

Carpenter No. 610® High Carbon, High Chrome Tool Steel (Air-Wear) (AISI D2)

Category : Metal , Ferrous Metal , Carbon Steel , High Carbon Steel , Tool Steel , Air-Hardening Steel

Material Notes:

No. 610 tool steel is an air hardening, high-carbon, high-chromium tool steel having extremely high wear resisting properties. It is very deep hardening, and will be practically free from size change after proper treatment. The high percentage of chromium gives it mild corrosion resisting properties in the hardened condition. It is available as a DeCarb-Free product. DCF bars have been cold-finished in the mill therefore eliminating the need for bar bark removal. Applications: Blanking dies, Forming dies, Coining Dies, Slitting cutters, Heading tools, Long punches, Forming rolls, Edging Rolls, Master tools, Beading tools, Intricate punches, Extrusion dies, Drawing dies. Information provided by Carpenter Technology Corporation. No. 610® is a registered trademark of Carpenter Technology Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Carpenter-No-610-High-Carbon-High-Chrome-Tool-Steel-Air-Wear-AISI-D2.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.83 g/cc	7.83 g/cc	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	44 - 45	44 - 45	Tempered at 1200°F
	62 - 63	62 - 63	As hardened
Abrasion	37.6	37.6	loss in mm ³ , As-Hardened; ASTM G65
	85.9	85.9	loss in mm ³ , Tempered at 1200°F; ASTM G65

Thermal Properties	Metric	English	Comments
CTE, linear	10.5 µm/m-°C	5.83 µin/in-°F	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	12.2 µm/m-°C	6.78 µin/in-°F	
	@Temperature 20.0 - 400 °C	@Temperature 68.0 - 752 °F	
	13.0 µm/m-°C	7.22 µin/in-°F	
	@Temperature 20.0 - 800 °C	@Temperature 68.0 - 1470 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.5 %	1.5 %	
Chromium, Cr	12 %	12 %	

Component Elements Properties	Metric	English	Comments
Manganese, Mn	0.50 %	0.50 %	
Molybdenum, Mo	0.80 %	0.80 %	
Silicon, Si	0.30 %	0.30 %	
Vanadium, V	0.90 %	0.90 %	

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