

Data sheet

**WDS® Shape**

ENGLISH

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**Description**

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

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

WDS® Shape is not flammable and meets the requirements acc. to DIN EN 13501-1 for fire protection class A1. The recommended application temperature of use is 950°C (1742°F).

**Application**

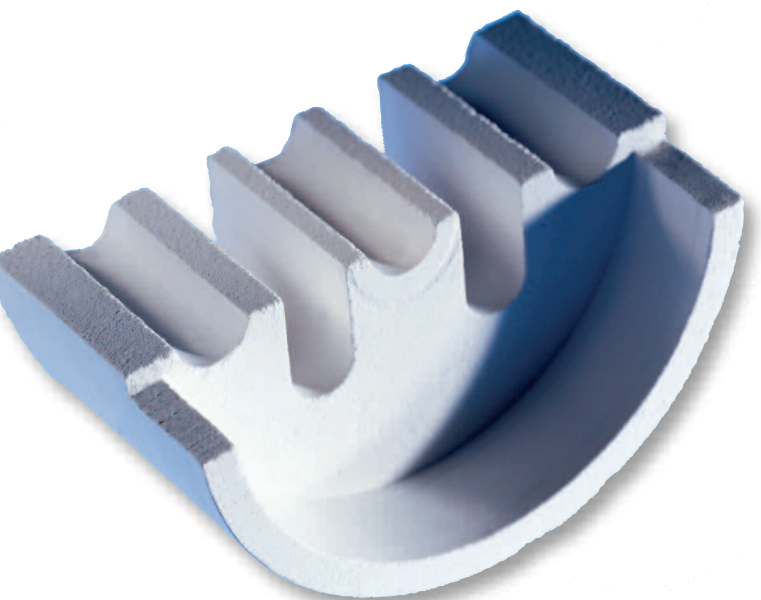
Tried and tested applications for WDS® Shape include insulation of data storage media system or insulation for laboratory instruments as well as electric grills (especially for ceramic grills).

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

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

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

- Electronic devices
- Measurement Equipment



**Form of delivery**

**Produced according to drawings or specification.**

**Standard sizes:**

1000mm x 650mm  
(39 x 26 inch)

**Standard thicknesses:**

10mm, 15mm, 20mm, 25mm  
30mm, 35mm, 40mm, 45mm  
50mm  
(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)

Tolerances according to DIN ISO 2768 Tolerance class “c”, coarse.

**Restrictions on applications**

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

The moisture sensitivity can be greatly improved or eliminated by treating it with an appropriate surface treatment (such as PE film or aluminium foil).

**Shelf life**

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

**Thermal Shock Resistance**

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

**Safety directions**

WDS® Shape 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® Shape 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	SiO2	approx. 50 %
Zirconium silicate	ZrSiO4	approx. 45 %
Other		approx. 5 %

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Metric information

Physical properties		
Colour		White
Nominal density kg/m <sup>3</sup>		300 - 350
Classification temperature °C		1000
Recommended temperature of use °C		950
Cold compressive strength N/mm <sup>2</sup> ASTM C165		0.342
Compressive strength MPa ASTM C165 @600°C		0.56
Shrinkage % @1000°C for 12 hrs exposed on single side AAW 906-00		0.4
Linear shrinkage % 24hrs full soak	@950°C	1.1
	@1000°C	2.0
Specific heat capacity kJ/kg·K DIN 51007 @700°C		0.909
Thermal conductivity W/m·K ASTM C177	@100°C	0.022
	@200°C	0.025
	@400°C	0.031
	@600°C	0.037
	@800°C	0.042

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

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# WDS® Shape

Imperial information

Physical properties		
Colour		White
Nominal density pcf		18.73 - 21.85
Classification temperature °F		1832
Recommended temperature of use °F		1742
Cold compressive strength N/mm <sup>2</sup> ASTM C165		0.342
Compressive strength MPa ASTM C165 @1112°F		0.56
Shrinkage % @1832°F for 12 hrs exposed on single side AAW 906-00		0.4
Linear shrinkage % 24hrs full soak	@1652°F	1.2
	@1742°F	2.2
Specific heat capacity kJ/kg·K DIN 51007 @1292°F		0.909
Thermal conductivity BTU·in./hr·ft <sup>2</sup> ·°F ASTM C177	@212°F	0.15
	@392°F	0.17
	@752°F	0.21
	@1112°F	0.26
	@1472°F	0.29

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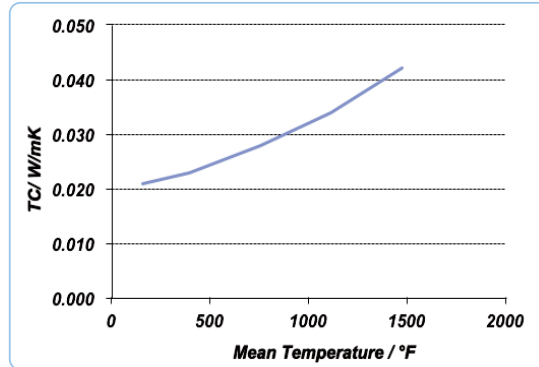
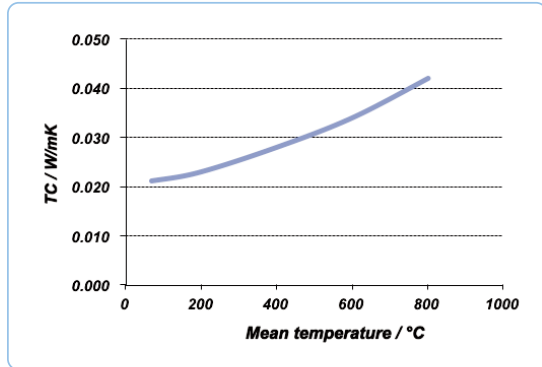
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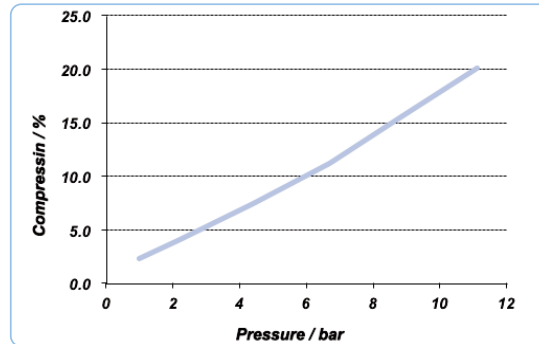
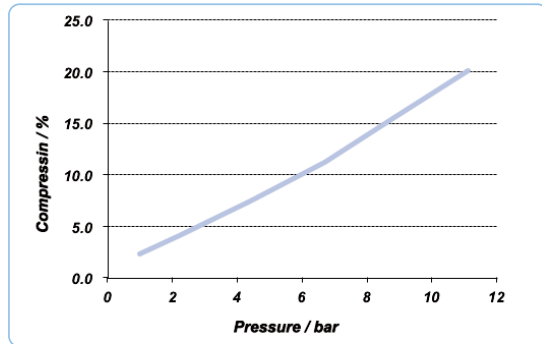
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Thermal conductivity as a function of mean temperature



Compression behavior



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