



MICAMAFCO  
EXCELLENCE IN MICA SINCE 1885





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# Micamafco

the world's largest manufacturer of hi-tech natural mica products since 1885.

MICAMAFCO Enterprise is the leading manufacturer and exporter of mica and micanite products from India. Its wide manufacturing range includes high quality thermal and electrical insulating products.

MICAMAFCO has been in the business of manufacturing and supplying mica products for the last 125 years and is a pioneer of all kinds of mica products in India. It has a state of the art manufacturing facility in Giridih located only a few miles away from the highest quality mica mines in the world and stocks large inventories of all grades of mica.

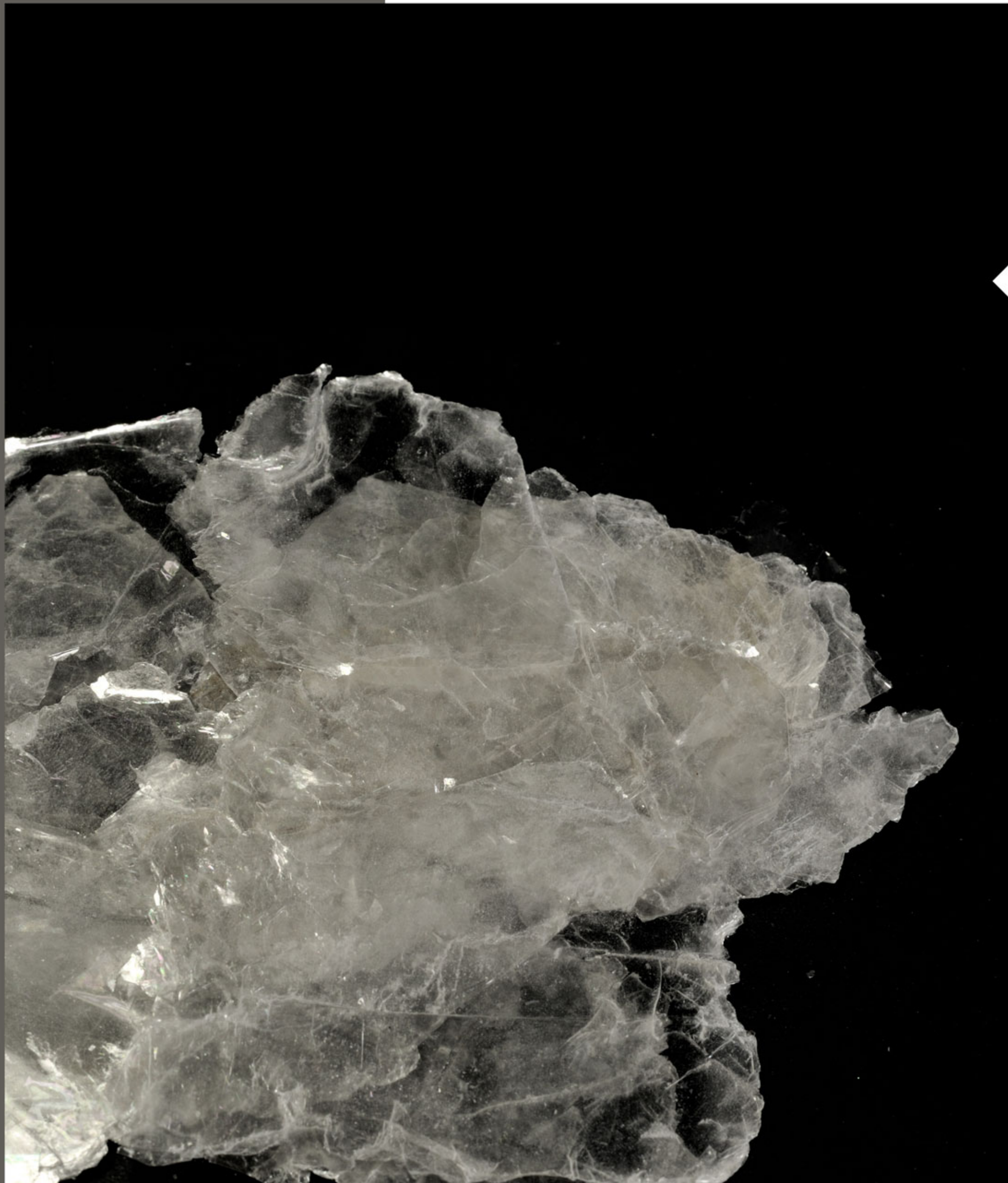


Over the years, the company has catered to a broad spectrum of industries in different continents and as of today it is exporting top quality mica products to over 80 countries across the world.

Our indepth knowledge of mica and decades of experience in mica products has won us enormous respect and credibility in the industry. We are members of:

- Engineering Export Promotion Council, (E.E.P.C.) Calcutta N.C.T.I., New Delhi
- Federation of Indian Export Organisations, (FIEO) New Delhi
- Indian Foriegn Trade Promotion Organisation, New Delhi
- Bharat Chamber of Commerce, Calcutta
- Indian Institute of Foreign Trade, (IIFT) New Delhi
- World Trade Centre, Bombay





## About Mica

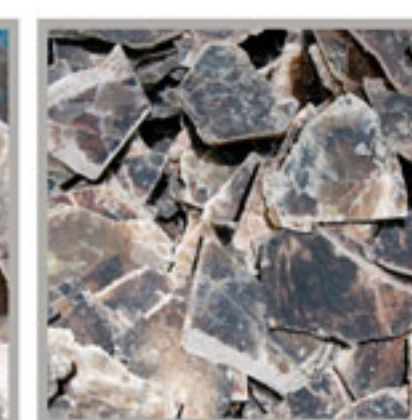
Mica is a crystalline mineral which can provide excellent electrical properties, heat resistance, and physical-chemical properties. Muscovite mica, Phlogopite mica and Synthetic mica can be regarded as one of the most important insulating materials for current electric industry.

**Muscovite mica**  $[KAl_2(AlSi_3O_{10})(OH)_2]$  and **Phlogopite mica**  $[KMg_3(AlSi_3O_{10})(OH)_2]$  are natural minerals. Its crystal structure of natural mica contains  $(OH^-)$  and begins to decompose at **750°C-800°C for muscovite, 850°C-950°C for phlogopite**, thermo gravimetric loss of natural mica increases suddenly. **Synthetic mica**  $[KMg_2(AlSi_3O_{10})F_2]$  is a non-natural mica crystal. The  $(OH^-)$  does not exist in the crystal structure of synthetic mica, it can be decomposed till its melting point 1350°C.

With special technology, **Calcined muscovite mica** is obtained by heating high quality **Muscovite mica** with temperature more than **850°C**. Calcined mica are totally free of all water of crystallization and foreign impurities which affect dielectric strength and temperature resistance, its chemical properties and physical stability are improved significantly. Calcined mica is extensively applied on products with strict requirement of high dielectrical strength and high temperature resistance.



MUSCOVITE



PHLOGOPITE



SYNTHETIC MICA



CALCINED MICA

Chemical Composition	Muscovite	Phlogopite	Synthetic Mica
Silica ( $SiO_2$ )	38.2 - 48.5%	38.7 - 45%	38 - 42%
Alumina ( $Al_2O_3$ )	20.8 - 36.1%	10.8 - 17%	10 - 14%
Potassium Oxide ( $K_2O$ )	7.32 - 9.87%	7 - 10.3%	9 - 14%
Ferric Oxide ( $Fe_2O_3$ )	1.56 - 2.48%	≤0.1%	-
Magnesium Oxide ( $MgO$ )	≤2.0%	21.4 - 29.4%	24 - 29%
Fluorine (F)	-	-	7 - 12%





## Mica Paper

**MICAMAFCO Paper** is the continous reeled paper made of selected muscovite, phlogopite or synthetic mica in the hydromechanical or chemical way. **It has excellent electric and heat resistant properties, fast resin penetration, high air porosity.** It is suitable to make sheet shaped insulating materials by impregnating with epoxy resin and silicone resin. It is also suitable to make roll or band shaped thermal insulation material by combining with bonding material (epoxy, silicon, etc.) and backing material (glass fabric, film, ceramic fabric, etc.).

