

Data sheet

Superwool® Plus & HT Pyro-Bloc®

ENGLISH

Metric information - Page 2
Imperial information - Page 3

Description

Superwool® Plus and HT Pyro-Bloc® modules comprise two sections of either Superwool® Plus or HT Pyro-Log® 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® internal hardware in any one of four standard versions and Y, M, T.

In the Y module, the tubes are connected with a central, internal yoke which includes a carbon 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 modules stud locating equipment.

The T module 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 a backing blanket and anticorrosion treatment of the casing.

Type

Mechanically-fixed modules made from high temperature insulation wool.

Features

- High un-compressed densities give low thermal conductivity
- Lubricated fiber allows increased compression and tight joints
- Hardening effect on first firing gives a tough hot face
- Resistance to weathering permits limited outside application
- Anchorage remote from the hot face protects steelwork

- 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
 - Use standard, commercially available welding equipment

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

- Superwool® fibre meets the requirements specified under NOTE Q of European Regulation 1272/2008. All Superwool® fibre products are therefore exonerated from labelling requirements in Europe.

- No requirement for warning labels under Globally Harmonised System (GHS) for the classification and labelling of chemicals.



Data sheet

Metric information

Superwool® Plus & HT Pyro-Bloc®

| | Superwool® Plus Pyro-Bloc® modules | | Superwool® HT Pyro-Bloc® modules | | |
|---|---------------------------------------|------|-------------------------------------|------|------|
| Classification temperature, °C | 1200 | | 1300 | | |
| Colour | white | | white | | |
| Specific heat capacity, kJ/kg.K | 160 | 192 | 160 | 192 | 240 |
| Loss on ignition, % after 2 hours heating @800°C | <0.25 | | < 0.25 | | |
| Permanent linear shrinkage, ENV 1094-1 after 24 hours isothermal heating, % @1000°C | < 1.5 | | - | | |
| after 100 hours isothermal heating, % @1000°C | - | | 0.20 | | |
| @1100°C | - | | 0.50 | | |
| @1200°C | - | | 0.80 | | |
| Specific heat capacity, kJ/kg.K @1090°C | 1.05 | | 1.22 | | |
| Thermal conductivity, ASTM C-201, W/m·K | | | | | |
| @200°C | - | - | 0.07 | 0.07 | 0.07 |
| @400°C | 0.11 | 0.09 | 0.14 | 0.12 | 0.10 |
| @600°C | 0.17 | 0.15 | 0.21 | 0.17 | 0.15 |
| @800°C | 0.24 | 0.21 | 0.30 | 0.25 | 0.22 |
| @1000°C | 0.32 | 0.28 | 0.40 | 0.33 | 0.29 |
| @1200°C | - | - | 0.54 | 0.44 | 0.39 |

Availability and Packaging

Pyro-Bloc® Modules are normally supplied as 305mm square and of thicknesses ranging from 100mm to 350mm, in 25mm increments.

Other sizes, shapes and densities, including Corner-Bloc modules can be made available on request.

Superwool® Plus & HT Pyro-Bloc® Modules are delivered packed either in cartons 315mm square x 930mm long or on palletted jumbo cartons, 1250mm x 1100mm x 1100mm high (including pallet).

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Whilst the values and application information in this datasheet are typical, they are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials - Thermal Ceramics.

SUPERWOOL® is a patented technology for high temperature insulation wools which have been developed to have a low bio persistence (information upon request). **SUPERWOOL®** products may be covered by one or more of the following patents, or their foreign equivalents:

SUPERWOOL® PLUS and **SUPERWOOL® HT** products are covered by patent numbers:
US5714421 and US7470641, US7651965, US7875566, EP1544177 and EP1725503 respectively.

A list of foreign patent numbers is available upon request to Morgan Advanced Materials plc.

Morgan Advanced Materials plc Registered in England & Wales at Quadrant, 55-57 High Street, Windsor, Berkshire SL4 1LP UK Company No. 286773

Data sheet

Imperial information

Superwool® Plus & HT Pyro-Bloc®

| | Superwool® Plus Pyro-Bloc® Modules | Superwool® HT Pyro-Bloc® Modules |
|---|------------------------------------|----------------------------------|
| Colour | White | White |
| Continuous use limit, °F (°C) | 1832 (1000) | 2200 (1204) |
| Classification temperature rating, °F (°C) | 2192 (1200) | 2372 (1300) |
| Density, pcf (kg/m³) | 8, 10, 12, 15 (128, 160, 192, 240) | 10, 12 (160, 192) |
| Thermal conductivity, BTU•in./hr•ft²•°F (W/m•k) ASTM C 201, measured at 10pcf (160kg/m³) | | |
| Mean temperature @ 500°F (260°C) | 0.48 (0.07) | 0.56 (0.08) |
| @ 1000°F (538°C) | 0.84 (0.12) | 1.29 (0.19) |
| @ 1500°F (816°C) | 1.34 (0.19) | 2.30 (0.33) |
| @ 2000°F (1093°C) | - | 3.60 (0.52) |
| Chemical analysis, % weight basis after firing | | |
| SiO ₂ | 62 - 68 | 70 - 80 |
| Al ₂ O ₃ | trace | trace |
| CaO+MgO | 29 - 39 | 18 - 25 |
| Other | < 1 | < 1 |

Availability and Packaging

Pyro-Bloc Y and M modules are packaged in cartons sized 12x12x37 inch (305x305x940 mm). Pallets are 38x50x77 inch (965x1270x1956 mm). Pallets will accommodate 24 cartons sized 12x12x37, shrink wrapped to the pallet. Some size combinations may require a minimum order.

| Module Thickness, inch (mm) | 12 x 12 Module | 12 x 6 Module |
|-----------------------------|--------------------|---------------|
| | Modules per carton | |
| 3 (76) | 12 | 24 |
| 4 (102) | 9 | 18 |
| 5 (124) | 7 | 14 |
| 6 (152) | 6 | 12 |
| 7 (178) | 5 | 10 |
| 8 (203) | 6 | 12 |
| 9 (229) | 4 | 8 |
| 10 (254) | 3 | 6 |
| 11 (279) | 3 | 6 |
| 12 (305) | 3 | 6 |

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