



GRAFSTAR™ ATC™ SPECIALTY GRAPHITE

Product Overview

ATC™ grade graphite has been an industry standard for years. It is a fine grain, high strength isomolded material that can be machined to precise tolerances and a fine surface finish. ATC™ grade graphite has unique thermal shock resistance due to the combination of low thermal expansion, high hardness, higher resistivity and Young’s modulus. This grade graphite has been specifically manufactured for continuous casting mold and die applications requiring lower thermal conductivity for improved metal solidification/performance, and heater element design with its higher resistivity values.

Applications

- Composite tooling
- Continuous casting dies
- Heater elements
- Hot pressing molds and punches
- Permanent molds
- Plungers and rams

Sizes*

Standard Sizes	
English	Metric
16 x 16 x 72 in	406 x 406 x 1828 mm
12 x 25 x 80 in	305 x 635 x 2032 mm

Typical Properties at Room Temperature**

Characteristic	English Units	WG	Metric Units	WG	SI Units	WG
Bulk Density	lbs/ft ³	109	g/cm ³	1.74	g/cm ³	1.74
Average Particle Size	inches	0.001	mm	0.03	mm	30
Specific Resistance (AG)	10 ⁻⁴ Ω-in	5.51	μΩm	14.0	μΩm	14.0
Flexural Strength	psi	4800	kg/cm ²	337	MPa	33
Young’s Modulus	10 ⁶ psi	1.60	kg/mm ²	1054	GPa	10.3
Tensile Strength	psi	4100	kg/cm ²	288	MPa	28
Compressive Strength	psi	10000	kg/cm ²	703	MPa	69
Permeability	Darcy	0.002	Darcy	0.002	Darcy	0.002
Hardness	Rockwell “L”	75	Rockwell “L”	75	Rockwell “L”	75
C.T.E. (to 100 °C) (AG)	10 ⁻⁶ / °F	1.8	10 ⁻⁶ / °C	3.2	10 ⁻⁶ / K	3.2
Thermal Conductivity	BTU/hr-ft-°F	55	W/m-K	95	W/m-K	95
Ash Content	%	0.10	%	0.10	%	0.10

Notes:

* Other sizes available upon request

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

WG = With-the-Grain AG = Against-the-Grain

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