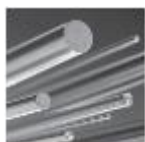


Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.2550
Description	60WCrV8
AISI/SAE	S1
Search for alternatives in the ABRAMS STEEL GUIDE®	www.steel-guide.eu/alternatives/S1

Specification



Precision round steel with machining allowance [PRS/BA]
 peeled / rough-turned
 L: 500 mm
 L: 1.000 mm

Chemical composition AISI/SAE S1 (reference value %)

C	Si	Mn	P	S	Cr	V	W
0,55 - 0,65	0,7 - 1,0	0,15 - 0,45	0 - 0,03	0 - 0,03	0,9 - 1,2	0,1 - 0,2	1,7 - 2,2

Physical properties

Hardness (delivery condition)	max. 229 HB, annealed						
Tensile strength R_m (as received condition)	approx. 770 N/mm ²						
Working hardness	max. 60 HRC						
Thermal expansion coefficient $10^{-6}m/(m \cdot K)$	20 - 100°C	20 - 200°C	20 - 300°C	20 - 400°C	20 - 500°C	20 - 600°C	20 - 700°C
	11,8	12,7	13,1	13,5	14,0	14,3	14,5
Thermal conductivity $W/(m \cdot K)$	20°C	350°C	700°C				
	34,2	32,6	30,9				

Technical properties

Steel grade with focus on cold work, with full hardenability, excellent toughness, dimensional stability and impact strength.

Applications

Blanking tools, dies, punches, forming dies, embossing tools, coining tools, tableting punches, plug-in tools, trimming tools, cold shear knives, riveting pins, hand chisels, pneumatic chisels, centre punches, ejectors, woodworking tools.

Heat treatment

	Temperature	Cooling	Hardness			
Soft annealing	710 - 750°C	Furnace	max. 229 HB			
	Temperature	Cooling				
Stress relief annealing	approx. 650°C	Furnace				
	Temperature	Quenching in	Hardness after quenching			
Hardening	870 - 900°C	Oil, hot basin (180 - 220°C)	60 HRC			
Tempering	100°C	200°C	300°C	400°C	500°C	600°C
	60 HRC	58 HRC	56 HRC	52 HRC	48 HRC	43 HRC

ABRAMS PREMIUM STEEL

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 Amtsgericht Osnabrueck / Germany, HRB 20019

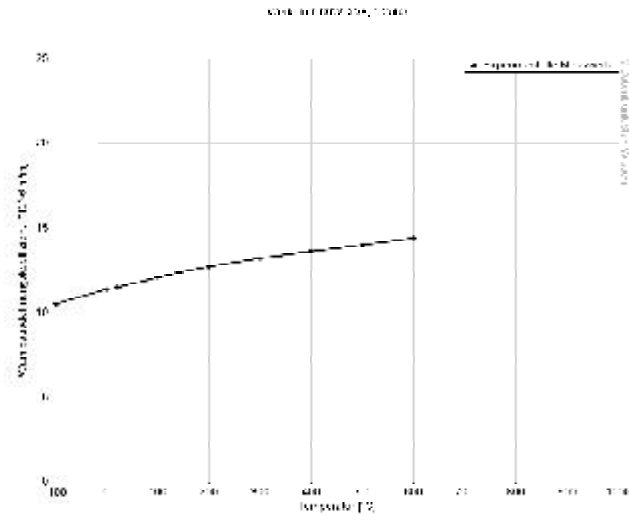
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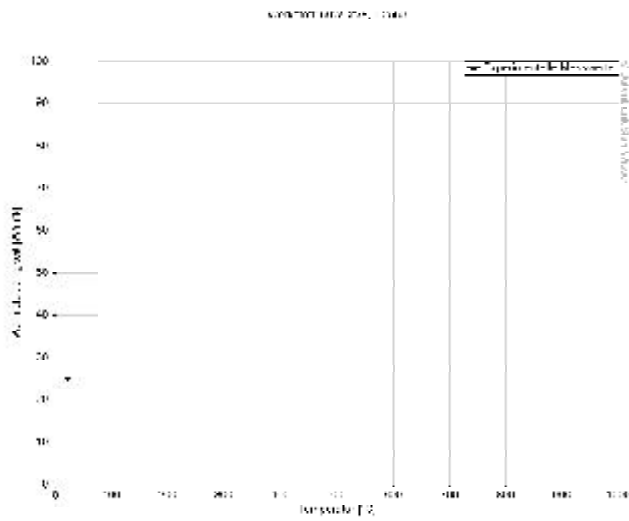
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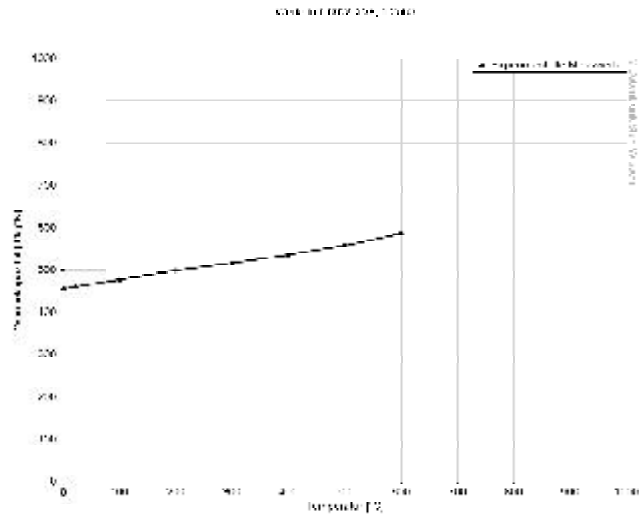
Thermal expansion coefficient diagram



