

PLASTIC MOULD STEELS

PREHARDENED CORROSION RESISTANT STEEL

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
- > 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	
~1.2316		
X36CrMo17	EN	
X38CrMo17		

Chemical composition (wt. %)

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

Material characteristics

	Corrosion resistance	Machinability in as supplied condition	Polishability	Toughness	Wear resistance
BÖHLER M303 HIGH HARD	★★★	★★	★★★★★	★★★	★★★★
BÖHLER M300	★★★★	★★★	★★	★★★	★★★
BÖHLER M303	★★★★	★★★	★★★★	★★★★	★★★
BÖHLER M314	★★	★★★★	★	★★	★★
BÖHLER M315	★★	★★★★★	★	★★	★★

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 in air.

Physical Properties

Temperature (°C °F)	20 68
Density (kg/dm ³ lb/in ³)	7.72 0.28
Thermal conductivity (W/(m.K) BTU (IT) ft/hr/ft ² /F)	22.8 13.17
Specific heat (J/(kg.K) BTU (IT) lb/F)	460 109.87
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 1112
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

For more information see <https://www.voestalpine.com/bohler-edelstahl/de/>

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