Latrobe LSSâ„¢ Vertex Tool Steel

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

Material Notes:

TLS Vertex tool steel is a versatile, high-chromium, air-hardening tool steel that is characterized by a relatively high attainable hardness and numerous, chromium-rich alloy carbides in the microstructure. These carbides provide good resistance to wear from sliding contact with other metals and abrasive materials. The primary alloy carbides in Vertex are smaller than the large chromium-rich alloy carbides which are characteristic of D2 tool steel. These smaller carbides result in better impact toughness and superior fatigue properties compared to D2. The molybdenum addition in Vertex enhances the hardness of the alloy carbides, and more significantly, provides superior secondary hardening response compared to D2. Therefore, unlike D2, Vertex can be tempered at higher tempering temperatures yet still attain a hardness in excess of 60 Rockwell C. Because of the higher secondary hardness, Vertex exhibits superior wear resistance compared to D2 tempered at the higher tempering temperatures, as well as the superTimken 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-Vertex-Tool-Steel.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.68 g/cc	7.68 g/cc	
Density	7.67 g/cc	0.277 lb/inÂ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	63.5	63.5	Air Cooled from 1052Â°C, 45 minutes
	64.5	64.5	Air Cooled from 1010Â°C, 45 minutes
	64.5	64.5	Air Cooled from 1030Â°C, 45 minutes
Modulus of Elasticity	207 GPa	30000 ksi	
Machinability	65 - 70 %	65 - 70 %	1% Carbon Steel
Izod Impact Unnotched	29.8 J	22.0 ft-lb	For 63 HRC
	61.0 J	45.0 ft-lb	For 54 HRC

Thermal Properties	Metric	English	Comments
CTE, linear	12.0 Âµm/m-Â°C @Temperature 38.0 - 200 Â°C	6.67 Âµin/in-Â°F @Temperature 100 - 392 Â°F	
	13.2 Âµm/m-Â°C @Temperature 38.0 - 500 Â°C	7.33 Âµin/in-Â°F @Temperature 100 - 932 Â°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	1.0 %	1.0 %	
Chromium, Cr	8.25 %	8.25 %	
Iron, Fe	86.6 %	86.6 %	
Manganese, Mn	0.50 %	0.50 %	
Molybdenum, Mo	2.25 %	2.25 %	
Silicon, Si	1.0 %	1.0 %	
Vanadium, V	0.40 %	0.40 %	

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