

Data sheet

WDS® Ultra

ENGLISH

Metric information - Page 2
Imperial information - Page 3

Description

WDS® Ultra is a microporous insulation material which has an extremely low thermal conductivity coefficient giving it very good insulating properties.

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

WDS® Ultra 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® Ultra include insulation for heat-treatment furnaces in the aluminum industry, or back-up insulation in the industrial furnace industry.

In these applications, WDS® Ultra fulfills several functions, such as :

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

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

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

Form of delivery

Standard sizes:

- 500mm x 650 mm
(29 x 26 inch)
- 1000mm x 650 mm
(39 x 26 inch)

Standard thicknesses:

- 10mm, 15mm, 20mm, 25mm
- 30mm, 35mm, 40mm, 45mm, 50mm
- Maximum Size 1320 mm x 1000 mm
x thickness
(0.4 inch, 0.6 inch, 0.8 inch, 1 inch,
1.2 inch, 1.4 inch, 1.6 inch, 1.8 inch, 2 inch
- Maximum Size 52 inch x 39 inch x
thickness)

Tolerances acc. to DIN ISO 2768. Tolerance class "c", coarse for length, breadth, for thickness ± 1mm. Special formats available on request

Restrictions on applications

WDS® Ultra has a 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® Ultra can be greatly improved or eliminated by treating it with an appropriate surface treatment such as PE film or aluminum foil.

Shelf life

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

Thermal Shock Resistance

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

Safety directions

WDS® Ultra 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® Ultra 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%
Silicon carbide	SiC	approx. 15%
Others		approx. 5%.



Data sheet
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Metric information

Physical properties		
Colour		Grey
Nominal density kg/m ³		200 - 250
Classification temperature °C		1000
Cold compressive strength MPa ASTM C165		0.417
Compressive strength MPa ASTM C165 @600°C		0.71
Shrinkage % @1000°C for 12 hrs exposed on single side AAW 906-00		0.6
Linear shrinkage % 24hrs full soak	@900°C	1.1
	@950°C	1.4
Specific heat capacity kJ/kg·K DIN 51007 @700°C		0.945
Thermal conductivity W/m·K ASTM C177	@200°C	0.022
	@400°C	0.027
	@600°C	0.034
	@800°C	0.044

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		Grey
Nominal density pcf		12,91 - 15,76
Classification temperature °F		1832
Cold compressive strength MPa ASTM C165		0.417
Compressive strength MPa ASTM C165 @1112°F		0.71
Shrinkage % @1742°F for 12 hrs exposed on single side AAW 906-00		0.6
Linear shrinkage % 24hrs full soak	@1652°F	1.1
	@1742°F	1.4
Specific heat capacity kJ/kg·K DIN 51007 @932°F		0.945
Thermal conductivity BTU-in./hr-ft ² ·°F ASTM C177	@392°F	0.15
	@752°F	0.19
	@1112°F	0.24
	@1472°F	0.31

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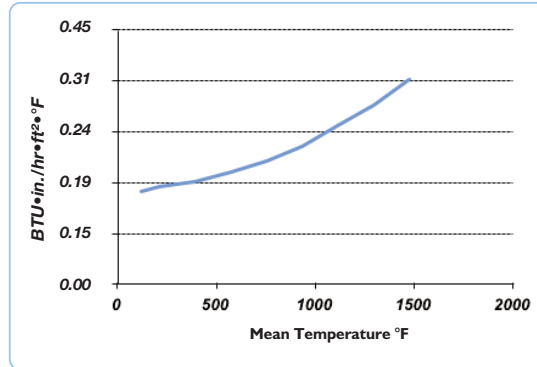
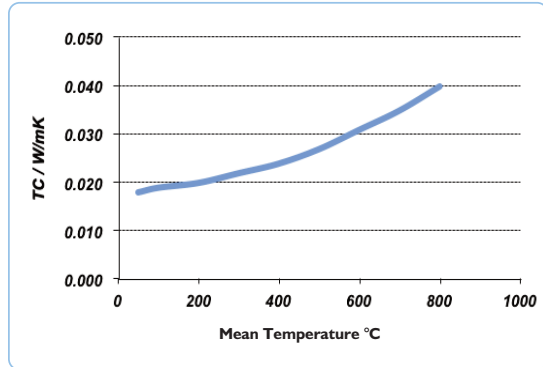
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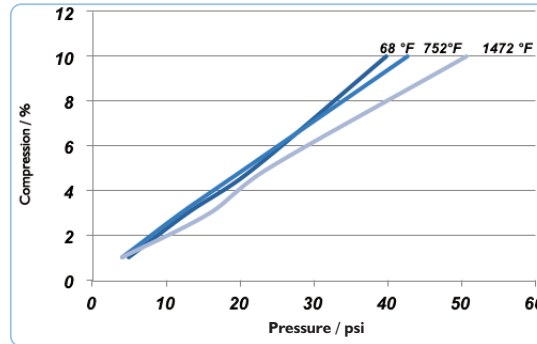
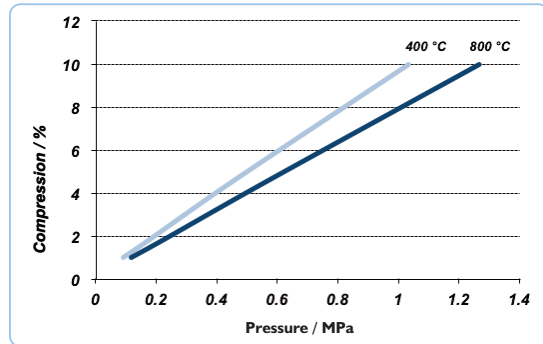
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Thermal conductivity as a function of mean temperature



Compression behavior



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