The quality of mica paper has a decisive effect for the final product which is made of mica paper. According to different raw material performance and production technology,

Type	Material	Application
PM506	Phlogopite	for normal fireproof mica tape, mica sheet
PM506 - X	Phlogopite	for special fireproof mica tape
MM506	Muscovite	for normal fireproof mica tape, mica sheet
SM506	Synthetic Mica	for high temperature fireproof mica tape, mica sheet
CM501	Calcined Mica	for high temperature fireproof mica tape with special requirements
HM506	Special resisting high temperature mica	for high temperature fireproof mica tape with special requirements
MM505	Muscovite	for epoxy mica sheet for commutator
MM506-D	Muscovite	for high performance mica tape for motor
MM507	Muscovite	for mica tape for motor



# Mica Tape

## For Fire-resistant Wire and Cable

**MAF mica tape for fire-resistant wire & cable**, a band-shaped electrical and thermal insulation material, consists of high quality **MICAMAFCO** mica paper, bonded to supporting materials of non-alkaline glass fabric or polyethylene film, impregnated with high temperature resistant silicone resin.

### Technical Data

Type	Mica	Backing materials
MAF - PG	Micamafco PM506 Phlogopite Mica Paper	Single side glass backed
MAF - PF	Micamafco PM506 Phlogopite Mica Paper	Single side film backed
MAF - SG	Micamafco SM506 Synthetic Mica Paper	Single side glass backed
MAF - CMG	Micamafco CM501 Calcined Mica Paper	Single side glass backed
MAF - HG	Micamafco HM506 Special Mica Paper	Single side glass backed
MAF - PGL	Micamafco PM506-X Phlogopite Mica Paper	Single side reinforced glass fabric
MAF - PGF	Micamafco PM506 Phlogopite Mica Paper	One side glass fabric, another side film
MAF - SGF	Micamafco SM506 Synthetic Mica Paper	One side glass fabric, another side film
MAF - PGD	Micamafco PM506 Phlogopite Mica Paper	Double sides glass fabric
MAF - SGD	Micamafco SM506 Synthetic Mica Paper	Double sides glass fabric

### Application

**MAF mica tapes are ideal solutions for all kinds of fire resistant wires & cables.** Enterprises with advanced facility are suggested to give priority to mica tape with single side glass fabric backed to reduce cable production cost. Mica tapes with double sides backed either film or glass fabric are suitable for equipments on requirements of high tensile strength particularly. To ensure the fire resistance property, 50% overlapped of two layers is minimum.

**All mica tapes comply with standard**  
IEC60092 350:2008 | IEC60331 | BS6387CWZ

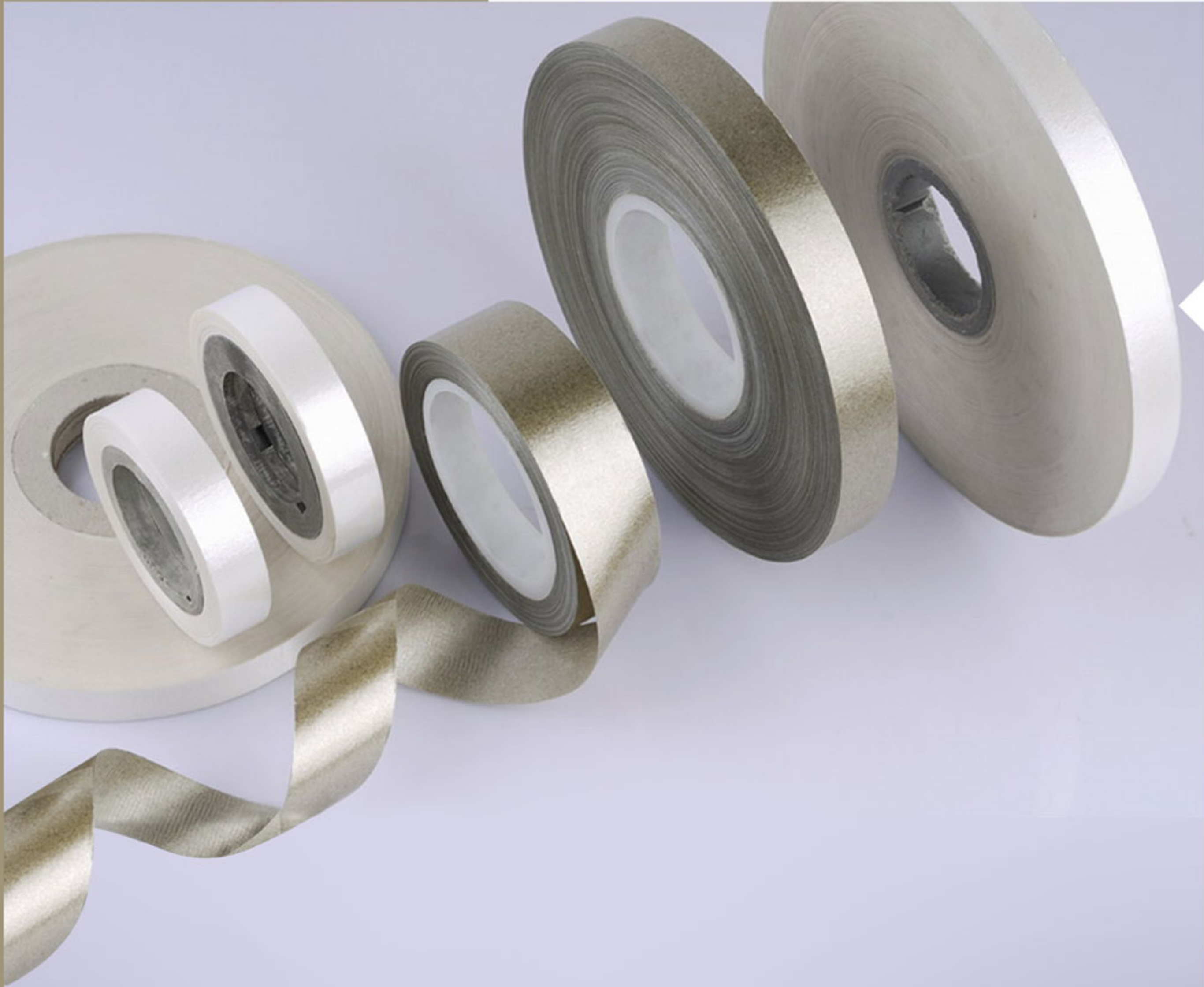
### Availability

**Width** : 5-1000mm(3-1000mm for single glass fabric backed mica tape)  
**Length** : 300m-1000m for normal pad, 2000m-20000m for traverse spool  
**Standard Core** : 76mm, 120mm  
(Various specifications available according to customers' requirements)

### Properties

- ✓ EXCEPTIONAL HIGH DIELECTRIC STRENGTH
- ✓ HIGH FIRE RESISTANCE
- ✓ STRONG RESISTANCE TO RADIATION, ACID AND ALKALI
- ✓ EXCELLENT FLEXIBILITY
- ✓ HIGH TENSILE STRENGTH





Type	Virtues
MAF - PG	High mica content, exceptional fire resistance, excellent flexibility
MAF - PF	High mica content, exceptional fire resistance, high dielectric strength, smooth
MAF - PGL	Better tensile strength, high dielectric strength, smooth surface after wrapping
MAF - PGF	Better tensile strength, high dielectric strength, smooth surface after wrapping
MAF - PGD	Excellent tensile strength

## Phlogopite Mica Tape For Fire-resistant Wire and Cable

**MAF-P** Phlogopite mica tape for fire-resistant wire & cable, a band-shaped electrical and thermal insulation material, consists of the high quality **MICAMAFCO** phlogopite mica paper, bonded to supporting materials of non-alkaline glass fabric or polyethylene film, impregnated with high temperature resistant silicone resin.

