SIQUAL 6587 Steel

Designation by Standards

Brand Name	Ravne	Mat. No.	DIN	EN	AISI/SAE
SIQUAL 6587	CT781	1.6587	17CrNiMo6 †	18CrNiMo7-6	4820

Chemical Composition (in weight %)

C	Si	Mn	Cr	Mo	Ni	V	W	Others
0.18	max.0.40	0.70	1.65	0.30	1.55	-	-	-

Description
Nickel-molybdenum alloy steel. Alloyed case hardening steel for heavy and high strained gear parts with high demands on toughness at core tensile strength of 1050-1350 N/mm^2.

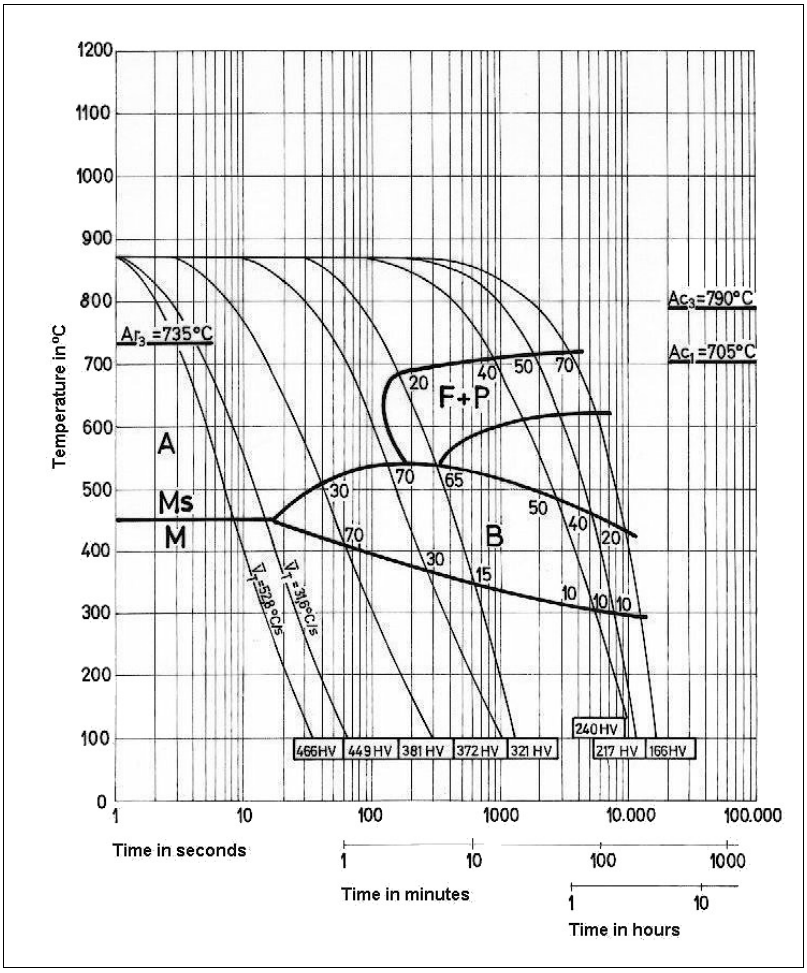
Applications
Severely stressed components for mechanical engineering and automobile industry.

Physical properties (average values) at ambient temperature
Modulus of elasticity [10^3 x N/mm^2]: 210
Density [g/cm^3]: 7.87
Thermal conductivity [W/m.K]: 38.0
Electric resistivity [Ohm mm^2/m]: 0.18
Specific heat capacity[J/g.K]: 0.46

