

I Buderus Corrosion-Resistant Plastic Mould Steel 2085 (~ 2316 + S)

| | C | Si | Mn | P | S | Cr | Ni |
|---------------------------------|-----------|--------|--------|---------|-------------|-----------|--------|
| Typical analysis | 0.34 | 0.30 | 0.95 | 0.025 | 0.100 | 15.0 | |
| Chemical composition as per SEL | 0.28–0.38 | ≤ 1.00 | ≤ 1.40 | ≤ 0.030 | 0.050–0.100 | 15.0–17.0 | ≤ 1.00 |

Figures in % by mass

| | |
|-----------------------------------|--------------|
| Register of European Steels (SEL) | X 33 CrS 16 |
| AFNOR | ~ Z 33 CS 16 |
| AISI | ~ 422 + S |

Characteristics

Corrosion-resistant plastic mould steel with increased sulphur content compared to grade 2316 ISO-B MOD.

For very good machinability properties.

Applications

Mould frames and mould fittings for corrosion-resistant injection-moulding dies.

Not suitable for contouring mould parts.

Delivered condition

Quenched and tempered to 265–310 HB (Δ approx. 900–1050 MPa)*

Physical properties (reference values)

| | | | |
|---|-----------|-----------|-----------|
| Thermal expansion coefficient ($10^{-6}/K$) | 20–100 °C | 20–250 °C | 20–500 °C |
| | 10.0 | 12.0 | 13.2 |
| 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 |

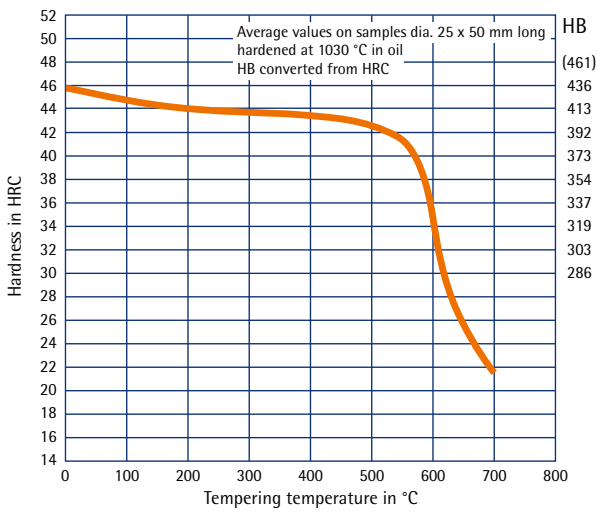
Buderus Corrosion-Resistant Plastic Mould Steel 2085 (~ 2316 + S)

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

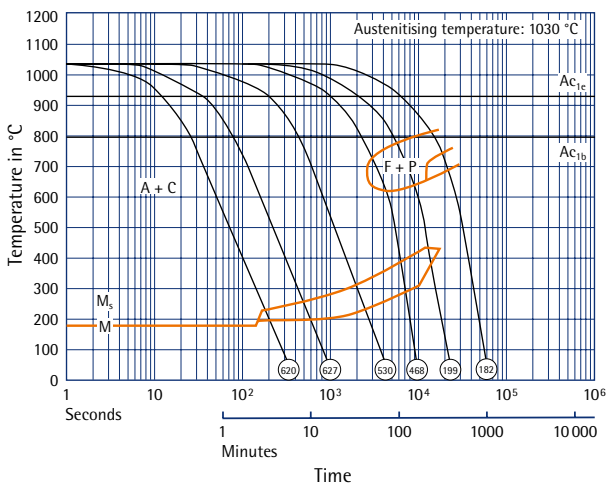
I 2085 (~ 2316 + S)

| Heat treatment | |
|--------------------|---|
| Stress relieving | Temperature: Approx. 590 °C in the quenched and tempered 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: 1030 °C Duration: 1 minute per mm wall thickness |
| Quenching hardness | Max. 48 HRC in oil or vacuum |
| Tempering | Temperature: See tempering curve Duration: 1 hour per 25 mm wall thickness Cooling: Air |
| Working hardness | 265–310 HB |

Tempering curve



TTT curve (continuous)



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. © Buderus Edelstahl GmbH, Wetzlar, 07/2010