

# GRAFTech International

## GRAFSHIELD® GRI™ Insulation System

GrafTech International is a global leader in graphite and carbon products. We enable customer leadership better and faster than our competition, through the creation, innovation and manufacture of carbon and graphite material science based solutions.

### GRAFSHIELD® GRI™ Insulation System

GRAFSHIELD GRI insulation system from GrafTech is a graphite fiber insulation material that uses lightweight carbon bonded fibers to provide low thermal conductivity and vapor pressure. Its excellent insulating characteristics help to significantly reduce heat loss. It withstands furnace temperatures up to 5400°F (3000°C) and virtually eliminates voids or hotspots found with other insulating materials. It is easy to handle, easy to install, machines freely and holds fine detail.

#### Typical Applications

- Vacuum furnace insulation
- Inert gas furnace insulation
- Inert gas atmosphere process equipment insulation



#### Sizes

Board stock: 10" x 50" x 60"

#### Cut Sizes:

Thickness	Standard Sizes				Metric
1"	24x42"	24x48"	24x52"	40x60"	250x1250x1500 mm
1.5"	24x42"	24x48"	24x52"		
2"		24x48"	24x52"		

Custom sizes and shapes, including cylinders, are available on request.

Multi-piece board stock and large diameter barrel stave cylinders can be fabricated by machined "shiplap" joint techniques. When bonded with GrafTech grade graphite cement and cured, the joints can be stronger than the insulation and will not lose joint integrity in normal usage.

#### Typical Properties (Room Temperature)\*

	<u>ENGLISH</u>	<u>WG</u>	<u>AG</u>	<u>SI</u>	<u>WG</u>	<u>AG</u>
Density	lbs/ft <sup>3</sup>	11.3		g/cm <sup>3</sup>	0.18	
Apparent Porosity	%	90		%	90	
Specific Resistance	10 <sup>-4</sup> Ω in.	285	2100	μΩm	720	5300
Flexural Strength	Psi	275	30	MPa	1.9	0.2
Compressive Strength	Psi	220	185	MPa	1.5	1.3
Thermal Conductivity 25°C	BTU-ft/hr ft <sup>2</sup> °F	0.25	0.09	W/mK	0.42	0.15
Thermal Conductivity 800°C in Argon	BTU-ft/hr ft <sup>2</sup> °F	0.54	0.32	W/mK	0.92	0.55
Carbon Content	%	99.5		%	99.5	
Ash Content	%	0.15		%	0.15	
CTE (RT to 1000°C)	10 <sup>-6</sup> /°F	1.67	1.72	10 <sup>-6</sup> /K	3.00	3.10
CTE (RT to 2000°C)	10 <sup>-6</sup> /°F	3.22	2.89	10 <sup>-6</sup> /K	5.80	5.20

\* Please contact GrafTech for high temperature and additional properties

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