BÖHLER

BÖHLER M303
HIGH HARD

PLASTIC MOULD STEELS

PREHARDENED CORROSION RESISTANT STEEL

Available Product Variants

Long Products | Plates

Product Description

BÖHLER M303 is a corrosion resistant martensitic chromium steel, offering excellent toughness, corrosion and wear resistance. It is characterized by improved machinability and polishability.

Process Melting

Airmelted

Properties

- Toughness & Ductility : high
- Wear Resistance : high
- Machinability : good
- Dimensional stability : good
- Polishability : very high
- Corrosion resistance : good
- No heat treatment necessary
- Prehardened

Applications

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

Technical data

Material designation	
~1.2316	SEL
X36CrMo17 X38CrMo17	EN

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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	
Hardness (HB)	350 to 390

Heat treatment

Stress relieving		
Temperature	max. 400 °C | 752 °F	Stress relieving after machining in the pre-hardened condition. After through-heating, soak for minimum 2 hours in a neutral atmosphere. Slow cooling in furnace with 20 °C/hr (68 °F/hr) down to 200 °C (390 °F), then cool down in an all-air environment.

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)	22.8 | 13.17
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)	0.6 | 2.81
Modulus of elasticity (10^{3}N/mm^2 | 10^{3}ksi)	218 | 31.62

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

Temperature (°C | °F)	100 | 212	200 | 392	300 | 572	400 | 752	500 | 932	600 | 1,112
Thermal expansion (10^{-6} m/(m.K) | 10^{-6} inch/inch. °F)	10.5 | 5.8	10.83 | 6	11.11 | 6.2	11.39 | 6.3	11.75 | 6.5	12.1 | 6.7

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