



Alumina Blanket Type NAB & Type NMB

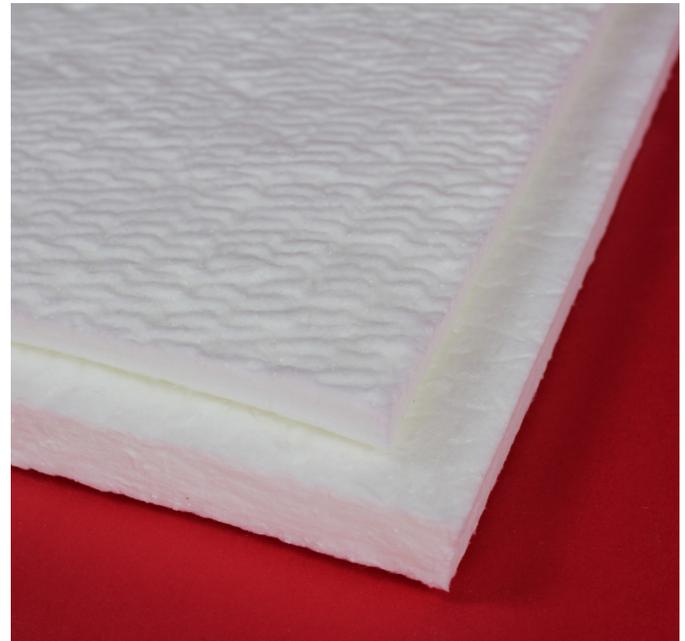
General Information

ZIRCAR Ceramics' Alumina Blankets Type NAB & Type NMB are mechanically-needled blankets made from shot-free, high-purity polycrystalline alumina fiber (PCW). These blankets contain no organic sizings and can be applied to numerous applications with continuous temperatures as high as 1600°C (2912°F).

These high-performance blankets exhibit light weight, low thermal conductivity, low thermal mass and immunity to thermal shock. NAB's high-alpha alumina and NMB's mullite fiber composition give both blankets good strength and high-temperature dimensional stability in applications with elevated temperatures and aggressive chemical environments.

NAB is most suitable in applications where SiO₂ cannot be tolerated and where the most chemically-stable blanket is needed.

NMB has good strength and can be cut into die-cut parts, incorporated into stack-bonded fiber modules or used in full roll lengths.



Characteristics & Properties

| Type | NMB | NAB |
|---|--------------------|----------|
| Nominal Composition, wt.% of fiber | | |
| Al ₂ O ₃ | 80 | 95 |
| SiO ₂ | 20 | 5 |
| α Al ₂ O ₃ | 5 maximum | 30 to 50 |
| Mullite | 50 to 70 | 5 to 16 |
| Al ₂ O ₃ + SiO ₂ | 99.7 minimum | |
| Fe ₂ O ₃ | 0.2 maximum | |
| Color | White | |
| Density (blanket), g/cc (pcf) | 0.1 (6.24) | |
| Average Fiber Diameter, μm | 3 to 5 | |
| Maximum Use Temperature*, °C (°F) | 1600 (2912) | |
| Loss on Ignition, wt. % | 0.3 maximum | |
| Shot Content, (% ≥ 100μm) | 2 maximum | |
| Linear Shrinkage, % after 24 hrs at 1500°C (2732°F) | Width and Length ‡ | ≤1 |
| | Thickness** | ≤3 |

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Characteristics & Properties Continued

| Thermal Conductivity, ASTM C177-76, W/m ² K (BTU/hr ft ² °F/in) | |
|---|-------------|
| 315°C (599°F) | 0.07 (0.50) |
| 540°C (1000°F) | 0.09 (0.70) |
| 760°C (1400°F) | 0.13 (0.90) |
| 980°C (1796°F) | 0.17 (1.25) |
| 1200°C (2192°F) | 0.23 (1.60) |
| 1425°C (2597°F) | 0.30 (2.15) |
| Tensile Strength, kg/cm ² | 0.2 minimum |
| Compressibility, % | 5 minimum |
| Resiliency, % | 5 minimum |

The data presented herein is intended to help the user to determine the appropriateness of this material for their application.

This data is a nominal representation of this product's properties and characteristics and therefore should not be used in preparing specifications.

* Maximum use temperature is dependent on variables such as stresses, both thermal and mechanical, and the chemical environment that the material experiences. ** Properties expressed parallel to thickness. ‡ Properties expressed perpendicular to thickness.

Suggested Applications

Primary and backup thermal insulation in both periodic and continuous furnaces, and thermal process systems operating to 1600°C (2912°F).

Furnace insulation packing around sight tubes, burner blocks, ports, expansion joints, and masonry cracks.

Fabricating into shot-free folded and stack-bonded modules used in steel industry reheat furnaces.

Availability of Standard Blanket

| ITEM # | DESCRIPTION |
|----------|----------------------------------|
| D121D-04 | NMB, 620mm x 450mm x 25mm, SHEET |
| D121D-05 | NMB, 620mm x 1800mm x 25mm, ROLL |
| D121D-06 | NMB, 620mm x 7200mm x 25mm, ROLL |
| D121A-01 | NAB, 620mm x 450mm x 25mm, SHEET |
| D121A-02 | NAB, 620mm x 1800mm x 25mm, ROLL |
| D121A-03 | NAB, 620mm x 7200mm x 25mm, ROLL |

To Order

Standard blanket: order online or specify quantity, item # and description. Standard items are available for immediate shipment from stock.

Custom roll and sheet sizes and die-cut parts can be manufactured.



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Revision Date October 10, 2022