

Promat

MONALITE®

September 2003

Machinable Insulation for High Thermal Shock Environments

INTRODUCTION

MONALITE® materials from Promat UK Limited are "technical ceramics" made from calcium silicate. They are formulated without the use of asbestos fibres, and are thermally insulating, non-wetting, fracture tough materials with low shrinkage. MONALITE® is the standard product for use in aluminium casting and is also used in the furnace industry and other process industries.

DESCRIPTION

MONALITE® M1

Standard product for contact with molten metal up to 850°C.

MONALITE® M1A

Improved product with higher strength and lower shrinkage.

MONALITE® G4

Improved carbon fibre reinforced product.

STANDARD SIZES

Thicknesses (mm)	12.7, 19.1, 25.4, 31.8, 38.1, 50.8, 76.2, 101.6 ¹
Width (mm)	1220
Lengths (mm)	1500

1= M1

* Special sizes available upon request

PERFORMANCE

Thermal Properties

Service temperature to 850°C or 1000°C depending on the grade. Low thermal conductivity and thermal capacity. Low shrinkage and coefficient of thermal expansion. Performs well against thermal shock.

Mechanical/Chemical Properties

Good compressive and flexural strength. Machinable to close tolerances. Non-wetting to most non-ferrous molten metals. High chemical stability in alkaline media. Reactive in acid media.



Conditioning

All products should be adequately dried and conditioned prior to use at elevated temperatures. Please consult Promat's Technical Services Department for advice.

Handling

Large components should be supported by a light metal support system. MONALITE® boards and cut sizes can be mechanically fixed together with glue or screw fixings. MONALITE® should be transported and stored under dry conditions.

TYPICAL APPLICATIONS

Non-Ferrous Metals

- Components for containment, transmission, distribution and flow control in casting processes.

Furnace Industry

- Hot face linings in holding, dosing and homogenising furnaces.

Chemical and Process Industry

- Collars, gaskets and pipe support rings.

TECHNICAL INFORMATION

For application advice contact Promat UK Limited

Technical Services Department. Telephone: 01344 381400,

Fax: 01344 381401.

TYPICAL PRODUCT PERFORMANCE

Mechanical Properties		M1	M1-A	G4
Bulk Density	kg/m ³	850	970	950
Flexural Strength	MPa	8	10	6
Hardness	[Shore D]	60	65	60
Compressive Strength at 10% compaction	MPa	15	18	15
Thermal Properties				
Maximum Service Temperature	°C	850	1000	850
Thermal Conductivity (at 750°C)	W/mK	0.26	0.27	0.30
Shrinkage (750°C for 12 hrs)	%	0.1/0.4	0.01/0.05	0.3/1.2
Length, Width/Thickness				
Loss on Ignition	%	3.1	2.7	5.6
Coefficient of Thermal Expansion (100 - 750°C)	K ⁻¹	6.1x10 ⁻⁶	6.2x10 ⁻⁶	5.5x10 ⁻⁶

