OTAI SPECIAL STEEL is S1 steel stockholders and suppliers from china. more 16 years experience in AISI S1 tool steel round bar, flat bar and plate supply.

AISI S1 Steel is a high quality tool steel, It belong to the high quality medium carbon alloy tool steel. Oil Quenched & Tempered Hardenss is 28-34 HRc. AISI S1 steel Annealing delivery hardenss less than 250HB.

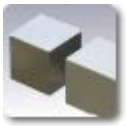
Related Specifications ASTM A681M DIN EN 10083/3 JIS G4053 GB GB/T 3077

Form of Supply

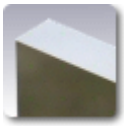
AISI S1 tool steel, we can supply the round bar, steel flat bar, plate, hexagonal steel bar and steel square block. AISI S1 steel Round bar can be sawn to your required lengths as one offs or multiple cut pieces. S1 steel Rectangular pieces can be sawn from flat bar or plate to your specific sizes. Ground tool steel bar can be supplied, providing a quality precision finished bar to tight tolerances.

Round

sheet



Square



Plate

Chemical composition

C(%)	0.40～0.55	Si(%)	0.15～1.20	Mn(%)	0.10～0.40	P, S(%)	≤0.030
W(%)	1.50～3.00	Cr(%)	1.00～1.80	Mo (%)	≤0.50	V(%)	0.15～0.30

Heat treatment Related

① Annealing of S1 Tool steel

Slowly heated to 800-810 ℃ (1472-1490℃) and allow enough times, let the steel to be thoroughly heated, Then cool slowly in the furnace. The S1 tool steel will get MAX 250 HB (Brinell hardness).

② Hardening of S1 tool steel

S1 steels should be Pre-heated uniformly to 650° C (1202° F) until completely heated through. If needed, the steels can be preheated at 900 to 950° C (1652 to 1742° F). About 30 min/per 25 mm of ruling section is to be provided and then the steels should be immediately quenched in oil.

③ Tempering of S1 tool steel

Tempering of S1 steels is performed at the preferred tempering temperature followed by holding for an hour , Soak well at the selected temperature and soak for at least one hour per 25mm of total thickness.

Temperature [℃]	150	200	250	350	400
Hardness [HRc]	58-56	56-54	55-53	53-51	52-49

Mechanical Properties

The mechanical properties of S1 tool steels are outlined in the following table.

Poisson's ratio	Elastic modulus	Thermal expansion	Yield (0.2%, hardened to 60 HRC)	Yield (0.2%, hardened to 62 HRC)	Yield (0.2%, hardened to 50 HRC)
T (25° C)	T (25° C)	T (20-100° C)	Mpa	Mpa	MPa
0.27-0.30	27557-30458 ksi	12.4 x 10^{-6}/°C	2150	2200	1350

All data only for your reference.

Applications

S1 steels are mainly used for Mandrel drawing steel tube. Medium temperature applications include forging, forming and die, punching, punching and reduce death. Other applications include shear blade working medium temperature including flying shear blades., cold taps,

reamers, collets, cutting hobs, strip slitting cutters, trimmer dies, tube expander rolls, plastic moulds and woodworking knives ature.

Regular size and Tolerance

1) Hot Rolled round bar

Diameter (mm)	Diameter Tolerance (mm)	Diameter (mm)	Diameter Tolerance (mm)
≤12.70	-0.13 ～0.30	>50.80～63.5	-0.25～0.76
12.7～25.40	-0.13～0.41	>63.50～76.20	-0.25～1.02
>25.4～38.10	-0.15～0.51	>76.20～101.60	-0.30～+1.27
>38.1～50.80	-0.20～0.64	>101.60～203.20	-0.38～3.81

2) Hot Rolled steel plate

Thickness (mm)	Thickness Tolerance (mm)	Thickness (mm)	Thickness Tolerance (mm)
≤25.4	-0.41～0.79	>127～152	-1.60～2.39
>25.4～76	-0.79～1.19	>178～254	-1.98～3.18
>76～127	-1.19～1.60	>254～305	-2.39～3.96

Others S1 have not specified size, pls contact our experienced sales team.

Processing

AISI S1 tool steel round bar and flat sections can be cut to your required sizes. S1 tool steel ground bar can also be supplied, providing a high quality tool steel precision ground tool steel bar to your required tolerances. AISI S1 steel is also available as Ground Flat Stock / Gauge Plate, in standard and nonstandard sizes.

Contact our experienced sales team to help you with your S1 tool steel questionsadn enquiry by Email or Telphone. The questions will be reply in 24 hours.

OTAI SPECIAL STEEL CO., LTD

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