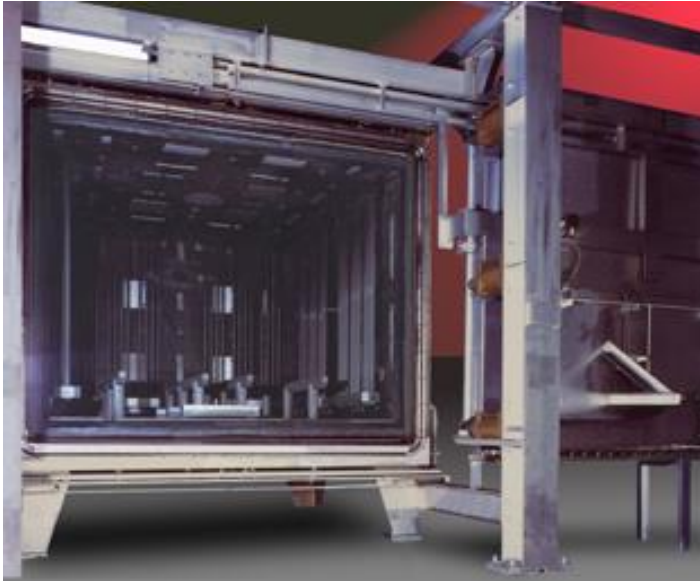


CARBOLON™

Carbon Fiber Heat Insulator

Felt Laminated FGL Series

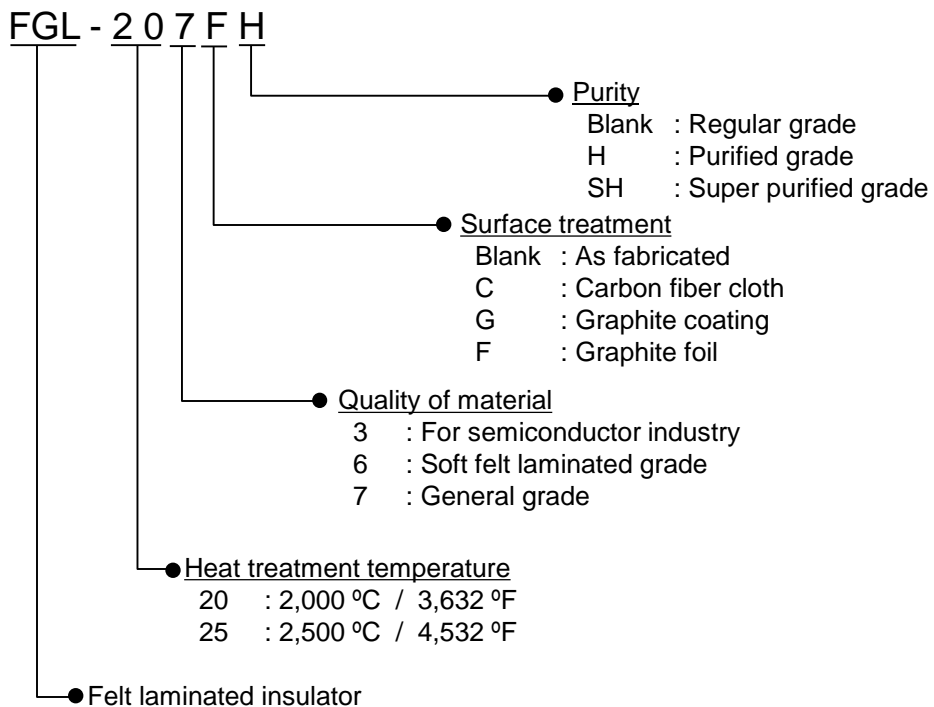


FGL Series are manufactured by impregnating resins into regular soft felts.

These products can be used over 2,000°C and have good insulation capability and easy installation for insulation structure.

Purified FGL series are the most suitable for applications where impurities should be limited.

Based upon each application, we machine, make surface treatments and purify it.



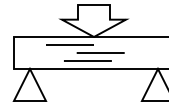
Typical properties

Property		Unit	FGL-203	FGL-206	FGL-207
Bulk density		g/cm ³	0.16	0.10	0.16
Electrical resistivity		mΩ · cm	(⊥) 450 (//) 100	(⊥) 900 (//) 180	(⊥) 3200 (//) 45
Flexural strength ⁽¹⁾		MPa	0.5	—	1.1
Compressive strength ⁽²⁾		MPa	0.3	—	0.3
Coefficient of thermal expansion ⁽³⁾		× 10 ⁻⁶ /K	2	2	2~3
Thermal conductivity ⁽⁴⁾	1500°C	W/m · K	0.38	0.28	0.38
	2000°C		0.48	0.40	0.48
	2500°C		0.61	0.55	0.61
Ash content	Regular grade	ppm	300~800 (Typical data)		
	Purified grade		<200(Assured)、50~70(Typical data)		
	Super purified grade		<50 (Assured)、10~20(Typical data)		
Surface treatment	Carbon fiber cloth		○	---	○
	Graphite coating		○	---	○
	Graphite foil		○	---	○



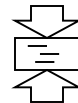
1) Flexural strength

This shows the strength when perpendicular load is put on two supports.



