

# WDS<sup>®</sup> Ultra

## Characteristics

WDS<sup>®</sup> Ultra is a microporous insulation material with an extremely low coefficient of thermal conductivity, i.e. with very good insulating properties.

WDS<sup>®</sup> Ultra consists of inorganic silicates. The main constituent is fumed silica, the other components are opacifiers for minimizing infrared radiation.

WDS<sup>®</sup> Ultra is not flammable and meets the requirements acc. to DIN ISO 4102 for fire protection class A1.

## Application

Tried and tested applications for WDS<sup>®</sup> Ultra include insulation for heat-treatment furnaces in the aluminum industry, or back-up insulation in the industrial furnace industry.

**In these applications, WDS<sup>®</sup> Ultra fulfills several functions, such as:**

- Precisely controlled energy emission
- Reduction of weight and volume
- Increase of heat retention
- Increased effective volume

**WDS<sup>®</sup> 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

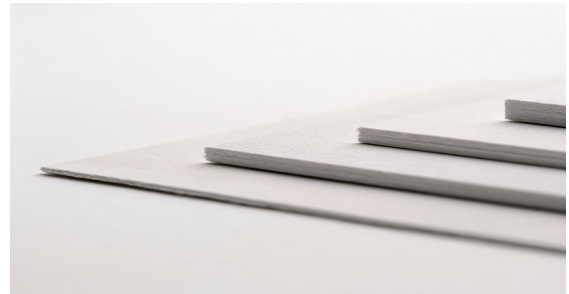
## Form of delivery

### 1. Standard sizes:

- 1000 mm x 650 mm x X
- 650 mm x 500 x X

### 2. Standard thicknesses (X):

- 10 mm, 15 mm, 20 mm, 25 mm, 30 mm, 35 mm, 40 mm, 45 mm, 50 mm
- Tolerances acc. to DIN ISO 2768 → Tolerance class "c", coarse.
- also available in customized panel forms
- max. Size 1320 mm x 1000 mm x thickness



## Restrictions on application

WDS<sup>®</sup> Ultra is sensitive to all liquids that can wet it, such as water, oil, petroleum spirit, since they can destroy the nanoporous structure.

The moisture sensitivity of WDS<sup>®</sup> Ultra can be greatly improved or eliminated altogether by suitable surface treatment (e.g. PE film, aluminum foil, or liquid coatings)

## Shelf life

WDS<sup>®</sup> Ultra has an unlimited shelf life. WDS<sup>®</sup> Ultra must be handled and stored in dry conditions. WDS<sup>®</sup> Ultra is resistant to diffusion by atmospheric humidity (water vapor).

## Composition

Silicon dioxide	SiO <sub>2</sub>	approx. 80%
Silicon carbide	SiC	approx. 15%
Others		approx. 5%.

## Electrical resistance

Panel unhardened	
Stored under dry conditions	> 2000 MΩ

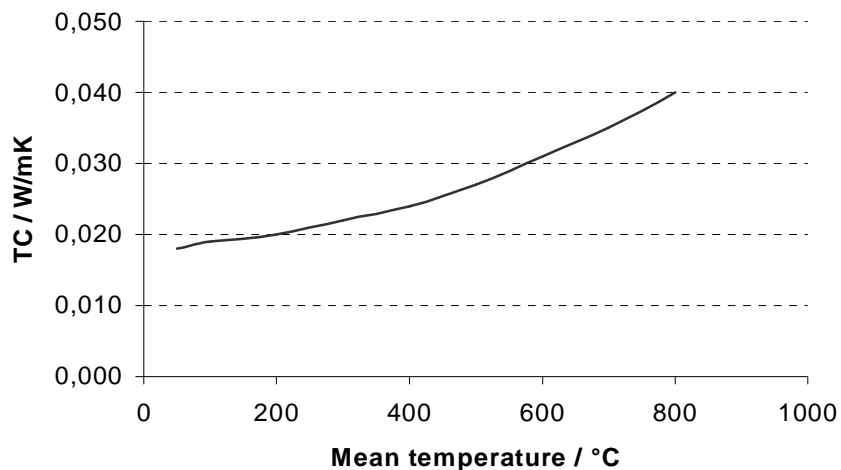
## Thermal shock resistance

WDS<sup>®</sup> Ultra is insensitive to high and low temperature thermal shocks.

