

Pyro-Bloc™ Modules



Material Type: Mechanically- fixed modules.

Classification Temperature

Pyro Blocs are available in 3 density grades in each of two temperature classifications.

Standard Fibre : 1260 °C
Zirconia Fibre : 1425 °C

Description

Pyro Bloc™ modules comprise two sections of Pyrolog™ slab in edge-grain orientation. These are held in position with two stainless steel tubes mounted transversely through the modules and remote from the hot face. They are anchored to the furnace casing with the patented Pyro Bloc fixing in any one of four standard versions, Y, M, T and Eye-bolt.

In the Y module, the tubes are connected with a central, internal yoke which includes a stainless steel stud and aluminium extension tube. This version is installed directly onto a metal plate casing, without pre-welding, using the special Pyro Bloc stud gun. It offers the fastest installation rates of any currently available modules.

The M module also includes the central yoke, but is fitted onto pre-welded studs using the special M module stud locating equipment.

The module T is anchored with a pre-studded, external side-fix yoke.

M and T modules are used where the lining specification calls for either or both backing blanket and anti-corrosion treatment of the casing.

The Eye-bolt version is used for fastening the module to expanded or perforated metal casing and can also accommodate a backing blanket.

Maximum Use Temperature

The maximum use temperature depends on the application. Refer to our company for advice."

Benefits

- High un-compressed densities give low thermal conductivity.
- Lubricated fibre allows increased compression and tight joints.
- Hardening effect on first firing gives a tough hot face, resistant to mechanical damage and gas flow abrasion.
- Resistance to weathering permits limited outside application.
- Anchorage remote from the hot face protects steelwork.

- Special Shapes

The Pyro Bloc system allows for modifications, either on site or factory pre-cut, without any directional limitation, to accommodate awkward casing configurations. L-shaped corner modules provide quick, seam-free installation around both internal and external corners, with no need for extra supporting metalwork. Half-round cut-away allows fitting to round sections.

- Y Modules

Fast installation.
All welds automatically torque tested.
One-step installation.

- M and T Modules

Allow use of backing insulation and casing treatment.
Module compression guaranteed.
Simple fixing components.
Use Standard, commercially available welding equipment.

- Eye-bolt Modules

Permits fixing of module to expanded or perforated metal casings.

Typical Applications

Pyro Blocs have a multitude of uses in heat containment applications in all industry groups, a selection of which are as follows.

- Petrochemical

Process Heaters, Reformers, Pyrolysis Heaters, Ductwork.

- Iron and Steel

Transfer Ladle Lids, Soaking Pit Covers, Reheating Furnace, Multi and Single Stack Coil Annealing Furnaces, Continuous Annealing and Coating Furnaces, Rotary Hearth Furnaces, Car Bottom Furnaces, Roller Furnaces, Lift-Off Furnaces, Offtakes and Ductwork.

- Aluminium

Soaking Pits and Covers, Bale Out Furnaces, Homogenising Furnaces, Ductwork.

- Ceramic

Tunnel Kilns for whiteware and Red Brick, Intermittent Kilns for Whiteware and Red Brick, Hoffman Kilns, Ductwork.

- Utilities

Thermal Oxidisers, Waste Heat Recovery Units, Combustion Chambers, Boiler Ductwork.

Pyro-Bloc™ Modules

Main Properties

		Standard Fiber			Zirconia Fiber		
• Classification temperature	°C	1260			1425		

Properties measured at ambient conditions (23°C/50% RH)

• Colour		white			white		
• Density uncompressed	kg/m ³	160	192	240	160	192	240

High temperature performance

• Loss on Ignition after 2 hours at:							
800 °C	%	<0.25			<0.25		
• Specific Heat Capacity at:							
1000 °C	kJ/kg.K	1.13			1.13		
• Permanent linear shrinkage after 24 hours at:							
1200 °C	%	3			1.6		
1400 °C	%	-			3.0		

• Thermal conductivity (ASTM C201-68) for both Standard and Zirconia Grades, at the mean temperature.

		Module Density					
		160 kg/m ³		192 kg/m ³		240 kg/m ³	
400 °C	W/mK	0.11		0.10		0.09	
600 °C	W/mK	0.16		0.16		0.14	
800 °C	W/mK	0.25		0.23		0.20	
1000 °C	W/mK	0.34		0.31		0.28	

Fixing Components and Installation

The Standard tubes and yokes for all Pyro Blocs are ASTM 316 Stainless Steel, but higher grades of steel (ASTM 310 and Inconel 601) are available for more arduous service conditions. Studs are ASTM 304 stainless steel or of such higher grade as warranted by the service conditions.

Full details of the installation of all Thermal Ceramics modules are included in the Thermal Ceramics Module Installation Manual.

Dimensions and Availability

Pyro Blocs are normally supplied as 305 mm square with thicknesses ranging from 100 mm to 350 mm in 25 mm increments. Other sizes, shapes and densities, including L-shaped modules can be made available on request.

Packaging

Pyro Blocs are delivered either in cartons 315mm squarex930mm long or in palletted jumbo cartons, 1250mmx1110mmx1100mm high (including pallet).

The values given herein are typical average values obtained in accordance with standard test methods and subject to normal manufacturing variations. They are supplied as technical data and may change without notice. Contact our company to obtain detailed information.

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