Alumina Blanket
Type NAB & Type NMB

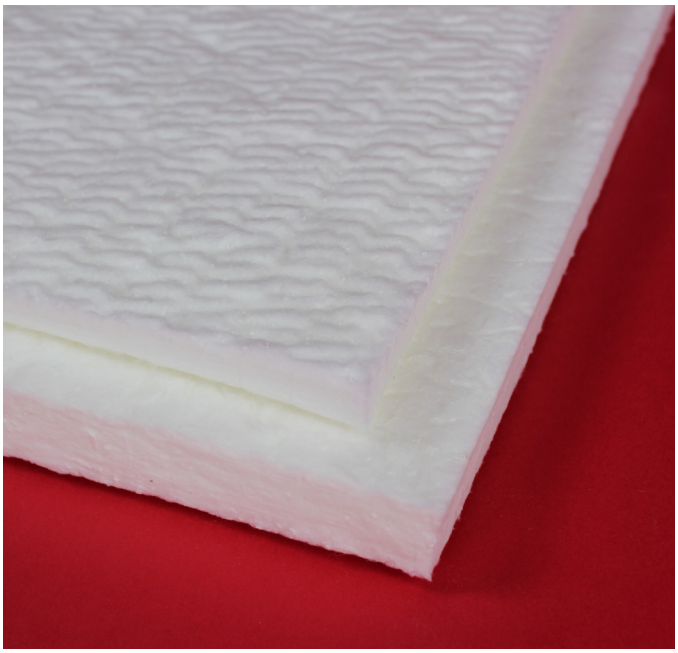
General Information

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 SiO_2 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_2O_3		80	95
SiO_2		20	5
α Al_2O_3		5 maximum	30 to 50
Mullite		50 to 70	5 to 16
$Al_2O_3 + SiO_2$		99.7 minimum	
Fe_2O_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°K (BTU/hr ft² °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/cm²	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-01	NMB, 620mm x 450mm x 12.5mm, SHEET
D121D-02	NMB, 620mm x 1800mm x 12.5mm, ROLL
D121D-03	NMB, 620mm x 7200mm x 12.5mm, ROLL
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 thicknesses (NMB), roll and sheet sizes, and die-cut parts can be manufactured.

Zircar® CERAMICS

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