

Steel grade

Material No. / Werkstoff-Nr.	PREMIUM 1.2365
Description	32CrMoV12-28
BS	BH 10
AISI/SAE	H10; T20810
Search for alternatives in the ABRAMS STEEL GUIDE®	www.steel-guide.co.uk/alternatives/BH10

Specifications



€co-Präz® [€co]
L: 500 mm



Precision round steel
with machining allowance [PRS/BA]
peeled / rough-turned
L: 500 mm
L: 1,000 mm

Chemical composition BS BH 10 (reference value %)

C	Si	Mn	P	S	Cr	Mo	V
0.28 – 0.35	0.1 – 0.4	0.15 – 0.45	0 – 0.03	0 – 0.02	2.7 – 3.2	2.5 – 3.0	0.4 – 0.7

Physical properties

Hardness (delivery condition)	max. 229 HB, annealed						
Tensile strength R_m (as received condition)	approx. 770 N/mm ²						
Working hardness	max. 52 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	12.5	12.7	13.1	13.5	13.6	13.8
Thermal conductivity $W/(m \cdot K)$	20°C	350°C	700°C				
	Annealed	32.8	34.5	32.2			
	Tempered	31.4	32.0	29.3			

Technical properties

Hot work steel with high toughness, heat resistance and tempering resistance. Air-hardening steel grade with good thermal conductivity. Can be cooled with water.

Applications

Extrusion presses, brass casting, compression moulding dies, die inserts, press tools, plastic moulds, recipient bushes, pressure dies, press mandrels, tube extrusion mandrels, piecer plugs, press dies, block receivers, screw production, nut production, rivet production, bolts production, hot shear knives.

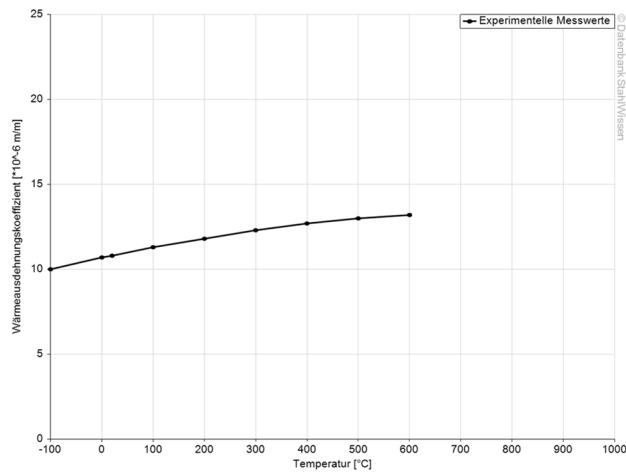


Heat treatment

	Temperature	Cooling	Hardness						
Soft annealing	750 - 800°C	Furnace	max. 229 HB						
	Temperature	Cooling							
Stress relief annealing	600 - 650°C	Furnace							
	Temperature	Quenching in	Hardness after quenching						
Hardening	1030 - 1050°C	Oil, hot basin (500 - 550°C)	52 HRC						
	100°C	200°C	300°C	400°C	500°C	550°C	600°C	650°C	700°C
Tempering	51 HRC	50 HRC	50 HRC	50 HRC	52 HRC	50 HRC	47 HRC	40 HRC	34 HRC

