

## Graphite & Carbon Insulation

### Carbon Felt



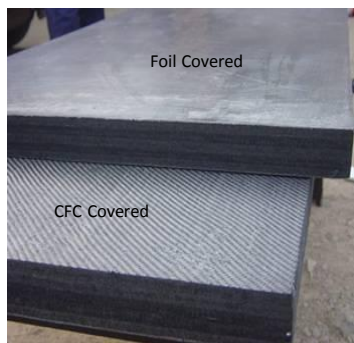
Property	Measured Value
Bulk density (g/cm <sup>3</sup> )	0.15 PAN (0.12 Rayon)
Carbon content (%)	≥97
Thermal conductivity (W/m-K)	0.21 PAN (0.22 Rayon)
Specific resistance (ohm.cm)	0.18 - 0.22
Tensile Strength (Mpa)	0.18 - 0.30
Ash content (%)	≤1.0
Processing temperature (°C)	1200
Environment To use (°C)	2400 in neutral atmosphere, 3000 in vacuum
Width	Max 1200 mm (48 in) (Custom sizes available)
Thickness	¼ to 2 inches thick (Stock ¼ in & ½ in thick only)
<b>Price (volume discounts available)</b>	<b>USD \$32 / lb. PAN &amp; \$45 / lb Rayon</b>

Property	Measured Value
Bulk density (g/cm <sup>3</sup> )	0.12 PAN (0.085 Rayon)
Carbon content (%)	≥99
Thermal conductivity (W/m-K)	0.365 (0.39 Rayon)
Specific resistance (ohm.cm)	0.14 - 0.18
Tensile Strength (Mpa)	0.1-0.25
Ash content (%)	≤0.5
Processing temperature (°C)	2000
Environment To use (°C)	2400 in neutral atmosphere, 3000 in vacuum
Wide	Max 1200 mm (48 in) (Custom sizes available)
Thickness	¼ to 2 inches thick (Stock ¼ in & ½ in thick only)
<b>Price (volume discounts available)</b>	<b>USD \$54 / lb. PAN &amp; \$72 / lb. Rayon</b>

### Graphite Felt



### Graphite Board



Property	Measured Value
Bulk density (g/cm <sup>3</sup> )	0.25
Carbon content (%)	≥95
Thermal conductivity (W/mk)	0.15-0.25
Specific resistance (ohm.cm)	0.18-0.22
Flexural Strength (Mpa)	1.10
Ash content (%)	≤ 0.6
Processing temperature (°C)	1200 - 2000
Environment To use (°C)	2400 neutral atmosphere, 3000 in vacuum
Size	Max 1.5 x 1.5 meter (60 x 60 in) max
<b>Standard Size</b>	<b>60 in x 40 in (stocked size in 1, 1.5 &amp; 2 in thick)</b>

#### Notes:

- 1) Up to 20 inch thickness available
- 2) Graphite foil facing on 1 side add \$50
- 3) Cloth (CFC) facing on 1 side add \$250
- 4) Cylinders & shapes made to order
- 5) Machined features done to print
- 6) Rigid & Semi-rigid qualities available

Property	Standard	High Pure	Ultra Pure	Nuclear
Bulk density (g/cm <sup>3</sup> )	1.0	1.0	1.0	1.0
Carbon content (%)	99	99.5	99.8	99.9
Ash Content (%)	1.0	0.5	0.4	0
Sulfur Content (ppm)	<1000	<600	<400	<200
Tensile Strength (Mpa)	4.5	5.0	5.5	6.0
Specific resistance (ohm.cm)	5	5	7	10
<b>Price (ave. volume) (\$/lb)</b>	<b>\$3.40</b>	<b>\$4.90</b>	<b>\$5.20</b>	<b>\$7.90</b>

- Rolls up to 60 inches wide, 1000 feet long & thickness range 0.006 to 0.060 inch
- Sheets up to 60 in x 60 in & thickness range 0.060 to 0.250 inch
- Custom shapes & gaskets made to print
- Volume discounts up to 50% - Call for pricing!!

### Graphite Foil



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## Graphite & Carbon Insulation (6/2011)

Felt Products	Heat Treat Temp (°C)	Sizing			Density		Weight per Roll (lbs)	Pricing Per Roll (USD)	Price per Foot <sup>2</sup>	Price Per Pound
		L (ft)	W (in)	Th (in)	(g/cm <sup>3</sup> )	(lb/ft <sup>3</sup> )				
Pan Felt Carbon	1200	80	48	0.25	0.12	7.49	50	\$1,600	\$5.00	\$32
		43	48	0.5	0.12	7.49	54	\$1,700	\$9.88	\$32
Pan Felt Graphite	2000	80	48	0.25	0.10	6.24	42	\$2,300	\$7.19	\$55
		43	48	0.5	0.10	6.24	45	\$2,400	\$13.95	\$54
		43	40	0.5	0.10	6.24	37	\$2,000	\$13.95	\$54
Rayon Felt Carbon	1200	80	48	0.25	0.12	7.30	49	\$2,200	\$6.88	\$45
		43	48	0.4	0.12	7.30	42	\$1,900	\$11.05	\$45
		43	48	0.5	0.12	7.30	52	\$2,350	\$13.66	\$45
Rayon Felt Graphite	2000	80	48	0.25	0.09	5.50	39	\$2,800	\$8.75	\$72
		43	48	0.5	0.08	5.50	41	\$2,950	\$17.15	\$72

Board Products	Heat Treat Temp (°C)	Size			Cubic Feet (ft <sup>3</sup> )	Density		Linear Weight (lb/ft <sup>2</sup> )	Weight per Board (lbs)	Pricing Per Board (USD)	Price per Foot <sup>2</sup>
		L (in)	W (in)	Th (in)		(g/cm <sup>3</sup> )	(lb/ft <sup>3</sup> )				
Carbon	1200	60	40	1	1.39	0.25	15.61	1.30	22	\$700	\$42
		60	40	1.5	2.08	0.25	15.61	1.95	32	\$1,000	\$60
		60	40	2	2.78	0.25	15.61	2.60	43	\$1,400	\$84
		60	40	4	5.56	0.25	15.61	5.20	86	\$2,600	\$156
Graphite	2000	60	40	1	1.39	0.24	14.98	1.25	21	\$950	\$57
		60	40	1.5	2.08	0.24	14.98	1.87	31	\$1,400	\$85
		60	40	2	2.78	0.24	14.98	2.50	41	\$1,850	\$111
		60	40	4	5.56	0.24	14.98	4.99	83	\$3,600	\$216

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