2) Compressive strength

This shows the strength when perpendicular load is charged on both sides.



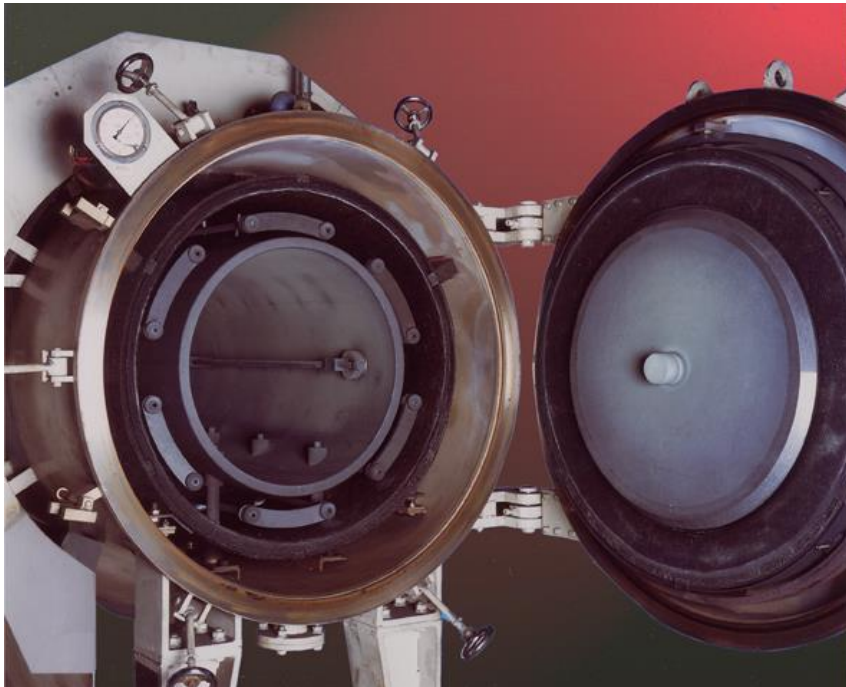
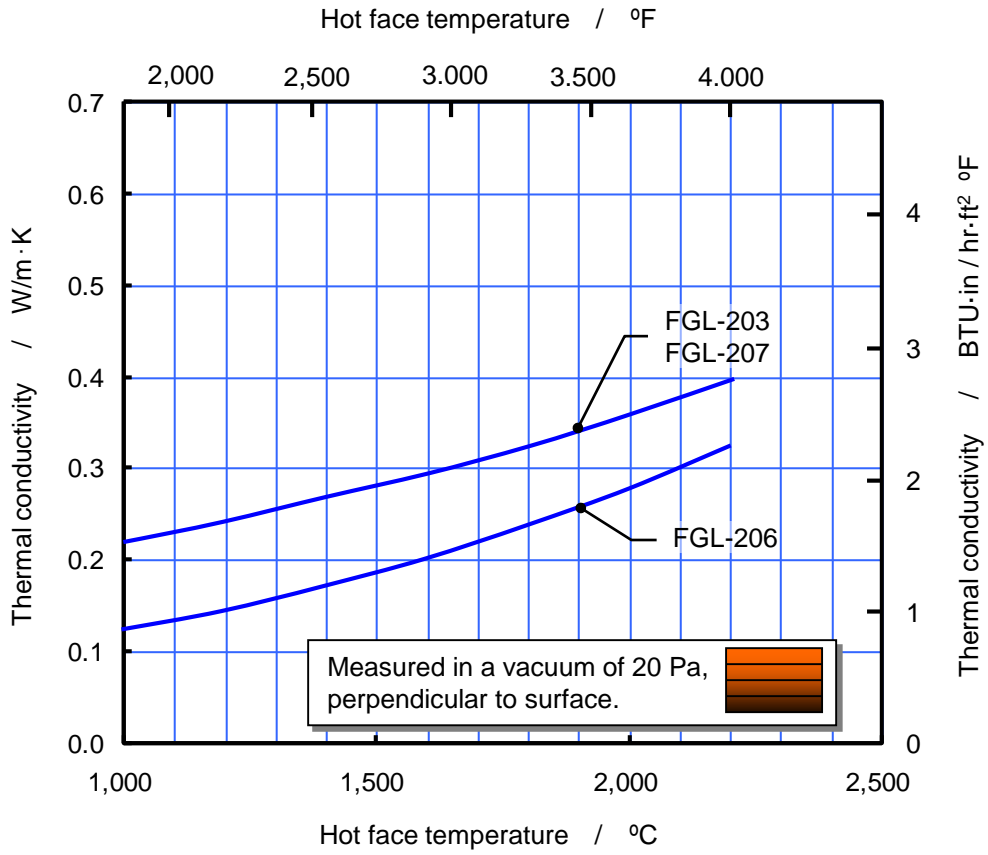
3) Coefficient of thermal expansion

This shows representative numbers measured between the room temperature and 500°C.

