

heat insulation materials



Our experience ensures the best solutions...



***Specialists in high purity advanced materials,
based on: carbon fiber, graphite fiber, graphite
felt, carbon-carbon composites (CFC), etc.***



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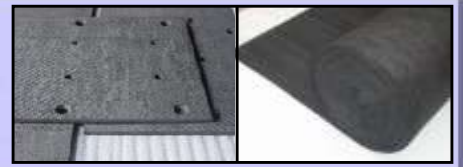
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carbon-graphite fiber felt



PAN carbon fiber felt

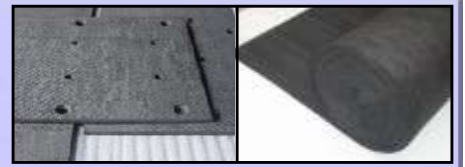
Polyacrylonitrile base (PAN) carbon felt is light in quality, small in specific heat capacity, soft in texture, good in adithermancy and convenient in operation, which can save great energy. Therefore, thermal insulation of the polyacrylonitrile base is extremely superior in vacuum or inert atmosphere, in particular, performance of the polyacrylonitrile base is stable under high temperature condition, and it is the excellent thermal insulation material for Vacuum Furnace.

PAN graphite fiber felt

Polyacrylonitrile base plumbago felt is formed by subjecting the high quality polyacrylonitrile base carbon felt to pyrographite treatment. It is light in quality, good in flexibility, high in carbon content high temperature resistant, without volatilization under high temperature, corrosion resistant and small in heat conductivity coefficient and high in shape retention. It is fine heat insulator for polysilicon and monocrystalline silicon preparation furnace, also the corrosion resisting filter material.



carbon-graphite fiber felt



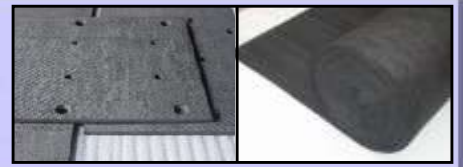
rayon carbon - graphite fiber felt

Rayon-based carbon felt, graphite felt have good character of light, soft, high carbon content, non-volatile, therefore mainly used in aerospace industry as resistant ablative materials and ultra-high-temperature vacuum metallurgical equipment, insulation materials and other composite materials, can also be used for high-performance body far-infrared heat.

PRODUCT		Rayon-based Carbon Felt	Rayon-based Graphite Felt	PAN-based Carbon Felt	PAN-based Graphite Felt
Grade Name		CB160	CB161	CB162	CB163
Material		RCF		PAN-CF	
Carbon Content	%	≥ 98,5	≥ 99,0	≥ 98,5	≥ 99,0
Ash Content	%	≤ 0,05	≤ 0,005	≤ 0,05	≤ 0,005
Bulk Density	g/cm ³	0,09~0,10	0,08~0,09	0,13~0,14	0,12~0,13
Crushing Stress at 10%	N/cm ²	6~10	5~8	8~12	8~10
Tensile Strength	MPa	0,13	0,10	0,15	0,14
Thermal Conductivity 1150 °C	W/mK	0,10~0,15	0,10~0,15	0,12~0,16	0,12~0,16
Working Temperature (Air)	°C	≤ 400			
(Vacuum)	°C	≥ 1.500	≥ 2.300	≥ 1.500	≥ 2.300
(Inert Atmosphere)	°C	≥ 2.300	≥ 3.300	≥ 2.300	≥ 3.300
Dimensions	Length (m)	16 - 18		9 - 12	
	Wide (mm)	1.000 - 1.300			
	Thickness (mm)	3, 5, 8, 10, 12			



hard composite felt

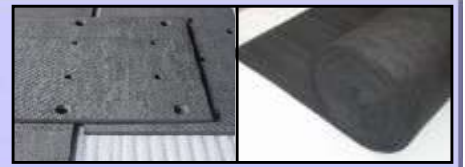


hard composite graphite fiber felt

The material is formed by integrating graphite foil, carbon felt and carbon cloth, and then subjecting them to secondary high temperature purification treatment. The material is superior in ablation resistance performance, thermal shock resistance performance, airflow washing proof performance and thermal insulation performance. It is mainly used for vacuum high pressure air queching furnace, low pressure fritting furnace, pressurization vacuum sintering furnace temperature, solar industry, vacuum furnace, single crystal furnace, multicrystalline Dss.



