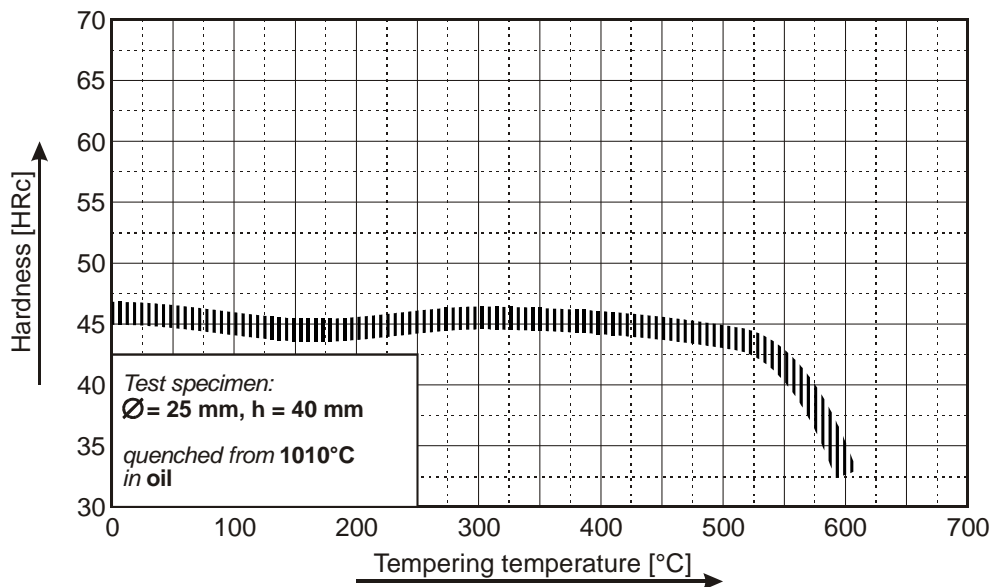
(1.4057) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.