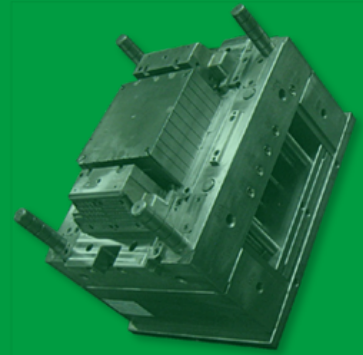


1.2738

Plastic mould steel



1 Main characteristics and applications

Pre-hardened plastic mould steel with excellent hardening penetration, good machinability, polishing and texturing properties.

This steel is used for plastic moulds of medium and big size. It can be subject to a nitriding or PVD treatment to improve its wear resistance.

Main applications: thermoplastic injections and extrusion moulds, rubber moulds, large moulds, frames, containers.

2 Comparable standards

UNI	W.Nr	DIN	AFNOR	AISI/SAE	BS
-	1.2738	40CrMnNi- Mo8-6-4	40CMND8	~P20+Ni	~P20+Ni

3 Chemical composition (typical; in weight %)

C	Mn	Si	Cr	Ni	Mo	P	S
0.38	1.5	0.30	2	1	0.2	0.025	0.003

4 Critical points

Ac1	720 °C
Ac3	800 °C
Ms	290 °C

5 Production technology

EAF-LF-VD - Forging-Heat treatment QT

6 US specification

In accordance to standard EN10228-3 Class 4 and standard SEP 1921 Class E/e

7 Delivery condition

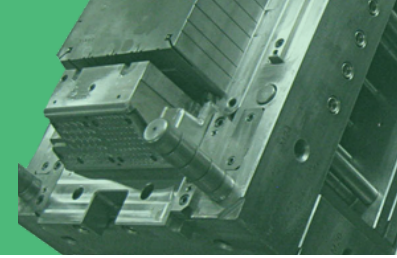
W1.2738 is delivered in quenched and tempered condition, with hardness range 300 - 340 HB (32 - 37 HRC).

8 Physical properties (reference values)

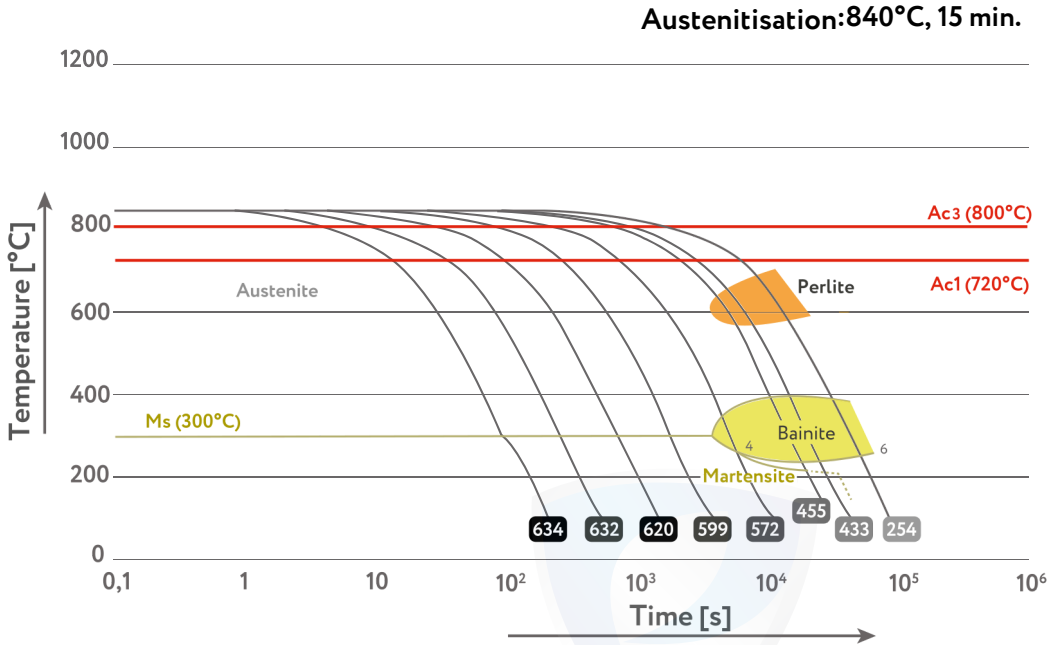
	20°C	100°C	250°C	500°C
Thermal expansion coefficient (10 ⁻⁶ /K)	12.0	12.4	12.9	14.1
Thermal conductivity (W/mk)	33.1	33.5	34.5	32.6
Young modulus (Kn/mm ²)	212	205	200	175

9 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	In order to obtain hardness lower than 250 HB (24 HRC) to improve machinability
Stress relieving	Heat to 560 - 600 °C (max 30 °C below tempering temperature)	Min. H.T. for 2 minute /mm	Air or furnace	To be carried out after machining, is recommended to eliminate the residual stresses induced by mechanical working
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 carried out after hardening. 2nd Tempering must be performed to max 30°C below tempering temperature



10 C.C.T. curve



11 Tempering curve

