

SIQUAL 6582 Steel

Designation by Standards

Brand Name	Ravne	Mat. No.	DIN	EN	AISI/SAE
SIQUAL 6582	VCNMO150	1.6582	-	34CrNiMo6	4337/4340

Chemical Composition (in weight %)

С	Si	Mn	Cr	Мо	Ni	V	W	Others
0.34	max.0.40	0.65	1.50	0.23	1.50	-	-	-

Description

SIQUAL 6582 is a heat treatable, low alloy steel containing nickel, chromium and molybdenum. It is known for its toughness and capability of developing high strength in the heat treated condition while retaining good fatigue strength. A very popular, versatile steel. It can be heat-treated to produce a wide range of tensile strength in moderate sections.

Applications

Typical applications are for structural use, such as aircraft landing gear, power transmission gears and shafts and other structural parts, general engineering parts, hrough-hardened gears, connecting rods and bolts, gun barrels.

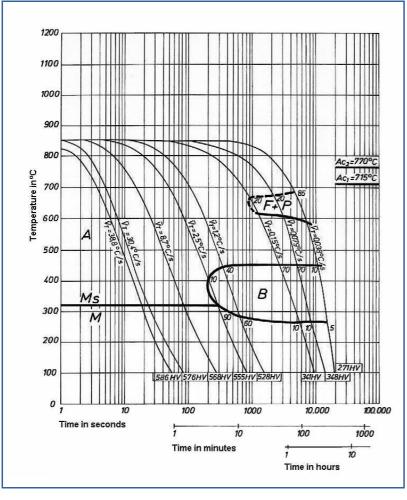
Physical properties (average values) at ambient temperature

Modulus of elasticity [10³ x N/mm²]: 210 Density [g/cm³]: 7.84 Thermal conductivity [W/m.K]: 37.7 Specific heat capacity[J/g.K]: 0.46

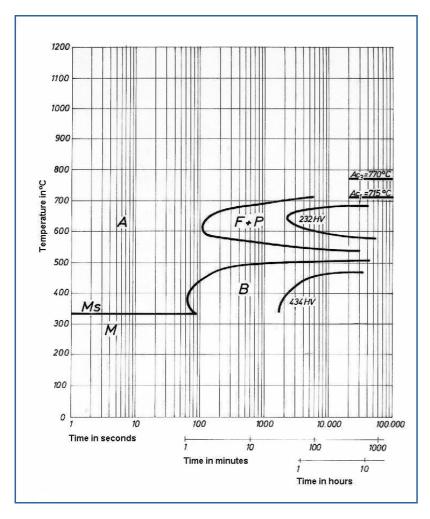
Environmental resistance

Flammability: very good Fresh water: good Organic solvent: very good Oxidation at 500°C: good Sea water: average Strong acid: poor Strong alkalis: poor Wear: very good Weak acid: average Weak alkalis: good Minimum service temperature: -73.2 to -42.2°C Maximum service temperature: 613-653°C





Time-Temperature Transformation (TTT) Diagram



Normalizing

Normalizing temperature: 850-880°C.

Stress Relieving

Stress relieving to remove machining stresses should be carried out by heating to approx. 650°C, holding for 1-2 hours at heat, followed by air cooling. This operation is performed to reduce distortion during heat treatment.

Hardening

Harden from a temperature of 830-860°C followed by oil quenching. Qenching temperature in the end-quench test is 850°C.

Tempering

Tempering temperature: 540-660°C.

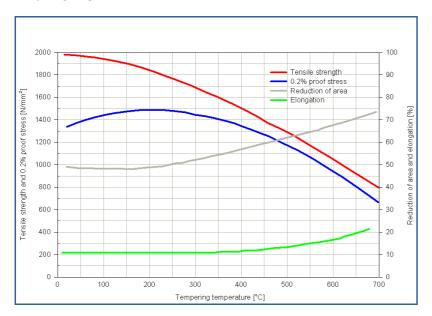
Mechanical Properties in Quenched and Tempered Condition

Diameter (mm)	0.2 % proof stress (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Reduction of area (%)	Notch impact energy (ISO-V) (J)
up to 16	980	1180-1380	9	40	41
17-40	885	1080-1280	10	45	48
41-100	785	980-1180	11	50	48
101-160	685	880-1080	12	55	48
161-250	590	780-930	13	55	48

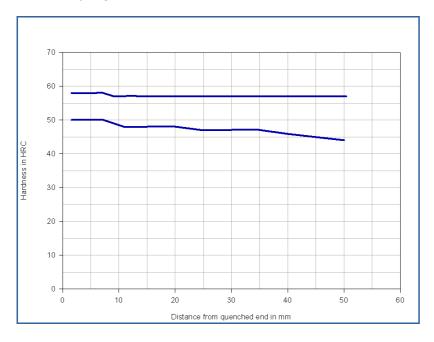
Distance From Quenched End in mm

-	1.5	3	5	7	9	11	13	15	20	25	30	35	40	45	50
H max.	58	58	58	58	57	57	57	57	57	57	57	57	57	57	57
H min.	50	50	50	50	49	48	48	48	48	47	47	47	46	45	44
HH max.	58	58	58	58	57	57	57	57	57	57	57	57	57	57	57
HH min.	53	53	53	53	52	51	51	51	51	50	50	50	50	49	48
HL max.	55	55	55	55	54	54	54	54	54	54	54	54	53	53	53
HL min.	55	55	55	55	54	54	54	54	54	54	54	54	54	53	53

Tempering Diagram



Hardenability Diagram



Forging

Hot forming temperature: 1100-900°C.

Machinability

Machining is best done with this alloy in the annealed or normalized and tempered condition. It can be machined by all conventional methods.

Corrosion Resistance

This is a low alloy steel and not a corrosion resistant alloy. Protective coating should be used.

Welding

The alloy can be fusion or resistance welded. Preheat and post heat weld procedures should be followed when welding this alloy by established methods.

Cold working

The VCNMO150 alloy may be cold worked, in the annealed condition, by conventional methods and tooling. It has good ductility.

Forms manufactured: Please see the Dimensional Sales Program.

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