

Material No.: Code:  
**1.2842 90MnCrV8**

DE - Brand:  
**Z1B**

**Chemical composition:**  
 (Typical analysis in %)

C	Mn	Cr	V				
0,90	2,00	0,40	0,10				

**Steel properties:**

Medium alloyed cold work steel with nearly 1% carbon, high hardening capacity, limited through hardenability, dimensionally stable, good compressive strength. Similar to AISI O2.

**Applications:**

Guide strips, ejector pins, cutting-, punching-, stamping tools, thread cutting tools, measuring tools, broaches, box grooves.

**Condition of delivery:**

Soft annealed to max. 229 HB

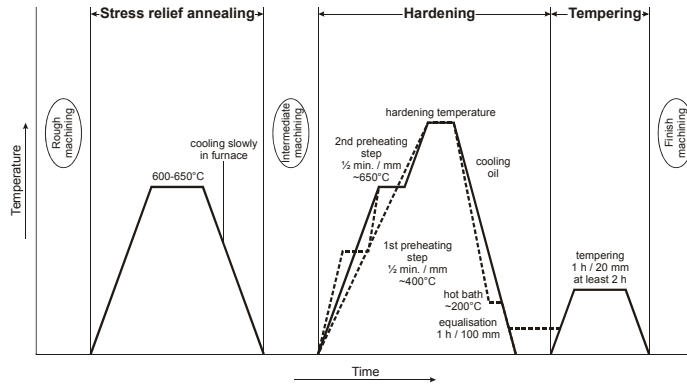
**Physical properties:**

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
		12,2	13,2	13,8	14,4
Thermal conductivity	$\left[ \frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C	350°C	700°C	
		32,8	32,0	31,5	

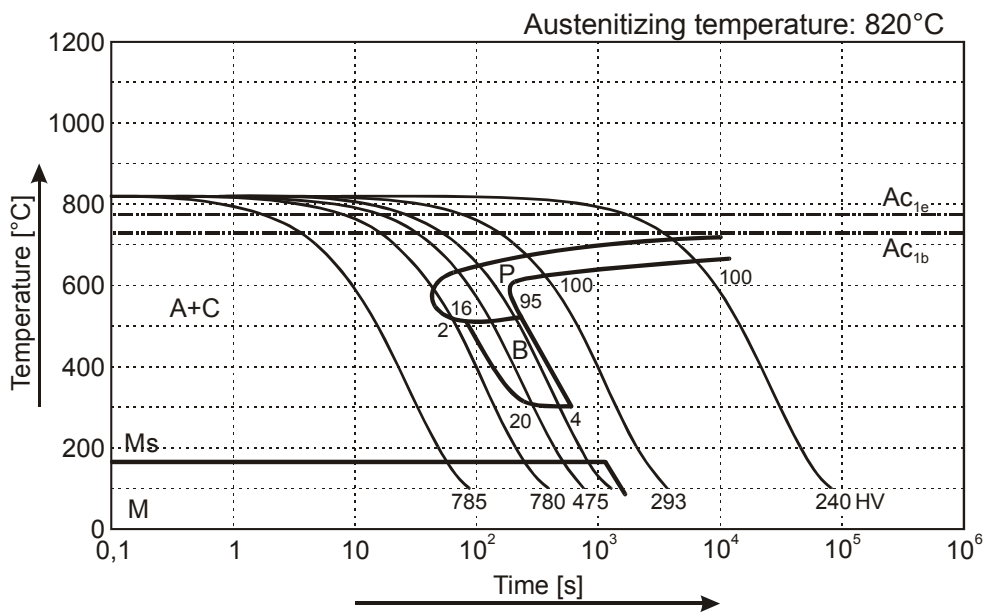
**Heat treatment:**

Soft annealing	<b>Temperature</b>	<b>Cooling</b>	<b>Hardness</b>
	700 - 730°C	furnace	max. 229 HB
Stress relief annealing	<b>Temperature</b>	<b>Cooling</b>	
	600 - 650°C	furnace	
Hardening	<b>Temperature</b>	<b>Cooling</b>	<b>Tempering</b>
	780 - 820°C	oil or hot bath 180 - 220°C	see tempering diagram

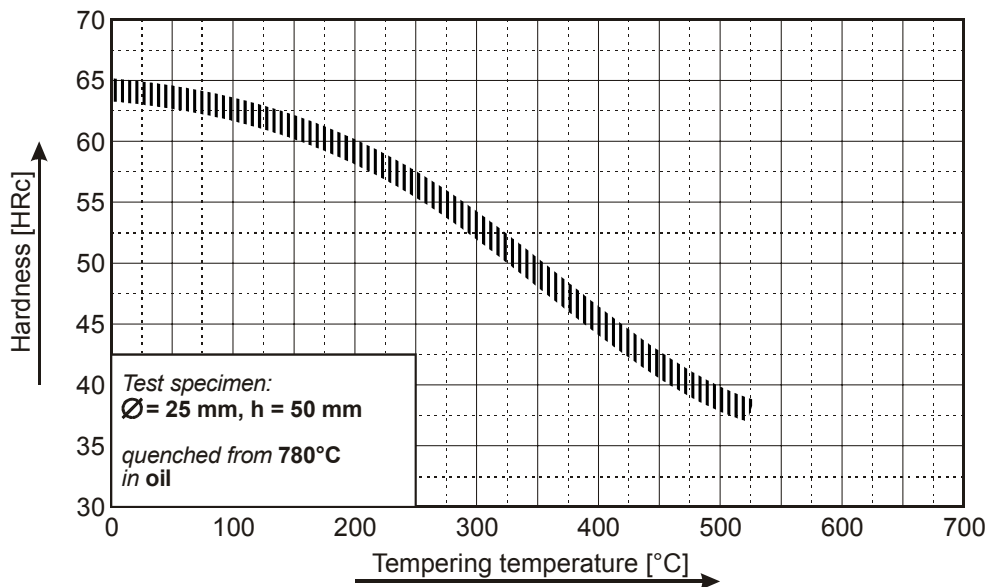
## (1.2842) Thermal Cycle Diagram



## Continuous Cooling Transformation Diagram (CCT)



## Tempering Diagram



Remarks: All technical information is for reference only.