

MATERIAL NO.:

1.2738

DESIGNATION:

DIN: 40 CrMnNiMo 8-6-4
AFNOR: 40 CMND 8
UNI: -
AISI: ≈ P20 + Ni

INDICATORY ANALYSIS:

C 0.40
Si 0.30
Mn 1.50
Cr 1.90
Mo 0.20
Ni 1.10

STRENGTH: 280 - 325 HB
(≈ 950 - 1100 N/mm²)

THERMAL CONDUCTIVITY AT 100°C: 33.5 $\frac{W}{m K}$

COEFFICIENT OF THERMAL EXPANSION
[10⁻⁶/K]

100°C	200°C	300°C	400°C	500°C	600°C	700°C
11.8	12.9	13.4	13.8			

CHARACTER: » Low-sulphur **tool steel**, supplied in pre-toughened condition; due to its nickel content, it features uniform strength even with maximum plate dimensions

APPLICATION: » Large cavity plates with deep cavities for items such as bumpers or dashboards, moulding frames

TREATMENT BY:

» Polishing, etching, EDM, nitriding:
highly suitable

» Hard chrome plating:
suitable

HEAT TREATMENT: Already pre-toughened; usually no heat treatment required

» Soft annealing:
710 to 740°C for about 2 to 5 hours
slow controlled cooling inside the furnace: 10 to 20°C per hour to 600°C; further cooling in air, **max. 235 HB**

» Hardening:
840 to 870°C
keep curing temperature for 15 to 30 minutes
quenching in oil/hot bath (180 to 220°C)/air
obtainable hardness: **53 HRC**

» Tempering:
slow heating to tempering temperature immediately after hardening;
minimum time in furnace: 1 hour per 20 mm part thickness;
double tempering is recommended

TEMPERING CHART:

