

# PLASTIC MOULD STEELS

## PREHARDENED STEEL

### Application Segments

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Plastic Mould

### Available Product Variants

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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

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BÖHLER M238 is a prehardened, non-corrosion-resistant plastic mould steel with good machinability. The addition of Ni guarantees uniform strength across the entire cross-section, even with large dimensions (up to 600 mm).

### Process Melting

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Airmelted

### Properties

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

### Applications

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- > Injection Molding
- > Standard Parts (Molds, Plates, Pins, Punches)
- > Tool Holders (milling, drilling, turning & chucks)
- > General Components for Mechanical Engineering
- > Lamps/Lenses for Automotive
- > Hotrunner systems

### Technical data

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Material designation		Standards	
1.2738	SEL	4957	EN ISO
40CrMnNiMo8-6-4	EN		

## Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	Ni
0.38	0.3	1.5	2	0.2	1.1

## Delivery condition

### Hardened and Tempered

Hardness (HB)	290 to 330
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## Heat treatment

### Stress relieving

Temperature	max. 550 °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 <sup>3</sup> )	7.81
Thermal conductivity (W/(m.K))	35.2
Specific heat (kJ/kg K)	0.465
Spec. electrical resistance (Ohm.mm <sup>2</sup> /m)	-
Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup> )	212

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

Temperature (°C)	100	200	300	400	500
Thermal expansion (10 <sup>-6</sup> m/(m.K))	11.88	12.44	13	13.45	13.85

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.