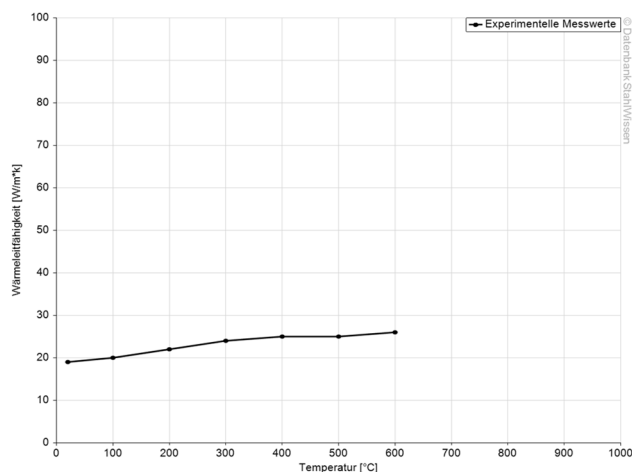
Thermal expansion coefficient diagram

Werkstoff: 32CrMoV12-28, 1.2365



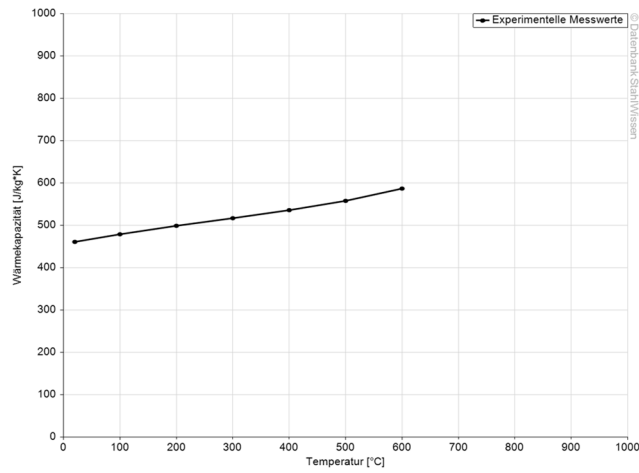
Thermal conductivity diagram

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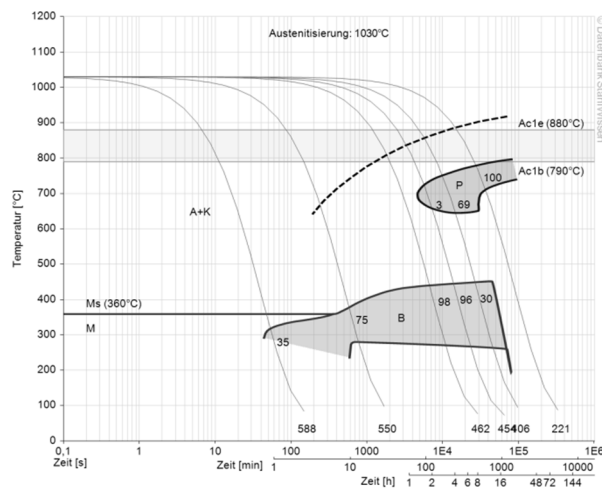
Thermal capacity diagram

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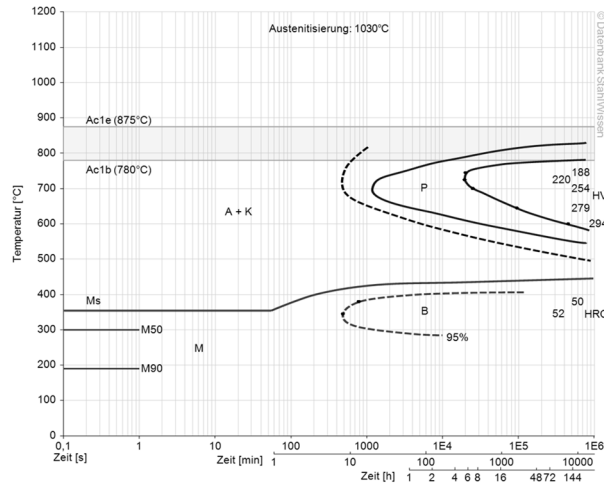
Continuous ZTU-diagram

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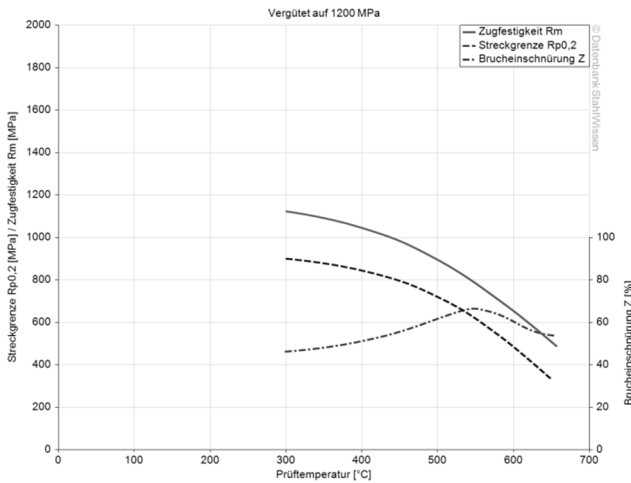
Isothermal ZTU-diagram

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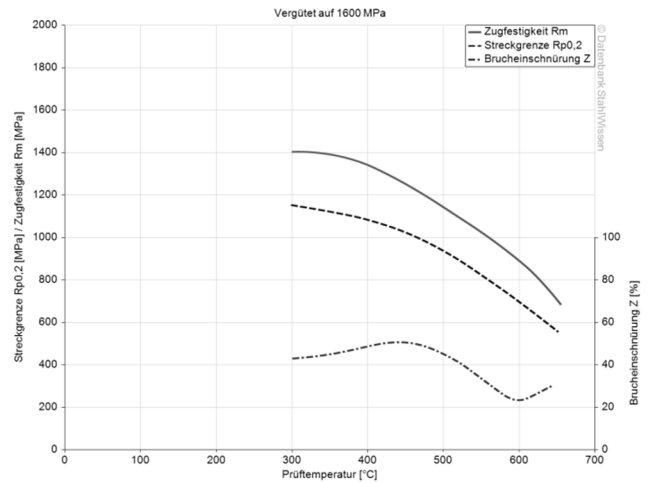


Hardening and tempering diagrams

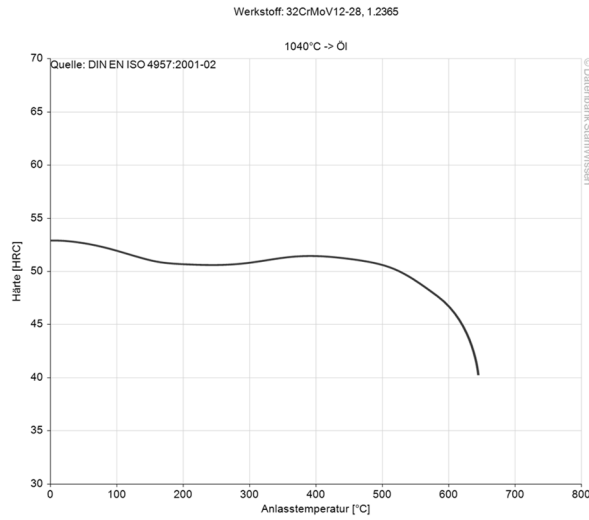
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Tempering diagram



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
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