

Latrobe Magnadie,ç Modified H-13 Hot Work Die Steel

Category : Metal , Ferrous Metal , Alloy Steel , Tool Steel , Air-Hardening Steel , Hot Work Steel

Material Notes:

MAGNADIE is an AOD refined, air hardenable 5% chromium die steel. It is a good choice for both hot and cold work applications. Magnadie steel possesses improved toughness as compared to standard H-13 while maintaining comparable elevated temperature hardness and strength characteristics. It is also easily machined as it can be annealed to a hardness of approximately 200 BHN. Some typical hot work applications for Magnadie steel include dummy blocks and mandrels for brass and aluminum extrusion, extrusion dies for aluminum and magnesium, hot press dies, punches and dies for shell piercing, die inserts for forging dies, knock out pins, heavy duty shears, slitters and other applications requiring maximum toughness. 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-Magnadie-Modified-H-13-Hot-Work-Die-Steel.php

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

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	39.6 - 48	39.6 - 48	
Tensile Strength, Ultimate	1311 - 1697 MPa	190200 - 246200 psi	
Tensile Strength, Yield	1091 - 1416 MPa	158200 - 205400 psi	
Elongation at Break	12.5 - 14 %	12.5 - 14 %	
Reduction of Area	36.4 - 38.4 %	36.4 - 38.4 %	
Charpy Impact	7.86 - 12.88 J	5.80 - 9.500 ft-lb	V-Notch

Thermal Properties	Metric	English	Comments
CTE, linear	11.88 $\mu\text{m/m-}^\circ\text{C}$	6.600 $\mu\text{in/in-}^\circ\text{F}$	
	@Temperature 27.0 - 204 $^\circ\text{C}$	@Temperature 80.6 - 399 $^\circ\text{F}$	
Thermal Conductivity	13.38 $\mu\text{m/m-}^\circ\text{C}$	7.433 $\mu\text{in/in-}^\circ\text{F}$	
	@Temperature 27.0 - 649 $^\circ\text{C}$	@Temperature 80.6 - 1200 $^\circ\text{F}$	
Thermal Conductivity	25.55 W/m-K	177.3 BTU-in/hr-ft ² - $^\circ\text{F}$	
	@Temperature 20.0 $^\circ\text{C}$	@Temperature 68.0 $^\circ\text{F}$	
	27.1 W/m-K	188 BTU-in/hr-ft ² - $^\circ\text{F}$	

Thermal Properties	@Temperature 649 Å°C Metric	@Temperature 1200 English	Comments
	28.11 W/m-K	195.1 BTU-in/hr-ftÅ²- Å°F	
	@Temperature 204 Å°C	@Temperature 399 Å°F	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.37 %	0.37 %	
Chromium, Cr	5.3 %	5.3 %	
Iron, Fe	91.2 %	91.2 %	
Manganese, Mn	0.40 %	0.40 %	
Molybdenum, Mo	1.35 %	1.35 %	
Silicon, Si	1.0 %	1.0 %	
Vanadium, V	0.38 %	0.38 %	

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