



钢铁之家

www.steels.org.cn

全球钢号百科!

Global Steel Grade Encyclopedia



涵盖的行业或国家与地区类别



国际材料与试验协会

GJB

国家军用标准



动力机械工程师协会

EU

前欧洲标准化

AISI

美国钢铁学会



德国工业标准

AMS

航空航天材料规范



国际标准

JASO

日本汽车标准组织

EN

欧洲标准

JB

中国机械行业标准

UNS

统一编号系统

UNI

意大利标准



美国机械工程师协会

SS

瑞典标准



国家标准



日本工业标准

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

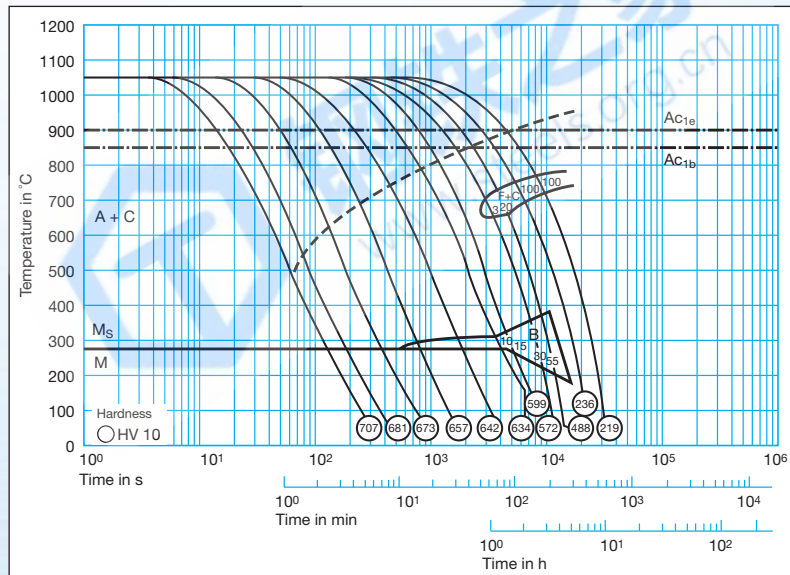
Quenching
Air, oil or
saltbath, 500 – 550 °C

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

