

## I Buderus Plastic Mould Steel Thruhard Supreme® 2738mod.TS(HH)

	C	Si	Mn	P	S	Cr	Ni	Mo	V
Typical analysis	0.26	0.10	1.45	0.015	0.002	1.25	1.05	0.50	0.10

Figures in % by mass

### Characteristics

Recently developed plastic mould steel, distinguished from grades 2311 and 2738 by:

- I Higher hardness and better through-hardenableity
- I Polishability up to 600 grit (high gloss finish reliability on request)
- I Grain reliability even with sensitive etch-graining designs
- I Improved weldability
- I Higher thermal conductivity.

Nitridable, hard chrome plateable, flame hardenable as delivered; its higher basic hardness provides better support for surface finishing (such as PVD coating).

### Applications

Compression and injection moulds to accommodate large dimensions such as bumpers, dashboards, chairs, rubbish bins, bottle crates, television cabinets, etc.

### Delivered condition

- I HighHard: 2738mod.TS(HH)  
Quenched and tempered to 310–355 HB ( $\Delta$  approx. 1050–1200 MPa)\*
- Normal hardness: 2738mod.TS  
I Quenched and tempered to 280–325 HB ( $\Delta$  approx. 950–1100 MPa)\*

### Physical properties (reference values)

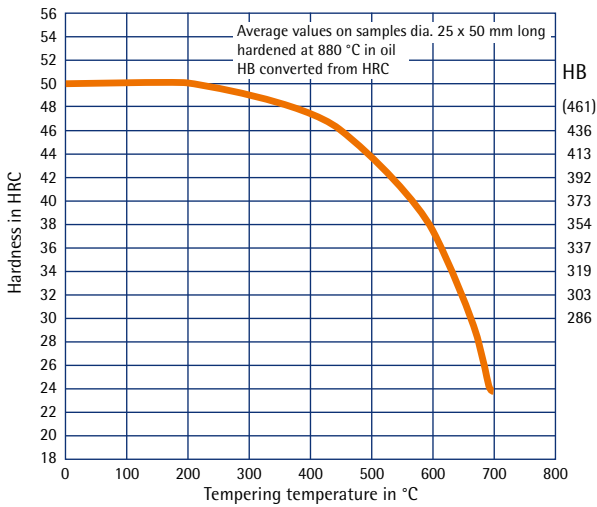
Thermal expansion coefficient ( $10^{-6}/K$ )	20–100 °C	20–250 °C	20–500 °C
	10.8	12.2	13.9
Thermal conductivity (W/mK)	20 °C	250 °C	500 °C
	37.4	41.3	39.8
Young's modulus (GPa)	20 °C	250 °C	500 °C
	204	188	160

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

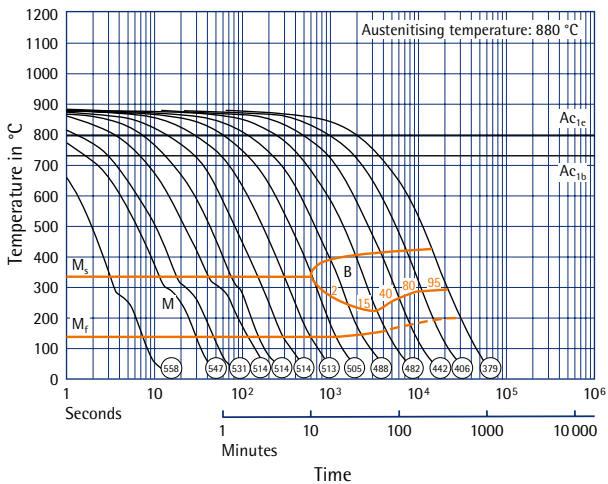
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Heat treatment	
Stress relieving	Temperature: Approx. 600 °C in the annealed state Approx. 560 °C in the quenched and tempered state Duration: 1 hour per 50 mm wall thickness Cooling: Furnace
Soft annealing	Temperature: 720 °C Duration: 1 hour per 25 mm wall thickness Cooling: Furnace
Hardening	Temperature: 880 °C Duration: 1 minute per mm wall thickness
Quenching hardness	Max. 50 HRC in water, polymer, oil or vacuum
Tempering	Temperature: See tempering curve Duration: 1 hour per 25 mm wall thickness Cooling: Air
Working hardness	280–355 HB

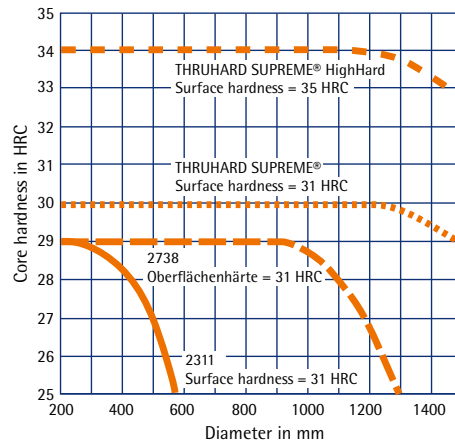
## Tempering curve



## TTT curve (continuous)



## Through-hardenability (schematic)



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