GRAFSTAR®
PCEA Grade Graphite

Product Overview

GRAFSTAR® PCEA grade graphite is a very high density, very high strength extruded graphite material. It has a medium grain size with excellent properties designed for evaluation within the nuclear industry and other more demanding applications.

Applications

- Nuclear applications
- CZ silicon crystal growth
- Polysilicon seed chucks
- Purified electronic fixturing

Sizes

Standard Sizes	
English	**Metric**
12" to 18" dia rounds x up to 84" lengths	300 mm to 460 mm dia x up to 2130 mm lengths
17"x17" | 15"x30" | 20"x20" cross section rectangles x up to 84" lengths	430x430mm | 380 x 760mm | 500x500mm cross-section rectangles x up to 2130mm lengths
Other Round sizes can be made available on a made-to-order basis.	
Other Rectangles can be made available on a made-to-order basis.	

Typical Properties at Room Temperature**

Characteristic	English Units	WG	AG	Metric Units	WG	AG	SI Units	WG	AG
Bulk Density	lbs/ft^3	115		g/cm^3	1.85		g/cm^3	1.85	
Maximum Particle Size	inches	0.03		mm	0.76		mm	0.76	
Specific Resistance	10^{-4} W-in	2.5	2.84	µΩm	6.4	7.2	µΩm	6.4	7.2
Flexural Strength	psi	4200	3600	kg/cm^2	295	253	MPa	29	25
Young's Modulus	106 psi	1.9	1.3	kg/mm^2	1335	913	GPa	13.1	9.0
Tensile Strength	psi	2700	2600	kg/cm^2	190	183	MPa	19	18
Compressive Strength	psi	9500	9500	kg/cm^2	668	668	MPa	66	66
Permeability	Darcy	0.009	0.008	Darcy	0.009	0.008	Darcy	0.009	0.008
Hardness	Rockwell "R"	100		Rockwell "R"	100		Rockwell "R"	100	
C.T.E. (to 100 0C)	10^{-6}/ ^{0}F	1.9	2.2	10^{-6}/ ^{0}C	3.4	3.9	10^{-6}/ K	3.4	3.9
Thermal Conductivity	BTU/hr-ft-^{0}F	92	81	W/m-K	160	140	W/m-K	160	140
Ash Content	%	0.15		%	0.15		%	0.15	
Equivalent Boron Calculation (EBC)	PPM	<5		PPM	<5		PPM	<5	

Notes:

* Properties listed are typical and cannot be used as accept/reject specifications

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