

PLASTIC MOULD STEELS

HARDENABLE CORROSION RESISTANT STEEL

Available Product Variants

Long Products

Product Description

BÖHLER M380 ISOPLAST is a PRESSURIZED electroslag remelted high nitrogen alloyed martensitic plastic mold steel with an outstanding corrosion resistance and very high toughness at high hardness levels up to 60 HRC.

Process Melting

Airmelted + PESR

Properties

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

Applications

- > Food processing Industry
- > Screws and Barrels
- > Camera lenses
- > Custom Hand Knives
- > Comps. for Food processing and Animal Feed
- > Injection Molding
- > Standard Parts (Molds, Plates, Pins, Punches)
- > Packaging
- > Electronic Industry
- > Plastic Extrusion
- > Medical
- > Components for Displays
- > Powder Pressing

Technical data

Material designation	
1.4108	SEL
X30CrMoN15-1	EN

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	N
0.3	0.6	0.4	15	1	0.4

Delivery condition

Annealed	
Hardness (HB)	max. 255 以下

Heat treatment

Hardening and Tempering	
Temperature	1,020 to 1,030 °C 1,868 to 1,886 °F For hardening hold at temperature for 20 min. A mandatory sub-zero treatment at min -80°C/-112°F is required after hardening. For highest corrosion resistance, temper twice for a minimum of 2h at 250-350°C/482-662°F. For best wear resistance, temper twice for a minimum of 2h at 495-525°C/923-977°F. 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)	7.72 0.28
Thermal conductivity (W/(m.K) BTU/ft h °F)	14 8.09
Specific heat (kJ/kg K BTU/lb °F)	0.43 0.1027
Spec. electrical resistance (Ohm.mm ² /m 10 ⁻⁴ Ohm.inch ² /ft)	0.8 3.78
Modulus of elasticity (10 ³ N/mm ² 10 ³ ksi)	223 32.34

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)	10.4 5.8	10.8 6	11.2 6.2	11.6 6.4	11.9 6.6

For additional specifications and technical requirements, please contact our regional voestalpine BÖHLER sales companies.

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