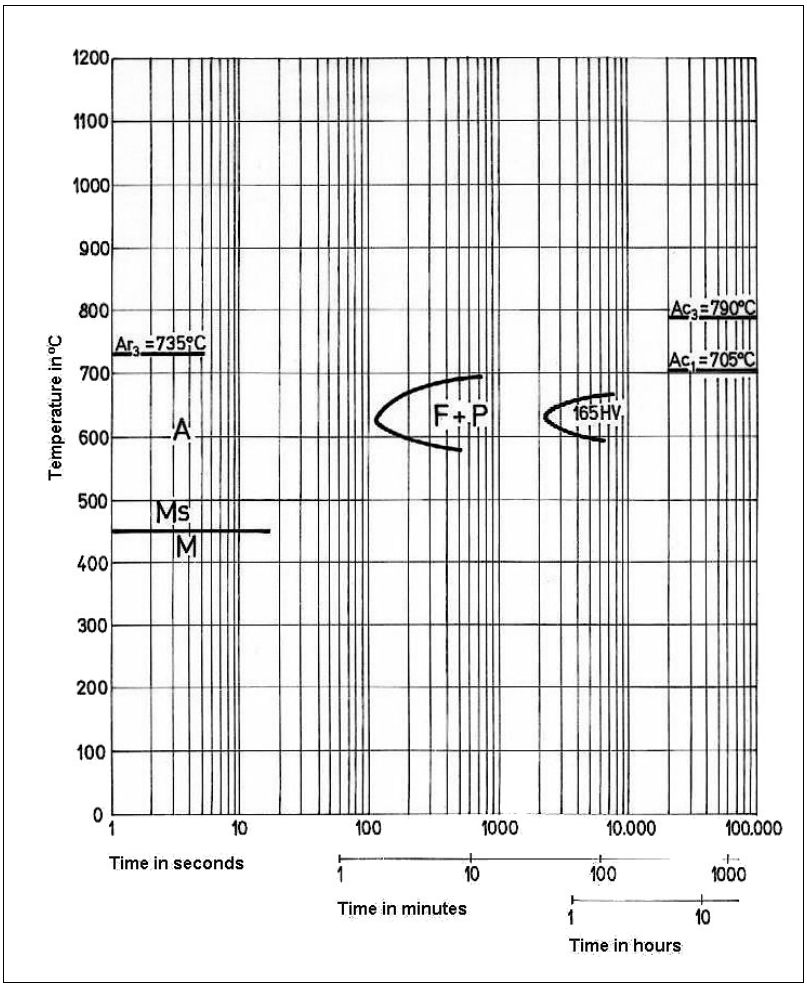
Coefficient of Linear Thermal Expansion 10^{-6} $^oC^{-1}$

20-100^{o}C	20-200^{o}C	20-300^{o}C	20-400^{o}C	20-500^{o}C
11.2	12.1	12.9	13.4	13.9

Continuous Cooling Transformation (CCT) Diagram



Time-Temperature Transformation (TTT) Diagram



Soft Annealing
Heat to 650-700^{o}C, cool slowly in furnace. This will produce a maximum Brinell hardness of 229.

Intermediate Annealing: 630-650^{o}C.

Hardening
Carburising: 880-980^{o}C.
Core Hardening: 830-870^{o}C, water.
Case Hardening: 780-820^{o}C, water.

Normalizing
Normalizing: 850-880^{o}C, air.

Tempering
Tempering temperature: 150-200^{o}C.

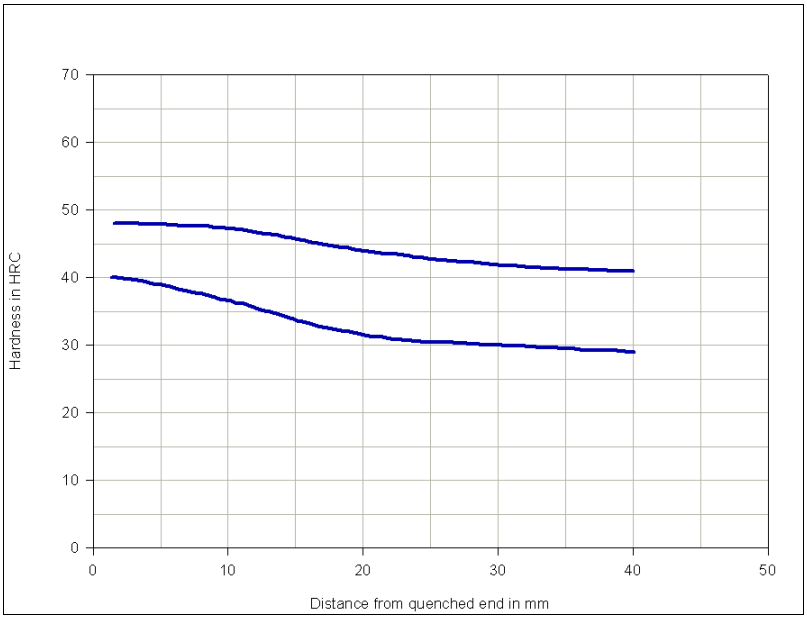
Soft annealed treated: max. 229 HB.
Treated for cold shearability: max. 255 HB.
Treated for strength: max. 229 HB.
Treated for ferite and pearlite structure and hardness range: 159-207 HB.

Tensile Strength R_m in N/mm^2 vs. Diameter in mm

After Hardening and Tempering at 200^{o}C

Diameter in mm	d<=16	17<d<=40	41<d<=100
Tensile Strength R_m in N/mm^2	min. 1200	min. 1100	min. 900

Hardenability Diagram



Forging
Hot forming temperature: 1050-850^{o}C.

Machinability
No data.

Forms manufactured: Please see the Dimensional Sales Program.

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