

# M35 – 1.3243 – High Speed Steel

## Data Sheet - Tooling Alloys



Zapp is certified to ISO 9001



### Key Features of Zapp`s High Speed Steel M35 – 1.3243:

- HSS 6 – 5 – 2 - 5
- Cobalt alloyed high speed steels
- High thermal stability
- Case hardness up to 67 HRC possible

### Typical Areas of Application

- Cutting Tools

### Physical properties

Modulus of elasticity E [GPa]	214
Density [kg/dm³]	8,26
Thermal expansion coefficient [mm/(mm/K)] in a temperature range up to 400 °C	11,6 x 10 <sup>-6</sup>

### Delivery condition

As-delivered condition	Soft-annealed, approx. 260 HB
Product form	Round bars, flat bars
Surface finish	Mechanically machined

### Heat Treatment

#### Soft Annealing

- In neutral atmosphere at ~ 870 °C and ~ 4 h exposure time (after through-heating)
- Followed by furnace cooling
- Soft annealing hardness ~ 260 HB

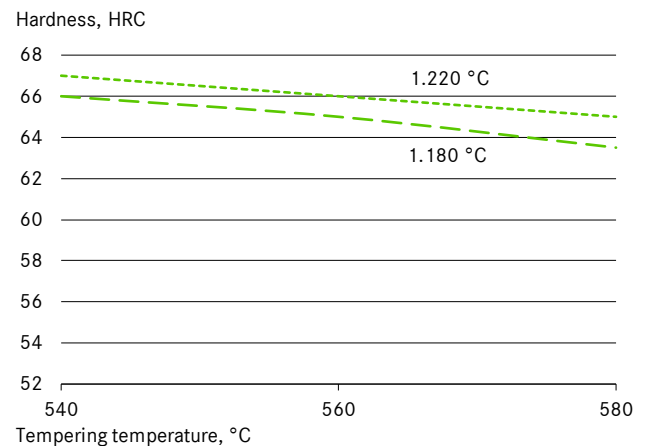
#### Stress Relief Annealing

~ 650 °C/~ 2 h exposure time (after through-heating)  
followed by furnace cooling

### Typical chemical composition (weight-%)

C	Cr	Mo	W	V	Co
0,93	4,2	5,0	6,4	1,8	4,8

### Tempering diagram



You can find more materials at:

[www.zapp.com/en-uk/materials/powder-metallurgical-tool-steel](http://www.zapp.com/en-uk/materials/powder-metallurgical-tool-steel)

Zapp Precision Metals GmbH ensures professional execution of all heat treatment steps as well as their preparation and post-processing (e.g., charging, hardness testing, straightening processes, etc.) – always with the aim of obtaining the optimum component properties!

We are happy to assist you with constructive advice!

## TOOLING ALLOYS

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