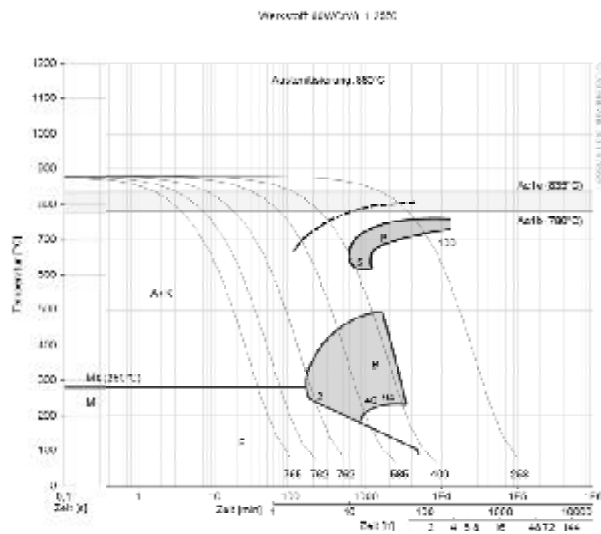
Thermal conductivity diagram



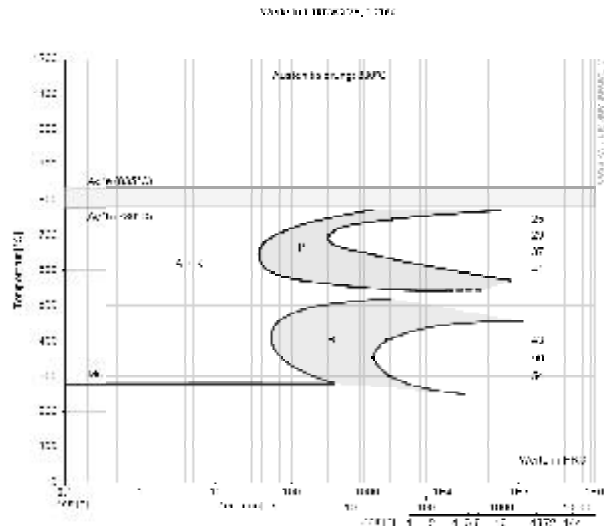
Thermal capacity diagram



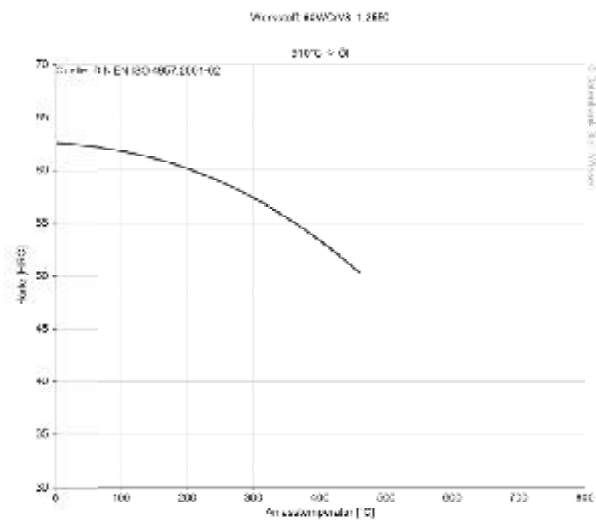
Continuous ZTU-diagram



Isothermal ZTU-diagram



Tempering diagram



The data shown here is to be used only as an indication of the statistics, thus we accept no liability.
Diagrams are taken from Datenbank StahlWissen Dr. Sommer Werkstofftechnik
Issued: 2012