### Technical Data

Commodity	MAF - PG				MAF - PF	
Type	P80G24	P100G32	P120G32	P160G32	P120F25	P160F25
Normal Thickness (mm)	0.08 ± 0.015	0.11 ± 0.015	0.125 ± 0.015	0.14 ± 0.015	0.12 ± 0.015	0.14 ± 0.015
Total Substance (g/m²)	117 ± 11	148 ± 11	172 ± 11	216 ± 14	161 ± 11	205 ± 14
Mica Content (g/m²)	80 ± 5	100 ± 5	120 ± 5	160 ± 8	120 ± 5	160 ± 8
Glass Content (g/m²)	24 ± 3	32 ± 3	32 ± 3	32 ± 3	--	--
Film Content (g/m²)	-	-	--	--	25 ± 3	25 ± 3
Bond Content (g/m²)	13 ± 3	16 ± 3	20 ± 3	24 ± 3	16 ± 3	20 ± 3
Dielectric Strength (Kv/layer)	>1.0	>1.2	>1.2	>1.4	>5.0	>5.5
Tensile Strength (N/cm)	>80	>120	>120	>120	>110	>120

Commodity	MAF - PGL		MAF - PGD		MAF - PGF	
Type	P120GL57	P160GL57	P140GD42	P160GD42	P120GF46	P160GD46
Normal Thickness (mm)	0.14 ± 0.015	0.17 ± 0.015	0.14 ± 0.015	0.17 ± 0.015	0.12 ± 0.015	0.17 ± 0.015
Total Substance (g/m²)	198 ± 13	242 ± 16	202 ± 14	224 ± 16	181 ± 13	225 ± 17
Mica Content (g/m²)	120 ± 5	160 ± 8	140 ± 6	160 ± 8	120 ± 5	160 ± 8
Glass Content (g/m²)	32 ± 3	32 ± 3	42 ± 4	42 ± 4	22 ± 2	22 ± 2
Content (g/m²)	25 ± 2	25 ± 2	--	--		--
Film Content (g/m²)	--	--	--	--	21 ± 3	21 ± 3
Bond Content (g/m²)	21 ± 3	25 ± 3	20 ± 4	22 ± 4	18 ± 3	22 ± 4
Dielectric Strength (Kv/layer)	>5.0	>5.5	>1.6	>2.0	>1.6	>1.6
Tensile Strength (N/cm)	>120	>120	>120	>120	>120	>120





## Calcined Muscovite Mica Tape for Fire-resistant Wire and Cable

**MAF-CM** calcined muscovite mica tape for fire-resistant wire & cable, a band-shaped electrical and thermal insulation material, consists of the high quality **MICAMAFCO** calcined muscovite mica paper, bonded to supporting materials of non-alkaline glass fiber fabric, impregnated with high temperature resistant silicone resin. **MAF-CM** calcined muscovite mica tape with special technology manufactured, is an ideal solution for all kinds of fire resistant wires & cables.

Heating the selected raw mica with high temperature improve its stability of mica tape by removing the impurities which affect the dielectric strength and temperature resistance. Silicone resin content of **MAF-CM mica tape** is **50% more than same of normal tape**. The conductor protection layer, sinter of silicone resin together with mica under high temperature, improves the property of fire resistance temperature. **MAF-CM** mica tape is the best solution of wire & cable with small diameter for its excellence of adhesion and flexibility.

### Technical Data

Commodity	MAF - CMG		
	CM80G24	CM100G32	CM120G32
Type	CM80G24	CM100G32	CM120G32
Normal Thickness (mm)	0.10 ± 0.015	0.12 ± 0.015	0.14 ± 0.015
Total Substance (g/m²)	127 ± 11	158 ± 11	181 ± 11
Mica Content (g/m²)	80 ± 5	100 ± 5	120 ± 5
Glass Content (g/m²)	24 ± 3	32 ± 3	32 ± 3
Bond Content (g/m²)	23 ± 3	26 ± 3	29 ± 3
Dielectric Strength (Kv/layer)	>1.2	>1.5	>1.6
Tensile Strength (N/cm)	>80	>120	>120





## Mica Tape for Fire-resistant Wire and Cable

**MAF - H** mica tape for fire-resistant wire & cable, a band-shaped electrical and thermal insulation material, consists of new developed **MICAMAFCO** H506 mica paper, bonded to supporting materials of nonalkaline glass fabric, impregnated with high temperature resistant silicone resin.

**MAF - H** is a high performance fireproof mica tape with special technology, compared with normal mica tape, its **stability, flexibility and temperature resistance** have been improved significantly. Additionally, flying mica flake and sticky issue during wrapping have been improved also. **It's applied for all kinds of fire resistance cables & wires.**



### Technical Data

Commodity	MAF - HG	
	H120G32	H160G32
Type	H120G32	H160G32
Normal Thickness (mm)	0.125 ± 0.015	0.14 ± 0.015
Total Substance (g/m²)	168 ± 11	212 ± 14
Mica Content (g/m²)	120 ± 5	160 ± 8
Glass Content (g/m²)	32 ± 3	32 ± 3
Bond Content (g/m²)	16 ± 3	20 ± 3
Dielectric Strength (Kv/layer)	>1.2	>1.4
Tensile Strength (N/cm)	>120	>120





Type	Virtues
MAF - SG	High mica content, exceptional fire resistance, excellent flexibility
MAF - SGF	Better tensile strength, high dielectric strength, smooth surface after wrapping
MAF - SGD	Excellent flexibility

## Synthetic Mica Tape for Fire-resistant Wire and Cable

**MAF - S** synthetic mica tape for fire-resistant wire & cable, a band-shaped electrical and thermal insulation material, consists of the high quality **MICAMAFCO** synthetic mica paper, bonded to supporting material of non-alkaline glass fabric or polyethylene film, impregnated with high temperature resistant silicone resin.

