

This page is mainly introduced the **W1-A Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc.** It also contains the use of **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 Die Steels W1-A

W1-A Standard Number:

ITEM	Standard Number	Descriptions
1	ASTM A686-1999	Carbon tool steel

W1-A Chemical composition(mass fraction)(wt.%)

Chemical	Min.(%)	Max.(%)							
C	0.80	0.90							
Si	0.10	0.40							
Mn	0.10	0.40							
P		0.030							
S		0.030							
Cr		0.15							
V		0.10							
Ni		0.20							
Cu		0.20							
W		0.15							
Mo		0.10							
C	Si	Mn	P	S	Cr	Ni	Mo	V	Ta
W	N	Cu	Co	Pb	B	Nb	Al	Ti	Other

Carbon tool steel

W1-A Physical Properties

Tensile strength	115-234	ob/MPa
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Yield Strength	23	$\sigma_{0.2} \geq / \text{MPa}$
Elongation	65	$\delta 5 \geq (\%)$
ψ	-	$\psi \geq (\%)$
Akv	-	$Akv \geq / \text{J}$
HBS	123-321	-
HRC	30	-

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	-

W1-A Heat Treatment Regime

Annealing	Quenching	Tempering	Normalizing	Q & T
√	√	√	√	√

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 Die Steels the specifications follows: