



ATT 2316 MOD (2316 ISO-B MOD)

CHEMICAL ANALYSIS (PERCENTAGE BY MASS)

	C	Si	Mn	P	S	Cr	Ni	Mo
Guide analysis	0.28	0.30	0.95	0.030	0.003	14.2	-0.50	1.10
Standard	0.33 - 0.45	≤ 1.00	≤ 1.50	≤ 0.030	≤ 0.030	15.5 - 17.5	≤ 1.00	0.80 - 1.30

CHARACTERISTICS

Modified, corrosion-resistant mold steel, polishable, etch-grainable, economical to machine.

APPLICATION

Injection dies, mold inserts, slit dies, profile dies, extrusion tools, drop forging tools and coaxial housings for processing PVC aminoplastics and additives; blow molds.

Important note: When processing aminoplastics and PVC alloys, excessive work temperatures (> 160 °C) can result in highly aggressive fission products, such as hydrochloric acid HCl, which can cause corrosion on the surface of the mold. No mold steel is resistant to this. The production temperature of 160 °C should therefore not be exceeded.

DELIVERED CONDITION

Hardened and tempered to 265 – 310 HB
(approx. 900 – 1,050 MPa)*
Annealed on request.

SEL	~X38CrMo16
DIN EN ISO 4957	~X38CrMo16
AFNOR	Z35CD17
AISI	~422

PHYSICAL PROPERTIES

Thermal Conductivity (W/m.K) at	20°C	250°C	500°C
	23.0	24.0	25.0
Thermal Expansion (µm/m) from 20°C to	20-100°C	20-250°C	20-500°C
	10.0	12.0	13.2
Young's modulus (GPa)	20°C	250°C	500°C
	215	203	180

* Surface hardness in Brinell, converted TO DIN EN ISO 18265 Table A.1.

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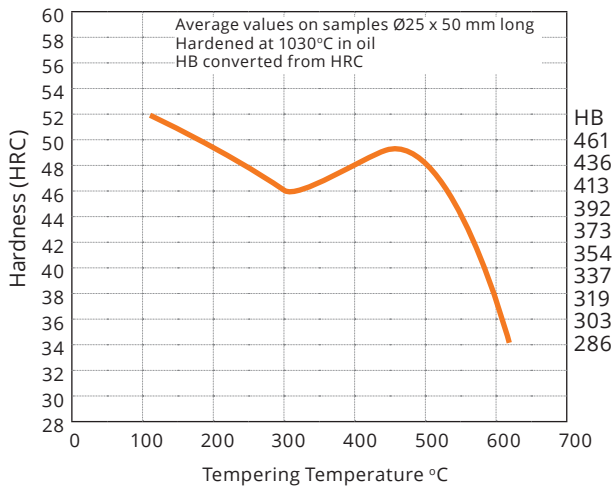


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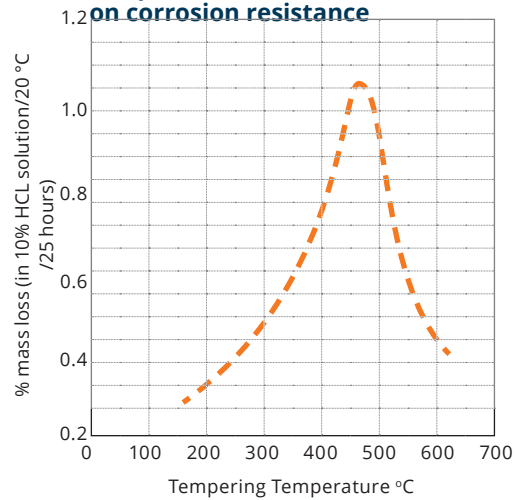
HEAT TREATMENT

Stress relieving	Temperature	Approx. 590°C in the quenched and tempered state
	Duration	1 hour per 50 mm wall thickness
	Cooling	Furnace
Soft annealing	Temperature	820°C
	Duration	1 hour per 25mm wall thickness
	Cooling	Furnace
Hardening	Temperature	1030°C
	Duration	1 min per mm wall thickness
Quenching hardness	Max. 52 HRC	in oil or vacuum
	Temperature	See tempering curve
Tempering	Duration	1 hour per 25 mm wall thickness
	Cooling	Air
Working hardness	265-310 HB	

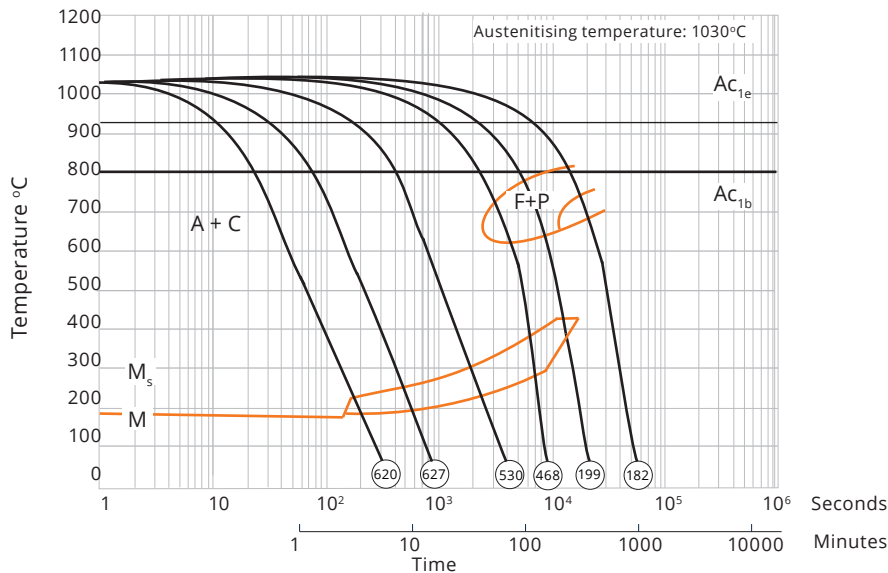
Tempering curve



Effect of the tempering temperature on corrosion resistance



TTT curve (continuous)



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