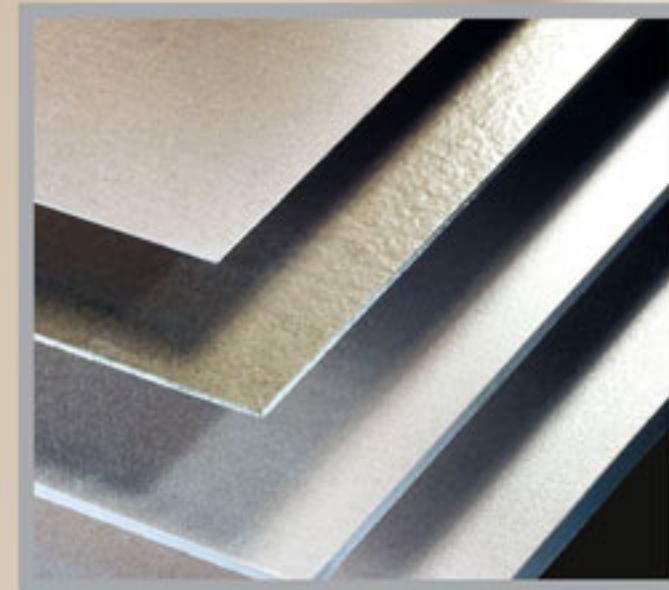
### Technical Data

Commodity	MAF - SG		
Type	S80G24	S100G32	S120G32
Normal Thickness (mm)	0.10 ± 0.015	0.11 ± 0.015	0.125 ± 0.015
Total Substance (g/m²)	117 ± 11	148 ± 11	173 ± 11
Mica Content (g/m²)	80 ± 5	100 ± 5	120 ± 5
Glass Content (g/m²)	24 ± 3	32 ± 3	32 ± 3
Film Content (g/m²)	--	--	--
Bond Content (g/m²)	13 ± 3	16 ± 3	21 ± 3
Dielectric Strength (Kv/layer)	>1.0	>1.2	>1.4
Tensile Strength (N/cm)	>80	>120	>120

Commodity	MAF - SGD		MAF - SGF	
Type	S140GD24	S160GD24	P120GF46	S140GF46
Normal Thickness (mm)	0.14 ± 0.015	0.17 ± 0.015	0.14 ± 0.015	0.17 ± 0.015
Total Substance (g/m²)	202 ± 14	224 ± 16	181 ± 13	203 ± 15
Mica Content (g/m²)	140 ± 6	160 ± 8	120 ± 5	140 ± 6
Glass Content (g/m²)	42 ± 4	42 ± 4	21 ± 2	21 ± 2
Film Content (g/m²)	--	--	22 ± 3	22 ± 3
Bond Content (g/m²)	20 ± 4	22 ± 4	18 ± 3	22 ± 4
Dielectric Strength (Kv/layer)	>1.6	>2.0	>1.6	>1.6
Tensile Strength (N/cm)	>120	>120	>120	>120



Rigid mica sheet for heater consist of **MICAMAFCO** muscovite, phlogopite or alternatively synthetic mica paper, impregnated with high temperature resistant organic silicon resin after melting and laminating process. The long-run working temperature is **500 °C -700 °C**, widely used as insulating parts for **electric toasters, hair dryers, electric irons, curlers, electric hot combs, strip heaters, baseboard heaters**, also in other appliances and applications where excellent resistance to moisture and thermal, mechanical and electrical properties are required. They are offered in different types to meet individual requirement of users, providing outstanding electrical insulation at high temperature.



Type	Item	Description
MAC-MM	Rigid Muscovite Mica Sheet	--
MAC-PM	Rigid Phlogopite Mica Sheet	--
MAC-ML	Low Smoke Rigid Muscovite Mica Sheet	Low binder
MAC-PL	Low Smoke Rigid Phlogopite Mica Sheet	Low binder
MAC-MH	High Content Rigid Muscovite Mica Sheet	High binder, high density, high strength
MAC-PH	High Content Rigid Phlogopite Mica Sheet	High binder, high density, high strength
MAC-MG	Glossy Rigid Muscovite Mica Sheet	Smooth surface without spatter
MAC-PG	Glossy Rigid Phlogopite Mica Sheet	Smooth surface without spatter

## Rigid Mica Sheet for Heater

### Technical Data

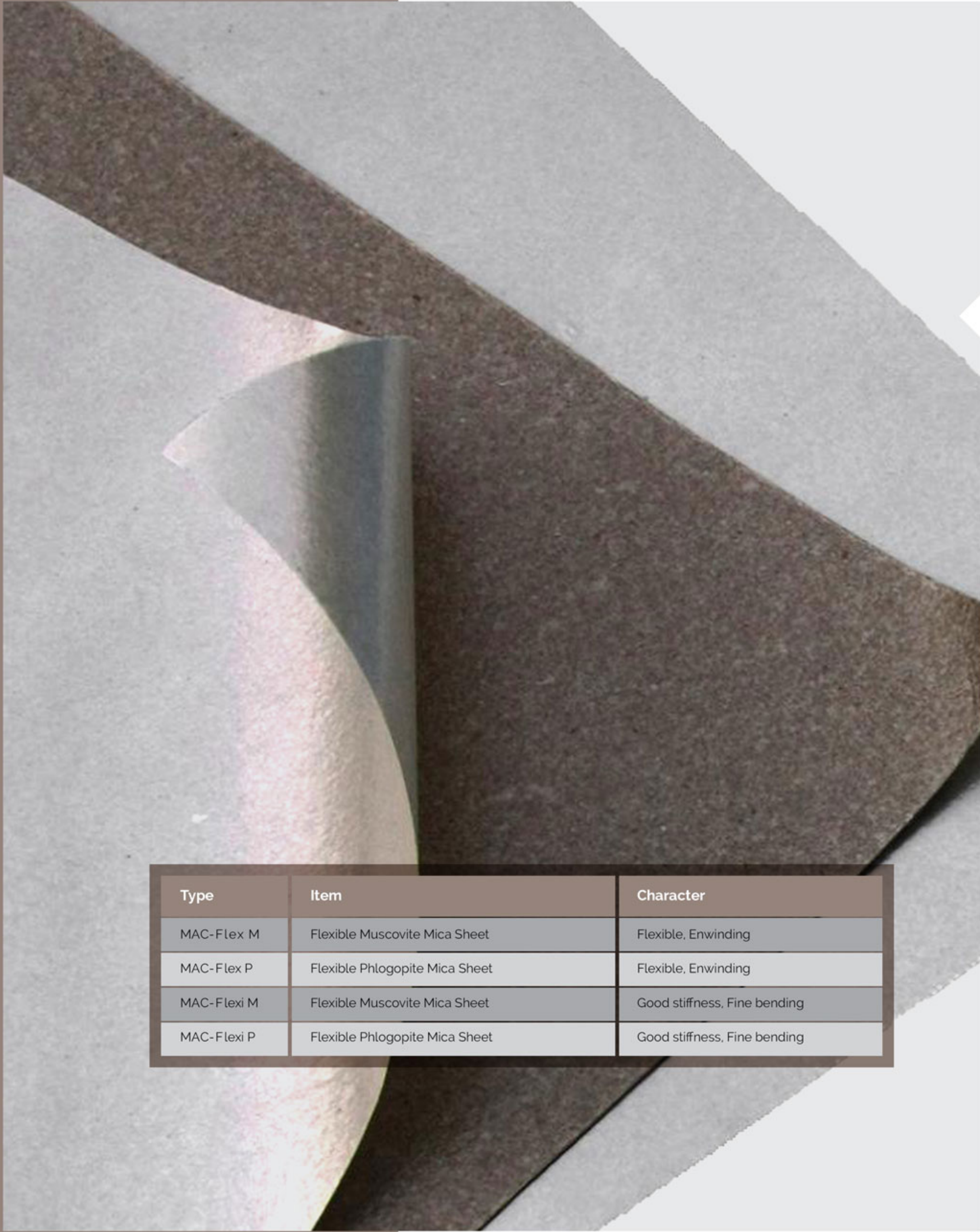
Type		MAC-MM	MAC-ML	MAC-MH	Test Standard
Mica content %		≥90	≥90	≥90	IEC371
Bond content %		≤10	≤8	≤12	IEC371
Density g/cm <sup>3</sup>		1.7 - 2.25	1.7 - 2.25	1.7 - 2.35	IEC371
Heat resistance	Continuous °C	500	500	500	--
	Intermittent °C	700	700	700	--
Heat loss	at 500 °C %	≤1	≤1	≤2	IEC371
	at 700 °C %	≤2	≤1.5	≤3	IEC371
Flexural strength N/mm <sup>2</sup>		≥160	≥120	≥180	GB/T5019
Water absorption 24h/23 °C %		≤1	≤1	≤0.5	GB/T5019
Dielectric strength Kv/mm		≥20	≥18	≥20	IEC243
Volume resistivity	23 °C ohm.cm	>10 <sup>17</sup>	>10 <sup>17</sup>	>10 <sup>17</sup>	IEC93
	500 °C ohm.cm	>10 <sup>12</sup>	>10 <sup>12</sup>	>10 <sup>12</sup>	IEC93

