

Data sheet

WDS® LambdaFlex®

ENGLISH

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**Description**

WDS® LambdaFlex® is a microporous insulation material which has an extremely low thermal conductivity coefficient giving it very good insulating properties. WDS® LambdaFlex® is heat sealed in a close-fitting 15 µm PE laminated film for purposes of flexibility.

WDS® LambdaFlex® consists of inorganic silicates. The main constituent is fumed silica; the other components are opacifiers to minimize infrared radiation and reinforce glass filaments.

WDS® LambdaFlex® (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® LambdaFlex® include back-up insulation in the steel and non-ferrous metals industry.

**Advantages**

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

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

- Heat treatment systems for metals
- Heat treatment systems for glass
- Fire protection equipment
- Electronic devices
- Metrology and instrumentation
- Plant construction parts
- Parts in the automotive industry
- Chimneys, pipes and diesel exhaust systems

**Form of delivery**

**Standard sizes:**

- 250mm x 500mm  
(9.8 inch x 20 inch)
- 500mm x 500mm  
(20 inch x 20 inch)
- 1000mm x 500mm  
(39 inch x 20 inch)

**Standard thicknesses:**

- 3mm, 5mm, 7mm, 10mm
- 0.1 inch, 0.2 inch, 0.3 inch, 0.4 inch

Tolerances acc. to DIN ISO 2768 ® Tolerance class “c”, coarse, thickness ± 1,0mm. Complex geometries and special formats available on request

**Restrictions on applications**

WDS® LambdaFlex® (the core material) is sensitive to all liquids that can wet it, such as water, oil, petroleum spirit, since they can destroy the pore structure.

Please ensure that the cover film is not damaged before or during installation. Damaged edges must be covered and protected using an AI-adhesive tape.

**Shelf life**

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

**Thermal Shock Resistance**

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

**Safety directions**

WDS® LambdaFlex® 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® LambdaFlex® 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 <sub>2</sub>	approx. 50%
Zirconium silicate	ZrSiO <sub>4</sub>	approx. 45%
Others		approx. 5%



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Metric information

Physical properties		
Colour (without film)		White
Nominal density kg/m <sup>3</sup>		300 - 430
Classification temperature °C		1100
Shrinkage % @1000°C for 12 hrs exposed on single side AAW 906-00		0.4
Linear shrinkage % 24hrs full soak	@950°C	1.6
	@1000°C	3.7
Compressive strength MPa ASTM C165 @600°C		0.414
Specific heat capacity kJ/kg·K DIN 51007 @700°C		1.0
Thermal conductivity W/m·K ASTM C177	@20°C	0.021
	@200°C	0.024
	@400°C	0.028
	@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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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.

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# WDS® LambdaFlex®

Imperial information

Physical properties		
Colour (without film)		White
Nominal density pcf		18.73 - 26.84
Classification temperature °F		2012
Shrinkage % @1000°C for 12 hrs exposed on single side AAW 906-00		0.4
Linear shrinkage % 24hrs full soak	@1742°F	1.6
	@1832°F	3.7
Compressive strength MPa ASTM C165 @1112°F		1.35
Specific heat capacity kJ/kg·K DIN 51007 @1292°F		1.0
Thermal conductivity BTU·in./hr·ft²·°F ASTM C177	@68°F	0.15
	@392°F	0.17
	@752°F	0.19
	@1112°F	0.23
	@1472°F	0.31

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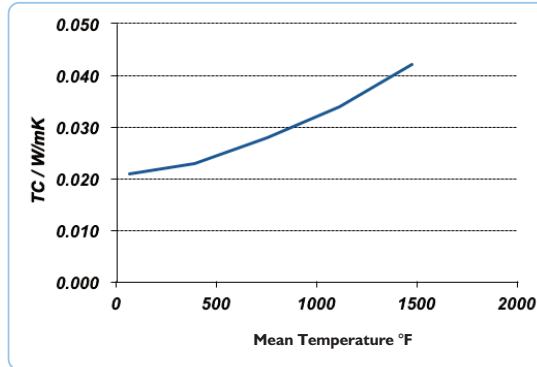
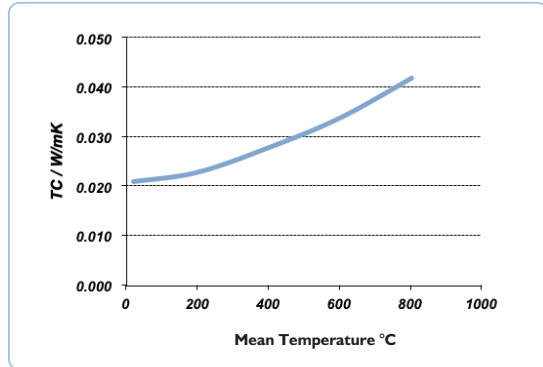
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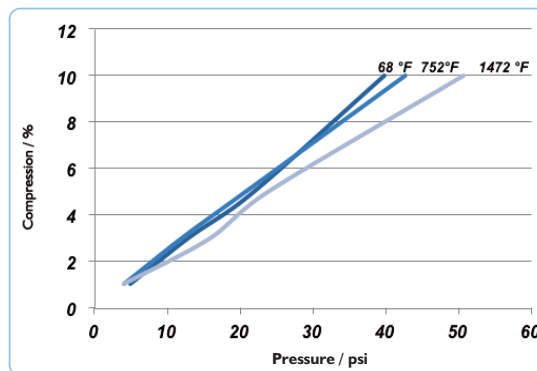
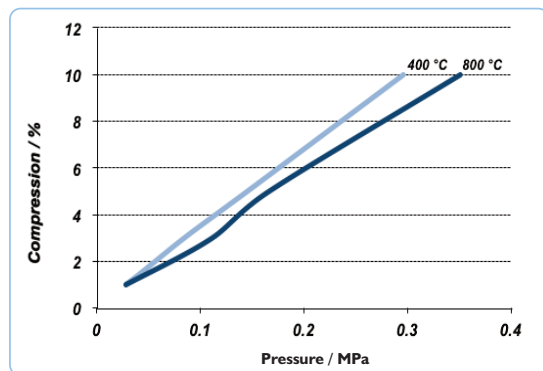
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Thermal conductivity as a function of mean temperature



Compression behavior (panel core)



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