Buderus | Edelstahl

Buderus Hot Work Tool Steel 9966 SUPER C

	C	Si	Mn	P	S	Cr	Ni	Mo	V
Typical analysis	0.33	0.25	0.20	0.003	0.002	1.50	3.00	0.80	0.30

Figures in % by mass

Characteristics

Patented NiCrMoV-hot work tool steel with good high-temperature strength (comparable to steels 2343 and 2344), but with much higher toughness. Higher wear-resistance than die steel 2714.

Applications

Dies that are susceptible to fracture, and die inserts with deep impressions, die holders.
Crack-susceptible extrusion moulds for aluminium forming.
Crack-prone plastic moulds.

Delivered condition

Annealed to max. 265 HB
Quenched and tempered to customer specification on request
to max. 440 HB (≙ approx. 1500 MPa)*

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 11.0	20–250 °C 12.2	20–500 °C 13.7
Thermal conductivity (W/mK)	20 °C 31.0	250 °C 33.0	500 °C 32.0
Young's modulus (GPa)	20 °C 215	250 °C 198	500 °C 179

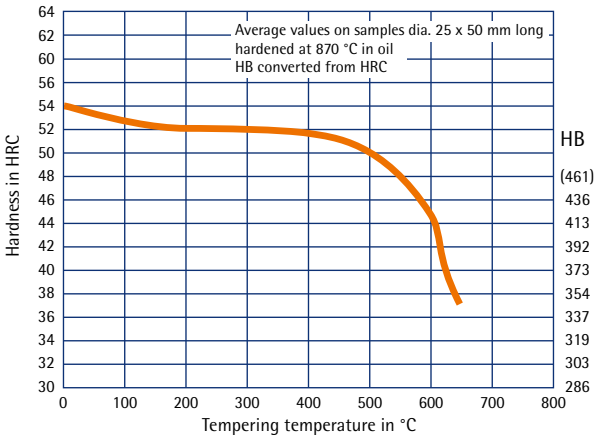
* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

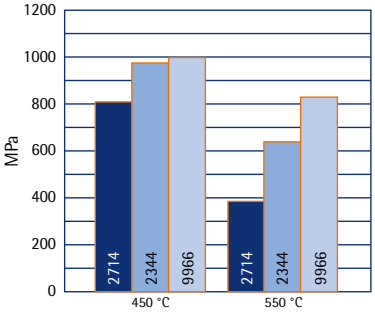
Buderus Edelstahl GmbH | Steel Bar Sales | Dillfeld 40 | D-35576 Wetzlar
Telephone +49 (0) 64 41-374 2468 | Fax +49 (0) 64 41-374 2784 | info@buderus-steel.com | www.buderus-steel.com

9966 SUPER C

Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 650 °C in the annealed state 40 °C below tempering temperature in the quenched and tempered state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	670 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	870 °C 1 minute per mm wall thickness
Quenching hardness	Max. 57 HRC	in oil, salt bath or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	300–440 HB	

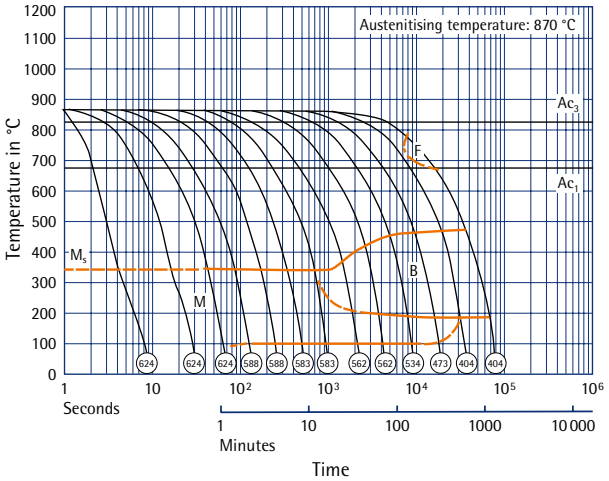
Tempering curve

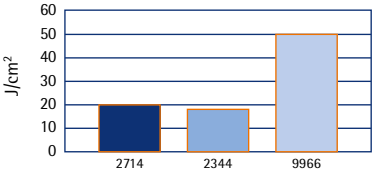




Comparison of high-temperature yield point
Quenched and tempered to 1400 MPa

TTT curve (continuous)





Comparison of impact value
Quenched and tempered to 1400 MPa
ISO-V samples surface transverse, 20 °C