

This page is mainly introduced the ASTM W1-A Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of ASTM W1-A, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

Datasheet for Steel Grades Tool Steel And Hard Alloy ASTM W1-A

ASTM W1-A Standard Number:		
ITEM	Standard Number	Descriptions

ASTM W1-A Chemical composition (mass fraction) (wt.%)									
Chemical				Min. (%)			Max. (%)		
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta
0.80~0.90	0.10~0.40	0.10~0.40	≤0.030	≤0.030	≤0.15	≤0.20	≤0.10	≤0.10	
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other
≤0.15		≤0.20							

© The hardness of carbon steel, tool steel and standard alloy steel

ASTM W1-A Physical Properties		
Tensile strength	115-234	σ_b /MPa
Yield Strength	23	$\sigma_{0.2} \geq$ /MPa
Elongation	65	$\delta_5 \geq$ (%)
ψ	-	$\psi \geq$ (%)
Akv	-	Akv $\geq$ /J
HBS	123-321	-
HRC	30	-

ASTM W1-A Mechanical Properties		
Tensile strength	231-231	σ_b /MPa

Yield Strength	154	$\sigma_{0.2} \geq \text{MPa}$
Elongation	56	$\delta 5 \geq (\%)$
ψ	-	$\psi \geq (\%)$
Akv	-	$Akv \geq \text{J}$
HBS	235-268	-
HRC	30	-

ASTM W1-A Heat Treatment Regime

Annealing	Quenching	Tempering	Normalizing	Q & T
✓	✓	✓	✓	✓

ASTM W1-A Range of products

Product type	Products	Dimension	Processes	Deliver Status
Plates / Sheets	Plates / Sheets	0.08-200mm(T)*W*L	Forging, hot rolling and cold rolling	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Steel Bar	Round Bar, Flat Bar, Square Bar	$\Phi 8$ -1200mm*L	Forging, hot rolling and cold rolling, Cast	Black, Rough Turning, Shot Blasting,
Coil / Strip	Steel Coil / Steel Strip	0.03-16.0x1200mm	Cold-Rolled & Hot-Rolled	Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting
Pipes / Tubes	Seamless Pipes/Tubes, Welded Pipes/Tubes	OD:6-219mm x WT:0.5-20.0mm	Hot extrusion, Cold Drawn, Welded	Annealed, Solution and Aging, Q+T, ACID-WASHED

We can produce Tool Steel And Hard Alloy the specifications follows: