



SIQUAL 7707 Steel

Designation by Standards

Brand Name	Ravne	Mat. No.	DIN	EN	AISI/SAE
SIQUAL 7707	VCMO230	1.7707	-	30CrMoV9	4340

Chemical Composition (in weight %)

C	Si	Mn	Cr	Mo	Ni	V	W	Others
0.30	max. 0.40	0.55	2.50	0.20	-	0.15	-	-

Description

Alloyed tool steel.

Applications

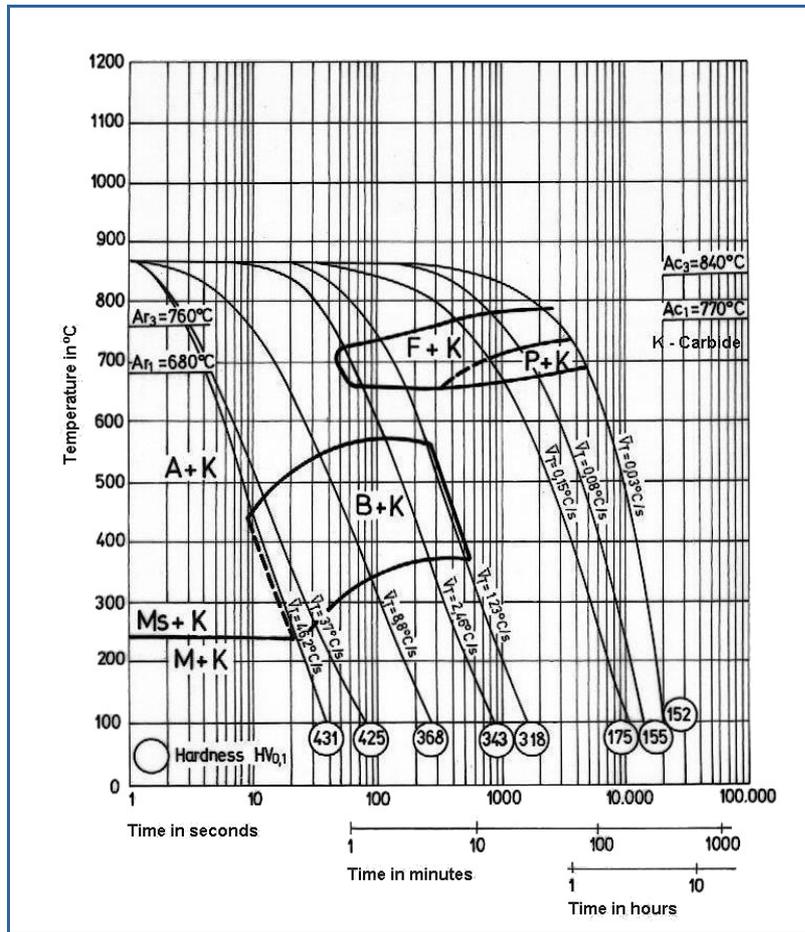
Structural parts of medium and large cross sections and high surface hardness, e.g., valve and gate valves, cylinders for combustion engines, superheated steam valves and fittings.

