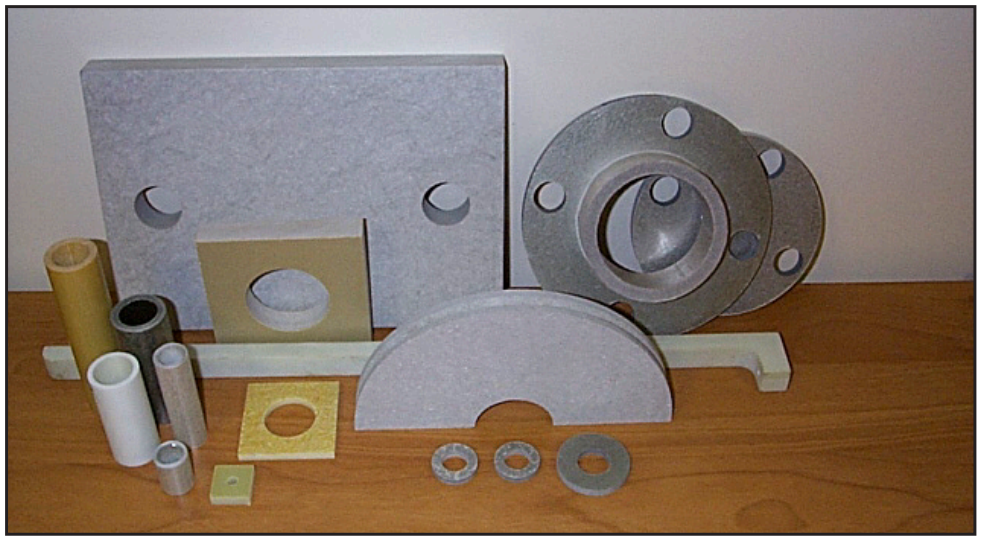
ELECTRICAL INSULATION COMPONENTS

FOR USE IN ALUMINIUM SMELTERS AND OTHER INSULATION APPLICATIONS



Pyrotek offers electrical insulation products specifically manufactured to meet the arduous conditions encountered in aluminium smelter potrooms and other applications. Resins and reinforcements are used to create a wide range of laminated and random fibre/resin composites.

Pyrotek has experienced engineers who can advise and recommend the appropriate grades of insulation materials for smelter construction, maintenance and replacement applications.

AVAILABILITY

- Sheets
- Tubes
- Precision machined custom parts
- Various—depending on product/material

APPLICATIONS

- Superstructure support pads
- Bus bar insulators
- Pot cradle insulators
- Exhaust duct insulators
- Machined parts
- Wedges and shunts
- Crust breaker and point feeder components
- Crane insulation components
- Walkway and floor grid supports
- Pot floor concrete insulation
- Point feeder gaskets
- Pot hood and door handles
- Arc chutes
- Dynamic brake insulation
- Potroom fire retardant FRC (fibre reinforced composite) shrouds to encapsulate building columns as column protection shrouds

ADVANTAGES

- Meets the international standards listed in the product table
- Grades selected for specific applications
- Smelter user references
- Approved by leading technologies
- Asbestos free
- Aluminium splash resistant

