Buderus | Edelstahl

Buderus Plastic Mould Steel 2738 Efficient®

	C	Si	Mn	P	S	Cr	Ni	Mo
Typical analysis	0.36	0.30	1.50	0.020	0.003	2.00	0.50	0.20
Chemical composition as per SEL	0.35–0.45	0.20–0.40	1.30–1.60	≤ 0.030	≤ 0.030	1.80–2.10	0.90–1.20	0.15–0.25

Figures in % by mass

Register of European Steels (SEL)	~ 40 CrMnNiMo 8-6-4
DIN EN ISO 4957	~ 40 CrMnNiMo 8-6-4
AFNOR	~ 40 CMND 8
AISI	~ P 20 + Ni
BS	~ P 20 + Ni

Characteristics

Mould steel for thickness ≤ 600 mm (width upon request). Properties as for grade 2311 ISO-BM, but with improved through-hardening.
Nitridable, hard chrome plateable, flame hardenable, polishable, grain-reliable as delivered.

In an extreme dimensional range, and where there is a requirement for
- Higher hardness and better through-hardenability
- Polishability > 320 grit
- Sensitive etch-graining designs (e.g. HNO_3)
- Higher thermal conductivity

we recommend grade 2738mod.TS(HH).

Applications

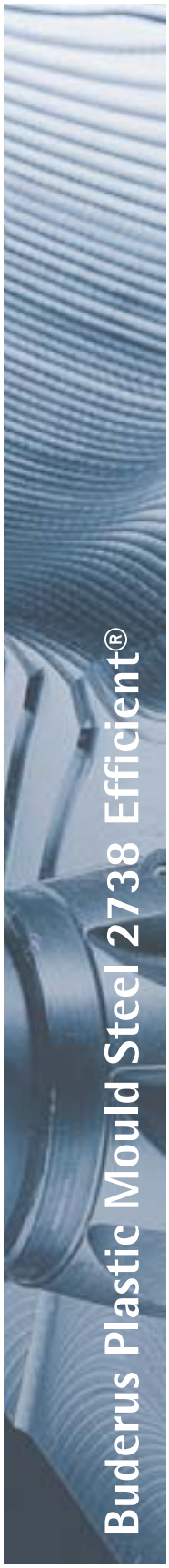
Small and medium-sized injection moulds, press moulds and mould frames up to 600 mm thick.

Delivered condition

Quenched and tempered to 280–325 HB (≙ approx. 950–1100 MPa)*

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 11.6	20–250 °C 12.8	20–500 °C 14.3
Thermal conductivity (W/mK)	20 °C 34.0	250 °C 33.5	500 °C 33.0
Young's modulus (GPa)	20 °C 212	250 °C 197	500 °C 175



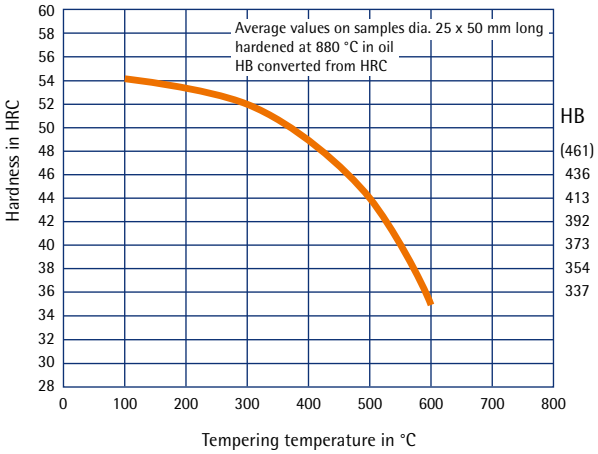
* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1;
we offer no quality guarantee with higher hardness requirements

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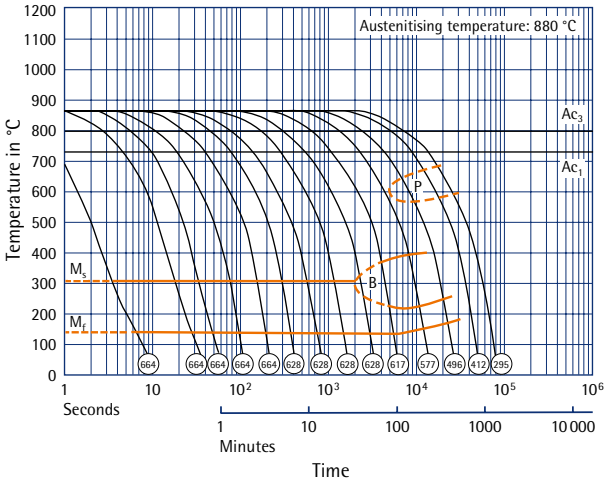
2738 Efficient®

Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 550 °C in the quenched and tempered state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	720 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	880 °C 1 minute per mm wall thickness
Quenching hardness	Max. 54 HRC	in oil, hot bath or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	280–325 HB	

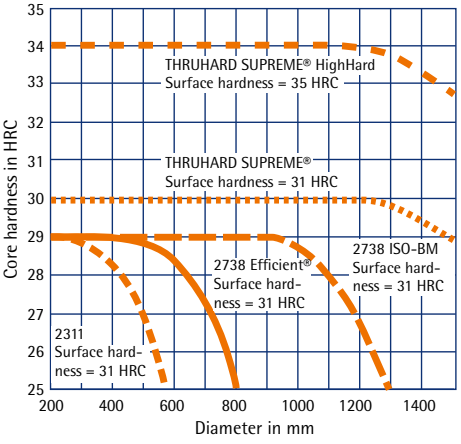
Tempering curve



TTT curve (continuous)



Through-hardenability (schematic)



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