

# PLASTIC MOULD STEELS - HEAT TREATABLE CORROSION RESISTANT STEELS

## Application Segments

Plastic Mould

## Available Product Variants

Long Products

## Product Description

BÖHLER M303 ISOPLAST corresponds to a remelted BÖHLER M303. The variation in the production route enables greater toughness and polishability thanks to higher purity and improved homogeneity. Also available as product variant BÖHLER M303HH ISOPLAST (high-hard variant).

## Process Melting

Airmelted + Remelted

## Applications

- > Blow Molding
- > Components for Displays
- > Components for food processing and animal feed
- > Packaging industry
- > General Components for Mechanical Engineering
- > Injection Molding
- > Lamps/Lenses for Automotive
- > Plastic Extrusion
- > Food processing industry
- > Hotrunner systems
- > Standard Parts (Molds, Plates, Pins, Punches)
- > Glasfibre reinforced plastics
- > Electronic industry
- > Screws and Barrels

## Technical data

| Material designation |     |
|----------------------|-----|
| ~1.2316              | SEL |

## Chemical composition (wt. %)

| C    | Si  | Mn   | Cr   | Mo | Ni   | N |
|------|-----|------|------|----|------|---|
| 0.27 | 0.3 | 0.65 | 14.5 | 1  | 0.85 | + |

## Delivery condition

### Hardened and Tempered | BÖHLER M303 ISOPLAST

|               |            |
|---------------|------------|
| Hardness (HB) | 290 to 330 |
|---------------|------------|

### Hardened and Tempered | BÖHLER M303HH ISOPLAST

|               |            |
|---------------|------------|
| Hardness (HB) | 350 to 390 |
|---------------|------------|

## Heat treatment

### Stress relieving

|             |             |   |
|-------------|-------------|---|
| Temperature | max. 550 °C | Pre-hardened and tempered material M303 ISOPLAST: 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 material in the oven at 20°C/hour to 200°C, then cool in air.   |
| Temperature | max. 500 °C | Pre- hardened and tempered material M303HH ISOPLAST: When stress-relieving the material after machining, keep the material at temperature for at least 2 hours in a neutral atmosphere after complete heating, then slowly cool the material in the oven at 20°C/hour to 200°C, then cool in air. |
| Temperature |             | Newly hardened and tempered material: Carry out the stress relief heat treatment at approx. 30 to 50°C 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> )                              | 7.72 |
| Thermal conductivity (W/(m.K))                             | 22.8 |
| Specific heat (kJ/kg K)                                    | 0.46 |
| Spec. electrical resistance (Ohm.mm <sup>2</sup> /m)       | -    |
| Modulus of elasticity (10 <sup>3</sup> N/mm <sup>2</sup> ) | 218  |

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

| Temperature (°C)                             |      |      |      |      |      |
|--|------|------|------|------|------|
| Thermal expansion (10 <sup>-6</sup> m/(m.K)) | 10.5 | 10.8 | 11.1 | 11.4 | 11.7 |

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.

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ONE STEP AHEAD.