ELECTRICAL INSULATION COMPONENTS

Product	Continuous Temperature °C	NEMA GRADE	Reinforcement / Resin	Density kg/m³	Compressive Strength MN/m²	Flexural Strength MN/m²	Dielectric Strength KV/mm	Water Absorption	Arc Resistance Sec	Characteristics
TS-81	120	CE	Cotton/Phenolic	1330	255	130	8	1.1%	-	Economy grade. Good acid resistance.
TS-83	120	LE	Linen/Phenolic	1330	260	150	14	1.0%	-	Good electrical and high mechanical strength. Moisture resistant.
TS-85	120	L	Linen/Phenolic	1360	250	130	10	1.3%	-	Good mechanical strength. Good machining qualities.
TS-101	120	C	Cotton/Phenolic	1790	270	140	8	1.8%	-	High impact strength. Good machining qualities.
TS-114	120	GPO-3	Glass/Polyester	1940	250	150	16	0.20%	180	Flame retardant. Excellent arc and track resistance. UL recognized.
TS-117	125	GPO-1	Glass/Polyester	1890	250	130	17	0.35%	150	Economical, general purpose product.
TS-120	125	GPO-2	Glass/Polyester	1890	230	130	14	0.20%	150	Highly flame resistant. Meets UL 94VO.
TS-82	140	XXX	Paper/Phenolic	1310	300	160	19	0.50%	124	High humidity resistance. Excellent resistance to splitting.
TS-84	140	XX	Paper/Phenolic	1350	210	120	20	0.50%	-	Good insulation in dry or humid conditions.
TS-102	140	X	Paper/Phenolic	1360	260	210	18	2.00%	-	High mechanical strength. Electrical properties are secondary.
TS-125	150	-	Glass/Polyester	1920	380	185	9	0.30%	180	Very high mechanical strength at room and elevated temperatures. Flame retardant.
TS-111	160	G-11	Glass/Epoxy	1790	345	395	18	0.09%	185	Good electrical and mechanical properties.
TS-180	160	-	Glass/Epoxy	1840	400	350	10	0.20%	-	Excellent mechanical and electrical properties at elevated temperatures.
TS-105	160	G-5	Glass/Melamine	1890	450	345	12	0.40%	180	High mechanical strength, arc and heat resistance. Self-extinguishing.
TS-109	160	G-9	Glass/Melamine	1890	450	520	20	0.20%	180	High mechanical strength, arc and heat resistance. Self-extinguishing.
TS-110	160	FR-4	Glass/Epoxy	1810	455	485	22	0.05%	130	High flexural, impact and bond strength at room temperature.
TS-103	175	G-3	Glass/Phenolic	1790	310	345	16	0.50%	-	Good heat resistance. Excellent mechanical and machining properties.
TS-207	215	-	Polymer/Polyester	1890	485	380	16	0.1%	183	High strength and good electrical resistance.
FHT	220	-	Glass/Polyester	-	100	-	18	1.1%	139	Highly flexible, excellent physical and thermal properties.
TS-106	210	GPO-1	Glass/Polyester	1650	315	160	16	0.3%	182	High heat resistance. UL recognized.
TS-235	220	-	Glass/Polyester	1630	100	55	20	1.1%	135	Highly flexible. High heat resistance.
TS-206	230	-	Glass/Polyester	1990	450	345	-	0.31%	-	High compressive and flexural strength.
TS-107	235	G-7	Glass/Silicone	1840	330	170	20	0.02%	240	High temperature resistance. Good electrical properties in humidity.
TS-330	290	-	Glass/Polyester	1600	550	520	-	0.45%	-	Very high compressive and flexural strength.
NAD-500 (NAD-11)	500	-	Cement/Inorganic Fibers	1750	120	32	3	15.0%	370	Excellent arc and heat resistance properties, adequate strength properties.
TS-450	500	-	Mica/Silicon	2150	400	230	17	0.5%	360	Very high temperature resistance. High dielectric properties. Needs containment (such as held between steel flanges) for use in high temperatures above 300°C.
FRC-1000	600		Isopthatlic Polyester/E-glass Fibers	1580	178	125	-	< 0.25%	-	Can be formed to meet specific applications. Corrosion resistant, fire retardant, non-conducting, fibre reinforced composite column protection shroud. Meets International standards ASTM E84-1 and UL 94 V-0.
ISOMAG® 175	1000	-	-	1540	40	30	10	25.0%	292	Excellent heat resistance and thermal insulating properties. Very good arc resistance and good mechanical properties.

Other materials may also be available. Note that there is no international colour code for these materials and material colour may vary. Please contact a Pyrotek Sales Engineer to discuss availability and how these and other materials can be used for your specific application.

Note: The physical and chemical properties listed represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice.

Product Type: 122

Commodity Code: 09002, 09005, 09006, 09007,15001

Contact Information: www.pyrotek.com/contact/request-information/

PYROTEK INC. • CORPORATE OFFICE • 705 WEST 1ST AVENUE • SPOKANE, WA 99201, USA • P: 509-926-6212 • F: 509-927-2408
www.pyrotek.com

DEC-17-E4-1146