

Pyro-Bloc[®] M Modules



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Features

- Monolithic, edge-grained ceramic fiber module
- Uncompressed densities from 10 - 15 pcf (160 - 240 kg/m³)
- Installs quickly over coated shells with or without a vapor barrier
- Installation techniques ensure high on-the-wall densities

Product Description

The Pyro-Bloc M and M² modules are a ceramic fiber lining system designed for high temperature furnaces that may also require corrosion barriers on the shell. The modules are manufactured from a high purity blend of raw materials to produce ceramic fiber grades:

- R Grade (alumina-silica)
- ZR Grade (alumina-silica-zirconia)
- C Grade (alumina-silica-chromia)

Pyro-Bloc M and M² modules have better resistance to mechanical abuse than conventional blanket systems, and they do not sacrifice the effectiveness of the shell corrosion barrier. The Pyro-Bloc M and M² modules are held to the shell by pre-welded stainless steel studs, 316SS which offers superior creep resistance and chemical attack resistance versus 304SS. Special installation hardware and accessories allow the modules to be uniformly compressed. No other system on the market offers such a high degree of on-the-wall densities, which relates directly to high mechanical abuse resistance and long in-service life.

Applications

- Process heaters
- Heat treating furnaces
- Forge furnaces
- Reformers, ethylene furnaces
- Incinerators
- All furnace linings requiring a pre-weld stud pattern or protective barrier against shell

Installation

There are a number of factors which must be considered when designing a Pyro-Bloc Module lining. The use limits of Pyro-Bloc Modules should be used only as a guide when considering lining installation and design.

Pyro-Bloc M² module, 16" x 16" square (406 mm x 406 mm), is a larger format. The 16" square size offers up to 78% more installed square feet per module than 12" x 12" modules, and is much easier to handle when compared to 24" x 24" (610 mm x 610 mm) modules. The Pyro-Bloc M² modules are available in R and ZR grade. Special hardware and accessories allow the M² module to be compressed up to 15" x 15" (381 mm x 381 mm) during installation

- 16" x 16", 1.78 sf/module (0.165 m²)
- Thickness from 3" - 12" in 1" increments

*Studs, nuts and installation tools must be purchased separately.

Pyro-Bloc[®] M Modules



Physical Properties	Pyro-Bloc M R Grade	Pyro-Bloc M ZR Grade	Pyro-Bloc M C Grade
Color	White	White	blue/green
Density, pcf (kg/m ³)	10, 12, 15 (160, 192, 240)	10, 12, 15 (160, 192, 240)	12 (192)
Thickness, in. (mm) (standard)	3 - 12 (76 - 305)	3 - 12 (76 - 305)	3 - 12 (76 - 305)
Maximum temp. rating, °F (°C)	2400 (1316)	2600 (1427)	2600 (1427)
Melting point, °F (°C)	3200 (1760)	3200 (1760)	3200 (1760)
Continuous use limit, up to °F (°C)	2200 (1204)	2450 (1343)	2500 (1371)
Chemical Analysis, %			
Alumina, Al ₂ O ₃	47	37.5	43
Silica, SiO ₂	53	47	54
Zirconia, ZrO ₂	–	15.5	–
Chromia, Cr ₂ O ₃	–	–	3
Loss on ignition, L.O.I.	trace	trace	trace
Other	trace	trace	trace
Thermal Conductivity, BTU•in./hr•ft²•°F (W/m•K), ASTM C 201			
Measured Density, pcf (kg/m ³)	10 (160)	12 (192)	15 (240)
Mean temperature			
@ 500°F (260°C)	0.52 (0.07)	0.50 (0.07)	0.49 (0.07)
@ 1000°F (538°C)	1.04 (0.15)	0.96 (0.14)	0.84 (0.12)
@ 1500°F (816°C)	1.81 (0.26)	1.66 (0.24)	1.43 (0.21)
@ 2000°F (1093°C)	2.69 (0.39)	2.45 (0.35)	2.19 (0.32)

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