

# PLASTIC MOULD STEELS

## PREHARDENED 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 M200 is a prehardened, non-corrosion-resistant chromium-manganese-molybdenum alloyed plastic mould steel with very good machinability and uniform strength over the entire cross-section of medium-sized dimensions.

### Process Melting

Airmelted

### Properties

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

### Applications

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

### Technical data

Material designation	
1.2312	SEL
40CrMnMoS8-6	EN
~P20	AISI

## Chemical composition (wt. %)

C	Si	Mn	S	Cr	Mo
0.4	0.4	1.5	0.08	1.9	0.2

## 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, after complete heating, at temperature in a neutral atmosphere for at least 2 hours, 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> )	7.85
Thermal conductivity (W/(m.K))	33
Specific heat (kJ/kg K)	0.46
Spec. electrical resistance (Ohm.mm <sup>2</sup> /m)	0.19
Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup> )	210

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

Temperature (°C)	100	200	300	400
Thermal expansion (10 <sup>-6</sup> m/(m.K))	12.8	13	13.8	14

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.