Buderus | Edelstahl

Buderus Hot Work Tool Steel HIPERDIE®

	C	Si	Mn	P	S	Cr	Mo	V	Others
Typical analysis	0.35	≤ 0.35	0.50	≤ 0.025	≤ 0.003	2.70	1.00	0.20	+

Figures in % by mass

Characteristics

Special CrMoV-alloyed hot work tool steel with excellent high-temperature strength and better toughness properties than grade 2344. In comparison to the NiCrMoV-alloyed hot work tool steel 2714, HIgh PERformance DIE is characterised by higher wear resistance.

Applications

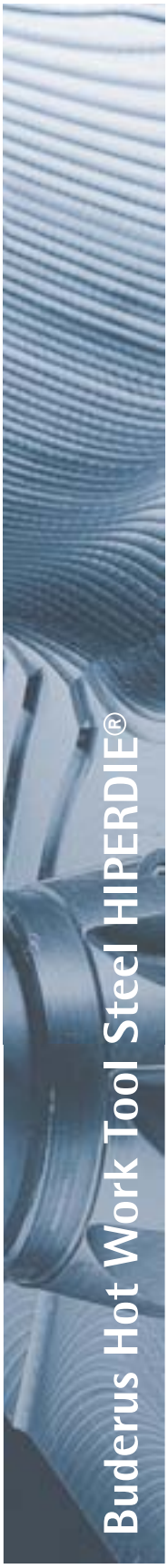
Small and medium-sized dies and die inserts for a large number of forgings.

Delivered condition

Annealed to max. 250 HB
Quenched and tempered to customer specification on request
to max. 430 HB (≙ approx. 1450 MPa)*

Physical properties (reference values)

Thermal expansion coefficient (10^{-6}/K)	20–100 °C 11.9	20–250 °C 12.8	20–500 °C 13.8
Thermal conductivity (W/mK)	20 °C 38.3	250 °C 37.1	500 °C 35.3
Young's modulus (GPa)	20 °C 209	250 °C 204	500 °C 198



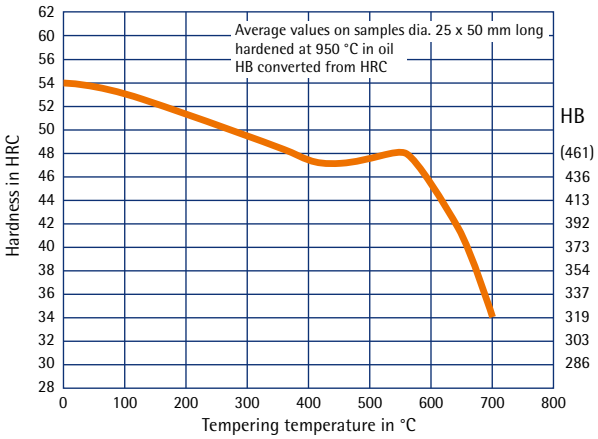
* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

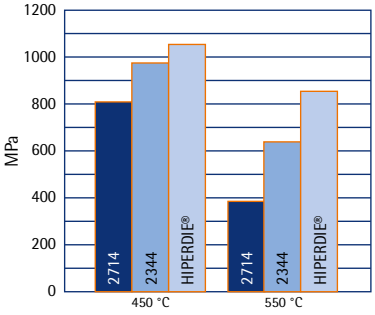
Buderus Edelstahl GmbH | Steel Bar Sales | Buderusstraße 25 | D-35576 Wetzlar
Telephone +49 (0) 64 41-374 2468 | Fax +49 (0) 64 41-374 2784 | info@buderus-steel.com | www.buderus-steel.com

HIPERDIE®

Heat treatment		
Stress relieving	Temperature: Duration: Cooling:	Approx. 650 °C in the annealed state 40 °C below tempering temperature in the quenched and tempered state 1 hour per 50 mm wall thickness Furnace
Soft annealing	Temperature: Duration: Cooling:	750 °C 1 hour per 25 mm wall thickness Furnace
Hardening	Temperature: Duration:	950 °C 1 minute per mm wall thickness
Quenching hardness	Max. 54 HRC	in oil, salt bath or vacuum
Tempering	Temperature: Duration: Cooling:	See tempering curve 1 hour per 25 mm wall thickness Air
Working hardness	Max. 430 HB	

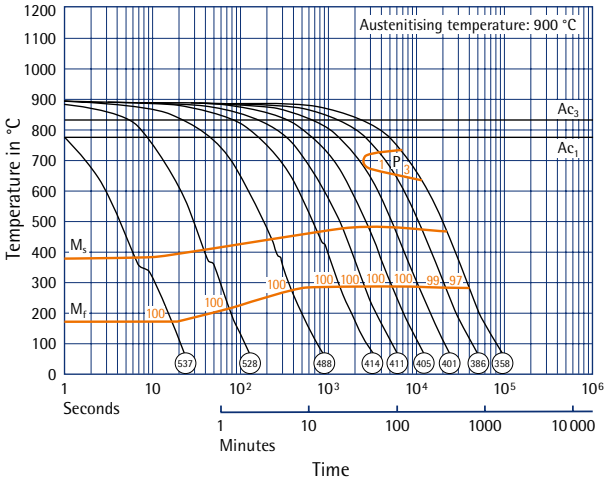
Tempering curve

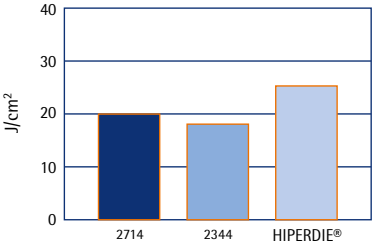




Comparison of high-temperature yield strength
Quenched and tempered to approx. 1400 MPa

TTT curve (continuous)





Comparison of impact value
Quenched and tempered to approx. 1400 MPa
ISO-V samples transverse, 20 °C

Legal notice. Buderus Edelstahl GmbH has taken every possible care in compiling this information; the data is nevertheless subject to intervening changes. Buderus Edelstahl GmbH disclaims all liability and any warranty as regards the accuracy, currency, correctness and completeness of the information provided. The information provided is merely descriptive and indicative in nature, and binding only when expressly agreed as undertakings in a contract made with Buderus Edelstahl GmbH. Buderus Edelstahl GmbH moreover reserves the right to make changes at any time without prior notice. Buderus Edelstahl GmbH disclaims all liability for loss or damage of any kind, including consequential loss, arising in connection with use of the information provided. This publication supersedes all previous ones.
© Buderus Edelstahl GmbH, Wetzlar, 07/2010