Buderus | Edelstahl

Buderus Corrosion-Resistant Plastic Mould Steel 2085 MOD

	C	Si	Mn	P	S	Cr	Ni	Mo	others
Typical analysis	0.28	0.30	0.95	0.030	0.050	14.2	~ 0.50	1.10	+
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
DIN EN ISO 4957	~ Z 33 CS 16
AISI	~ 422 + S

Characteristics

Corrosion-resistant, sulphur-alloyed plastic mould steel with modified chemical composition and increased hardness in comparison to 1.2085 Standard.

Applications

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

Note: Because of its controlled sulphur content (economic to machine) and the high hardness level, this material has restricted toughness properties.

Delivered condition

Quenched and tempered to 335–380 HB (≙ approx. 1130–1290 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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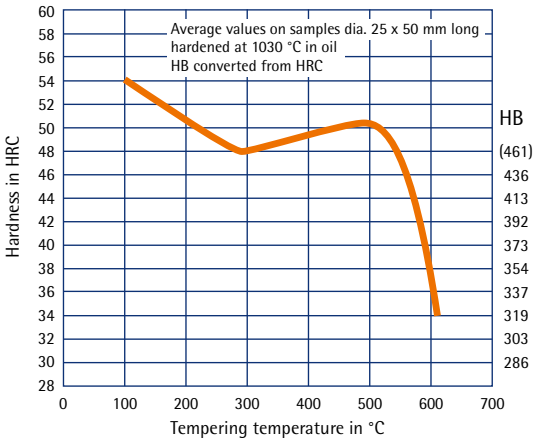
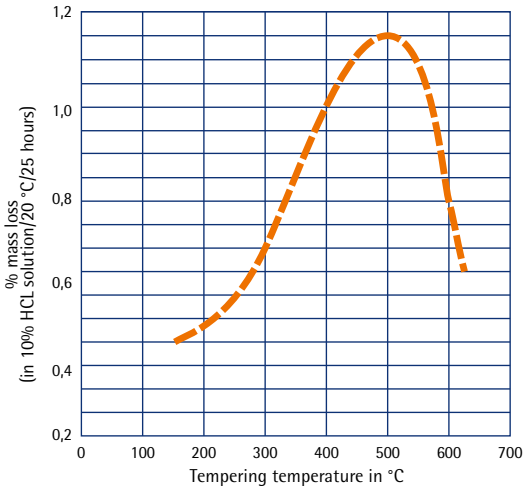
2085 MOD

Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 500 °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. 53 HRC	in oil or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	~ 335–380 HB	

Tempering curve



Effect of the tempering temperature on corrosion resistance



TTT curve (continuous)