

Latrobe LSS S5 Shock-Resisting Tool Steel (ASTM S5)

Category : Metal , Ferrous Metal , Alloy Steel , Tool Steel

Material Notes:

TLS S5 Shock-Resisting tool steel is a silicon-manganese tool steel which exhibits the highest impact toughness among all of the "S" type steels. The high toughness and the ability to be hardened to 62 Rockwell C make TLS S5 an excellent choice for applications which require higher strength than S7 shock-resisting tool steel. The steel is typically hardened using an oil quench, but for simple geometries, the steel may be water quenched. Typical applications include pneumatic tools, shear blades, mandrels, heavy-duty punches, and stamping dies. 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-S5-Shock-Resisting-Tool-Steel-ASTM-S5.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.75 g/cc	7.75 g/cc	
Density	7.75 g/cc	0.280 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	50	50	Oil Quenched from 816 ^o C, 30 minutes
	52	52	Water Quenched from 816 ^o C, 30 minutes
	57	57	Oil Quenched from 871 ^o C, 30 minutes
	59	59	Water Quenched from 871 ^o C, 30 minutes
	61	61	Oil Quenched from 954 ^o C, 30 minutes
	62	62	Water Quenched from 954 ^o C, 30 minutes
Modulus of Elasticity	207 GPa	30000 ksi	
Machinability	65 - 70 %	65 - 70 %	1 % Carbon Steel
Charpy Impact	10.8 J	8.00 ft-lb	V-Notch; Oil Quenched from 927 ^o C; 200 ^o C Temper Temperature
	20.3 J	15.0 ft-lb	V-Notch; Oil Quenched from 927 ^o C; 600 ^o C Temper Temperature

Thermal Properties	Metric	English	Comments
CTE, linear	12.6 $\mu\text{m/m-}^{\circ}\text{C}$	7.00 $\mu\text{in/in-}^{\circ}\text{F}$	
	@Temperature 21.0 - 427 $^{\circ}\text{C}$	@Temperature 69.8 - 801 $^{\circ}\text{F}$	

Thermal Properties	Metric	English	Comments
	13.7 Åpm/m-Å°C	7.6 Åpm/in-Å°F	
	@Temperature 21.0 - 659 Å°C	@Temperature 69.8 - 1220 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.60 %	0.60 %	
Chromium, Cr	0.18 %	0.18 %	
Iron, Fe	95.79 %	95.79 %	
Manganese, Mn	0.90 %	0.90 %	
Molybdenum, Mo	0.35 %	0.35 %	
Silicon, Si	1.9 %	1.9 %	
Vanadium, V	0.28 %	0.28 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	766 Å°C	1410 Å°F	Ac1

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