



INTERNATIONAL TOOL STEEL

The World's Finest Tool Steel

A-6

PRODUCT INFORMATION

TYPICAL PARTS

A-6 has a variety of applications such as blanking and forming dies, punches, shear blades, retaining rings and plastic molds.

ADVANTAGES

A-6 is a low-alloy chromium-molybdenum air-hardening tool steel with a balanced combination of toughness, strength and wear resistance. An excellent choice for intermediate service cold-work tools and dies. A-6 offers both safety and dimensional stability during heat treatment.

FORGING/ROLLING

Heat to 2175° F and forge until material reaches 1800° F. Discontinue forging at 1800° F and reheat if necessary to finish forging. Following forging, cool slowly by burying in heat insulated material to avoid cooling cracks.

ANNEALING

Heat to 1400° F and hold for 1 hour per inch of greatest cross section. Furnace cool 20° F and hour to 1290° F, then cool at 10° F per hour to 1100° F. Air cool at room temperature. This procedure should produce a hardness of 229° HB, max.

HARDENING

Heat to an austenitizing temperature of 1550° F, holding at temperature for one hour per inch of greatest thickness, After air quenching, the piece should be tempered immediately upon reaching 150 F.

TEMPERING

A-6 tool steel is normally tempered for two hours per inch of greatest cross section. For most applications, a tempering temperature of 400° F is usually specified. If a given application requires higher toughness, a higher temperature should be specified.

Chemical Analysis

Carbon	.65/.75
Phosphorus	
Manganese	.75/1.80
Sulfur	.030 Max.
Silicon	.50/.90
Chromium	.90/1.20
Vanadium	___ ___
Tungsten	___ ___
Molybdenum	.90/1.40
Cobalt	___ ___

Tempering Temperature °f

As-quenched	
400	59
500	58
600	56
700	54
800	52
900	51
1000	49
1100	47
1200	41

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