



DE - Brand:

Special Steel

WP7V

Chemical composition: (Typical analysis in %)

C	Cr	Mo	V				
0,50	7,80	+	+				

Steel properties:

Cr-Mo-V alloyed special steel, secondary hardenable, very high toughness, good compressive strength, high wear resistance also at high temperature.

Applications:

High wear loaded dies with flat impressions, hot and cold shear knives, knives for cutting sheet >7mm, highly stressed punches, profiling rolls, tools for hot stamping of automotive body parts, hot forming of sheet metals.

Condition of delivery:

Soft annealed to max. 250 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	10,7	11,3	11,6
Thermal conductivity	$\left[\frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C	350°C	700°C	
		26,4	27,8	30,6	

Heat treatment:

Soft annealing

Temperature	Cooling	Hardness
820 - 850°C	furnace	max. 250 HB

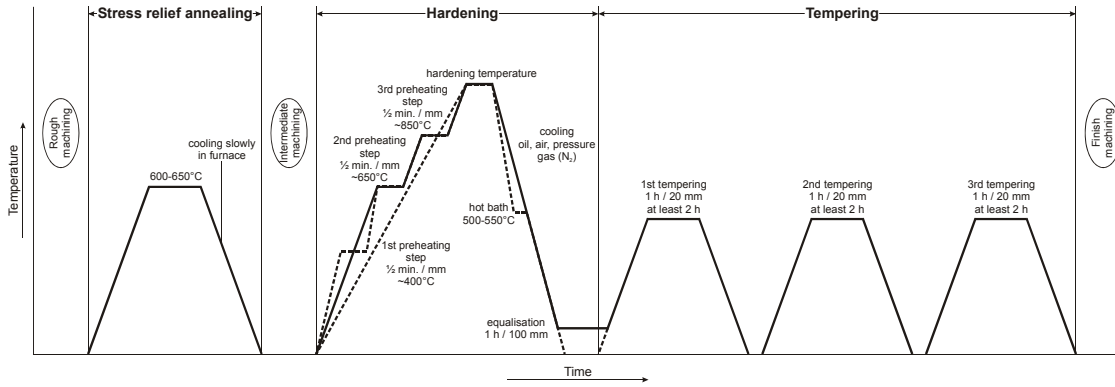
Stress relief annealing

Temperature	Cooling	
600 - 650°C	furnace	

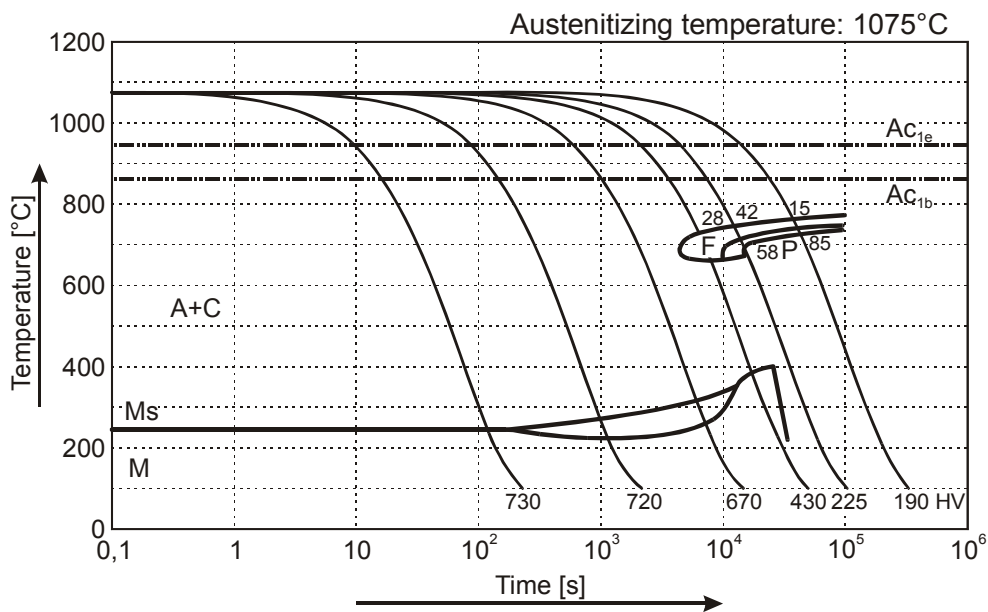
Hardening

Temperature	Cooling	Tempering
1050 - 1090°C	oil, pressure gas (N ₂), air or hot bath 500 - 550°C	see tempering diagram

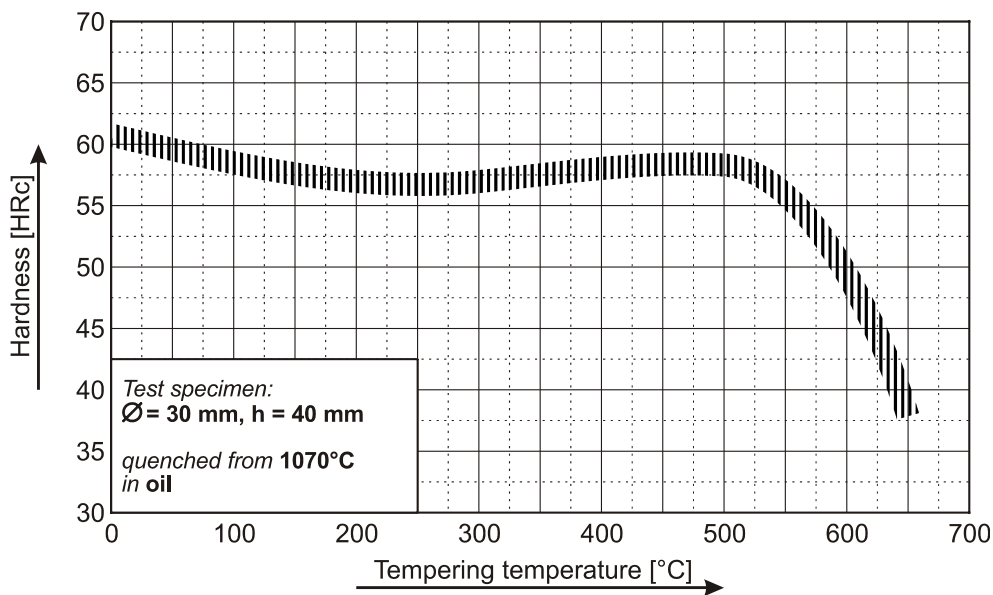
(WP7V) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.