**Note** Data sheet of MAC-MG is the same as MAC-MM

Type		MAC-PM	MAC-PL	MAC-PH	Test Standard
Mica content %		≥90	≥90	≥90	IEC371
Bond content %		≤10	≤8	≤12	IEC371
Density g/cm <sup>3</sup>		1.7 - 2.25	1.7 - 2.25	1.7 - 2.35	IEC371
Heat resistance	Continuous °C	700	700	700	--
	Intermittent °C	900	900	900	--
Heat loss	at 500 °C %	≤1	≤1	≤2	IEC371
	at 700 °C %	≤2	≤1.5	≤3	IEC371
Flexural strength N/mm <sup>2</sup>		≥140	≥100	≥160	GB/T5019
Water absorption 24h/23 °C %		≤1.5	≤2.5	≤1	GB/T5019
Dielectric strength Kv/mm		≥20	≥18	≥20	IEC243
Volume resistivity	23 °C ohm.cm	>10 <sup>17</sup>	>10 <sup>17</sup>	>10 <sup>17</sup>	IEC93
	500 °C ohm.cm	>10 <sup>12</sup>	>10 <sup>12</sup>	>10 <sup>12</sup>	IEC93

**Note** Data sheet of MAC-PG is the same as MAC-PM





Type	Item	Character
MAC-Flex M	Flexible Muscovite Mica Sheet	Flexible, Enwinding
MAC-Flex P	Flexible Phlogopite Mica Sheet	Flexible, Enwinding
MAC-Flexi M	Flexible Muscovite Mica Sheet	Good stiffness, Fine bending
MAC-Flexi P	Flexible Phlogopite Mica Sheet	Good stiffness, Fine bending

## Flexible Mica Sheet for Heater

Flexible mica sheet for heater consist of **MICAMAFCO** muscovite or alternatively phlogopite mica paper, impregnated with high temperature resistant organic silicon resin after melting and laminating process. The long-run working temperature is **500 °C - 700°C**, widely used as insulating parts which need to be rolled for **electric hair dryers, electric irons, electric heating bars, motors**, also in other appliances and applications where excellent resistance to moisture and thermal, mechanical and electrical properties are required. Also be suitable for applying to thermal resist grade of foundry industry equipment, for example, line frequency furnace, middle frequency furnace or arc furnace, and also used as gaskets material instead of asbestos material in most important industries of **automotive, vessel, petroleum or chemical**.

### Technical Data

Type		MAC Flexi M	MAC Flexi P	MAC Flex M	MAC Flex P	Test Standard
Mica content %		≥90	≥90	≥90	≥90	IEC371
Bond content %		≤10	≤10	≤12	≤12	IEC371
Density g/cm³		1.7 - 2.15	1.7 - 2.25	1.7 - 2.15	1.7 - 2.15	IEC371
Heat resistance	Continuous °C	500	500	500	700	--
	Intermittent °C	700	700	700	900	--
Heat loss	at 500 °C %	<3	<3	≤3.5	≤3.5	IEC371
Water absorption 24h/23 °C %		≥20	≥18	≥20	≥18	IEC243
Volume resistivity	23 °C ohm.cm	>10 <sup>17</sup>	>10 <sup>17</sup>	>10 <sup>17</sup>	>10 <sup>17</sup>	IEC93
	500 °C ohm.cm	>10 <sup>12</sup>	>10 <sup>12</sup>	>10 <sup>12</sup>	>10 <sup>12</sup>	IEC93

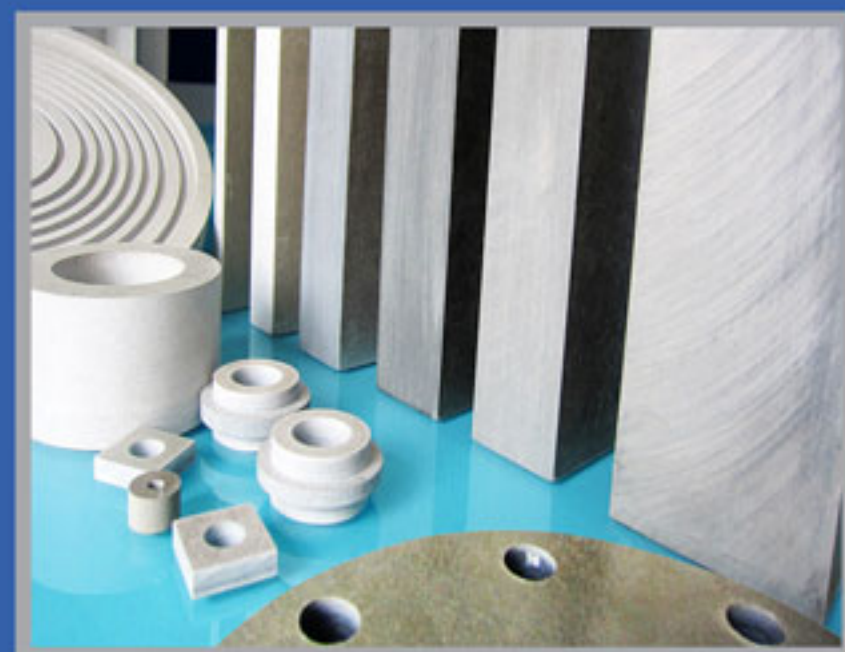
### Availability

Standard Size	: 1000 x 600mm, 1000 x 1200mm
Max Size	: 1000 x 2400mm
Thickness with tolerance	: 0.06mm - 0.35mm ± 0.03mm
	: 0.4mm-0.9mm ± 0.04mm
	: 1.0mm-1.95mm ± 0.05mm

(Various specification according to customers' drawings. 50 kgs for each carton, non-fumigated wooden case or pallet as outside package for exporting, 20cartons per case or pallet.)



Mica Plate for High-Performance Thermal and Electrical Insulation consist of **MICAMAFCO** muscovite or alternatively phlogopite mica paper, impregnated with high temperature resistant organic silicon resin after melting and laminating process, which can be widely used as customized components in most important industries of metallurgy, petroleum, automotive, military or vessel after punching, drilling, milling, die-cutting or machining process.



