

| Buderus Plastic Mould Steel 2738mod. Efficient Extrahard

	C	Si	Mn	P	S	Cr	Ni	Mo
Typical analysis	0,30	0,10	1,45	0,020	0,003	1,35	0,65	0,50

Figures in % by mass

Characteristics

Mould steel with higher hardness 350–395 HB.

Hard chrome plateable, flame and laser hardenable, etch-grainable, nitridable (max. 500 °C).

Where there is a requirement for polishability > 400 grit and/or sensitive etch-graining designs (e.g. HNO₃, fine or textile graining) we recommend 2738mod.TS(HH).

For applications that require a combination of high strength and toughness we recommend grade 2711 ISO-B.

Applications

Compression and injection moulds where higher hardness is needed.

Thickness max. 600 mm (width on request).

Delivered condition

Quenched and tempered to 350–395 HB (Δ approx. 1180–1340 MPa)*

Physical properties (reference values)

Thermal expansion coefficient (10 ⁻⁶ /K)	20–100 °C	20–250 °C	20–500 °C
	11.5	12.7	14.2
Thermal conductivity (W/mK)	20 °C	250 °C	500 °C
	36.9	38.0	34.3
Young's modulus (GPa)	20 °C	250 °C	500 °C
	211	194	165

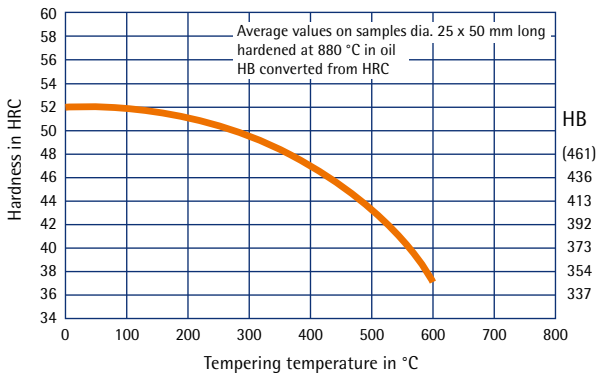
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* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

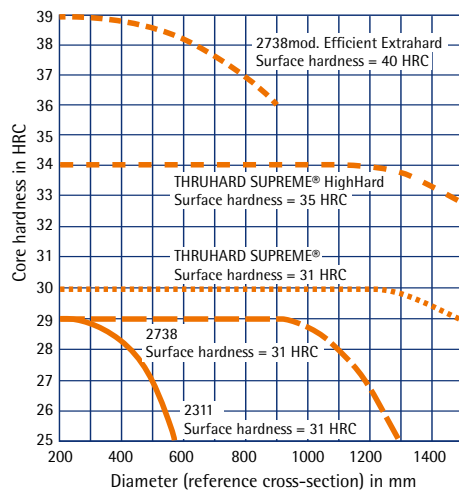
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Heat treatment	
Stress relieving	Temperature: Approx. 600 °C in the annealed state Max. 500 °C in the quenched and tempered state Duration: 1 hour per 50 mm wall thickness Cooling: Furnace
Soft annealing	Temperature: 700 °C Duration: 1 hour per 25 mm wall thickness Cooling: Furnace
Hardening	Temperature: 880 °C Duration: 1 minute per mm wall thickness
Quenching hardness	Max. 52 HRC in oil, hot bath or vacuum
Tempering	Temperature: See tempering curve Duration: 1 hour per 25 mm wall thickness Cooling: Air
Working hardness	350–395 HB

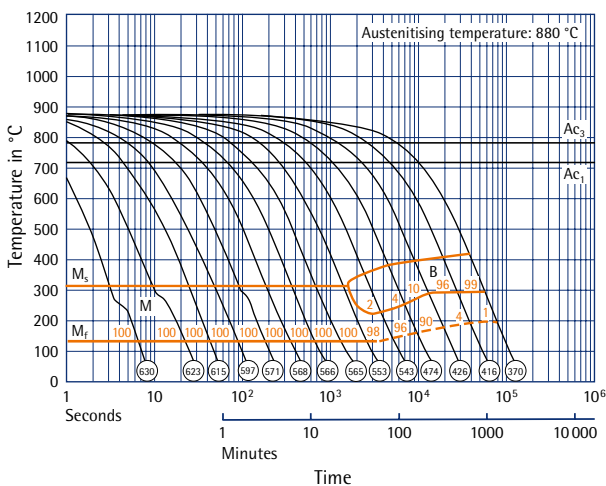
Tempering curve



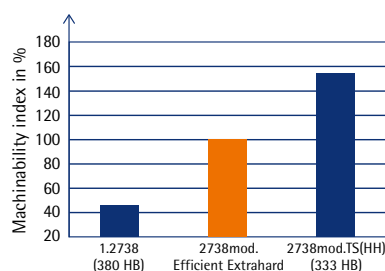
Through-hardability (schematic)



TTT curve (continuous)



Machinability, comparison of tool life while rough milling



Test parameters:
Milling head Ø 25 mm
1 Carbide reversing plate Ø 8 mm
Type XS 020832 P25

$V_c = 295$ m/min
 $n = 3.750$ min⁻¹
 $V_f = 1.875$ mm/min
 $F_z = 0,5$ mm
 $a_p = 0,6$ mm
 $a_e = 8,25$ mm