

Data Sheet

ArmorWool™ Special Grade Blankets

a product of ArmorMax Engineered Systems

Introduction

ArmorWool Special Grade Blankets consist of 3 Refractory Ceramic Fiber (RCF) blankets: ArmorWool HA, ArmorWool CR and ArmorWool PCW. All of these products are targeted to deliver the highest possible thermal insulation value and handling strength for non-standard grade RCF Blankets.

ArmorWool HA

With an increased alumina, a 2550°F grade blanket was achieved without the use of zirconia. In atmospheres with higher levels of alkali, ArmorWool HA has proven to extend the lifetime of the fiber lining. The chemical composition of ArmorWool HA is the preferred solution in special applications for the iron and steel industry.

ArmorWool CR

ArmorWool CR provides the highest classification and continuous use temperature of all melt/spun fibers using Chromium Oxide. With a classification temperature of 2700°F, it is recommended for use up to 2500°F. It is unaffected by most chemicals and can be used in the most severe operating condition.

ArmorWool PCW

ArmorWool PCW has high thermal insulation properties, high heat resistance, with thermal stability of insulation materials up to 2912°F and excellent resiliency under 2372°F and good tensile strength retention after heating. It is ideal for applications in automotive and steel industries.

ArmorWool Special Grade Blankets are available in a wide range of dimensions and densities from 6 PCF to 8 PCF. Higher density products are available upon request. All products have been developed to meet requirements specific to the final application.

Type

ArmorWool Special Grade Blankets are manufactured from either high temperature RCF or PCW fibers.

Temperature range

| Blanket | Classification Temperature | Maximum Continuous Use Limit* |
|---------------|----------------------------|-------------------------------|
| ArmorWool HA | 2550°F | 2300°F |
| ArmorWool CR | 2700°F | 2500°F |
| ArmorWool PCW | 2900°F | 2912°F |

*The maximum continuous use temperature provided on the data sheet is a guideline and only applicable in a clean oxidizing atmosphere.

Typical applications

- Thermal insulation for furnace lining
- Thermal insulation for lining stacks and chimneys
- Blanket for module making
- Furnace lining in ceramics and glass
- Thermal insulation for petrochemical industry
- Chemically stable insulation for steel treatment
- Thermal insulation of furnaces and industrial applications

Benefits

- Proven technical solution
- Low shot technology
- Excellent insulation performance
- High handling strength
- Unaffected by most chemicals
- Excellent thermal stability
- Resistant to thermal shock

Additional products

Other ArmorWool Blanket products include Standard Grade ArmorWool X, ArmorWool HP, and ArmorWool ZR, as well as a low biopersistence solution, ArmorWool AES.



| Properties measured | Typical Values | | | | | | | | |
|----------------------------|----------------|--|----------------|------|--------------|------|----------------------|----------------------|----------------------|
| | Standard | Unit | ArmorWool HA | | ArmorWool CR | | ArmorWool PCW | | |
| Grade | | | RCF | | RCF | | PCW | | |
| Color | | | white | | green/blue | | white | | |
| Classification temperature | | °F | 2500 | | 2700 | | 2900 | | |
| Continuous use temperature | | °F | 2300 | | 2500 | | 2912 | | |
| Density | | PCF | 6 | 8 | 6 | 8 | 6 | 8 | 9.3 |
| Tensile strength | GB/T 17911 | PSI | 9.5 | 13 | 10.5 | 13 | - | - | - |
| Permanent linear shrinkage | GB/T 17911 | % @2200°F @2550°F | < 2.5 < 4.0 | | < 2 < 3 | | | | |
| | JIS R3311 | @2552°F x 24hrs @2912°F x 24hrs | | | | | ≤1 1 | ≤1 1 | ≤1 — |
| Thermal conductivity | ASTM C201 | BTU·in/hr·ft ² ·°F @ 500°F | 0.52 | 0.47 | 0.52 | 0.46 | | | |
| | | @ 1000°F | 0.90 | 0.76 | 0.83 | 0.74 | | | |
| | | @ 1500°F | 1.56 | 1.32 | 1.43 | 1.28 | | | |
| | JIS R2251-1 | @ 1800°F | 2.05 | 1.85 | 2.03 | 1.72 | | | |
| | | @ 2000°F | 2.52 | 2.19 | 2.40 | 2.05 | | | |
| | | @ 1112°F @ 1832°F @ 2192°F | | | | | 0.16 0.33 0.49 | 0.15 0.32 0.46 | 0.15 0.31 0.44 |
| Chemical composition, % | GB/T 21114 | SiO ₂ | 49-52 | | 51-54 | | 28 | | |
| | | Al ₂ O ₃ | 48-51 | | 43-46 | | 72 | | |
| | | ZrO ₂ | - | | - | | | | |
| | | Fe ₂ O ₃ | < 0,1 | | < 0.2 | | | | |
| | | Cr ₂ O ₃ | - | | 2,5-3,0 | | | | |
| | | Other | < 0,25 | | < 0,25 | | | | |

Availability

ArmorWool Special Grade Blankets are supplied in standard carton boxes or in shrinkwrapped rolls. The blankets are placed on a heat-treated export pallets with 20 rolls per pallet. Please refer to underneath list for availability and dimensions of the fiber; other sizes are available on request.

ArmorWool HA/CR

| Length (In) | Width (In) | Thickness (In) | Sq Ft per roll |
|-------------|------------|----------------|----------------|
| 600 | 24 | 1/2 | 100 |
| 300 | 24 | 1 | 50 |
| 200 | 24 | 1-1/2 | 33.33 |
| 150 | 24 | 2 | 25 |

ArmorWool PCW

| Length (In) | Width (In) | Thickness (In) | Sq Ft per roll |
|-------------|------------|----------------|----------------|
| 425 | 24 | 1/2 | 70.833 |
| 425 | 24 | 1 | 70.833 |

Product range

ArmorWool Special Grade Blankets are part of an extensive product range of high temperature insulation products provided to meet industry demands for a distributor focused on value, responsiveness and high-quality refractory insulation and specialty products to heat-processing industries.

Technical support

ArmorMax Engineered Systems, Inc. provides help with material selections for applications, engineering services and installation, as well as compliance with applicable regulations and performance standards. For additional information, please contact the team at ArmorMax Engineered Systems, Inc.

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