

Latrobe LSS™ S1 Shock-Resisting Tool Steel (ASTM S1)

Category : Metal , Ferrous Metal , Alloy Steel , Carbon Steel , Medium Carbon Steel , Tool Steel , Oil-Hardening Steel

Material Notes:

TLS S1 Shock-Resisting tool steel is a medium-carbon steel which combines moderate hardness with good impact toughness. It is a deep-hardening, oil-hardening steel designed for shock and impact loading applications. TLS S1 exhibits better resistance to abrasive wear than any of the other "S"-type shock-resisting steels. Typical applications include hand chisels, pneumatic tools, shear blades, mandrels, heavy duty punches, stamping dies, and machine parts. 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-S1-Shock-Resisting-Tool-Steel-ASTM-S1.php

Physical Properties	Metric	English	Comments
Specific Gravity	7.89 g/cc	7.89 g/cc	
Density	7.89 g/cc	0.285 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	54.5	54.5	Air Cooled from 899°C, 30 minutes
	56	56	Air Cooled from 927°C, 30 minutes
	56.5	56.5	Air Cooled from 982°C, 30 minutes
Modulus of Elasticity	207 GPa	30000 ksi	
Machinability	70 - 75 %	70 - 75 %	1% Carbon Steel
Charpy Impact	10.8 J	8.00 ft-lb	V-Notch; Oil Quenched from 954°C; 149°C Temper Temperature
	29.8 J	22.0 ft-lb	V-Notch; Oil Quenched from 954°C; 625°C Temper Temperature

Thermal Properties	Metric	English	Comments
CTE, linear	12.6 µm/m-°C	7.00 µin/in-°F	
	@Temperature 21.0 - 204 °C	@Temperature 69.8 - 399 °F	
	13.5 µm/m-°C	7.50 µin/in-°F	
	@Temperature 21.0 - 427 °C	@Temperature 69.8 - 801 °F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.53 %	0.53 %	

Component Elements Properties	Metric	English	Comments
Iron, Fe	95.37 %	95.37 %	
Manganese, Mn	0.25 %	0.25 %	
Silicon, Si	0.25 %	0.25 %	
Tungsten, W	2.0 %	2.0 %	
Vanadium, V	0.25 %	0.25 %	

Chemical Properties	Metric	English	Comments
Critical Temperature	730 °C	1350 °F	Ar3
	774 °C	1430 °F	Ar1
	777 °C	1430 °F	Ac1
	823 °C	1510 °F	Ac3

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