Physical properties (average values) at ambient temperature

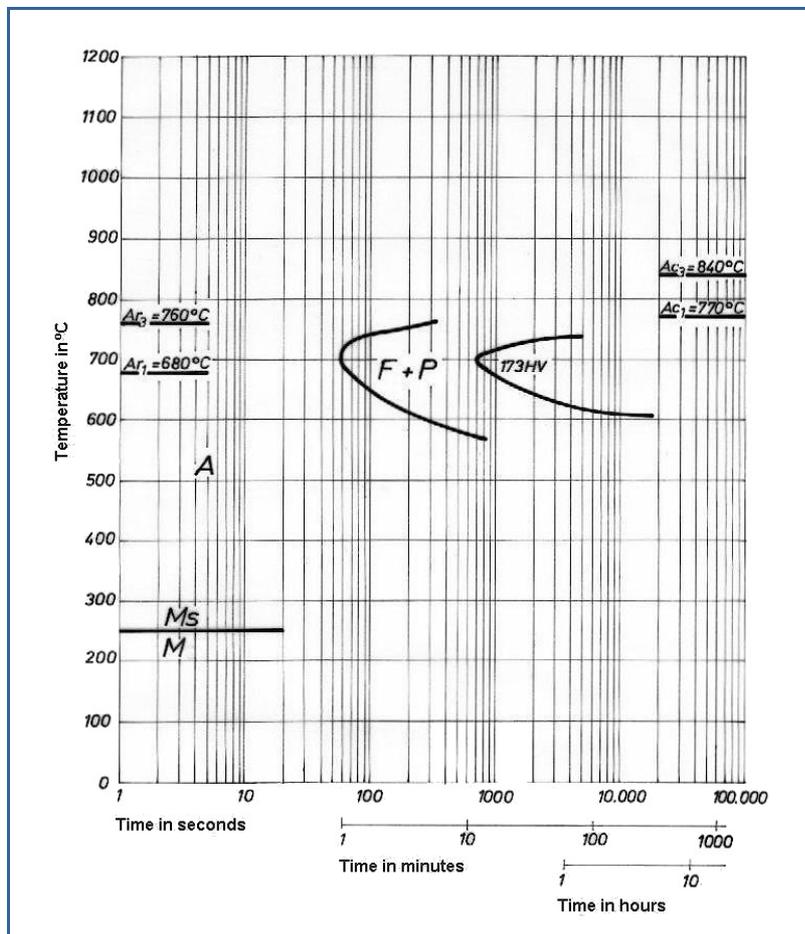
Modulus of elasticity [$10^3 \times \text{N/mm}^2$]: 210

Density [g/cm^3]: 7.85

Continuous Cooling Transformation (CCT) Diagram



Time-Temperature Transformation (TTT) Diagram



Soft Annealing

Heat to 680-720°C, cool slowly. This will produce a maximum Brinell hardness of 248.

Hardening

Harden from a temperature of 850-880°C followed by oil quenching.

Tempering

Tempering temperature: 570-680°C.

Nitriding

Gas/plasma nitriding temperature (gas, salt bath): 570-580°C

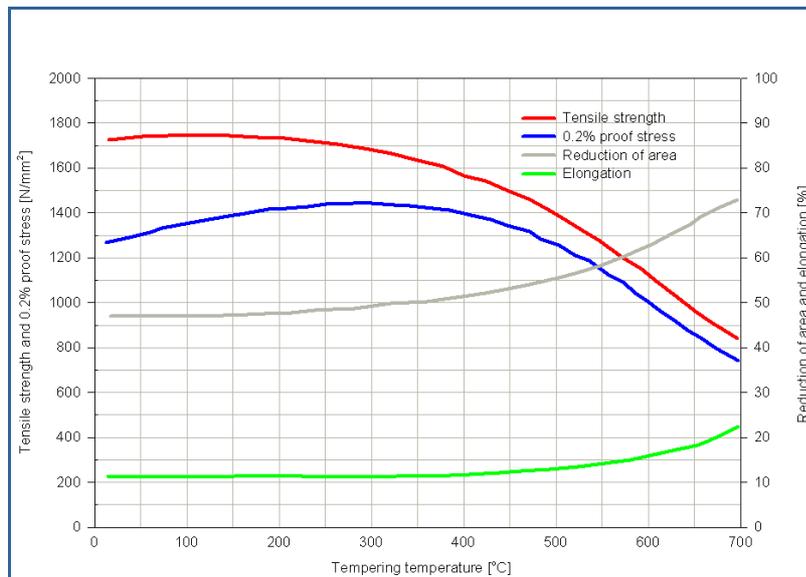
Gas/plasma nitriding temperature (powder, plasma): 580°C

Surface hardness after nitriding: 800 HV

Mechanical Properties in Hardening and Tempering Condition

Diameter (mm)	0.2 % proof stress (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Reduction of area (%)
<100	800	1000-1200	11	40
101-250	700	900-1100	12	50

Diagram Tempering Temperature - Mechanical Properties



Forging

Hot forming temperature: 1050-850°C.

Machinability

No data.

Forms manufactured: Please see the [Dimensional Sales Program](#).

Disclaimer

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