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Buderus Corrosion-Resistant Plastic Mould Steel 2085 (~ 2316 + S)

	C	Si	Mn	P	S	Cr	Ni
Typical analysis	0.34	0.30	0.95	0.025	0.100	15.0	
Chemical composition as per SEL	0.28–0.38	≤ 1.00	≤ 1.40	≤ 0.030	0.050–0.100	15.0–17.0	≤ 1.00

Figures in % by mass

Register of European Steels (SEL)	X 33 CrS 16
AFNOR	~ Z 33 CS 16
AISI	~ 422 + S

Characteristics

Corrosion-resistant plastic mould steel with increased sulphur content compared to grade 2316 ISO-B MOD.
For very good machinability properties.

Applications

Mould frames and mould fittings for corrosion-resistant injection-moulding dies.
Not suitable for contouring mould parts.

Delivered condition

Quenched and tempered to 265–310 HB (≙ approx. 900–1050 MPa)*

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 10.0	20–250 °C 12.0	20–500 °C 13.2
Thermal conductivity (W/mK)	20 °C 23.0	250 °C 24.0	500 °C 25.0
Young's modulus (GPa)	20 °C 215	250 °C 203	500 °C 180



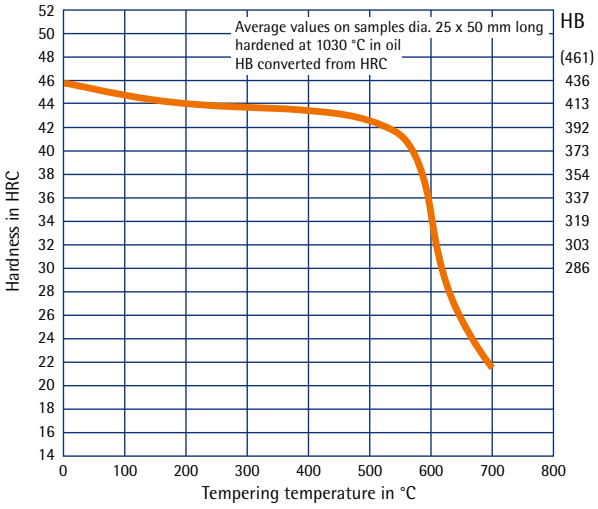
* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

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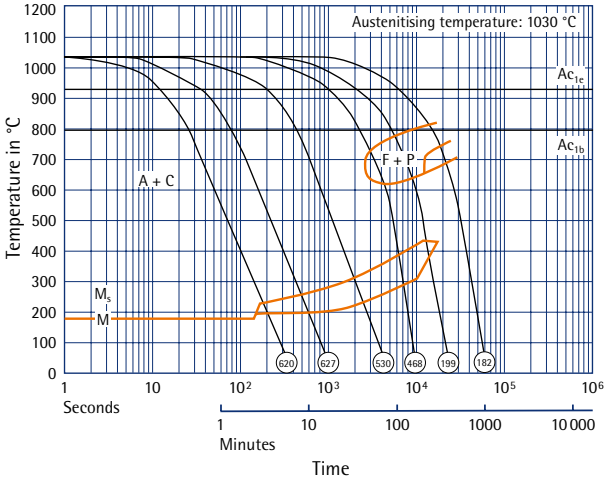
2085 (~ 2316 + S)

Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 590 °C in the quenched and tempered state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	820 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	1030 °C 1 minute per mm wall thickness
Quenching hardness	Max. 48 HRC	in oil or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	265–310 HB	

Tempering curve



TTT curve (continuous)



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