

## Schmolz + Bickenbach Thermotur® 2367 Superclean Hot Work Die Steel

Category : Metal , Ferrous Metal , Tool Steel , Hot Work Steel

### Material Notes:

Description: Thermotur® 2367 Superclean is an electro slag remelted (ESR) hot work die steel developed for applications where high temperature properties (tensile strength & thermal conductivity) are required to resist thermal fatigue and tempering Characteristics:

Excellent resistance to heat checking; Excellent resistance to wear (erosion & abrasion); Excellent high-temperature strength; Good

tempering resistance; and Good toughness Applications: High pressure die casting dies, Hot forging dies, Hot extrusion tooling, Forming

dies, Plastic molds and Mandrels Stress Relieving (Heat Treatment): 1200°F for 2 hours; Cooling: Cool slowly to 900°F in air; Hardness:

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Schmolz-Bickenbach-Thermotur-2367-Superclean-Hot-Work-Die-Steel.php](http://www.lookpolymers.com/polymer_Schmolz-Bickenbach-Thermotur-2367-Superclean-Hot-Work-Die-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.78 g/cc	0.281 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell C	36	36	
	@Treatment Temp. 700.0 °C, Time 7200 sec	@Treatment Temp. 1292 °F, Time 2.00 hour	
	45	45	
	@Treatment Temp. 650.0 °C, Time 7200 sec	@Treatment Temp. 1202 °F, Time 2.00 hour	
	52	52	
	@Treatment Temp. 400 °C, Time 7200 sec	@Treatment Temp. 752 °F, Time 2.00 hour	
	52	52	
@Treatment Temp. 600.0 °C, Time 7200 sec	@Treatment Temp. 1112 °F, Time 2.00 hour		
55	55		
@Treatment Temp. 500 °C, Time 7200 sec	@Treatment Temp. 932 °F, Time 2.00 hour		
55	55		
@Treatment Temp. 550.0 °C, Time 7200 sec	@Treatment Temp. 1022 °F, Time 2.00 hour		
Tensile Strength	1400 MPa	203000 psi	44 HRC

Mechanical Properties	Metric MPa	English psi	Comments
	1840 MPa	267000 psi	52 HRC
Tensile Strength, Yield	1180 MPa	171000 psi	44 HRC
	@Strain 0.200 %	@Strain 0.200 %	
	1330 MPa	193000 psi	48 HRC
	@Strain 0.200 %	@Strain 0.200 %	
	1550 MPa	225000 psi	52 HRC
	@Strain 0.200 %	@Strain 0.200 %	
Elongation at Yield	12 %	12 %	52 HRC
	12 %	12 %	44 HRC
	13 %	13 %	48 HRC
Reduction of Area	35 %	35 %	52 HRC
	38 %	38 %	48 HRC
	40 %	40 %	44 HRC

Thermal Properties	Metric	English	Comments
CTE, linear	11.9 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	6.60 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 21.1 - 93.3 $\text{Å}^\circ\text{C}$	@Temperature 70.0 - 200 $\text{Å}^\circ\text{F}$	
	12.4 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	6.90 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 21.1 - 204 $\text{Å}^\circ\text{C}$	@Temperature 70.0 - 400 $\text{Å}^\circ\text{F}$	
	12.6 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	7.00 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	
	@Temperature 21.1 - 399 $\text{Å}^\circ\text{C}$	@Temperature 70.0 - 750 $\text{Å}^\circ\text{F}$	
Thermal Conductivity	29.7 W/m-K	206 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	
	@Temperature 21.1 $\text{Å}^\circ\text{C}$	@Temperature 70.0 $\text{Å}^\circ\text{F}$	
	33.9 W/m-K	235 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	
	@Temperature 343 $\text{Å}^\circ\text{C}$	@Temperature 650 $\text{Å}^\circ\text{F}$	
	35.3 W/m-K	245 BTU-in/hr-ft $\text{Å}^2\cdot\text{Å}^\circ\text{F}$	
	@Temperature 704 $\text{Å}^\circ\text{C}$	@Temperature 1300 $\text{Å}^\circ\text{F}$	

Component Elements Properties	Metric	English	Comments
Carbon, C	0.37 %	0.37 %	
Chromium, Cr	5.0 %	5.0 %	
Iron, Fe	>= 90.627 %	>= 90.627 %	
Molybdenum, Mo	3.0 %	3.0 %	
Silicon, Si	0.40 %	0.40 %	
Sulfur, S	<= 0.0030 %	<= 0.0030 %	
Vanadium, V	0.60 %	0.60 %	

Processing Properties	Metric	English	Comments
Annealing Temperature	729.4 - 779.4 Å°C	1345 - 1435 Å°F	Soft; Cooling: Furnace 20Å°F/hour to 1200Å°F/ Then air cool; < 235 HB

## Contact Songhan Plastic Technology Co.,Ltd.

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