

1.2738

Plastic Mould Steel

TECHNICAL SHEET

1 Comparison Standards

W.Nr	DIN	JIS equivalent	AISI/SAE	AFNOR	BS	UNI
1.2738	40CrMnNiMo8-6-4	-	~P20+Ni	40CMND8	~P20+Ni	-

2 Chemical Composition

C	Si	Mn	P (max)	S (max)	Cr	Mo	Ni	Supply Condition	Supply Hardness (HB)
0.35-0.45	0.20-0.40	1.30-1.60	0.03	0.03	1.80-2.10	0.15-0.25	0.90-1.20	Q & T	280 - 320

3 Main Characteristics and Applications

Pre-hardened plastic mould steel offers excellent hardening penetration, along with superior machinability, polishing and texturing properties. This steel is ideal for medium and large plastic moulds and can undergo nitriding or PVD treatment to enhance its wear resistance.

Applications:

- Household items
- Thermoplastic Injections
- Extrusion Moulds
- Rubber Mould
- Large Moulds
- Frames
- Containers

4 Production Route

EAF - LF - VD - Forging - Heat treatment QT

5 Physical Properties (Reference Values)

	20°C	100°C	250°C	500°C
Thermal expansion coefficient (10-6/K)	12.0	12.4	12.9	14.1
Thermal Conductivity (W/mk)	33.1	33.5	34.5	32.6
Young modulus (Kn/mm2)	212	205	200	175

6 Heat Treatment

TREATMENT	TEMPERATURE	HOLDING TIME (HT)	COOLING	COMMENTS
Annealing	Heat to 680 - 700 °C	Min. H.T. for 2 minute /mm	Air or Furnace	To achieve a hardness below 250 HB (24 HRC) and enhance machinability
Stress relieving	Heat to 560 - 600 °C (max 30 °C below tempering temperature)	Min. H.T. for 2 minute /mm	Air or Furnace	It is recommended to eliminate the residual stresses induced by mechanical working after machining
Hardening	Heat to 860 - 880 °C	Min. H.T. for 1 minute /mm	Polymer	-
Tempering	Heat to 550 - 620 °C	Min. H.T. for 3 minute /mm	Air or Furnace	To be performed after hardening, conduct a second tempering at a temperature no more than 30 °C below the initial tempering temperature



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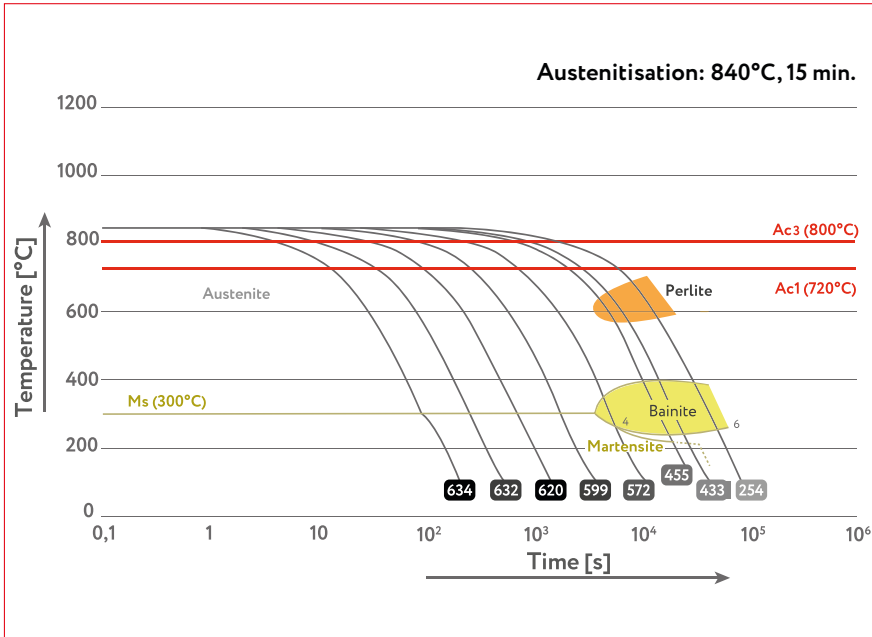


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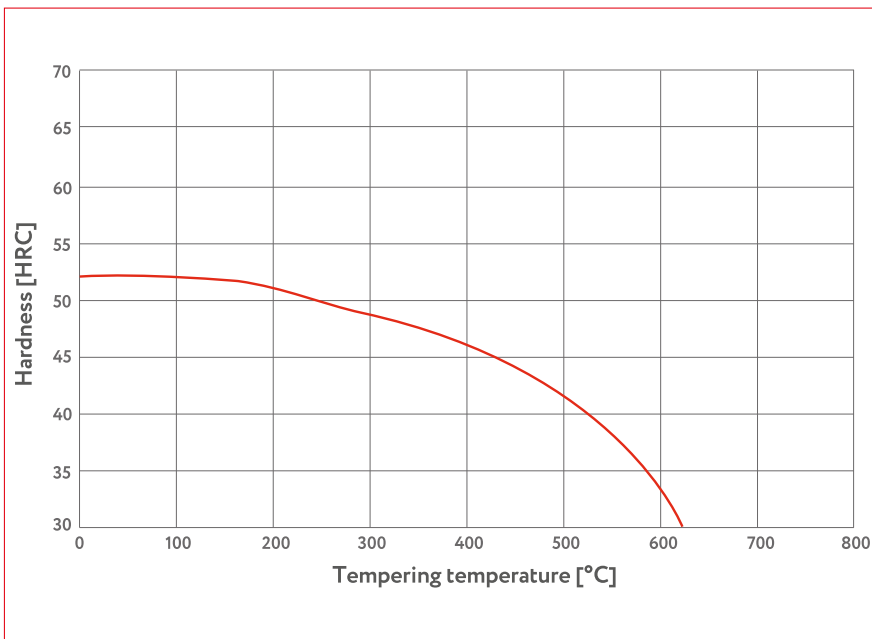
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7 C.C.T. Curve



8 Tempering Curve



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