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Buderus Plastic Mould Steel Thruhard Supreme® 2738mod.TS(HHH)

	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	0.70	0.15

Figures in % by mass

Its higher hardness compared to 2738mod.TS(HH) is achieved by its optimised chemical composition.

Characteristics

Both plastic mould steel variants of Thruhard Supreme® distinguished from grades 2311 and 2738 by:

- Higher hardness and better through-hardenability
- Polishability up to 600 grit
- Grain reliability even with sensitive etch-graining designs
- Improved weldability
- 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).

For high gloss polish requirements we recommend Thruhard Diamond®.

Applications

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

Delivered condition

- TripleHard: 2738mod.TS(HHH)
  Quenched and tempered to 355–400 HB (≙ approx. 1200–1350 MPa)*

Physical properties (reference values)

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

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

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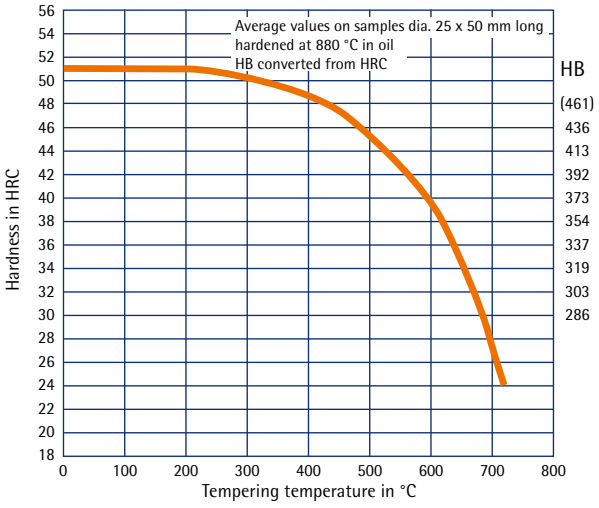
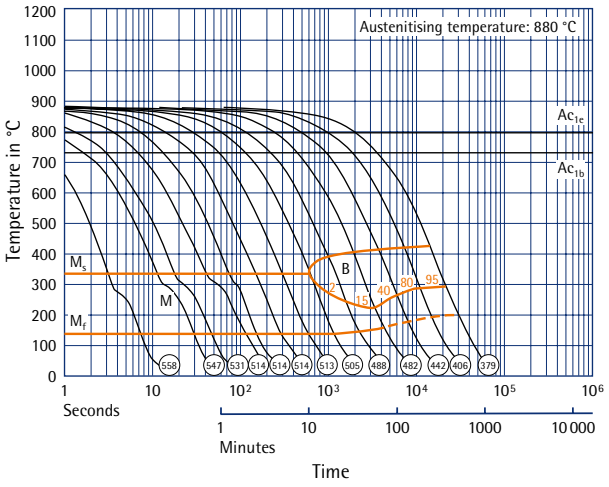
Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 520 °C in the quenched and tempered state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	720 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	880 °C 1 minute per mm wall thickness
Quenching hardness	Max. 51 HRC	in water, polymer, oil or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	340–400 HB	

Tempering curve



TTT curve (continuous)



Through-hardenability (schematic)