

Special Steel

DE - Brand:

1.3343^{PLUS}

Chemical composition:
(Typical analysis in %)

C	Cr	Mo	V	W			
0,90	4,00	5,00	1,90	6,40			

Steel properties:

High-speed steel of powder-metallurgical production, same analysis like 1.3343 (HS6-5-2C), but homogenous microstructure within whole cross-section; fine distributed carbide-structure, better machine-ability, polish-ability, grind-ability. High strength at elevated temperatures, good toughness, high compressive strength, good wear resistance. Analysis similar to AISI M2.

Applications:

Standard material for machining tools, e.g. drill bits, milling cutters, screw dies, broaches, inserts for circular saw blades. slotting tools and wood working tools. In addition cold forming tools e.g. cutting and blanking tools, cold extrusion punches and dies. Excellent base material for PVD/CVD coating.

Condition of delivery:

Soft annealed to max. 260 HB

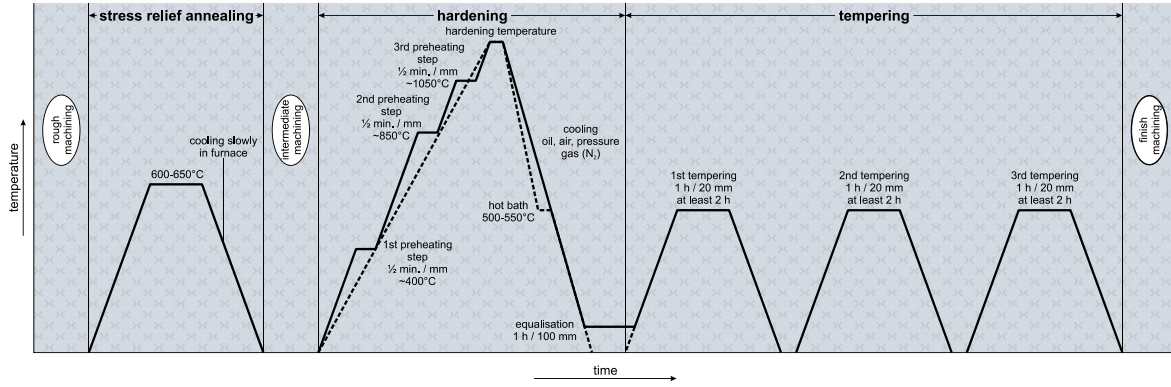
Physical properties:

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
		10,8	11,8	12,0	12,5
Thermal conductivity	$\left[\frac{\text{W}}{\text{m} \cdot \text{K}} \right]$	20°C	350°C	700°C	
		27,6	27,2	26,1	

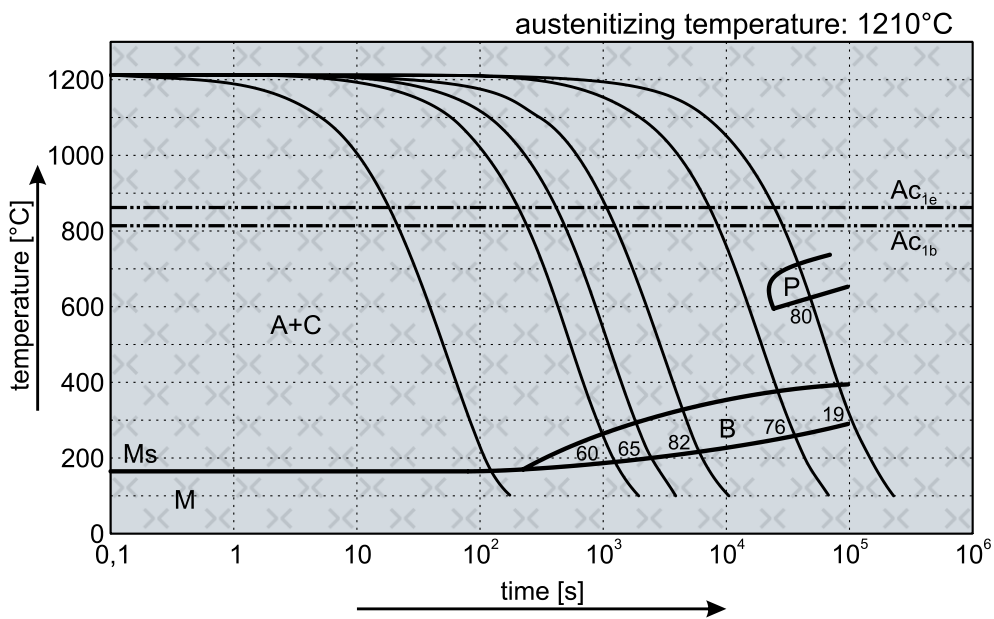
Heat treatment:

Soft annealing	Temperature	Cooling	Hardness
	780 - 860°C	furnace	max. 260 HB
Stress relief annealing	Temperature	Cooling	
	600 - 650°C	furnace	
Hardening	Temperature	Cooling	Tempering
	1090 - 1180°C	oil, pressure gas (N ₂), air or hot bath 500 - 550°C	see tempering diagram

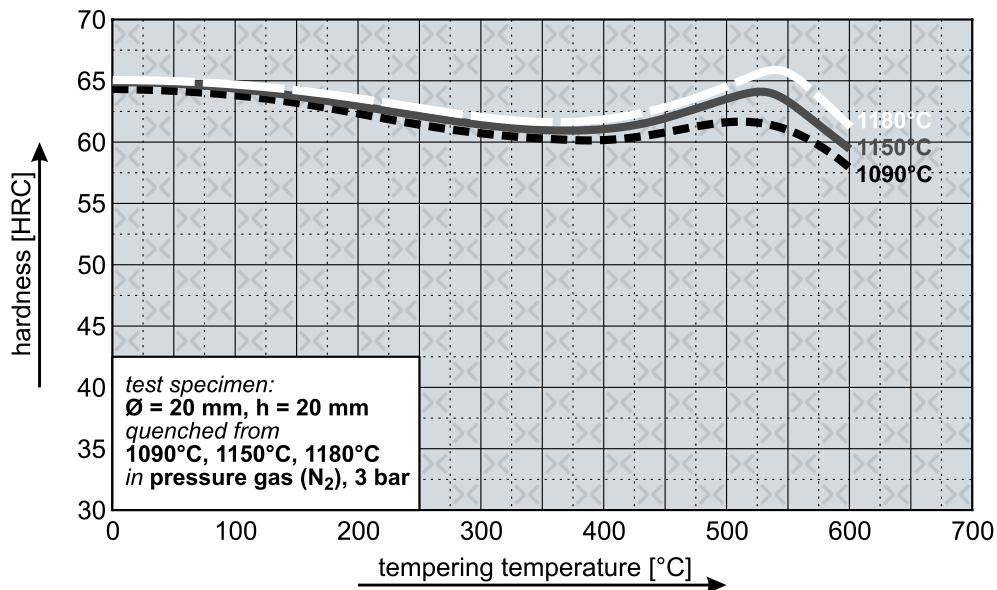
(1.3343^{PLUS}) Thermal Cycle Diagram



Continuous Cooling Transformation Diagram (CCT)



Tempering Diagram



Remarks: All technical information is for reference only.