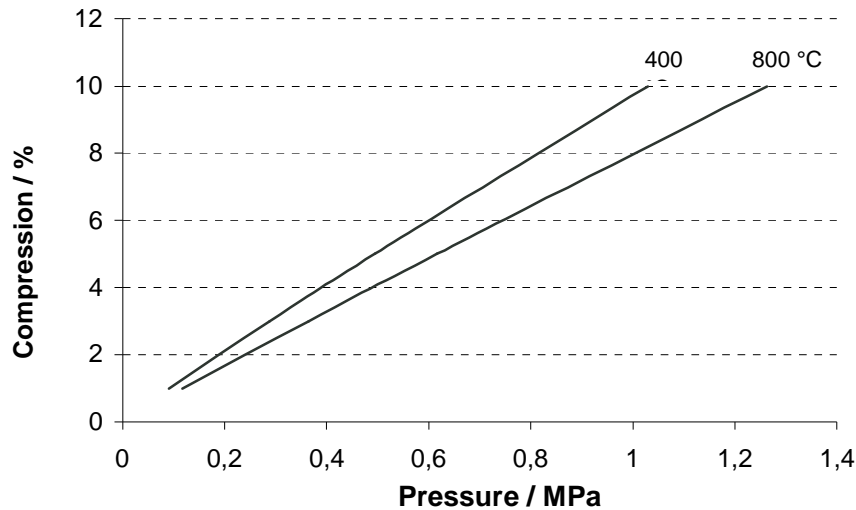
## Product data

Physical properties		Standards	Units	Values
Color				Grey
Bulk density			kg / m <sup>3</sup>	230 ± 10%
Max. application temperature			°C	950
Low-temp. flexural strength		DIN 53423	N / mm <sup>2</sup>	0.16
Shrinkage		Temperature applied to one side		0.5% at 1000 °C / 12h
Linear shrinkage / long term		Temperature at all sides		800 °C 1.0% 1000 °C 4.8%
Compression		400 °C	800 °C	
	1 %	0.090 MPa	0.117 MPa	
	3 %	0.288 MPa	0.364 MPa	
	5 %	0.494 MPa	0.617 MPa	
	10 %	1.029 MPa	1.263 MPa	
Thermal conductivity		DIN 51046		
		50 °C	W / mK	0.018
		100 °C	W / mK	0.019
		200 °C	W / mK	0.020
		300 °C	W / mK	0.022
		400 °C	W / mK	0.024
		500 °C	W / mK	0.027
		600 °C	W / mK	0.031
		700 °C	W / mK	0.035
		800 °C	W / mK	0.040

## Thermal conductivity as a function of mean temperature (DIN 52612)



## Compression behavior



## Safety directions

WDS<sup>®</sup> Ultra is not a hazardous material as defined in EU directive 91/155/EEC.

The fibers used for mechanical reinforcement of WDS<sup>®</sup> Ultra are not respirable as defined by WHO.

WDS<sup>®</sup> Ultra does not liberate hazardous decomposition products and, as far as is known at present, does not cause any problems to human health.

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.



and WDS<sup>®</sup> are registered trademarks of Porextherm Daemmstoffe GmbH.

Version 1.02 of 05/01/05

Please address all technical questions that affect quality and product safety to:

Porextherm Daemmstoffe GmbH  
Heisinger Str. 8  
D-87437 Kempten

[www.porextherm.com](http://www.porextherm.com)  
[info@porextherm.com](mailto:info@porextherm.com)



DIN EN ISO 9001:2000  
Zertifikat: 01 100 030449