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Buderus Plastic Mould Steel 2711 ISO-B

	C	Si	Mn	P	S	Cr	Ni	Mo	V
Typical analysis	0.52	0.20	0.70	0.020	0.002	0.75	1.75	0.30	0.10
Chemical composition as per SEL	0.50–0.60	0.15–0.35	0.50–0.80	≤ 0.025	≤ 0.025	0.60–0.80	1.50–1.80	0.25–0.35	0.07–0.12

Figures in % by mass

Register of European Steels (SEL)	54 NiCrMoV 6
AFNOR	55 NCDV 7
AISI	~ 6 F 2
BS	~ BH 224

Characteristics

High toughness, high compressive strength, polishable.
Nitridable as delivered; hard chrome plateable, flame hardenable, grain reliable.

Applications

For larger compression and injection moulds subject to higher mechanical and thermal stress.
Contour hardening is recommended.
With higher working hardness, also suited to processing SMC and GMT, in combination with surface coating if applicable.

Delivered condition

Annealed to max. 248 HB,
Hardened and tempered to 280–325 HB (≙ approx. 950–1100 MPa)*
or to 355–415 HB (≙ approx. 1200–1400 MPa)*
or to customer specification

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 11.0	20–250 °C 12.4	20–500 °C 13.5
Thermal conductivity (W/mK)	20 °C 33.0	250 °C 35.0	500 °C 33.0
Young's modulus (GPa)	20 °C 212	250 °C 197	500 °C 175



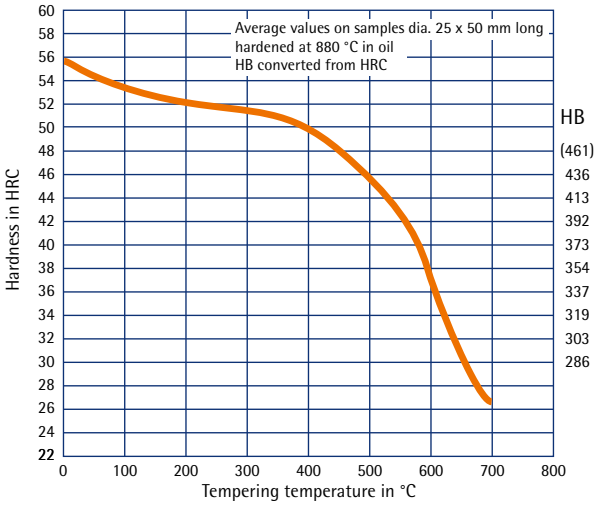
* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

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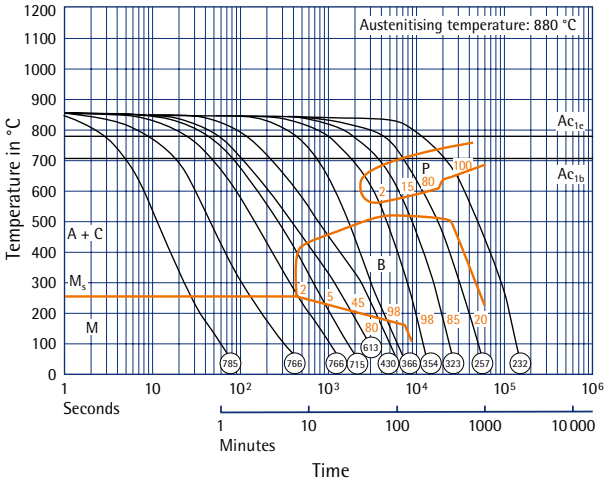
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Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 600 °C in the annealed state Approx. 540 °C in the hardened and tempered state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	700 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	880 °C 1 minute per mm wall thickness
Quenching hardness	Max. 56 HRC	in oil, hot bath or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	280–415 HB	

Tempering curve



TTT curve (continuous)



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