

Plastic Mould

TGP 40
DIN 1.2738
DIN 1.2738HH



Smelting method : EAF+LF+VD+ESR

Main characteristics : If futures excellent hardening penetration, good workability, polishing and photoengraving properties. This steel is used for plastic moulds of medium and big size. It can be subject to a nitriding treatment to imporve its wear resistance.

Major applications : • Injections and thermoplastic extrusion moulds, rubber moulds, moulds carrier frames, container.

Chemical constituent (%):

C	Si	Mn	Cr	Mo	Ni	P	S
0.35 / 0.45	0.20 / 0.40	1.30 / 1.60	1.80 / 2.10	0.15 / 0.25	0.90 / 1.20	≤ 0.030	≤ 0.030

Comparable standards :

UNI	W.Nr	DIN	AFNOR	AISI/SAE	BS
--	1.2738	40Cr/MnNiMo8-6-4	~40 CMND8	~P20 + Ni	~P20 + Ni

Critical points:

Ac1	710 °C
Ms	290 °C

Supply Conditions:
Hardened and Tempered Normal HP 280 - 320 & 380 - 400

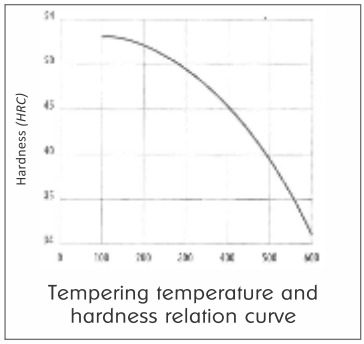
Thermal Heat treatment

Annealing
- Heat to 710 - 740°, with hold at minimum rate for 3 hours
- Slow furnace cooling to 600 °C

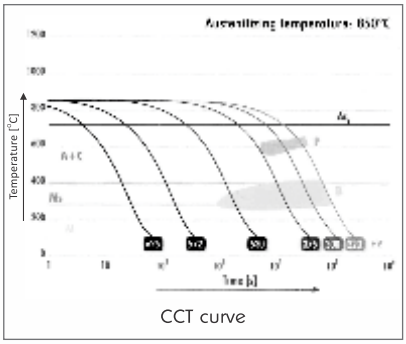
Stress relieving
- To be carried out after machining and before the final heat treatment
- Heating to 530 - 580 °C for 2 h

Hardening
- Preheating to 500 - 550 °C
- Austenitizing at 840 - 880 °C
- Oil or thermal bath cooling at 200 - 230 °C, then oil cooling according to the steel shape size
- Quenched hardness 52 - 54 HRC

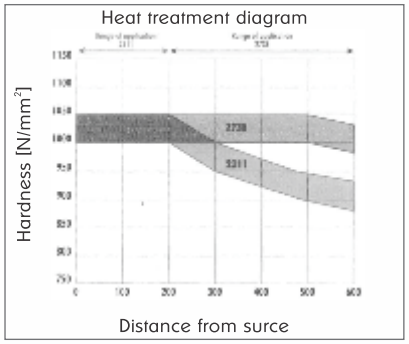
Tempering
- To be carred out after the hardening and when the steel is at 60 - 80 °C , at 500 - 600 °C according to the required hardness and with permanence for at least 2 h
- Cooling in air



Tempering temperature and hardness relation curve



CCT curve



Distance from surce