

# PLASTIC MOULD STEELS

## HARDENABLE CORROSION RESISTANT 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

Corrosion resistant plastic mould steel with the best polishability for products which require an outstanding surface finish.

### Process Melting

- Airmelted + Remelted

### Properties

- > Toughness & Ductility : very high
- > Wear Resistance : good
- > Machinability : very high
- > Dimensional stability : very high
- > Polishability : very high
- > Corrosion resistance : very high
- > Micro-cleanliness : very high

### Applications

- > Comps. for Food processing and Animal Feed
- > Plastic Extrusion
- > Consumer Goods - General
- > Medical
- > Components for Displays
- > Hotrunner systems
- > Food processing Industry
- > Standard Parts (Molds, Plates, Pins, Punches)
- > General Components for Mechanical Engineering
- > Packaging
- > Electronic Industry
- > Glasfibre reinforced plastics
- > Injection Molding
- > Blow Molding
- > Lamps/Lenses for Automotive
- > Camera lenses
- > Screws and Barrels

### Chemical composition (wt. %)

| C    | Si  | Mn   | Cr    | Mo | Ni | V | N |
|------|-----|------|-------|----|----|---|---|
| 0.24 | 0.2 | 0.35 | 13.25 | +  | +  | + | + |

### Delivery condition

#### Soft annealed

|               |          |
|---------------|----------|
| Hardness (HB) | max. 220 |
|---------------|----------|

## Heat treatment

### Hardening and Tempering

|             |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature | 980 °C   1,796 °F | For hardening hold at temperature for 25 to 30 min. An optional sub-zero treatment at -80°C/ 176°F can be applied after hardening. For highest corrosion resistance, temper once for a minimum of 2h at 250-350°C/482-662°F. For best dimensional stability, temper twice for a minimum of 2h at 505-510°C/941-950°F (without sub-zero treatment) or 505-520°C/ 941-968°F (with sub-zero treatment). After each heat treatment step, material should be cooled down to approx. 30°C |
|-------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Physical Properties

|                                                                                                   |               |
|---------------------------------------------------------------------------------------------------|---------------|
| Temperature (°C   °F)                                                                             | 20   68       |
| Density (kg/dm <sup>3</sup>   lb/in <sup>3</sup> )                                                | 7.71   0.28   |
| Thermal conductivity (W/(m.K)   BTU/ft h °F)                                                      | 23.1   13.35  |
| 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) | -             |
| Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup>   10 <sup>3</sup> ksi)                   | 216   31.33   |

## 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) | 10.5   5.8 | 11   6.1  | 11   6.1  | 11.5   6.4 | 12   6.7  |

**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.

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