

H.C. Starck HPM 1750 Tungsten High Density Composite Sheet

Category : Metal , Metal Matrix Composite , Nonferrous Metal , Refractory Metal , Tungsten Alloy

Material Notes:

Tungsten based composite materials are outstanding due to high density and good mechanical properties. The product can be delivered both as semi-finished product for further processing by the customer or in accordance with the drawing as finished machined component. HPM 1700 to HPM 1850 materials provide a solution in a wide range of applications requiring concentrated weight or density in a limited space. These lead-free parts meet legal requirements and recommendations to protect the environment. Range of Application: Balance weights, radiation protection, vibration absorbers, heat transfer, drilling bars. The mechanical characteristics have to guarantee the stability and strength in any application case. The absorption of x-ray and gamma radiation is in direct proportion to the density of the shielding material. Tungsten high density composites are more than 1.5 times as effective as lead and provide extremely efficient protection, particularly where space is limited. HPM 1750 (sheet) is a specifically developed material for rolling of thin sheets. It is possible to produce it in a thickness between a few tenth part up to several centimeters. The processing of the raw tungsten composite sheets will be accomplished by laser cutting, water jet cutting or wire-cut EDM. Information provided by H.C. Starck.

Order this product through the following link:

http://www.lookpolymers.com/polymer_HC-Starck-HPM-1750-Tungsten-High-Density-Composite-Sheet.php

Physical Properties	Metric	English	Comments
Density	17.4 - 17.8 g/cc	0.629 - 0.643 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	<= 460	<= 460	HV 30
Tensile Strength	870 MPa	126000 psi	
Tensile Strength, Yield	>= 520 MPa	>= 75400 psi	
Elongation at Break	16 %	16 %	
Modulus of Elasticity	340 GPa	49300 ksi	

Thermal Properties	Metric	English	Comments
CTE, linear	5.50 Åµm/m-Å°C	3.06 Åµin/in-Å°F	
	@Temperature 20.0 - 100 Å°C	@Temperature 68.0 - 212 Å°F	
	5.70 Åµm/m-Å°C	3.17 Åµin/in-Å°F	
	@Temperature 20.0 - 300 Å°C	@Temperature 68.0 - 572 Å°F	
	5.80 Åµm/m-Å°C	3.22 Åµin/in-Å°F	
	@Temperature 20.0 - 450 Å°C	@Temperature 68.0 - 842 Å°F	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	W/m-K	BTU-in/hr-ft ² -°F	

Component Elements Properties	Metric	English	Comments
Tungsten, W	92.5 %	92.5 %	Balance - Ni, Fe

Electrical Properties	Metric	English	Comments
Volume Resistivity	0.000015 ohm-cm	0.000015 ohm-cm	
Magnetic Permeability	>= 1.05	>= 1.05	

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