

# PLASTIC MOULD STEELS

## PREHARDENED STEEL

### Available Product Variants

Long Products\*

Plates

test 123344

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

### Product Description

BÖHLER M238 is a hardened and tempered, not corrosion resistant plastic mould steel. Because of the Ni-addition, there is no hardness decrease in the center of large sizes (up to 600 mm). A special melting technology offers good machinability.

### Process Melting

Airmelted

### Properties

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

### Applications

- > 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

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)	355 to 395

## Heat treatment

Stress relieving		
Temperature	500 °C   932 °F	In hardened and tempered condition approx. 30 to 50 °C (86 to 122 °F) below the tempering temperature. After through heating, hold at temperature in neutral atmosphere for 1 to 2 hours. Slow cooling in furnace afterwards.

## Physical Properties

Temperature (°C   °F)	20   68
Density (kg/dm <sup>3</sup>   lb/in <sup>3</sup> )	7.81   0.28
Thermal conductivity (W/(m.K)   BTU/ft h °F)	35.2   20.34
Specific heat (kJ/kg K   BTU/lb °F)	0.465   0.1111
Spec. electrical resistance (Ohm.mm <sup>2</sup> /m   10 <sup>-4</sup> Ohm.inch <sup>2</sup> /ft)	-
Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup>   10 <sup>3</sup> ksi)	212   30.75

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

Temperature (°C   °F)	100   212	200   392	300   572	400   752	500   932
Thermal expansion (10 <sup>-6</sup> m/(m.K)   10 <sup>-6</sup> inch/inch.°F)	11.88   6.6	12.44   6.9	13   7.2	13.45   7.5	13.85   7.7

**Long Products:** For additional specifications and technical requirements, please contact our regional voestalpine BÖHLER sales companies.

**Sheet & Plates:** Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche GmbH & Co KG.

*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.*