Technical Data Sheet

Grade ATJ Graphite

Product Overview

Grade ATJ™ graphite has been an industry standard for years. It is a fine grain, high strength material that can be machined to precise tolerances and a fine surface finish. ATJ™ graphite has unique thermal shock resistance due to the combination of low thermal expansion, high thermal conductivity, and low elastic modulus.

Applications

- Permanent molds
- Hot pressing molds and punches
- Composite tooling
- Rocket motor nozzles
- Continuous casting dies
- Plungers & rams

Sizes*

Inches

- 16" x 16" x 65" rectangles
- 12" x 25" x 80" rectangles
- 8" - 24" diameter x 72" long rounds

Millimeters

- 406 x 406 x 1651 mm rectangles
- 305 x 635 x 2032 mm rectangles
- 203-610 mm diameter x 1829 long rounds

Grade ATJW™ graphite is a post purified version of ATJ™ graphite for applications requiring very low ash. ATJW™ has the same properties as ATJ™ with an ash content of less than 20ppm.

Typical Properties at Room Temperature**

Characteristic	ENGLISH	WG	METRIC	WG	SI	WG
Density	lbs/ft^3	110	g/cm^3	1.76	g/cm^3	1.76
Average Particle Size	Inches	0.001	mm	0.03	mm	0.03
Specific Resistance	10^{-4}µΩm in.	4.61	µΩm	11.7	µΩm	11.7
Flexural Strength	psi	4500	kg/cm^2	317	MPa	31
Young's Modulus	10 ^{6} psi	1.40	kg/mm^2	982	GPa	9.7
Tensile Strength	psi	3740	kg/cm^2	262	MPa	26
Compressive Strength	psi	9500	kg/cm^2	670	MPa	66
Permeability	Darcy	0.002	Darcy	0.002	Darcy	0.002
Hardness	Rockwell "L"	60	Rockwell "L"	60	Rockwell "L"	60
C.T.E. (to 100 °C)	10^{-6}/°F	1.7	10^{-6}/°C	3.0	10^{-6}/K	3.0
Thermal Conductivity	BTU-ft/hr ft^2 °F	67	W/mK	116	W/mK	116
Ash Content	%	.11	%	.11	%	.11

Notes:
* Other sizes available upon request
** Properties listed are typical and cannot be used as accept/reject specifications