

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

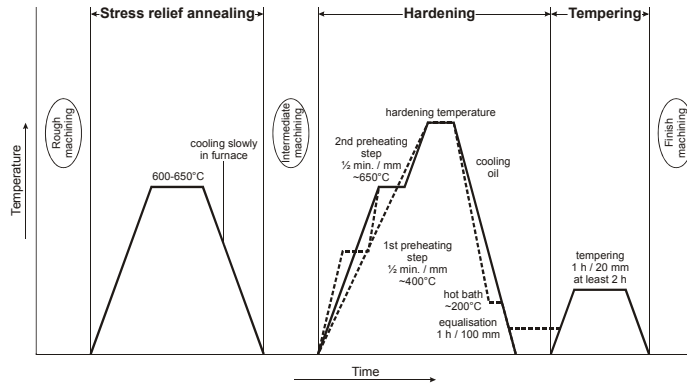
**Physical properties:**

|                               |   |          |          |          |          |
|-------------------------------|---|----------|----------|----------|----------|
| 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     |          |

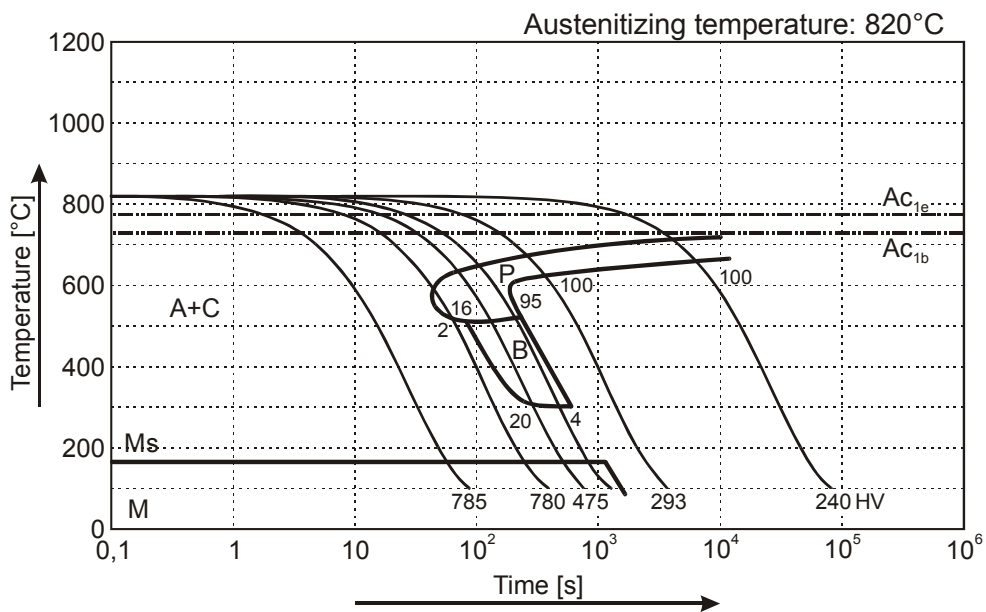
**Heat treatment:**

|                         |                    |                                |                       |
|-------------------------|--------------------|--------------------------------|-----------------------|
| 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<br>180 - 220°C | see tempering diagram |

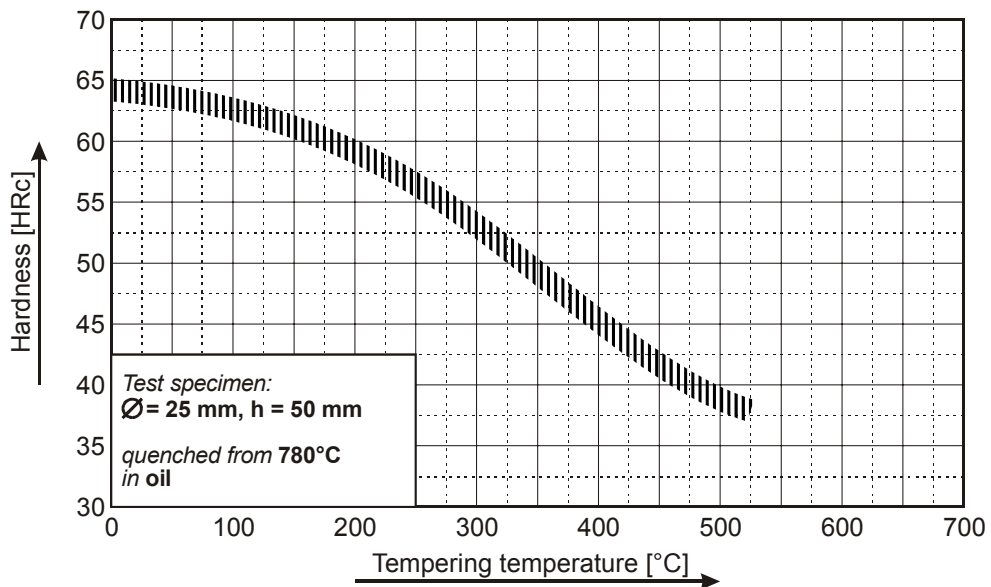
## (1.2842) Thermal Cycle Diagram



## Continuous Cooling Transformation Diagram (CCT)



## Tempering Diagram



Remarks: All technical information is for reference only.