

LOW THERMAL CONDUCTIVITY COMPOSITE MATERIAL



RFM, an acronym for reinforced fiberglass material, is a composite material made of fiberglass fabric embedded in either a calcium silicate slurry, RFM CS, or a fused silica slurry, RFM FS. Select calcium silicate or fused silica depending on product application and desired properties (refer to the “typical properties” table).

RFM can be shaped into complex shapes with thin walls. It exhibits exceptional non-wetting properties against molten aluminium alloys. Because it is a composite, RFM has a high resistance to fracturing. RFM can be used in conjunction with low density, highly insulating backup linings that greatly lower the thermal conductivity.

ADVANTAGES

- No pre-heating required
- Excellent mechanical properties
- Excellent erosion resistance
- Can be molded
- Non-wetted by molten aluminium
- Fracture resistant

APPLICATIONS

- Distribution troughs for continuous casting machine
- Reusable molten aluminium distributor (ReMAD)
- Float bottom part
- Casting tip
- Autopour ladle
- Skim dam
- Control pin
- Thermocouple protection tube
- Sampling spoon
- Automatic skimming

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TYPICAL PROPERTIES

	RFM CS	RFM FS
Properties	Calcium silicate based	Fused silica based
Density	1600 kg/m ³ (100 lb/ft ³)	1850 kg/m ³ (115 lb/ft ³)
Maximum Service Temperature	800°C (1472°F)	800°C (1472°F)
Thickness	3 @ 20 mm (1/8 inch @ 3/4 inch)	3 @ 20 mm (1/8 inch @ 3/4 inch)
Hardness (Shore D)	82	97
MOR @ 375°C (705°F)	13.7 MPa (2000 psi)	19.2 MPa (2800 psi)
Thermal Expansion Coefficient	9 (mm/mm°C) x 10E ⁻⁶ (5 in/in/°F) x 10E ⁻⁶	2.4 (mm/mm°C) x 10E ⁻⁶ (1.3 (in/in/°F) x 10E ⁻⁶)
Thermal Conductivity	0.43 W/(m·K) @ 500°C (3.0 BTU-in/ft ² /hr @ 930°F)	0.57 W/(m·K) @ 500°C (4.0 BTU-in/ft ² /hr @ 930°F)

RFM® 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.

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