# Superwool® Prime Pyro-Fold™ and Pyro-Stack™ Modules

## Product Description

Superwool Prime Pyro-Fold and Pyro-Stack Modules feature exceptional thermal and physical properties. With a classification temperature of 1300°C (2370°F), both module types are made from our Superwool Prime Blankets that are manufactured using patented low biopersistent fibre manufacturing technology that produces a low shot fibre product that features an improved handleability and nuisance dust is eliminated.

Superwool Prime Pyro-Fold and Pyro-Stack Modules do not contain binder or lubricant and do not emit any fumes or smell during the first firing. The modules are available featuring the M-type or T-type Module hardware. The T-type module contains two stainless steel tubes mounted transversely through the module and remote from the hot face. T-type modules are anchored with an external, side-fix yoke. The M-type module hardware is designed with a central yoke embedded into the module, and is fitted onto pre-welded studs.

Please review the best internal anchoring hardware options with your regional Morgan Advanced Materials Sales Representative and Applications Engineering team.

## Features

- Excellent thermal stability results in reliable and consistent thermal insulating performances
- Immune to thermal shock
- Binder or lubricant free
- Thermal stability
- Low heat storage
- High erosion resistance no damage up to 50 m/sec:
  - Superwool Prime Pyro-Bloc tested at 1200°C (2190°F)
- Excellent resistance to chemicals and pollutants, especially alkali metals
- Excellent tensile strength
- Good sound absorption

## Applications

- Power generation especially HRSG stack and duct insulation
- Petrochemical and Refinery applications:
  - Ethylene Cracking Furnaces
  - Ammonia, Hydrogen and Methanol Reformers
  - Delayed Cokers and Refinery Heaters
  - Flare Stacks
- Industrial Furnace, Boiler and Heater linings
  - Iron & Steel heat treatment furnaces
  - Galvanizing Lines
  - Anode Baking Furnace Expansion Joints

## Environmental & Health Safety

Superwool low biopersistent fibres manufactured by Morgan Advanced Materials are not classified as carcinogenic by IARC or under any national regulations on a global basis. They have no requirements for warning labels under GHS (Globally Harmonised System for the classification and labelling of chemicals).

In Europe, Superwool fibres meet the requirements specified under Note Q of European Regulation EC/1272/2008 (on Classification, Labelling and Packaging of substances and mixtures). All Morgan Advanced Materials Superwool low biopersistent fibre products are therefore exonerated from classification and labelling as hazardous in Europe.



www.morganthermalceramics.com
Email: marketing.tc@morganplc.com
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# Superwool® Prime Pyro-Fold™ and Pyro-Stack™ Modules

| Properties | Superwool Prime Pyro-Stack Modules | | | Superwool Prime Pyro-Fold Modules |
|---|---|---|---|---|
| **Colour** | white | | | white |
| **Classification Temperature, °C (°F), EN 1094-1 (2008)** | 1300 (2370) | | | 1300 (2370) |
| **Continuous Use Temperature, °C (°F)** | 1150-1200 (2100-2190) | | | 1150-1200 (2100-2190) |
| **Density, kg/m³ (pcf), EN 1094-1 (2008)** | 160, 190, 210 (10, 11.9, 13.1) | | | 170 (10.6) |
| **Specific heat capacity, kJ/kg•K, 1090°C (1994°F)** | 1.20 | | | 1.20 |
| **Chemical Analysis, %** | | | | |
| Silica, $SiO_2$ | 64-70 | | | 64-70 |
| Calcium Oxide, CaO | 29-35 | | | 18-26 |
| Magnesium Oxide, MgO | 0 | | | 0 |
| Other | <3 | | | <3 |
| **Thermal Conductivity, W/m•K, ASTM C201** | | | | |
| Density, kg/m³ (pcf) | 160 (10) | 192 (12) | 210 (13.1) | 170 (10.6) |
| 200°C | 0.06 | 0.07 | 0.07 | 0.07 |
| 400°C | 0.10 | 0.10 | 0.10 | 0.10 |
| 600°C | 0.16 | 0.15 | 0.15 | 0.16 |
| 800°C | 0.25 | 0.22 | 0.22 | 0.23 |
| 1000°C | 0.36 | 0.32 | 0.31 | 0.32 |
| 1200°C | 0.49 | 0.43 | 0.42 | 0.42 |
| **Thermal Conductivity, BTU•in/hr•ft²•°F, ASTM C201** | | | | |
| 500°F | 0.50 | 0.51 | 0.53 | 0.53 |
| 1000°F | 0.98 | 0.92 | 0.94 | 0.96 |
| 1500°F | 1.79 | 1.60 | 1.60 | 1.63 |
| 1832°F | 2.50 | 2.20 | 2.15 | 2.20 |
| 2000°F | 2.91 | 2.55 | 2.52 | 2.53 |
| 2200°F | 3.45 | 3.00 | 2.96 | 2.95 |

## Product Availability

Pyro-Fold and Pyro-Stack Modules are manufactured and available globally, but packaging, density and thickness availability will vary by region.

Please contact your regional Morgan Advanced Materials - Thermal Ceramics representative to support providing specific packaging availability for your local business needs.





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