

# PLASTIC MOULD STEELS

## PREHARDENED STEEL

### 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

Large and medium-sized moulds for plastic processing, mould frames for the injection moulding and die casting industries, components for general mechanical engineering.

### 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)
- > Injection Molding
- > Tool Holders (milling, drilling, turning & chucks)
- > Hotrunner systems
- > General Components for Mechanical Engineering

### 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

## Heat treatment

Stress relieving		
Temperature	600 °C   1,112 °F	In hardened and tempered condition approx. 86 to 122°F (30 to 50°C) below the tempering temperature. After through heating, hold at temperature in neutral atmosphere for 1 to 2 hours. Slow cooling in furnace.

## Physical Properties

Temperature (°C   °F)	20   68
Density (kg/dm <sup>3</sup>   lb/in <sup>3</sup> )	7.85   0.28
Thermal conductivity (W/(m.K)   BTU/ft h °F)	33   19.07
Specific heat (kJ/kg K   BTU/lb °F)	0.46   0.1099
Spec. electrical resistance (Ohm.mm <sup>2</sup> /m   10 <sup>-4</sup> Ohm.inch <sup>2</sup> /ft)	0.19   0.9
Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup>   10 <sup>3</sup> ksi)	210   30.46

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

Temperature (°C   °F)	100   212	200   392	300   572	400   752
Thermal expansion (10 <sup>-6</sup> m/(m.K)   10 <sup>-6</sup> inch/inch.°F)	12.8   7.1	13   7.2	13.8   7.7	14   7.8

**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.*