

SALOMON'S METALEN B.V.

SILVER STEEL

Silver Steel is a versatile high carbon tool steel is ground to very close tolerances. It is so called because of its highly polished appearance created by the extremely fine surface finish. The high carbon content of this silver steel means that it can be hardened to give considerable wear resistance and the chromium content increases strength and hardenability. It is readily machinable as supplied in the spheroidised annealed condition.

Chemical Composition

	Analysis Range (%)	Typical Analysis (%)
C	.95/1.25	1.13
Si	.40 max.	.22
Mn	.25 / .45	.37
P	.045 max.	.014
S	.045 max.	.018
Cr	Cr. .35 / .45	.43

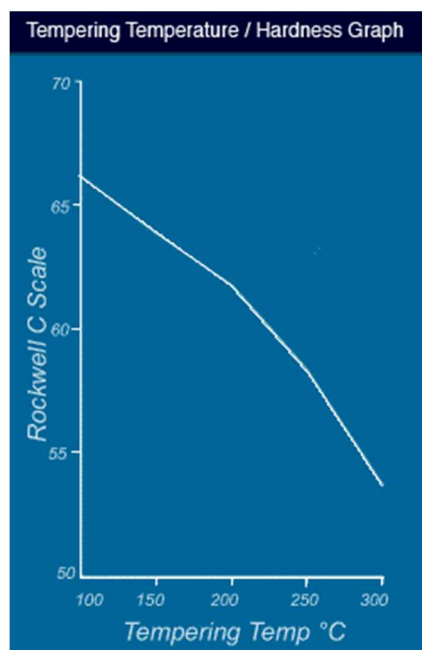
Heat Treatment

Hardening

Heat slowly to 760 - 800°C using the upper end of the temperature range for lower carbon contents and lower end of temperature range for higher carbon contents. Austenitize until the temperature is uniform. Quench into well agitated water. The approximate quench hardness is 65 to 69 Rc.

Tempering

Temper immediately after hardening preferably before the tool reaches room temperature. Temper for a minimum of 1 hour at temperatures between 180 - 350°C, dependent upon the final hardness required.



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Technical Data

Typical Properties as supplied:

Hardness (Brinell)	180-285
U.T.S (Tons/sq. inch)	40-60
Yield Point	35-50
Torsional Stress	22-33
Shear Stress	24-36
Elongation % (2GL)	35-20
Reduction of Area %	45-30
Density	7.83grms/cc

The above figures are for guidance only and do not form part of a specification

Mean Coefficient of Expansion:

0° - 700°	14.69×10^{-6}
Modulus of Elasticity (Youngs)	$E - 30 \times 10^6 \text{ lbs/inch}^2$
Modulus of Rigidity or Modulus of Transverse Elasticity	$G = 12 \times 10^6 \text{ lbs/ins}^2$