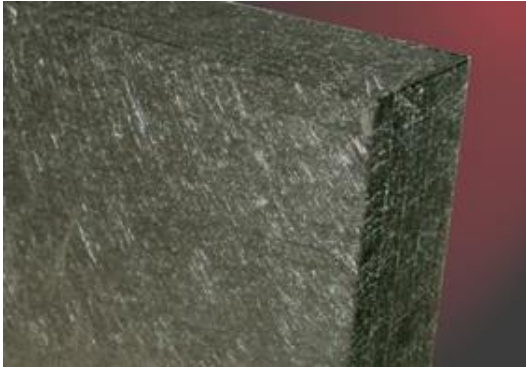
4) Thermal conductivity

These numbers are obtained by NCK 's steady-state method.

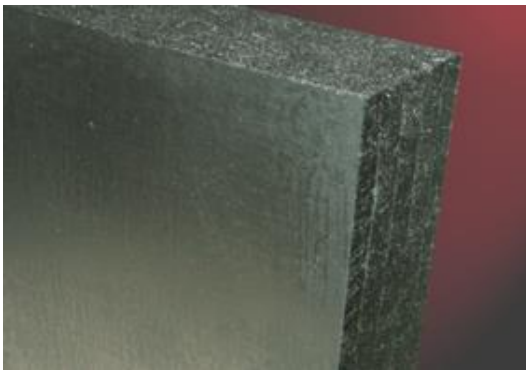
Thermal conductivity



Surface treatments



FGL-207
As fabricated



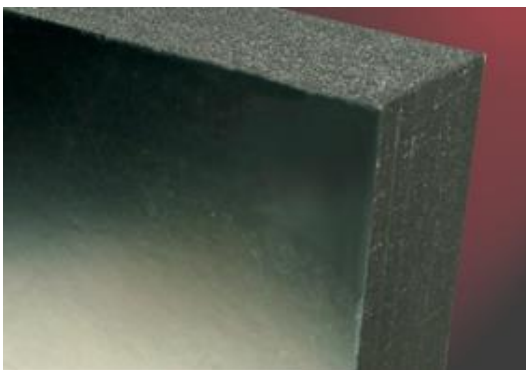
FGL-207G
Graphite coating

Dust Generation Prevention



FGL-207C
Carbon fiber cloth lining

Dust Generation Prevention
High strength
Erosion protection & Resistance



FGL-207F
Graphite foil lining

Dust Generation Prevention
Low gas permeability
Erosion protection & Resistance

Maximum dimensions

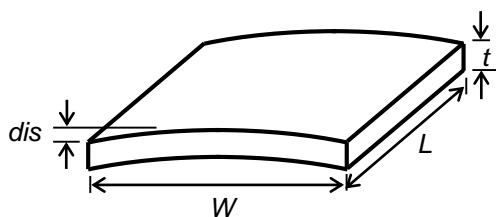
	Form	Maximum fabrication size
Regular grade	Plate	2,200 (<i>W</i>) × 2,200 (<i>L</i>) × 200 (<i>t</i>)
	Cylinder	2,200 (<i>D</i>) × 1000 (<i>h</i>)
Purified grade	Plate	1,800 (<i>W</i>) × 1,800 (<i>L</i>) × 200 (<i>t</i>)
	Cylinder	1,800 (<i>D</i>) × 1,000 (<i>h</i>)

Unit : mm

In case that the height of cylinder is more than 1,000mm, we can supply divided pieces with special joints.



Tolerance

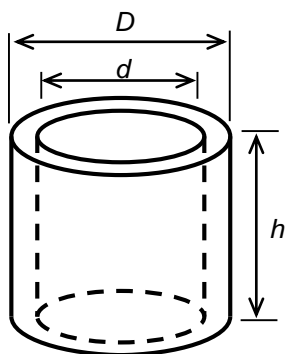


Length "L" Width "W"	Tolerance
< 500	±2
> 501	±3

Thickness "t"	Tolerance
< 30	±1
> 30	±2

Distortion "dis"	Tolerance
<i>L</i> , <i>W</i> < 500	<2
<i>L</i> , <i>W</i> > 500	<5

Unit : mm



Height "h"	Tolerance
< 500	±2
> 501	±3

O.D. "D" I.D. "d"	Tolerance (As fabricated)		Tolerance (After machining)	
	<i>D</i>	<i>d</i>	<i>D</i>	<i>d</i>
~ 50	±1	±1	±1	±1
50 ~ 200	±2			
200 ~ 400	±3			
400 ~ 600	±4	±2	±2	±2
600 ~ 800	±5			
800 ~ 1,000	±6	±3	±2	±2
1,000 ~ 2,000	±4			

Unit : mm

Other available products

Carbon fiber felt	“ CARBOLON™ felt ”
C/C composite material	“CCM™”
Graphite foil	“ Nicafilm™ ”
Graphite coating	“ G coat ”
Carbon fiber yarn	“ TSZ ”
Carbon gasket	“ CARBEST™ ”
Graphite cement	“ GBT ”



The above properties are based on our current information and should be considered as typical.
Nippon Carbon Co., Ltd. does not guarantee property data or suitability for any specific application.

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