



## ATT 2738 (2738 ISO-BM) ATT 2738 HH

### CHEMICAL ANALYSIS (PERCENTAGE BY MASS)

	C	Si	Mn	P	S	Cr	Ni	Mo
Guide analysis	0.36	0.30	1.50	0.020	0.003	2.00	1.00	0.20
Standard	0.35-0.45	0.20-0.40	1.30-1.60	≤ 0.030	≤ 0.030	1.80-2.10	0.90 - 1.20	0.15 -0.25

### CHARACTERISTICS

Mold steel for large dimensions > 400 mm thickness. Properties as with material ATT 2311 with improved through-hardening. Nitridable, hard-chrome platable, flame hardenable, polishable and grain-reliable as supplied.

For extreme dimensions and for

- higher hardness and better through-hardening
- polishability > grain size 320
- delicate grain designs (e.g. HNO<sub>3</sub>)

we recommend ATT 2738 MOD TS / ATT 2738 MOD TS HH.

### APPLICATION

Tools for compression and injection molds for bumpers, instrument panels, chairs, garbage containers, bottle crates, TV cabinets etc.

### DELIVERED CONDITION

ATT 2738 is hardened and tempered to 280 - 325 HB (approx. 950 - 1,100 MPa)\*

ATT 2738 HH is hardened and tempered to 310 - 355 HB (approx. 1,050 - 1,200 MPa)

### PHYSICAL PROPERTIES

Thermal Conductivity (W/m.K) at	20°C	250°C	500°C
	34.0	33.5	33.0
Thermal Expansion (µm/m) from 20°C to	100°C	250°C	500°C
	11.6	12.8	14.3
Young's modulus (GPa)	20°C	250°C	500°C
	212	197	175

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

SEL	40CrMnNiMo8-6-4
DIN EN ISO 4957	40CrMnNiMo8-6-4
AFNOR	40CMND8
AISI	~P20 + Ni
BS	~P20 + Ni

ATT 2738 (2738 ISO-BM)

The information contained herein is intended to provide general knowledge on our products and their uses. It should not be construed as a warranty of specific properties of the products described, or a warranty of fitness for a particular purpose. Each user of products from Advanced Tooling Tek (Shanghai) Co Ltd ("ATT") is responsible for making its own determination as to the suitability of ATT's products and services.



www.att-metal.com



WeChat

### Advanced Tooling Tek (Shanghai) Co Ltd

No. 255 Xinxiao Road, Xinqiao Town, Songjiang Dist., Shanghai 201612 China  
Tel: +86 21 3373 8146 | Fax: +86 21 3373 8193

### Guangdong branch

No.1G, Sanhe Road, Hecheng Sub-district, Gaoming Zone, Foshan, Guangdong 528511 China  
Tel: +86 757 8862 2983 | Fax: +86 757 8862 2983

info@att-metal.com

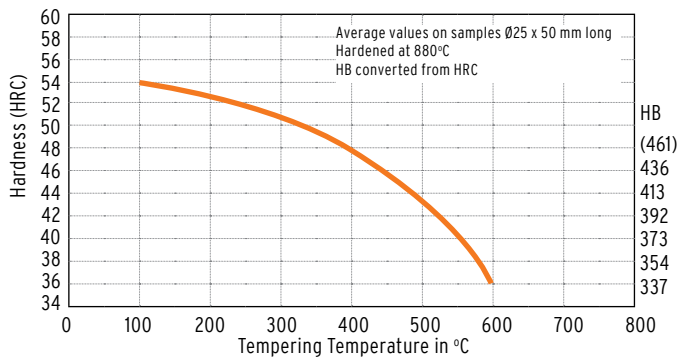


**ATT 2738** (2738 ISO-BM)  
**ATT 2738 HH**

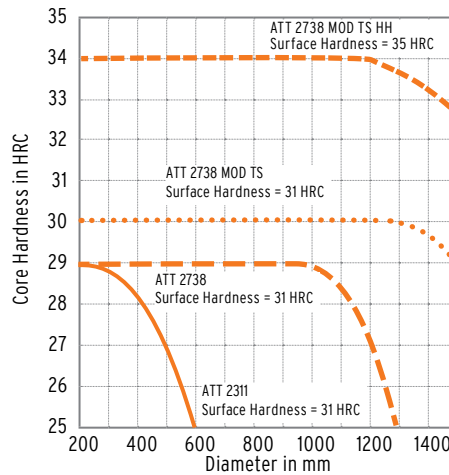
**HEAT TREATMENT**

Stress relieving	Temperature	Approx. 600°C in the annealed state Approx. 550°C in the quenched and tempered state
	Duration	1 hour per 50 mm wall thickness
	Cooling	Furnace
Soft annealing	Temperature	720°C
	Duration	1 hour per 25mm wall thickness
	Cooling	Furnace
Hardening	Temperature	880°C
	Duration	1 min per mm wall thickness
Quenching hardness	Max. 54 HRC	in oil, hot bath or vacuum
	Temperature	See tempering curve
Tempering	Duration	1 hour per 25 mm wall thickness
	Cooling	Air
Working hardness	280-325 HB	ATT 2738
	310-355 HB	ATT 2738 HH

**Tempering curve**



**Through-hardenability (schematic)**



**TTT curve (continuous)**

