

DB6 2714

	C	Si	Mn	P	S	Cr	Ni	Mo	V
Typical analysis	0.55	0.25	0.75	0.025	0.004	1.10	1.70	0.50	0.10
Chemical composition (%)	0.50–0.60	0.10–0.40	0.65–0.95	≤0.030	≤0.030	1.00–1.20	1.60–1.80	0.45–0.55	0.07–0.12

Figures in % by mass

Register of European Steels (SEL)	55 NiCrMoV 7
DIN EN ISO 4957	55 NiCrMoV 7
AFNOR	55 NCDV 07
AISI	L 6

Characteristics

Classic die steel with through-hardening properties up to a reference diameter of 450mm.
Uniform hardness over sections also at big dimensions. Good hardenability.

Applications

Large press dies for forming aluminium, forging dies for large quantities regardless of die size and shape of cut, die and mould holders, tool holders and cold forging die holders, tool cassettes.
Hydroforming moulds (IHU).

Delivered condition

Annealed to max. 248 HB
Quenched and tempered to 370–415 HB (Δ approx. 1250–1400 MPa)*

Physical properties (reference values)

Thermal expansion coefficient (10 ⁻⁶ /K)	20–100 °C 12.2	20–250 °C 13.1	20–500 °C 14.2
Thermal conductivity (W/mK)		500 °C 36.8	600 °C 36
Young's modulus (GPa)	20 °C 215	250 °C 198	500 °C 176

High-temperature yield strength

Quenched and tempered state	0.2 % yield strength in MPa at temperature			
	450 °C	500 °C	550 °C	600 °C
~ 1570 MPa	900	740	460	220
~ 1370 MPa	810	590	390	200
~ 1180 MPa	610	460	280	150

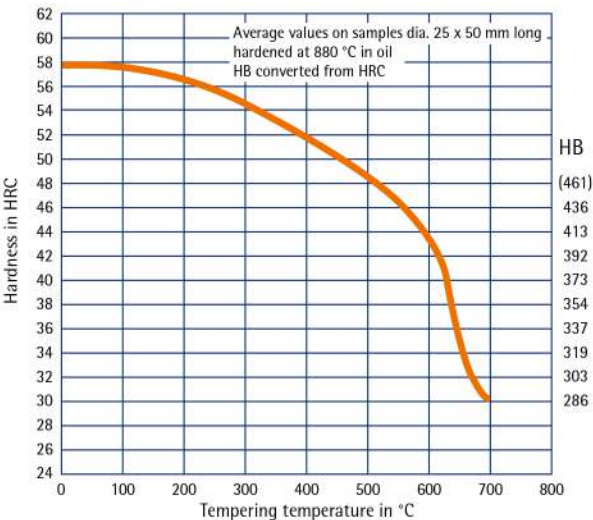
* Surface hardness in Brinell, converted to DIN EN ISO 18265, Table A.1

2714

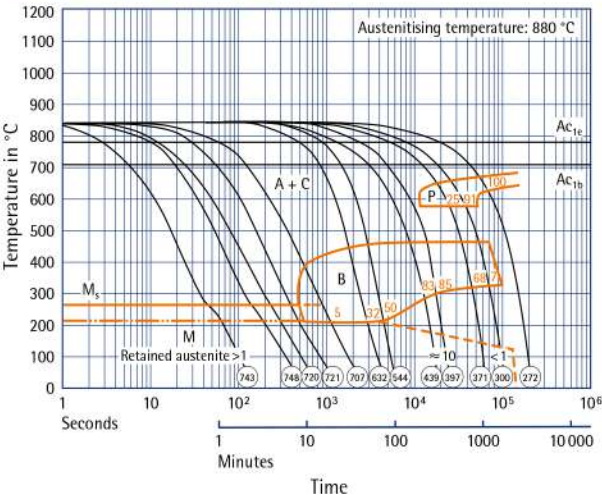
Heat treatment		
Stress relieving	Temperature:	Approx. 650 °C in the annealed state
	Duration:	1 hour per 50 mm wall thickness
	Cooling:	Furnace
Soft annealing	Temperature:	700 °C
	Duration:	1 hour per 25 mm wall thickness
	Cooling:	Furnace
Hardening	Temperature:	880 °C
	Duration:	1 minute per mm wall thickness
Quenching hardness	Max. 58 HRC	in water/oil, protective atmosphere/oil, oil, hot bath or vacuum
Tempering	Temperature:	See tempering curve
	Duration:	1 hour per 25 mm wall thickness
	Cooling:	Air
Working hardness	300–440 HB	depending on application

Note: Pre-heating of the tools to 250–280 °C is recommended.

Tempering curve



TTT curve (continuous)



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