

I Buderus Die Steel 2744 ISO-B

	C	Si	Mn	P	S	Cr	Ni	Mo	V
Typical analysis	0.56	0.25	0.70	0.025	0.003	1.10	1.70	0.80	0.10
Chemical composition as per SEL	0.50–0.60	0.15–0.35	0.60–0.80	≤ 0.035	≤ 0.035	0.90–1.20	1.50–1.80	0.70–0.90	0.07–0.12

Figures in % by mass

Register of European Steels (SEL)	57 NiCrMoV 7-7
AFNOR	55 NCDV 7

Characteristics

The Mo component is increased relative to grade 2714, providing better tempering properties and greater high-temperature strength.

Applications

High-performance steel for dies, inserts and forging dies, annealed or hardened and tempered, with large quantities.

Extrusion stems up to medium specific pressures, orifice rings, die backers, tool holders, bolsters, backings, mandrel holders, hot shearing blades.

Delivered condition

Annealed to max. 250 HB

Hardened and tempered to customer specification on request

Physical properties (reference values)

Thermal expansion coefficient ($10^{-6}/K$)	20–100 °C	20–250 °C	20–500 °C
	12.2	13.1	14.2
Thermal conductivity (W/mK)	20 °C	250 °C	500 °C
	36.0	37.5	35.0
Young's modulus (GPa)	20 °C	250 °C	500 °C
	215	198	175

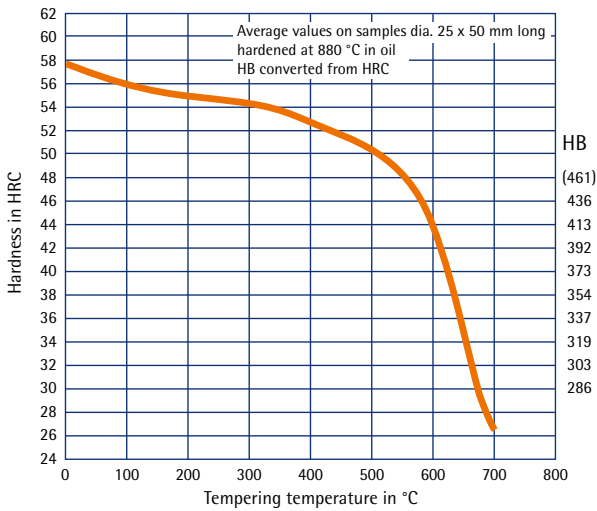
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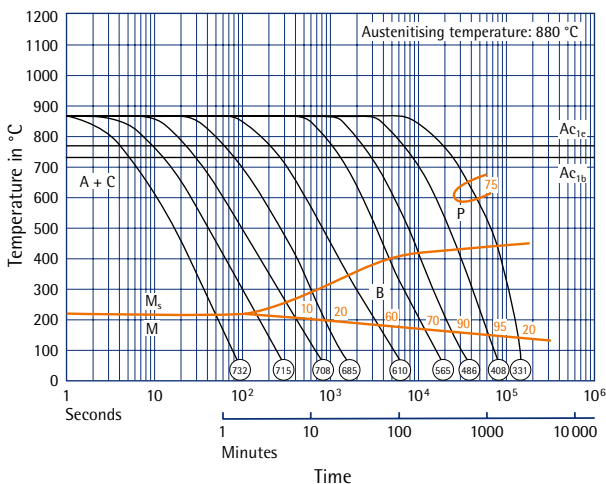
Heat treatment		
Stress relieving	Temperature:	Approx. 650 °C in the annealed state
	Duration:	1 hour per 50 mm wall thickness
	Cooling:	Furnace
Soft annealing	Temperature:	700 °C
	Duration:	1 hour per 25 mm wall thickness
	Cooling:	Furnace
Hardening	Temperature:	880 °C
	Duration:	1 minute per mm wall thickness
Quenching hardness	Max. 58 HRC	in oil, hot bath, air or vacuum
Tempering	Temperature:	See tempering curve
	Duration:	1 hour per 25 mm wall thickness
	Cooling:	Air
Working hardness	300–440 HB	depending on application

Note: Preheating to 250–280 °C is recommended.

Tempering curve



TTT curve (continuous)



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