### Properties

- OUTSTANDING HIGH TEMPERATURE RESISTANCE
- EXCELLENT ELECTRIC PROPERTIES
- GOOD MECHANICAL STRENGTH
- ANTI CORROSION
- NON-TOXIC
- REPLACEMENT OF ASBESTOS
- GREAT MACHINING PERFORMANCE

## Mica Plate for High-Performance Thermal and Electrical Insulation

### Technical Data

Type		Therm - M	Therm - P	Test Standard
Mica content %		≥88	≥88	--
Bond content %		≤12	≤12	--
Density g/cm <sup>3</sup>		2.0 - 2.35	2.0 - 2.35	--
Heat resistance	Continuous °C	500	700	IEC371-2
	Intermittent °C	700	900	--
Heat loss	at 500 °C %	<1	<1	--
	at 700 °C %	<2	<2	--
Water absorption 24h/23 °C %		<0.5	<0.5	--
Fire resistance classification		94V-0	94V-0	94V-0
Dielectric strength	23 °C Kv/mm	>20	>20	IEC243
	400 °C 1hour, tested at 20 Kv/mm	13	13	IEC243
	600 °C 1hour, tested at 20 Kv/mm	10	10	IEC243
Volume resistivity	20 °C ohm.cm	10 <sup>16</sup>	10 <sup>16</sup>	IEC93
	400 °C ohm.cm	10 <sup>12</sup>	10 <sup>12</sup>	--
	500 °C ohm.cm	10 <sup>9</sup>	10 <sup>9</sup>	--

**Note** Data sheet of MAC-MG is the same as MAC-MM

### Availability

Standard Size	: 1000 x 600mm, 1000 x 1200mm
Untrimmend Size	: 1016 x 1220mm
Max Size	: 1000 x 2400mm
Max Thickness	: 105mm
Thickness with tolerance	: 2-5mm ± 7%
	: 6-30mm ± 5%
	: 31-100mm ± 3%

(Various specification according to customers' drawings. Non-fumigated wooden case for pallet as outside packing for exporting, 1000kg per case or pallet.)





## Epoxy Mica Mica Sheet for Commutator

Epoxy mica sheet for commutator consist of **MICAMAFCO** muscovite or phlogopite mica paper, impregnated with a small amount of specially selected epoxy resin. This product is a hard and dense mica sheet for using in segments, separators and spacers. It exhibits **good electrical properties, mechanical strength, excellent moisture resistance**, and can be sawed, sheared and punched into intricate shapes.

### Technical Data

Type		Epo - M	Epo - P
Mica content %		≥90	≥90
Bond content %		≤10	≤10
Density g/cm <sup>3</sup>		2.1 - 2.4	2.1 - 2.4
Thickness tolerance mm	Average	± 0.02	± 0.02
	Individual	± 0.03	± 0.03
Compressibility	Ce-elastic %	≤2.5	≤2.0
	Cp-plastic %	≤2.5	≤2.0
Flexural strength Mpa		>300	>300
Elastic modulus Mpa		>80 000	>70 000
Resistance to exudation and displacement °C		200	200
Dielectric strength Kv/mm		>20	>20

### Availability

**Standard Size** : 1000 x 600mm, 1000 x 1200mm

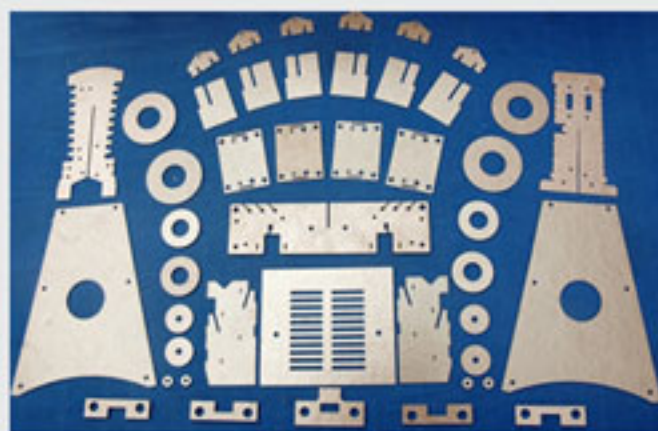
**Max Size** : 1000 x 2400mm

(Various specification according to customers' drawings. 50kgs for each carton, fumigated wooden case or pallet as outside package for exporting, 20 cartons per case or pallet.)



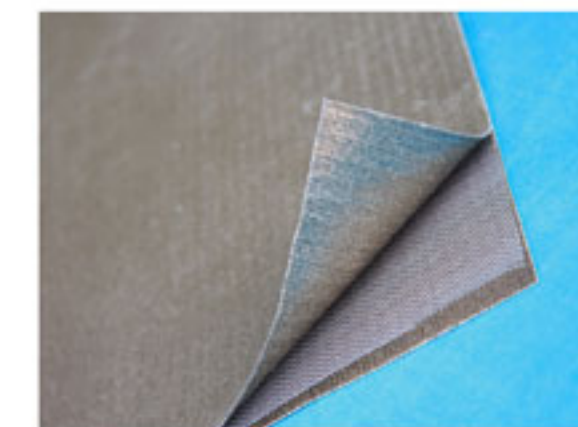


## Mica Insulating Parts



MICAMAFCO possesses large scale Numerical Control Machining Center to make various complicated mica parts, including mica gasket, mica tube, mica flange, mica disc, and so on, which could be widely used as customized components in most important industries of **house appliance, metallurgy, petroleum, automotive, military or vessel** after punching, drilling, milling, die-cutting or machining process.

## Mica-Based Insulation Material



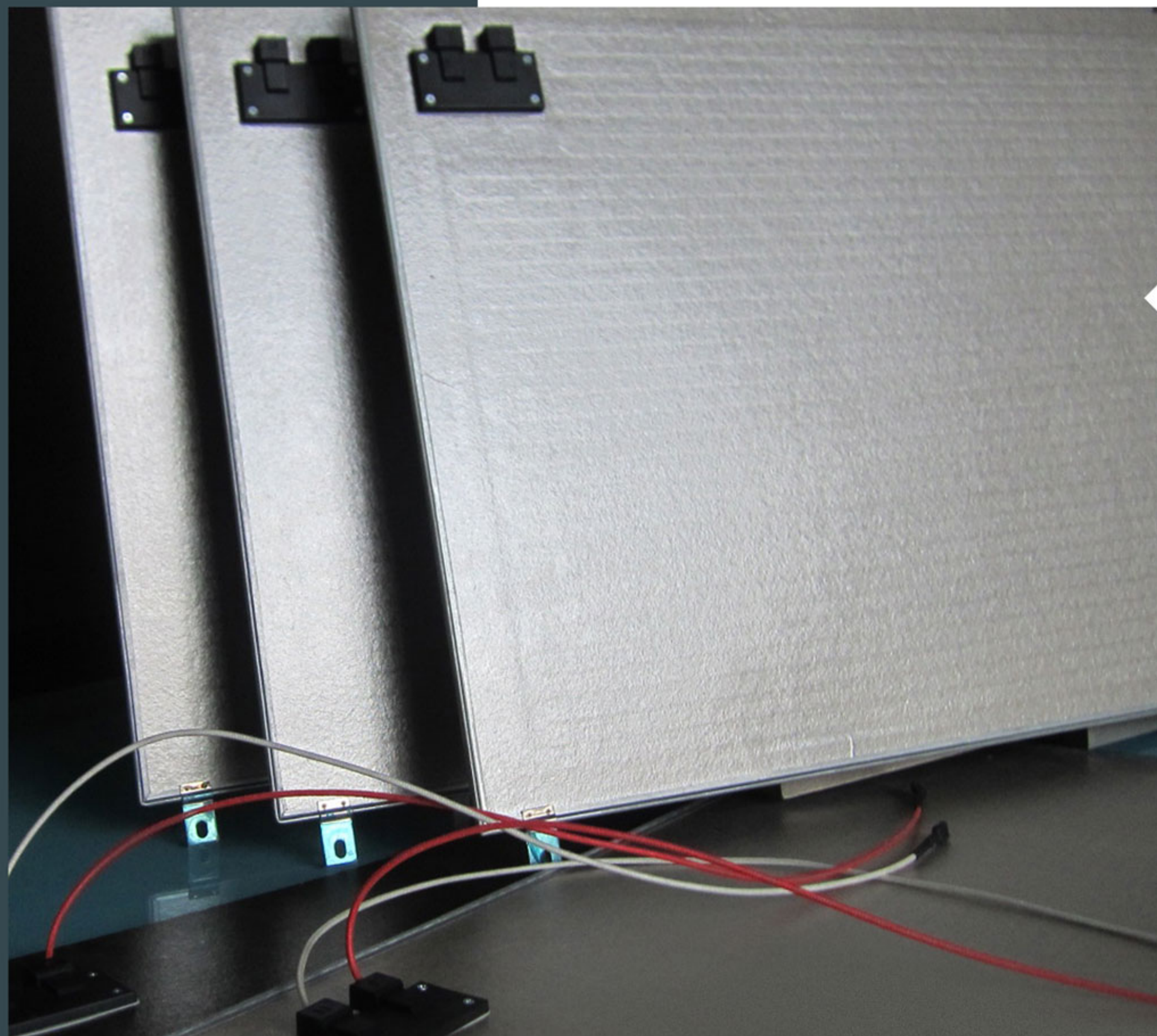
**Mica-based insulation material** laminated from muscovite, phlogopite or alternatively synthetic mica paper and as supporting by non-alkali glass fabric, ceramic fiber, stainless steel wire mesh or non-woven fabric spinning, impregnated with high temperature silicon resin. It contains both mica and other materials to own **good insulation and isolation functions**, not only low heat transmitting but also perfect aseismatic, widely used as insulating parts for line frequency furnace, middle frequency furnace or arc furnace, and also **used as gaskets material instead of asbestos material in most important industries of automotive, vessel, petroleum or chemical**.

