Morgan Advanced Materials

POREXTHERM

Data sheet

WDS® High

ENGLISH

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Description

WDS® High is a microporous insulation material which has an extremely low thermal conductivity coefficient giving it very good insulating properties. WDS® High can be protected by various wrapping possibilities, this allows an easy and dust-free installation as well as protecting the product from moisture.

WDS® High consists of inorganic silicates. The main constituent is fumed silica; the other components are opacifiers to minimize infrared radiation.

WDS® High (core material) is not flammable and meets the requirements acc. to DIN EN 13501-1 for fire protection class A1.

Application

Tried and tested applications for WDS® High include insulation for heat-treatment furnaces in the aluminum industry and back-up insulation in the industrial furnace industry.

Advantages

- Controls energy emissions, precisely
- Increases heat retention
- Reduces both weight and insulation volume
- Increases effective volume

WDS® High is also successfully used as insulation material in the following areas:

- Heat treatment systems for glass
- Fire protection equipment
- Electronic devices
- Plant construction parts
- Chimneys, pipes

Form of delivery

Standard sizes:

600mm x 500mm
(24 inch x 20 inch)
1000mm x 600mm
(39 inch x 24 inch)

Standard thicknesses:

10mm, 12mm, 15mm, 17mm, 20mm, 25mm, 30mm, 35mm, 40mm, 45mm, 50mm
Maximum Size: 1200mm x 1000mm x thickness
0.4 inch, 0.5 inch, 0.6 inch, 0.7 inch, 0.8 inch, 1 inch, 1.2 inch, 1.4 inch, 1.6 inch, 1.8 inch, 2 inches
Maximum Size: 47 inches x 39 inches x thickness
Tolerances acc. to DIN ISO 2768
Tolerance class “c”, coarse. Thickness ±1,0mm

Special formats available on request.

Restrictions on applications

WDS® High has a non-porous surface therefore it is sensitive to all liquids that can wet it; this includes substances such as water, oil and petroleum spirit, since they can destroy the pore structure.

The moisture sensitivity of WDS® High can be greatly improved or eliminated by using a surface treatment such as aluminum foil or shrink wrapping with PE Film.

Shelf life

- WDS® High, has unlimited shelf life if it stored properly
- WDS® High must be handled and stored in dry conditions.
- WDS® High is resistant to diffusion by atmospheric humidity (water vapor).

Thermal Shock Resistance

WDS® High is insensitive to high and low temperature thermal shocks.

Safety directions

WDS® High is not a hazardous substance according to the EU Directive 2006/1907/EEC. The fibers used for mechanical reinforcement have a diameter of> 5 μm; therefore they are not respirable (in accordance to the WHO definition). WDS® High does not use any dangerous decomposition substances and according to current knowledge, it does not cause any problems to human health or the environment.

Composition

Silicon dioxide	SiO_2	approx. 80%
Zirconium silicate	$ZrSiO_4$	approx. 15%
Others		approx. 5%

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Metric information

Physical properties	
Colour	White
Nominal density kg/m³	250 - 310
Classification temperature °C	1100
Recommended temperature of use °C	1000
Shrinkage % @1000°C for 12 hrs exposed on single side AAW 906-00	0.6
Linear shrinkage % 24hrs full soak	
@950°C	1.6
@1000°C	3.5
Cold compressive strength N/mm² ASTM C165	0.386
Compressive strength MPA ASTM C165 @600°C	1.3
Specific heat capacity kJ/kg·K DIN 51007 @700°C	0.963
Thermal conductivity W/m·K ASTM C177	
@50°C	<0.022
@200°C	0.022
@400°C	0.030
@600°C	0.043
@800°C	0.060

The above data are only intended as a guide and should not be used in preparing specifications.

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Imperial information

Physical properties	
Colour	White
Nominal density pcf	15.6 - 19.4
Classification temperature °F	2012
Recommended temperature of use °F	1742
Shrinkage % @1832°F for 12 hrs exposed on single side AAW 906-00	0.6
Linear shrinkage % 24hrs full soak	
@1742°F	1.6
@1832°F	3.5
Cold compressive strength N/mm² ASTM C165	0.386
Compressive strength MPA ASTM C165 @1112°F	1.3
Specific heat capacity of raw panel kJ/kg·K DIN 51007 @1292°F	0.963
Thermal conductivity BTU•in./hr•ft²•°F ASTM C177	
@122°F	<0.15
@392°F	0.15
@752°F	0.21
@1112°F	0.30
@1472°F	0.42

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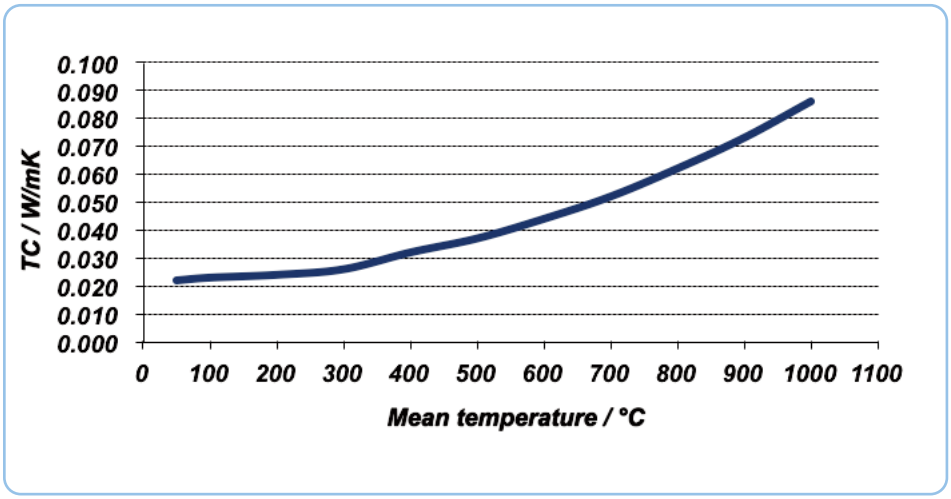
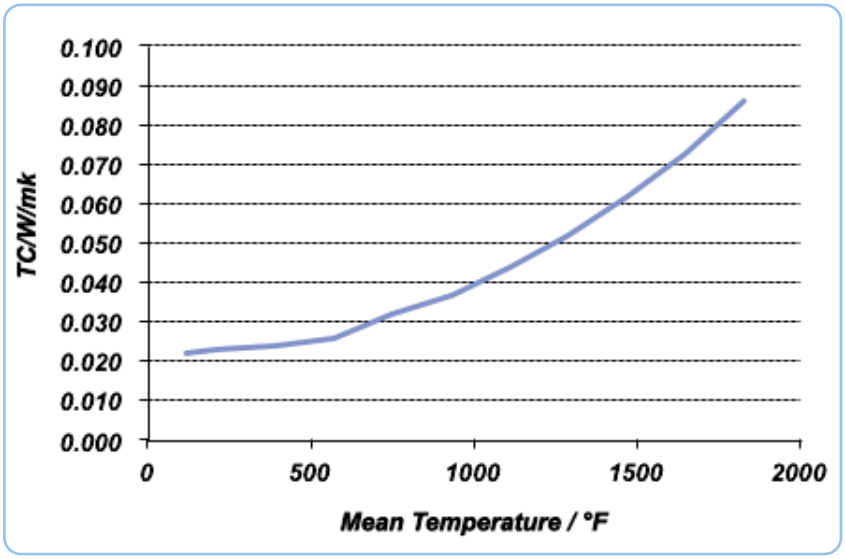
Thermal conductivity as a function of mean temperature





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