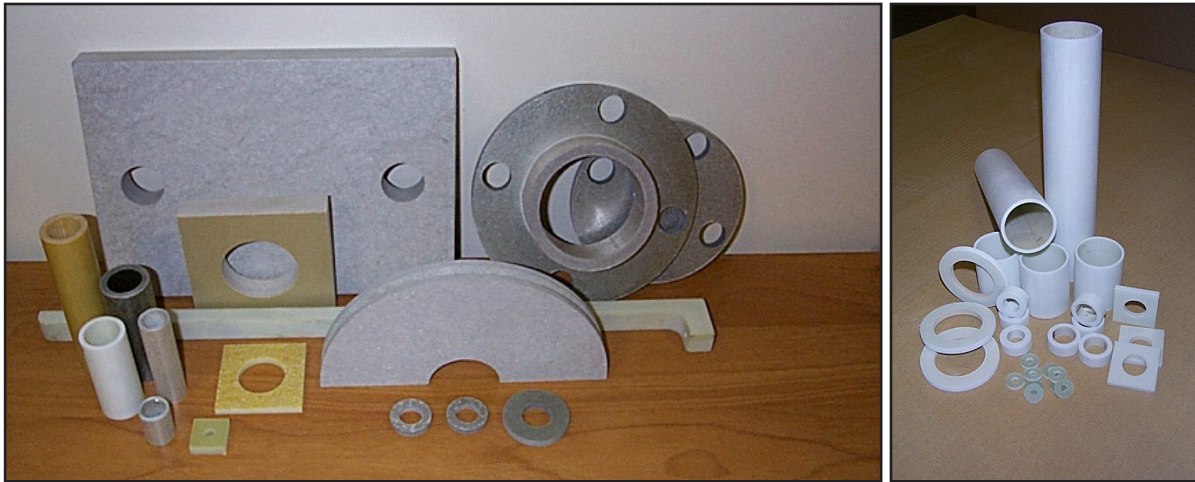


ELECTRICAL INSULATION COMPONENTS

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 fiber / 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 (fiber reinforced composite) shrouds to encapsulate building columns as column protection shrouds