### Availability

Thickness : 0.2 ~ 5mm | Length : 12.5 ~ 300m | Width : 1000 ~ 1060mm

(Various specification according to customers' drawings.)





## Cystallite Electric Film Mica Heating Board

Mica electrothermal film superheater consists of mica paper and alloy electrothermal film as integral superheater after special laminating technology process.

- Mica and electrothermal film integral pressing technology, perfect aseismatic, great protection
- Panel type heating, immediate response of temperature, thermal efficiency can be up to 96%
- Superlight ultrathin, suitably designed as appliance surface
- Noiseless, no odor, no light pollution, environmental protection
- Moderately heating, keep air moisture properly for comfortable warmth
- Complete parallel circuit design, durable service, no power attenuation

### Technical Data

Temperature	50 ~ 330°C
Voltage	AC 5V ~ 380V
Normal power rating	International standard
Voltage performance	Can resist AC 2000V / 0.75mA / 1min impact without breakdown, no flashover in normal state
Insulating performance	>100MΩ
Leakage current	<0.25mA
Usage life	>6000 hours
Temperature increasing time	<2 min
Can be customized of form, size, power and voltage	

### Application

It has counter flow and radial type according to different application:

- **Counter flow type :** It is a heating way that is heat rapidly the room air from the convection of up thermal air and down cool air with the different density of cool and thermal air. The counter flow mica heating apparatus can have a full tangency with air with best heat elimination and high thermal efficiency.
- **Radial type :** It is appended the reflecting layer with aluminum and platinum, let the thermal emanate compulsively. Suitable for heating apparatus with directional heat addition, for example, panel heating apparatus, hanging heating apparatus.



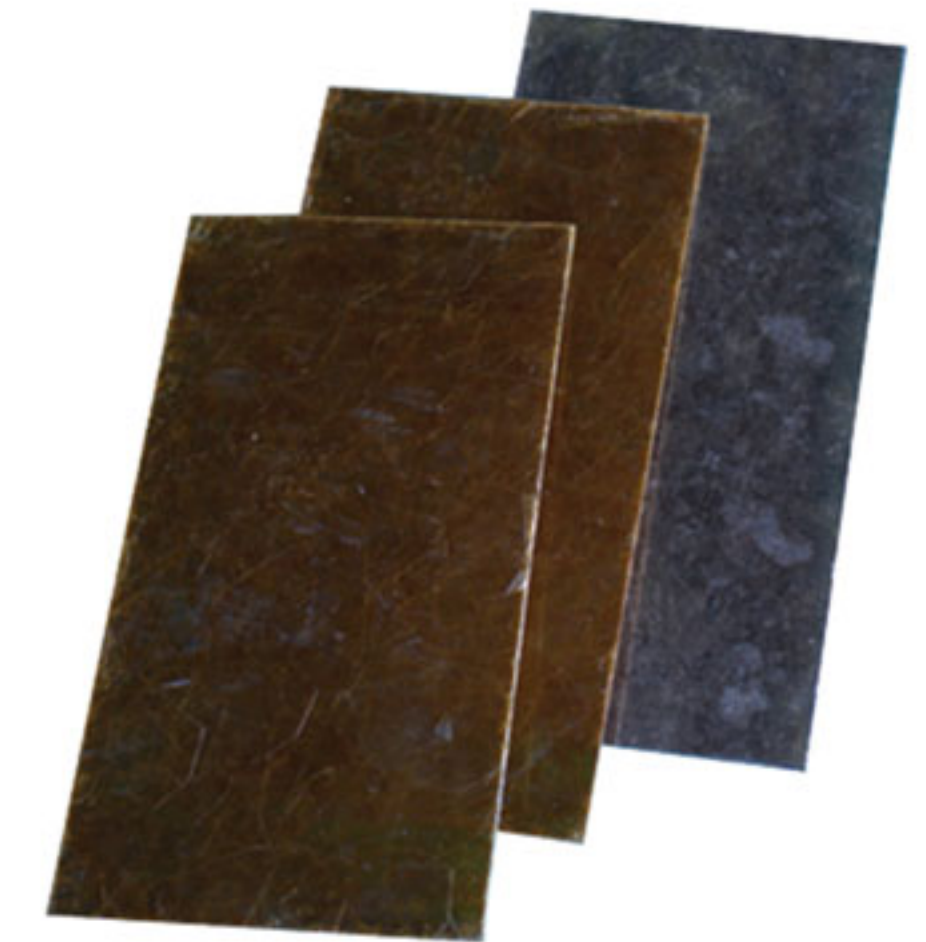


## Applications

Aeroplane plugs, angles, brush-holder studs, caps, channels, collector studs, commutator 'V' Rings or cones, conduits, collars, end bell insulation, pads rheostat rods, roebel bar spacers, slot cells, spools, transformer core forms, tubes, washers etc.



## Hot-Moulding Micanite Sheets (MMC - 2001)



## Composition

They are manufactured from **Muscovite Mica Splittings** impregnated with shellac as a binder confirming to **NEMA specs no.F1-1-1996** grade 2 (hot-forming unmilled). They are produced in rigid sheets but when uniformly heated at a temperature between **130°C to 160°C**, they become soft and could easily be moulded into shapes by hot or cold process. By further curing at a baking temperature between **160°C to 180°C** at pressure of **14-35 kg/cm²** for a duration of 2 to 4 hours, they form into rigid well bonded structure retaining the customized shape of the moulded parts. Exact curing system depends on the desired final properties of the moulded parts.

## Availability

Standard Sheet Size	:	500 X 1000mm
Thickness Range	:	0.25 - 1.5mm
Thickness Tolerance	:	+/- 0.05 mm

## Technical Data

Characteristics	Unit	Value
Thermal Classification	°C	130
Mica Content	%	> 80
Binder Content	%	18 - 22
Density	gm/cm³	2.2 - 2.4
Dielectric Strength @23°C	kV/mm	22

**Note:** Technical data given are subject to variations and do not constitute any warranty.





## Applications

Commutators of high-voltage DC machine of traction motors. They are fitted over each end of the steel V-edge of the commutators to insulate and separate the copper segments from the support structures.



