

CCEWOOL® Polycrystalline Wool Blanket



Classification Temperature: 1600°C (2912°F)

Chemical Composition: Alumina, Silica

CCEWOOL® Polycrystalline Wool Blanket

(PCW Blanket) is a high-performance refractory insulation material developed for extreme-temperature applications typically operating around 1350–1500°C (2462–2732°F). It is produced through a sol-gel process and formed using a

double-sided needle-punching process, providing a dense, uniform fiber structure with good strength and flexibility.

The product is primarily composed of a mullite crystalline phase and maintains excellent dimensional stability and resilience at elevated temperatures. Compared with conventional refractory ceramic fiber, CCEWOOL® PCW Blanket offers better resistance to thermal shock, chemical attack, and demanding furnace atmospheres, making it suitable for high-temperature and chemically aggressive environments.

With extremely low shot content and a highly uniform fiber structure, the blanket helps reduce thermal bridging and maintain low, stable thermal conductivity. This supports lower furnace heat loss and improved insulation efficiency.

Its stable fiber quality, uniform structure, and good flexibility also make CCEWOOL® Polycrystalline Wool Blanket suitable for Fabrication processing into shaped components, modules, composite insulation structures, and customized high-temperature parts.

Characteristics:

Ultra-high-temperature stability up to 1600°C (2912°F);

Very low linear shrinkage;

Very low thermal conductivity;

Extremely low shot content;

Excellent thermal stability;

Excellent thermal shock resistance;

Good chemical stability;
Resistance to acids, alkalis, and chemical attack;
High tensile strength and good mechanical performance;
Binder-free and asbestos-free;
Easy to install.

Applications:

Hot-face linings and integrated insulation for high-temperature industrial furnaces;
Reheating furnaces, galvanizing furnaces, and reducing-atmosphere furnaces;
Aluminum furnaces and other high-temperature melting furnaces;
High-temperature ceramic kiln linings;
Furnace doors, roofs, panels, and removable sections;
Burner block wrapping and burner-area insulation;
High-temperature expansion joint filling;
High-temperature gaskets and seals for melting furnaces;
Automotive catalytic converter mat applications;
Engine, muffler, and exhaust system insulation;
Boilers, tanks, and high-temperature equipment insulation;
Ladle covers and high-temperature vessel insulation;
Marine and offshore high-temperature insulation;
Battery fire-protection covers and high-temperature fire barriers;
High-temperature insulation areas requiring long-term service up to 1600°C (2912°F).

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CCEWOOL® Polycrystalline Fiber Blanket	
Classification Temperature(°C)(°F)	1600°C(2912°F)
Continuous Temperature Use Limit (°C)(°F)	1500°C(2732°F)
Chemical Composition (%)	
Al ₂ O ₃ (%)	71-73
SiO ₂ (%)	27-29
Leachable Chlorides	Trace
Color	White
Density (kg/m ³)	96/128 (6,8lb/ft ³)

Zibo Double Egret Thermal Insulation Co., Ltd
Add: No.105 Liuquan Road, Zibo, Shandong, China
Tel: +86-533-7986860

Email: ceramicfibres@ccewool.com
Website: www.ceramicfibres.com
www.ccceramicfiber.com
www.ccwool.com

Tensile Strength (kPa)	≥80
Permanent Linear Shrinkage (%)	1400°C x24h<1.0
Thermal Conductivity (W/m-K)	
400°C	0.09
600°C	0.16
800°C	0.22
1000°C	0.28
1200°C	0.36
1400°C	0.45

Specifications	
Thickness	3-25mm (0.12"-1")
Width	610mm (24")
Length	7200mm, 10800mm, 14400mm, etc., can be customized
Density	96kg/m3 (6lb/ft3)
	128kg/m3 (8lb/ft3)
	160kg/m3 (10lb/ft3)