

Carpenter Vega® Alloy Tool Steel (Air-Tough) (AISI A6)

Category : Metal , Ferrous Metal , Tool Steel

Material Notes:

Vega die steel combines the deep hardening and minimum size change characteristics of air-hardening steels with the simplicity of low temperature heat treatment possible in many oil-hardening steels. It is available as a DeCarb-Free product. DCF bars have been cold finished in the mill, eliminating the need for bar bark removal. Applications: Large blanking dies, Large forming dies, Trimming dies, Notching dies, Feed fingers, Heavy duty punches, Coining dies, Retaining rings, Rim rolls, Master hubs, Shear blades, Precision tools, Spindles, Bending tools, Mandrels, Stripper plates, Plastic molds. Information provided by Carpenter Technology Corporation. Vega® is a registered trademark of Carpenter Technology Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Carpenter-Vega-Alloy-Tool-Steel-Air-Tough-AISI-A6.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.85 g/cc	7.85 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	48 - 49	48 - 49	Tempered at 1200°F
	61 - 62	61 - 62	As hardened
Tensile Strength, Ultimate	2350 MPa	341000 psi	when tempered at 350°F
Tensile Strength, Yield	2100 MPa	305000 psi	when tempered at 350°F
Elongation at Break	1.0 %	1.0 %	when tempered at 350°F
Reduction of Area	2.0 %	2.0 %	when tempered at 350°F
Modulus of Elasticity	200 GPa	29000 ksi	
Izod Impact Unnotched	155 J	114 ft-lb	when tempered at 350°F
Charpy Impact	1.00 J	0.738 ft-lb	V-Notch, when tempered at 350°F
	130 J	95.9 ft-lb	tempered at 350°F
Charpy Impact, Unnotched	@Treatment Temp. 177 °C	@Treatment Temp. 350 °F	
Abrasion	73.8	73.8	loss in mm ³ , As-Hardened; ASTM G65
	130.7	130.7	loss in mm ³ , Tempered at 1100°F; ASTM G65

Thermal Properties	Metric	English	Comments
	11.8 μm/m-°C	6.56 μin/in-°F	

Thermal Properties	Metric	English	Comments
	@ Temperature 20.0 - 100 °C	@ Temperature 68.0 - 212 °F	
	13.7 µm/m-°C	7.61 µin/in-°F	
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	14.7 µm/m-°C	8.17 µin/in-°F	
	@Temperature 20.0 - 700 °C	@Temperature 68.0 - 1290 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.70 %	0.70 %	
Chromium, Cr	1.0 %	1.0 %	
Iron, Fe	94.65 %	94.65 %	As Balance
Manganese, Mn	2.0 %	2.0 %	
Molybdenum, Mo	1.35 %	1.35 %	
Silicon, Si	0.30 %	0.30 %	

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