Chemical composition Typical analysis in %

C	Cr	Mo	Ni	V
0.56	1.1	0.5	1.7	0.1

Steel properties

Tough die steel with high tempering resistance and good through hardening. This grade is usually supplied in annealed condition or quenched and tempered to a hardness of 370 to 410 HB (round) or 355 to 400 HB (square, flat).

Physical properties

Coefficient of thermal expansion 10^{-6} m/(m · K)	20 – 100 °C	20 – 200 °C	20 – 300 °C	20 – 400 °C	20 – 500 °C	20 – 600 °C
	12.2	13.0	13.3	13.7	14.2	14.4

Thermal conductivity W/(m · K)	20 °C	350 °C	700 °C
	36.0	38.0	35.0

Applications

Standard steel for forging dies of all kinds, mandrels, die holders, armoured trim dies, hot-shear blades.

Heat treatment

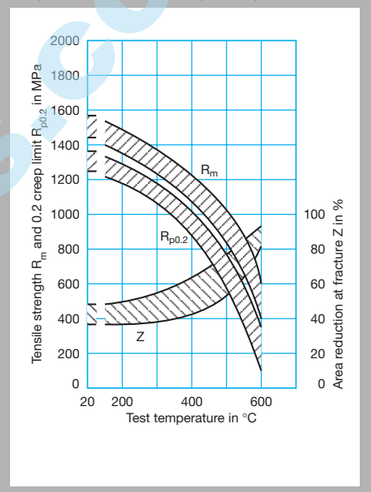
Soft annealing °C	Cooling	Hardness HB
650 – 700	Furnace	max. 250

Hardening °C	Quenching	Hardness after quenching HRC
830 – 870	Oil	58
860 – 900	Air	56

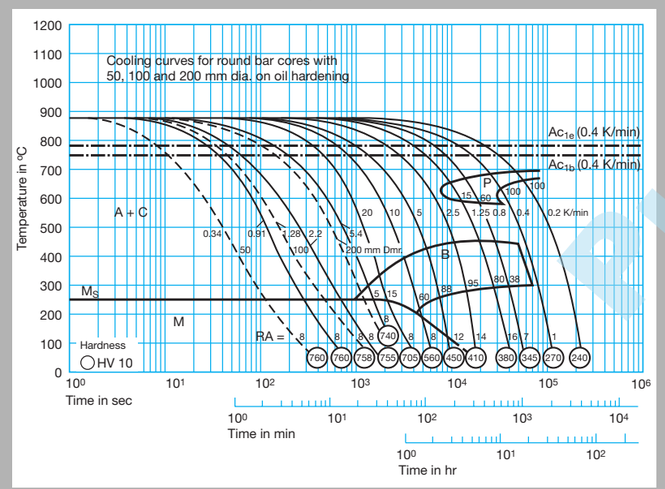
Tempering °C	100	200	300	400	450	500	550	600	650
After quenching in oil – HRC	57	54	52	49	47	46	43	38	34

Tempering °C	100	200	300	400	450	500	550	600	650
After quenching in air – HRC	55	52	50	47	45	43	40	36	32

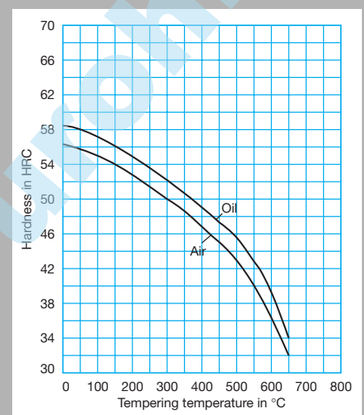
High-temperature strength diagram



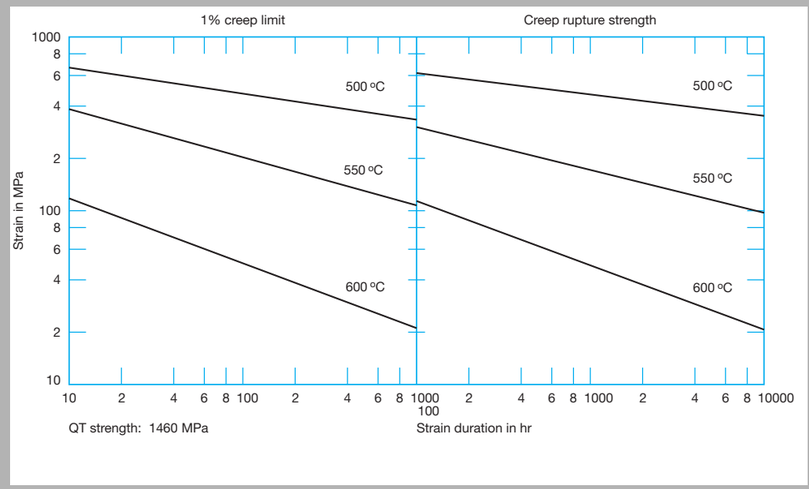
Time-temperature-transformation diagram



Tempering diagram



Creep process



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