

Thermodur 2344

X40CrMoV5-1

C 0.40 Si 1.00 Cr 5.30 Mo 1.40 V 1.00

Steel properties

High hot-wear resistance and hot tensile strength as well as good toughness, thermal conductivity and insusceptibility to hotcracking. Can be water-cooled to a limited extent.

Standards

AISI H13

AFNOR Z40CDV5

Physical properties

Coefficient of thermal expansion

at °C	20 – 100	20 – 200	20 – 300	20 – 400	20 – 500	20 – 600	20 – 700
$10^{-6} \text{ m}/(\text{m} \cdot \text{K})$	10.9	11.9	12.3	12.7	13.0	13.3	13.5

Thermal conductivity

at °C			
$\text{W}/(\text{m} \cdot \text{K})$ Annealed	20	350	700
$\text{W}/(\text{m} \cdot \text{K})$ Quenched and tempered	27.2	30.5	33.4
	25.5	27.6	30.3

Applications

Besides applications typical for the area of hot-work steels, this grade is mainly used for ejector pins, tool holders and shrink fit chucks.

Heat treatment

Soft annealing °C
750 – 800

Cooling
Furnace

Hardness HB
max. 230

Stress-relief annealing °C
approx. 600 – 650

Cooling
Furnace

Hardening °C
1020 – 1050

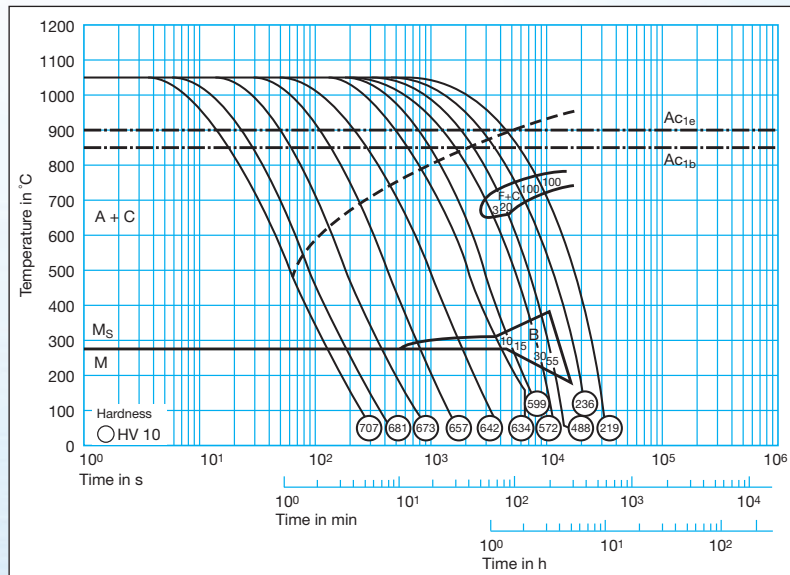
Quenching
Air, oil or
saltbath, 500 – 550 °C

Hardness after quenching HRC
54

Tempering °C
HRC

100	200	300	400	500	550	600	650	700
53	52	52	54	56	54	50	42	32

Time-temperature-transformation diagram



Tempering diagram

