Latrobe LSSâ„¢ D2 Tool Steel (ASTM D2)

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

Material Notes:

TLS D2 tool steel is a versatile high-carbon, high-chromium, air-hardening tool steel that is characterized by a relatively high attainable hardness and numerous, large, chromium rich alloy carbides in the microstructure. These carbides provide good resistance to wear from sliding contact with other metals and abrasive materials. Although other steels with improved toughness or improved wear resistance are available, TLS D2 provides an effective combination of wear resistance and toughness, tool performance, price, and a wide variety of product forms. TLS D2 is also available as an Electro-Slag-Remelted (ESR) product. The remelting process provides improved chemical homogeneity, refinement of carbide size, and the associated improvements in mechanical and fatigue properties. Typical applications for TLS D2 tool steel include rolls, punches, dies for blanking, forming, trimming, and thread rolling, shear knives, food-processing knives, and gages.Information Provided by Timken Latrobe Steel.Timken sold Latrobe in December 2006. They are now Latrobe Specialty Steels Co.

Order this product through the following link:
http://www.lookpolymers.com/polymer_Latrobe-LSS-D2-Tool-Steel-ASTM-D2.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.70 g/cc	7.70 g/cc	
Density	7.70 g/cc	0.278 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	62.5	62.5	Air Cooled from 982Â°C, 30 minutes
	63	63	Air Cooled from 1038Â°C, 30 minutes
	64	64	Air Cooled from 1010Â°C, 30 minutes
Modulus of Elasticity	207 GPa	30000 ksi	
Machinability	50 - 60 %	50 - 60 %	1% Carbon Steel
Izod Impact Unnotched	10.8 J	8.00 ft-lb	Air Cooled from 1010Â°C; As Quenched
	29.8 J	22.0 ft-lb	Air Cooled from 1010Â°C; 483Â°C Temper Temperature
	55.6 J	41.0 ft-lb	Air Cooled from 1010Â°C; 593Â°C Temper Temperature

Thermal Properties	Metric	English	Comments
CTE, linear	10.3 Âµm/m-Â°C @Temperature 38.0 - 260 Â°C	5.72 Âµin/in-Â°F @Temperature 100 - 500 Â°F	
	12.3 Âµm/m-Â°C	6.83 Âµin/in-Â°F	

Thermal Properties	Metric	English	Comments
	@Temperature 38.0 - 538 Â°C	@ Temperature 100 - 1000 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.5 %	1.5 %	
Chromium, Cr	12 %	12 %	
Iron, Fe	85.6 %	85.6 %	
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	0.75 %	0.75 %	
Silicon, Si	0.30 %	0.30 %	
Vanadium, V	0.90 %	0.90 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	744 Â°C	1370 Â°F	Ar3
	788 Â°C	1450 Â°F	Ac1
	789 Â°C	1450 Â°F	Ar1
	1553 Â°C	2827 Â°F	Ac3

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