

## I 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 ( $\triangle$  approx. 1500 MPa)\*

### Physical properties (reference values)

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

Buderus Hot Work Tool Steel 9966 SUPER C

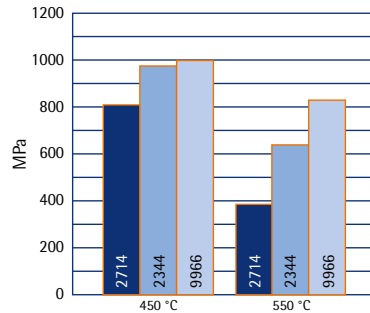
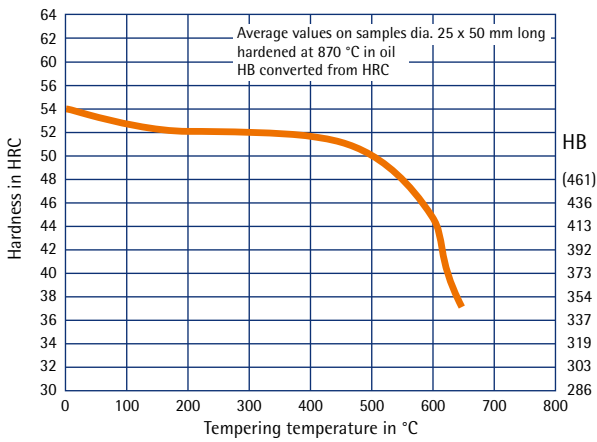
\* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

# 9966 SUPER C

## Heat treatment

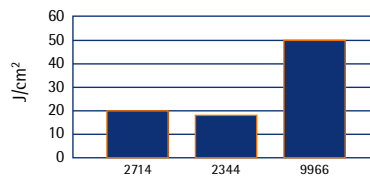
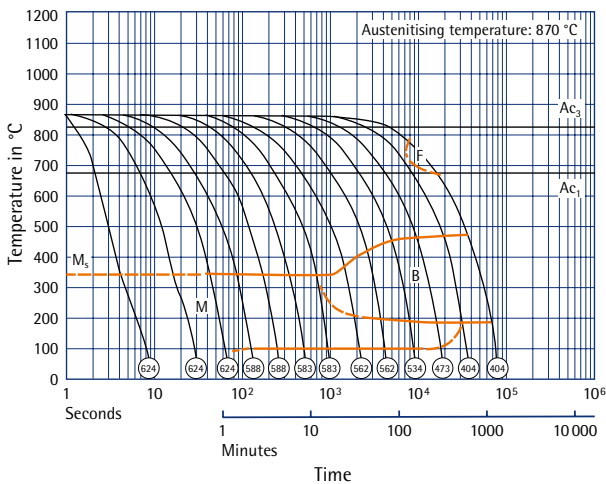
Stress relieving	Temperature: Approx. 650 °C in the annealed state 40 °C below tempering temperature in the quenched and tempered state
	Duration: 1 hour per 50 mm wall thickness
	Cooling: Furnace
Soft annealing	Temperature: 670 °C
	Duration: 1 hour per 25 mm wall thickness
	Cooling: Furnace
Hardening	Temperature: 870 °C
	Duration: 1 minute per mm wall thickness
Quenching hardness	Max. 57 HRC in oil, salt bath or vacuum
Tempering	Temperature: See tempering curve
	Duration: 1 hour per 25 mm wall thickness
	Cooling: 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 transverse, 20 °C

Legal notice: Buderus Edelstahl GmbH has taken every possible care in compiling this information; the data is nevertheless subject to intervening changes. Buderus Edelstahl GmbH disclaims all liability and any warranty as regards the accuracy, currency, correctness and completeness of the information provided. The information provided is merely descriptive and indicative in nature, and binding only when expressly agreed as undertakings in a contract made with Buderus Edelstahl GmbH. Buderus Edelstahl GmbH moreover reserves the right to make changes at any time without prior notice. Buderus Edelstahl GmbH disclaims all liability for loss or damage of any kind, including consequential loss, arising in connection with use of the information provided. © Buderus Edelstahl GmbH, Wetzlar, 07/2010