PLASTIC MOULD STEELS

HARDENABLE CORROSION RESISTANT STEEL

Available Product Variants

Long Products*	Plates

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

Product Description

Martensitic chromium steel with increased wear resistance, optimized for applications where glasfiber-reinforced plastics are processed. Böhler M340 ISOPLAST has approvals in the food processing industry.

Process Melting

Airmelted + Remelted

Properties

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

Applications

> Comps. for Food processing and Animal Feed
> Plastic Extrusion
> Medical
> Components for Displays
> Powder Pressing

> Food processing Industry
> Screws and Barrels
> Camera lenses
> Custom Hand Knives
> Pill punching dies

> Injection Molding
> Standard Parts (Molds, Plates, Pins, Punches)
> Packaging
> Electronic Industry
> Glasfibre reinforced plastics

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V	N
0.54	0.45	0.4	17.3	1.1	0.1	+

voestalpine
ONE STEP AHEAD.

BÖHLER

PLASTIC MOULD STEELS
HARDENABLE CORROSION RESISTANT
STEEL

BÖHLER M340
ISOPLAST®

Material characteristics

	Corrosion resistance	Machinability in as supplied condition	Polishability	Toughness	Wear resistance
BÖHLER M340 ISOPLAST®	★★★	★★★	★★	★★	★★★
BÖHLER M310 ISOPLAST®	★★★★	★★★★	★★	★★	★★
BÖHLER M333 ISOPLAST®	★★★★★	★★★★	★★★★★	★★★★★	★★
BÖHLER M368 MICROCLEAN®	★★★★	★★★	★★★★	★★★	★★★
BÖHLER M390 MICROCLEAN®	★★	★	★★★	★★	★★★★
BÖHLER M398 MICROCLEAN®	★★	★	★★★	★★	★★★★★
BÖHLER M380 ISOPLAST®	★★★★★	★★★★	★★★★★	★★★★	★★★

Delivery condition

Soft annealed

Hardness (HB)	max. 260

Heat treatment

Stress relieving

Temperature	650 °C | 1,202 °F	After temperature equalization, soak for 1 to 2 hours in neutral atmosphere. Slow cooling in furnace. After hardening and tempering, stress relieving has to be performed 50°C (90°F) below last tempering temperature.

Hardening and Tempering

Temperature	980 to 1,000 °C | 1,796 to 1,832 °F	For hardening hold at temperature for 15 to 30 min. An optional sub-zero treatment at -80°C/-112°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 wear resistance, temper twice for a minimum of 2h at 505-520°C/941-968°F (without sub-zero treatment) or 490-505°C/914-941°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^3 | lb/in^3)	7.67 | 0.28
Thermal conductivity (W/(m.K) | BTU/ft h °F)	18.2 | 10.52
Specific heat (kJ/kg K | BTU/lb °F)	0.46 | 0.1099
Spec. electrical resistance (Ohm.mm^2/m | 10^{-4} Ohm.inch^2/ft)	-
Modulus of elasticity (10^3N/mm^2 | 10^3ksi)	219 | 31.76

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

Temperature (°C	°F)	100	212	200	392	300	572	400	752	500	932
Thermal expansion (10^{-6} m/(m.K)	10^{-6} inch/inch.°F)	10.88	6	10.78	6	11.21	6.2	11.61	6.4	11.9	6.6

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.

voestalpine
ONE STEP AHEAD.