ADVANTAGES

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

ELECTRICAL INSULATION COMPONENTS

Product	Continuous Temperature °F (°C)	NEMA GRADE	Reinforcement / Resin	Density lb/ft ³ (kg/m ³)	Compressive Strength lb/in ² (MN/m ²)	Flexural Strength lb/in ² (MN/m ²)	Dielectric Strength V/mil (KV/mm)	Water Absorption	Arc Resistance Sec	Characteristics
TS-81	250 (120)	CE	Cotton / Phenolic	83 (1330)	37,000 (255)	19,000 (130)	200 (8)	1.1%	-	Economy grade. Good acid resistance.
TS-83	250 (120)	LE	Linen / Phenolic	83 (1330)	38,000 (260)	22,000 (150)	350 (14)	1.0%	-	Good electrical and high mechanical strength. Moisture resistant.
TS-85	250 (120)	L	Linen / Phenolic	85 (1360)	36,000 (250)	19,000 (130)	250 (10)	1.3%	-	Good mechanical strength. Good machining qualities.
TS-101	250 (120)	C	Cotton / Phenolic	112 (1790)	39,000 (270)	20,000 (140)	200 (8)	1.8%	-	High impact strength. Good machining qualities.
TS-114	250 (120)	GPO-3	Glass / Polyester	121 (1940)	36,000 (250)	22,000 (150)	400 (16)	0.20%	180 sec	Flame retardant. Excellent arc and track resistance. UL recognized.
TS-117	260 (125)	GPO-1	Glass / Polyester	118 (1890)	36,000 (250)	19,000 (130)	425 (17)	0.35%	150 sec	Economical, general purpose product.
TS-120	260 (125)	GPO-2	Glass / Polyester	118 (1890)	33,000 (230)	19,000 (130)	350 (14)	0.20%	150 sec	Highly flame resistant. Meets UL 94VO.
TS-82	280 (140)	XXX	Paper / Phenolic	82 (1310)	44,000 (300)	23,000 (160)	475 (19)	0.50%	124 sec	High humidity resistance. Excellent resistance to splitting.
TS-84	280 (140)	XX	Paper / Phenolic	84 (1350)	30,000 (210)	17,000 (120)	500 (20)	0.50%	-	Good insulation in dry or humid conditions.
TS-102	280 (140)	X	Paper / Phenolic	85 (1360)	38,000 (260)	30,000 (210)	450 (18)	2.00%	-	High mechanical strength. Electrical properties are secondary.
TS-125	310 (150)	-	Glass / Polyester	120 (1920)	55,000 (380)	27,000 (185)	230 (9)	0.30%	180 sec	Very high mechanical strength at room and elevated temperature. Flame retardant.
TS-111	320 (160)	G-11	Glass / Epoxy	112 (1790)	50,000 (345)	57,000 (395)	465 (18)	0.09%	185 sec	Good electrical and mechanical properties.
TS-180	320 (160)	-	Glass / Epoxy	115 (1840)	58,000 (400)	51,000 (350)	250 (10)	0.20%	-	Excellent mechanical and electrical properties at elevated temperature.
TS-105	328 (160)	G-5	Glass / Melamine	118 (1890)	65,000 (450)	50,000 (345)	300 (12)	0.40%	180 sec	High mechanical strength, arc and heat resistance. Self-extinguishing.
TS-109	328 (160)	G-9	Glass / Melamine	118 (1890)	65,000 (450)	75,000 (520)	500 (20)	0.20%	180 sec	High mechanical strength, arc and heat resistance. Self-extinguishing.
TS-110	328 (160)	G-10	Glass / Epoxy	113 (1810)	60,000 (415)	70,000 (485)	550 (22)	0.05%	100 sec	High flexural, impact and bond strength at room temperature.
TS-103	350 (175)	G-3	Glass / Phenolic	112 (1790)	45,000 (310)	50,000 (345)	400 (16)	0.50%	-	Good heat resistance. Excellent mechanical and machining properties.
SG-200	410 (210)	GPO-1	-	-	36,000 (250)	29,000 (200)	500 (20)	0.3%	180 sec*	Very high strength, high temperature resistance. *Post cured.
TS-207	420 (215)	-	Polymer / Polyester	118 (1890)	70,000 (485)	55,000 (380)	400 (16)	0.1%	183 sec	High strength and good electrical resistance.
FHT	430 (220)	-	Glass / Polyester	-	14,000 (100)	-	450 (18)	1.1%	139 sec	Highly flexible, excellent physical and thermal properties.
TS-106	430 (220)	-	Glass / Polyester	103 (1650)	46,000 (315)	23,000 (160)	400 (16)	0.3%	182 sec	High heat resistance. UL recognized.
TS-235	430 (220)	-	Glass / Polyester	102 (1630)	15,000 (100)	8,000 (55)	500 (20)	1.1%	135 sec	Highly flexible. High heat resistance.
TS-206	450 (230)	-	Glass / Polyester	124 (1990)	65,000 (450)	50,000 (345)	-	0.31%	-	High compressive and flexural strength.
TS-107	460 (235)	G-7	Glass / Silicone	115 (1840)	48,000 (330)	25,000 (170)	500 (20)	0.02%	240 sec	High temperature resistance. Good electrical properties in humidity.
TS-330	550 (290)	-	Glass / Polyester	100 (1600)	80,000 (550)	75,000 (520)	-	0.45%	-	Very high compressive and flexural strength.
NAD-500 (NAD-11)	932 (500)	-	Cement / Inorganic Fibers	109 (1750)	17,100 (120)	4,640 (32)	69 (3)	15.0%	370 sec	Excellent arc and heat resistance properties, adequate strength properties.
TS-450	932 (500)	-	Mica / Silicon	134 (2150)	58,000 (400)	51,000 (350)	430 (17)	0.5%	360 sec	Very high temperature resistance. High dielectric properties. Needs containment (such as held between steel flanges) for use in high temperatures above 572°F.
FRC-1000	1112 (600)	-	Isophthalic Polyester / E-glass Fibers	97 (1580)	26,000 (178)	18,000 (125)	-	< 0.25%	-	Can be formed to meet specific applications. Corrosion resistant, fire retardant, non-conducting, fiber reinforced composite column protection shroud. Meets Int'l standards ASTM E84-1 and UL 94V-0.
ISOMAC® 175	1830 (1000)	-	-	96 (1540)	5,500 (40)	4,000 (30)	249 (10)	25.0%	292 sec	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 color code for these materials and material color may vary. Please contact a Pyrotek Sales Engineer to discuss availability and how these and other materials can be used for your specific application.

ISOMAC® is a registered trademark of Pyrotek Inc.

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

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