

Buderus Corrosion-Resistant Plastic Mould Steel 2083 ISO-B

	C	Si	Mn	P	S	Cr
Typical analysis	0.42	0.40	0.40	0.030	0.003	13.0
Chemical composition as per SEL	0.36–0.42	≤ 1.00	≤ 1.00	≤ 0.030	≤ 0.030	12.5–14.5

Figures in % by mass

Register of European Steels (SEL)	X 40 Cr 14
DIN EN ISO 4957	X 40 Cr 14
AFNOR	Z 40 C 14
AISI	420

Characteristics

Corrosion-resistant plastic mould steel for processing chemically aggressive injection-moulding compounds, with good polishing and machining properties.

Applications

Mould inserts

Delivered condition

Annealed to max. 241 HB

Hardened and tempered to customer specification on request

Physical properties (reference values)

Thermal expansion coefficient ($10^{-6}/K$)	20–100 °C	20–250 °C	20–500 °C
	11.0	12.5	13.5
Thermal conductivity (W/mK)	20 °C	250 °C	500 °C
	23.0	24.0	25.0
Young's modulus (GPa)	20 °C	250 °C	500 °C
	215	203	180

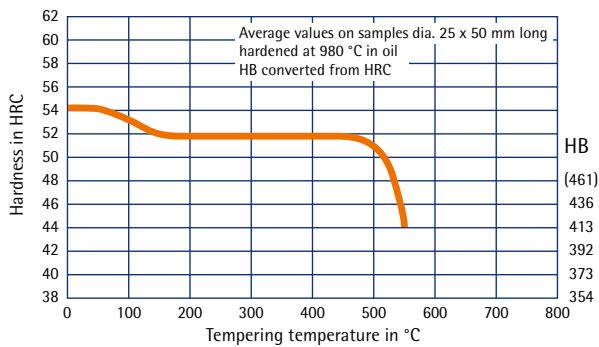
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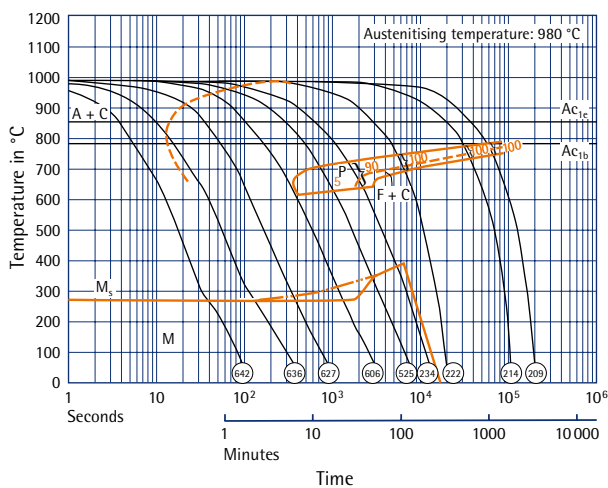
Heat treatment	
Stress relieving	Temperature: Approx. 650 °C in the annealed state Duration: 1 hour per 50 mm wall thickness Cooling: Furnace
Soft annealing	Temperature: 820 °C Duration: 1 hour per 25 mm wall thickness Cooling: Furnace
Hardening	Temperature: 980 °C Duration: 1 minute per mm wall thickness
Quenching hardness	Max. 56 HRC in oil or vacuum
Tempering	Temperature: See tempering curve Duration: 1 hour per 25 mm wall thickness Cooling: Air
Working hardness	50–54 HRC

Note on hardening: To avoid pitting, holding at hardening temperature must not be done in salt baths, but packed or in a vacuum. Quenching in nitric salts should likewise be avoided with the hot bath method of vacuum hardening.

Tempering curve



TTT curve (continuous)



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