

OTAI SPECIAL STEEL is A4 steel stockholders and suppliers from china. more 16 years experience in AISI A4 tool steel round bar, flat bar and plate supply.

AISI A4 Steel is a high quality, High carbon, high manganese, chrome, molybdenum alloy Cold work tool steel. Oil Quenched & Tempered Hardness is 28-34 HRC. AISI A4 steel Annealing delivery hardness less than 250HB. A4 tool steel properties as below:

Related Specifications ASTM A681 DIN EN 10083/3 JIS G4053 GB/T 1299

Form of Supply

AISI A4 tool steel, we can supply the round bar, steel flat bar, plate, hexagonal steel bar and steel square block. AISI A4 steel Round bar can be sawn to your required lengths as one off or multiple cut pieces. A4 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.



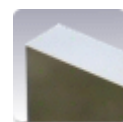
Round



sheet



Square



Plate

Chemical composition

C(%)	0.95~ 1.05	Si(%)	0.10~0.50	Mn(%)	1.80~ 2.20	P(%)	≤0.030
S(%)	≤0.040	Cr(%)	0.90~1.20	Mo (%)	0.90~ 1.40	V(%)	/

Heat treatment Related

① Forged of A4 Tool steel

Slowly heated the A4 steel material to 650-680° C (1202-1256° F) before raising the temperature to 1050-1100° C (1922-2120° F) and

soak A4 tool steel material until uniformly heated. Initial hammer blows should be light due to the comparatively high hot strength of this steel.

The A4 steel forged temperature should be maintained above 1000° C(1832°F) until the A4 steel metal begins to yield. Final forged should not be done below 900° C(1652°F). Slowly cool after forged is essential to avoid the possibility of cracking.

② Annealing of A4 Tool steel

Slowly heated A4 steel to 850–870 °C (1562–1598°F) and allow enough times, let the steel to be thoroughly heated, Then cool slowly in the furnace at a rate of 4° C (40° F) per hour or less.. The A4 tool steel will get MAX 250 HB (Brinell hardness) .

③ Hardening of A4 tool steel

A4 steels should be heated uniformly to 790–820° C (1436–1508° F) until completely heated through. Then heated to the hardening temperature of 950–980° C(1742–1796°F), soak at the temperature enough time, let A4 steel to be thoroughly heated .

Then withdraw A4 steel tools from the furnace, either air cool or oil quench.

Tempering of A4 tool steel

Tempering of A4 steels is performed at 150–400° C (302–752° F), Soak well at the selected temperature and soak for at least one hour per 25mm of total thickness. Get Rockwell C hardness of 57 to 62. Others different Heat treatment temperature will get different hardness. Below only for reference.

Temperature [°C]	150	200	250	300	350	400
Hardness [HRc]	62–61	61–60	60–59	59–58	58–57	58–57

Mechanical Properties

The mechanical properties of A4 tool steels are outlined in the following table.

Bulk modulus (typical for steels)	Machinability (based on carbon)	Shear modulus	Poisson's ratio	Elastic modulus)	Thermal expansion
GPa		GPa		GPa	20-100°C
140	65%	78	0.27-0.30	190-210	$10.7 \times 10^{-6}/^{\circ}\text{C}$

Applications

A4 steels are mainly used for slitters, die shapes.

A4 tool steel typical applications include cold forging dies, coining dies, cold heading dies, shear blades, knurling tools and as cutting knives for paper, wood, fibre and resin-bonded material, etc.

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 A4 have not specified size, pls [contact](#) our experienced sales team.

Processing

AISI A4 tool steel round bar and flat sections can be cut to your required sizes. A4 tool steel ground bar can also be supplied, providing a high quality tool steel precision ground tool steel bar to your required tolerances. AISI A4 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 A4 tool steel questions and enquiry by [Email](#) or Telephone. The questions will be reply in 24 hours.

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