hard composite felt

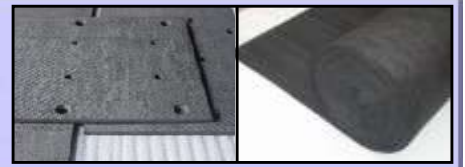


hard composite carbon fiber felt

PRODUCT	High Temperature		High Purity		
	Carbon Felt (cover with graphite foil)	Carbon Felt (cover with CFC)	Carbon Felt (cover with graphite foil)	Carbon Felt (cover with CFC)	
Grade Name	CB166	CB165	CB164	CB167	
Material	PAN-CF				
Carbon Content	%	≥ 98	≥ 99		
Ash Content	ppm	≤ 500	≤ 200		
Bulk Density	g/cm ³	0,25 ~ 0,30		0,25 ~ 0,28	
Folding Strength	MPa	1,5 ~ 3,2	1,8 ~ 3,4	1,3 ~ 3,0	1,75 ~ 3,2
Flexural Strength	MPa	1,0 ~ 2,5	1,5 ~ 3,0	1,0 ~ 2,5	1,5 ~ 3,0
Thermal Conductivity 1150 °C	W/m°C	0,25 ~ 0,35		0,20 ~ 0,30	
Working Temperature (Air)	°C	≤ 400			
(Vacuum)	°C	≥ 1.800		≥ 2.200	
(Inert Atmosphere)	°C	≥ 3.200			
Plate Dimensions	Length (mm)	1.500 - 1.800			
	Wide (mm)	1.000 - 1.300			
	Thickness (mm)	20 - 350			
Cylinder/Tube Dimensions	Diameter (mm)	Ø200 - Ø1.500			
	Heigh (mm)	300 - 2.000			
	Wall Thickness (mm)	30 - 120			



carbon-carbon composites (CFC)

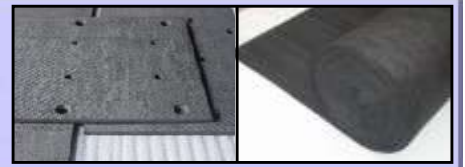


carbon fiber reinforced carbon composite

C/C composite materials (CFC) are the use of polyacrylonitrile-based carbon fibers (PAN-CF) through a special process composite, curing, sedimentation, purification treatment made with high strength, high steel, high density, high thermal conductivity, expansion of small, high temperature, corrosion-resistant, wear-resistant rub, thermal shock resistance and stability properties, particularly suitable for high temperature vacuum heat to do physical, fasteners, transmission parts, support materials, such as high temperature structural plate. Also in wide range of applicatios as vacuum metallurgy, new materials, chemical, semiconductor, electronics, etc.



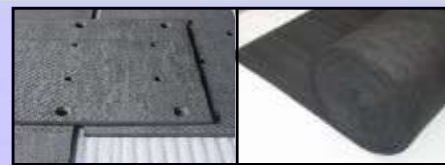
carbon-carbon composites (CFC)



GRADE NAME		CB153
Carbon Content	%	≥ 98
Ash Content	%	≤ 0,05
Bulk Density	g/cm ³	1,43 ~ 1,57
Flexural Strength	MPa	200 ~ 300
Tensile Strength	MPa	250 ~ 380
Electric Resistivity	Ωmm ² /m	35 ~ 45
Thermal Conductivity	W/m°C	20 ~ 40
Co-eff. Thermal Expansi3n	10 ⁻⁶ /°C	0,5 ~ 2,0
Working Temperature (Air)	°C	≤ 400
(Vacuum)	°C	≥ 1.800
(Inert Atmosphere)	°C	≥ 3.300
Plate Dimensions	Length (mm)	2.000 m3x.
	Wide (mm)	1.200 m3x
	Thickness (mm)	1,5 - 220
Cylinder/Tube Dimensions	Diameter (mm)	Ø230 - Ø1.500
	High (mm)	2.000 m3x
	Wall Thickness (mm)	6 - 80



industries & applications



Vacuum and High Pressure Sintering Industry:

Heat Insulation for Hard Metal Sintering, Non Oxide Ceramics, Tungsten Carbide manufacturing.

Vacuum Treatment Industry:

Heat Insulation for Commercial Heat Treat Furnaces, Hardening, Tempering, etc.

Crystal Growing Industry:

Heat Insulation for Silicon, SiC, Indium Phosphide, Gallium Arsenide, Sapphire, Optical Crystals, Solar Ingots.

Special Castings Industry:

Heat Insulation for precision casting of DS/SC turbine engine components and Metal Matrix Composites.

Graphitising/CVD Applications:

Heat Insulation for High Modulus Carbon Fiber Production, Halogen Purification Furnaces.

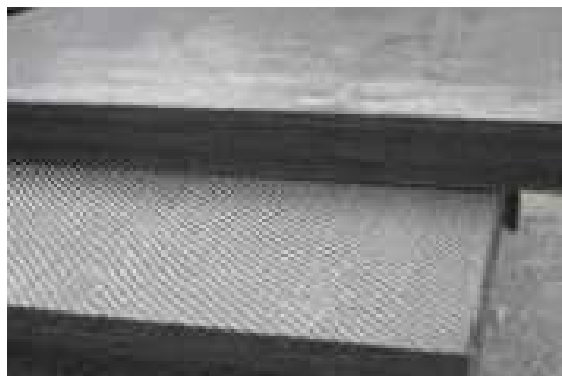
Electronic/Semiconductor Industry:

Heat Insulation for Materials for various precursor applications.

Solar cells:

PAN Graphite felt electrode in the vanadium redox flow battery.

quality and service



- ***Advanced materials***
- ***We help improve your process***
- ***We help increase your production***
- ***We help reduce your costs***
- ***We offer you the best price, technical support and quality***



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