

PLASTIC MOULD STEELS

PREHARDENED CORROSION RESISTANT STEEL

Application Segments

Plastic Mould

Available Product Variants

Long Products*

Plates

* Presented data refer exclusively to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Product Description

BÖHLER M303HIGHHARD corresponds to BÖHLER M303 in the High-Hard product variant. A variation in the heat treatment enables significantly higher wear resistance.

Process Melting

Airmelted

Properties

- > Toughness & Ductility : high
- > Wear Resistance : high
- > Machinability : good
- > Dimensional stability : good
- > Polishability : very high
- > Corrosion resistance : good
- > No heat treatment necessary
- > Prehardened

Applications

- | | | |
|--|--|----------------------------|
| > Blow Molding | > Components for food processing and animal feed | > Food processing industry |
| > Injection Moulding | > Plastic Extrusion | > Screws and Barrels |
| > Standard Parts (Moulds, Plates, Pins, Punches) | > Components for Displays | > Electronic industry |
| > General Components for Mechanical Engineering | > Lamps/Lenses for Automotive | > Packaging industry |
| > Hotrunner systems | > Glasfibre reinforced plastics | > Wear Applications |
| > Pumping | > Mechanical Engineering | |

Technical data

Material designation	
~1.2316	SEL
X38CrMo16	EN

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	Ni	N
0.27	0.3	0.65	14.5	1	0.85	+

Delivery condition

Hardened and Tempered

Hardness (HB)	350 to 390
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Heat treatment

Stress relieving

Temperature	max. 500 °C	Prehardened material: When stress-relieving the material after processing, keep the material at temperature in a neutral atmosphere for at least 2 hours after complete heating, then slowly cool the oven at 20°C [68 °F]/hour to 200°C [392 °F], then cool in air.
Temperature		Newly hardened and tempered material: Carry out the stress relief heat treatment at approx. 50°C [122 °F] below the tempering temperature. After complete heating, hold at temperature for 1 to 2 hours in a neutral atmosphere, then slowly cool down the furnace.

Physical Properties

Temperature (°C)	20
Density (kg/dm ³)	7.72
Thermal conductivity (W/(m.K))	22.8
Specific heat (kJ/kg K)	0.46
Spec. electrical resistance (Ohm.mm ² /m)	-
Modulus of elasticity (10 ³ N/mm ²)	218

Thermal Expansions between 20°C | 68°F and ...

Temperature (°C)	100	200	300	400	500	600
Thermal expansion (10 ⁻⁶ m/(m.K))	10.5	10.8	11.1	11.4	11.7	12.1

If other available product variants are listed in addition to long products, please note that these may differ in terms of melting process, technical data, delivery and surface condition as well as available product dimensions. For mandatory technical specifications, other requirements and dimensions, please contact our regional voestalpine BÖHLER sales companies. The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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