Special Steel

DE - Brand:
CPR

Chemical composition:
(Typical analysis in %)

C	Cr	Mo	V	W			
1,20	12,00	1,40	1,70	2,50			

Steel properties:

Ledeburitic 12% chrome steel with increased additions of W-, Mo- and V, high wear resistance, good toughness, high pressure resistance, minimal change in dimension, secondary hardening.

Applications:

Thread rolling dies, cold extrusion punches, screws, bending tools, hobbing tools, die- and punching tools, calibrating rings, pressure and profiling rolls, drawing tools.

Condition of delivery:

Soft annealed to max. 265 HB

Physical properties:

Thermal expansion coefficient

$\left[\frac{10^{-6} \cdot m}{m \cdot K}\right]$	68-212°F	68-392°F	68-572°F	68-752°F
	10,6	11,2	11,6	12,0

Thermal conductivity

$\left[\frac{W}{m \cdot K}\right]$	68°F	662°F	1292°F
	22,8	23,8	24,9

Heat treatment:

Soft annealing

Temperature	Cooling	Hardness
1510 - 1580°F	Furnace	max. 265 HB

Stress relief annealing

Temperature	Cooling	
1110 - 1200°F	Furnace	

Hardening

Temperature	Cooling	Tempering
2065 - 2100°F	oil, pressure gas (N_2), air or hot bath 930 - 1020°F	see tempering diagram

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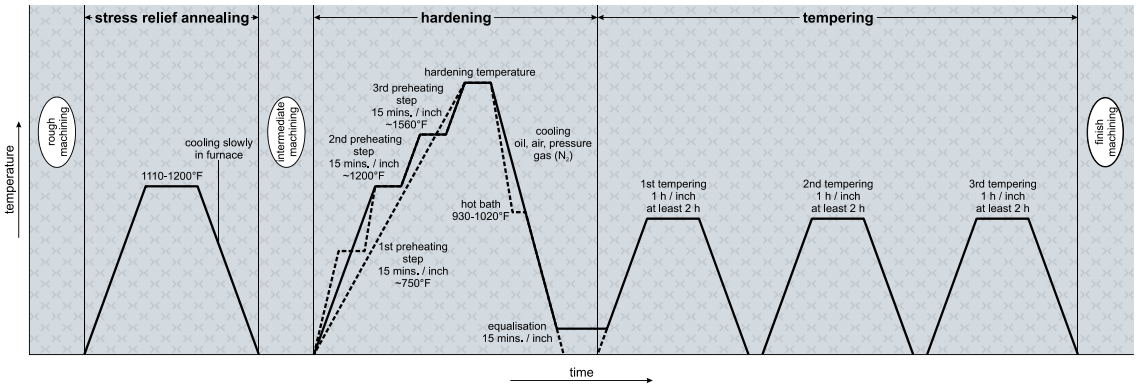
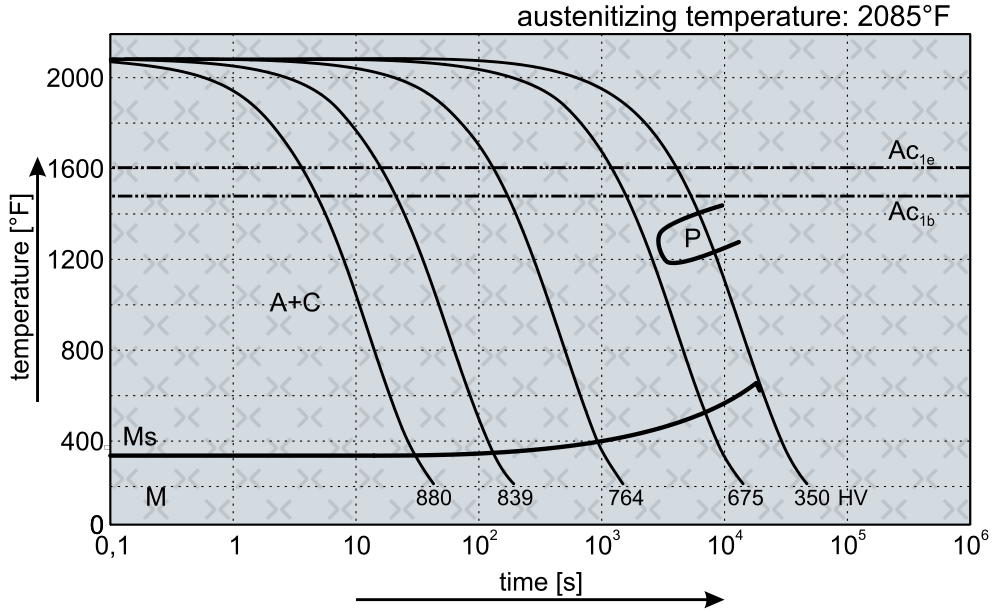
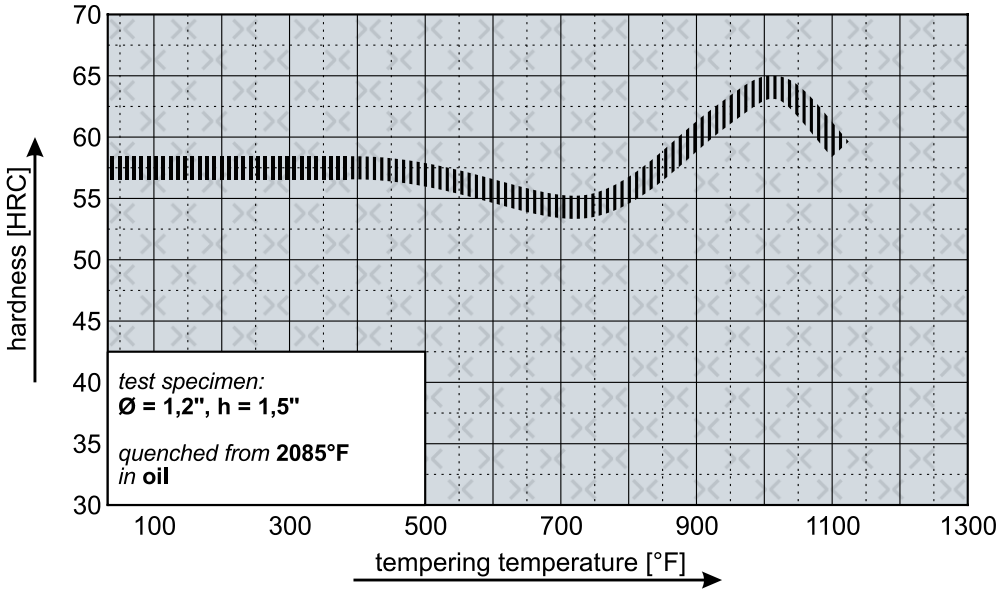
(CPR) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.