Thermal Ceramics

Pyro-Bloc Y and Y² Modules

Product Information

The Pyro-Bloc Y and Y² modules are manufactured from a high purity blend of raw materials which are used to produce R Grade (alumina-silica), ZR Grade (alumina-zirconia-silica), and C Grade (alumina-silica-chromia) ceramic fibers. The modules utilize a specially designed 316 stainless steel internal support system and industry standard Pyro-Bloc stud system. In addition, it has no hot face, cold face, or side constrictions which permit maximum module-to-module compression during installation. The modules use the proven center-fire, one-step weld system which eliminates the need for pre-laid out stud patterns.

Pyro-Bloc Y modules are edge-grained ceramic fiber blocks used for lining industrial furnaces. The Pyro-Bloc Y modules are manufactured from R grade, ZR grade and C grade ceramic fiber. The Y Module comes complete with internal support system and stud already in place.

- 12" x 12" *(305mm x 305mm)* modules
- 6" x 12" *(152mm x 305mm)* split long fiber modules
- 12" x 6" *(305mm x 152mm)* split short fiber modules
- Module thickness from 3" to 12" *(76mm to 305mm)* in 1" *(25.4mm)* increments

Pyro-Bloc Y² modules (16" x 16" *[406mm x 406mm]*) are a larger format edge-grained ceramic fiber block used for lining industrial furnaces. The Pyro-Bloc Y² modules are manufactured from R grade and ZR grade ceramic fiber. The 16" *(406mm)* square size offers up to 78% more installed square feet per module than 12" x 12"*(305mm x 305mm)* modules. In addition, the 16" *(406mm)* square size is much easier to handle when compared to 24" x 24" *(610mm x 610mm)* modules.

- 16" x 16" *(406mm x 406mm)* modules (1.78 sf per module *[0.165m²]*)
- Module thickness from 3" to 12" *(76mm to 305mm)* in 1" *(25.4mm)* increments

Features

- Monolithic, edge-grained ceramic fiber module
- Available in uncompressed densities from 8 - 15 pcf *(128-240 kg/m³)*
- One-shot center-fired stud
- Extremely fast, efficient installation
- High density fiber resists mechanical abuse

Applications

- Annealing furnaces
- Heat treating furnaces
- Process heaters
- Reformers
- Ethylene furnaces
- Forge furnaces
- Steam flood units
- Homogenizing furnaces
- Incinerators

Pyro-Bloc Y and Y² Modules

Product Information

Physical Properties	**R**	**ZR**	**C**
Color	white	white	blue/green
Density, pcf *(kg/m³)*	8, 10, 12, 15 *(128, 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 (Nominal, %)			
Alumina, Al_2O_3	47	37.5	43
Silica, SiO_2	53	47	54
Zirconia, ZrO_2	–	15.5	–
Chromia, Cr_2O_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)

	8pcf *(128kg/m³)*	**10pcf** *(160kg/m³)*	**12pcf** *(192kg/m³)*	**15pcf** *(240kg/m³)*
Mean temperature				
@ 500°F *(260°C)*	0.53 *(0.08)*	0.52 *(0.07)*	0.50 *(0.07)*	0.49 *(0.07)*
@ 1000°F *(538°C)*	1.13 *(0.16)*	1.04 *(0.15)*	0.96 *(0.14)*	0.84 *(0.12)*
@ 1500°F *(816°C)*	1.97 *(0.28)*	1.81 *(0.26)*	1.66 *(0.24)*	1.43 *(0.21)*
@ 2000°F *(1093°C)*	2.95 *(0.43)*	2.69 *(0.39)*	2.45 *(0.35)*	2.19 *(0.32)*

Installation

Modules are installed by the instant action of our industry standard Pyro-Bloc stud and stud gun. In one easy step the module is positioned against the furnace shell, securely welded*, and tightened into place in less than three seconds. This unique process self checks and quality tests each and every weld for absolute integrity. The Pyro-Bloc modules installation procedure eliminates the need for a time consuming stud layout and prewelding of anchors or brackets. Modules are easy to cut and fit in the field for special shape requirements.

** Independent test results on the strength of the Pyro-Bloc stud are available upon request.*

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