

OTAI SPECIAL STEEL is O1 steel stockholders and suppliers from china. more 16 years experience in AISI O1 tool steel round bar, flat bar and plate supply.

AISI O1 Steel is a high quality Cold work tool steel, It belong to the high quality high carbon alloy tool steel. Oil Quenched & Tempered Hardenss is 28-34 HRC. AISI o1 steel Annealing delivery hardenss less than 250HB.

Related Specifications ASTM A29/A29M DIN EN 10083/3 JIS G4053 GB GB/T 3077

Form of Supply

AISI o1 tool steel, we can supply the round bar, steel flat bar, plate, hexagonal steel bar and steel square block. AISI o1 steel Round bar can be sawn to your required lengths as one offs or multiple cut pieces. O1 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.



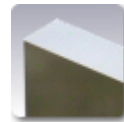
Round



sheet



Square



Plate

Chemical composition

C(%)	0.85~ 1.00	Si(%)	0.10~0.50	Mn(%)	1.00~ 1.40	P(%)	≤0.030
S(%)	≤0.040	Cr(%)	0.40~0.60	V(%)	≤0.30	W(%)	0.40~ 0.60

Heat treatment Related

① Annealing of O1 Tool steel

Slowly heated to 740–760 °C (1364–1400°C) and allow enough times, let the steel to be thoroughly heated, Then cool slowly in the furnace. The oil tool steel will get MAX 250 HB (Brinell hardness) .

② Hardening of oil tool steel

Oil steels should be heated uniformly to 780–820° C (1436–1508° F) until completely heated through. If needed, the steels can be preheated at 300–500° C (572–932° 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 oil tool steel

Tempering of Oil steels is performed at 100–350° C (212–662° F), Soak well at the selected temperature and soak for at least one hour per 25mm of total thickness. Get Rockwell C hardness of 55 to 64.

Temperature [°C]	100	150	200	250	300	350
Hardness [HRC]	64–63	63–62	62–61	60–59	58–57	56–55

Mechanical Properties

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

Elastic modulus (@399° C/750° F, hardened to 62 HRC)	Elastic modulus (hardened to 62 HRC)	Yield (0.2%, hardened to 55 HRC)	Yield (0.2%, hardened to 60 HRC)	Yield (0.2%, hardened to 62 HRC)	Yield (0.2%, hardened to 50 HRC)
GPa	GPa	Mpa	Mpa	Mpa	MPa
172	193	1800	2150	2200	1350

Applications

Oil steels are mainly used for short run tooling for cold forming dies, blanking dies, and cutting tools operating at ambient temper.

O1 tool steel typical applications include medium run dies, intricate press tools, drawing punches, broaches, bushings, lathe centres, chuck jaws, master cavity sinking hobs, paper cutting machine knives, plug gauges, thread gauges and precision measuring tools. Also commonly used in applications such as cams, cloth cutting knives, 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 O1 have not specified size, pls [contact](#) our experienced sales team.

Processing

AISI o1 tool steel round bar and flat sections can be cut to your required sizes. O1 tool steel ground bar can also be supplied, providing a high quality tool steel precision ground tool steel bar to your required tolerances. AISI o1 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 ol tool steel questionsadn enquiry by [Email](#) or Telpnone. The questions will be reply in 24 hours.

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