# Mica V-Rings And Cones

## Composition

They are hand processed individually from muscovite hot-moulding mica, impregnated with shellac or alkyd-vinyl resin, in various intricate dimensions and shapes with especially made die-tools and multiple high temperature heat pressures, as per customer's drawings and specs.

## Special Characteristics

They have excellent electrical, thermal and mechanical strengths. They are rigid and could withstand high mechanical forces and combine effect of stresses during normal and abnormal operating conditions. Their structures are almost homogeneous and humidity resistant, having good cutting strength and could withstand dielectric test of 6 kv/mm for 1 minute, as well as, meet the requirements of VDE 0332 (1961) and DIN 57332 specs.

## Quality Assurance

Each mica V-ring or Cone is strictly examined and tested for dielectric strength, insulation resistance, dimensions, etc. by means of sophisticated equipments before final packing and dispatch.

## Packaging

Each Mica V-Ring or Cone is individually wrapped in polyethylene and are packed in stiff cardboard box and strong sea-worthy packages.

## Availability

From the smallest inside dia. of 10mm (3/4 inch) used in fraction HP Motors, upto the largest inside dia. of 712mm (28 inch) used in high-voltage traction motors.

**Note:** It is essential for the customers to finish drawings showing dimensions in complete details, such as, inside and outside diameter, height, wall thickness, hole(bore) dia., wave dia., size of slopping and angle degree along with drawings indicating exact requirements when requesting for a quote.



Special Features

- Mica shields are produced from finest quality natural **MICAMAFCO Muscovite Ruby or Green Micas**. They are hard, flat, and transparent of uniform colour and are completely free from air inclusions, surface scratches, cracks, holes or any physical defects. They are 'laser' or 'lathe-cut' to precision dimension shape, size and thickness.
- Mica shields are having high degree of through vision transparency and provide optimum visibility and safe observations of fluid flow or corrosive media viscosity and a clear reading of water / steam in boiler drums. The transparency of mica is not affected by repeated fluctuations of heating and cooling at extreme pressures and temperatures.
- Mica shields provide maximum protection to retain basic strength of sight glass against erosion from chemical abrasion and corrosive effects of alkaline solutions, boiler waters, caustics, hydrofluoric acids, hot phosphoric acids, sodium and potassium hydroxides and other contaminated viscous or corrosive media.
- Mica shields are a must where saturated steam pressure exceeds **350 PSI** (up to 5689 PSI) and working temperature exceeds **196°C** (up to 600°C). As steam boilers are frequently shut-down and re-started, this places extreme demands on the cushion joints of level indicators. It is therefore essential to protect sight glass with Mica Shields facing the medium chamber. **Mica shields assure longer service life to sight glass and save high cost of their replacement.**



MICA SHIELDS



Standard Thickness

0.10	-	0.15 mm	/	0.004"	-	0.006"
0.15	-	0.20 mm	/	0.006"	-	0.008"
0.20	-	0.20 mm	/	0.008"	-	0.012"
0.30	-	0.35 mm	/	0.012"	-	0.014"

Mica Shields

Mica Shields for Sight Glass of liquid-level / water-level gauges for high pressure steam boilers

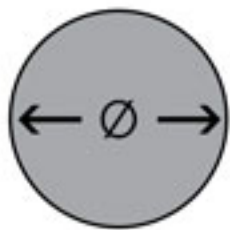
Serving electricity generating stations, thermal power stations, oil refineries, petrochemical plants, chemical plants, paper plants, sugar plants, pharmaceutical plants, textile plants, fertilizer plants, pressure vessels & tanks, etc.

Mica shield thickness shall be composed of either one, two or three laminations; the inner lamination shall be not less than 0.08mm or .003" thick. When two or more pieces are supplied, they must be used as one and should not be separated or rearranged. Mica shields can be supplied in any required length, width and thickness as per customer's specifications.

Some of the Standard Sizes

NO.	TYPE A / B			TYPE A			TYPE B / H			TYPE TA - 28		
	L	X	W	L	X	W	L	X	W	L	X	W
I	115	X	24	115	X	30	115	X	34	133	X	47
II	140	X	24	140	X	30	140	X	34	158	X	47
III	165	X	24	165	X	30	165	X	34	183	X	47
IV	190	X	24	190	X	30	190	X	34	208	X	47
V	220	X	24	220	X	30	220	X	34	238	X	47
VI	250	X	24	250	X	30	250	X	34	268	X	47
VII	280	X	24	280	X	30	280	X	34	298	X	47
VIII	310	X	24	320	X	30	320	X	34	338	X	47
IX	320	X	24	340	X	30	340	X	34	358	X	47
X	340	X	24	370	X	30	370	X	34	378	X	47

All dimensions are in millimeters. L = Length W = Width



MICA DISCS

Circular Mica Discs

Mica Shields are also available in **Circular Discs** for sight flow indicators as follows:  
**Diameter Sizes:** Ø = 31, 33, 40, 45, 50, 60, 70, 80, 90, 100, 110, 120, 125, 150, 170, 175, 200 mm  
**Standard Thickness:** 0.10 mm / 0.20 mm / 0.30 mm

**CAUTION:** It is advised to use only a superior quality mica shields having accurate thickness to provide complete safety and long service life to the sight glass. The thickness of mica shields are usually calculated on the basis of the steam pressure and working temperatures. However, in no case should such thickness be calculated on the minimum (minus) values. This would result in shortening the life of a transparent glass by half or even less.

**MICAMAFCO** is a specialist producer of the finest quality mica shields established over a century. We are an **ISO-9001:2000 certified company** and are totally committed to supply guaranteed hi-tech quality products at cost-effective price and fastest delivery time.





## Micalyte Paper Based Phenolic Laminates (Bakelite Sheets)



A strong and rigid paperbased phenolic laminates suitable for general electrical and mechanical applications. They can withstand low tension electrical applications under non-humid atmosphere.

Specifications	:	IS : 2036 - 1974	- Grade P1
	:	BS : 2572	- Grade P1
	:	NEMA Li I - 1989	- Grade X
	:	DIN : 7735	- Grade HP 2061
Thermal Class	:	'E' (120°C)	
Colour	:	Medium Brown / Dark Brown / Black	
Thickness Range	:	0.5mm upto 50mm	
Standard Size	:	1220 x 1220mm (4' x 4')	
	:	1220 x 2440mm (4' x 8')	

### Technical Properties

Physical	Unit	Typical Value
Standard Finish	-	Glossy Finish
Specific Gravity	Gms / cc	1.38
Water Absorption 0.8mm / 3.2mm / 12.0mm / 25.0mm	mgs. (Average) Mgs. (Max.)	45 / 70 / 130 / 200 188 / 252 / 312 / 376

Mechanical	Unit	Typical Value
Cross - Breaking Strength	Kgf / cm <sup>2</sup>	1650
Shear Strength	-	900
Compression Strength	-	890
Tensile Strength	-	1050
Impact Strength	-	6.2

Electrical	Unit	Typical Value
Electrical Strength 0.8mm / 3.2mm (Flat wise)	kV/m (Min)	15 / 10
Electric Strength (Edge wise)	kV/m (Min)	25
Insulation Resistance after immersion in water for 24 hours	Meg - Ohms	10

Approx. weight per sheet : 1.0mm = 2.1kg (4" x 4") / 4.2 kg(4" x 8") and so on.



## World Wide Logistics



CARTON PACKING



BOX PACKING



TRUCK LOADING

MICAMAFCO provides world-wide logistics transportation of Mica products directly to clients warehouse.

Facilities for port clearance and door to door delivery are available on special request all around the world.

50kgs for each carton, fumigated wooden case or pallet as outside package for exporting, 20 cartons per case or pallet.







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