

Data sheet

# WDS® LambdaFlex® Super

ENGLISH

Metric information - Page 2  
Imperial information - Page 3

## Description

WDS® LambdaFlex® Super is a microporous insulation material which has an extremely low thermal conductivity coefficient giving it very good insulating properties. WDS® LambdaFlex® Super is welded for added flexibility in an aluminum foil composite system.

WDS® LambdaFlex® Super 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® Super (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® Super 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® Super 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 according to DIN ISO 2768 (Tolerances class "c", coarse) thickness  $\pm 1,0$ mm.

Special Formats available on request.

## Restrictions on applications

WDS® LambdaFlex® Super (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 Aluminium adhesive tape.

## Shelf life

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

## Thermal Shock Resistance

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

## Safety directions

WDS® LambdaFlex® Super is not a hazardous substance according to the EU Directive 2006/1907/EEC. The fibers used for mechanical reinforcement have a diameter of  $> 5 \mu\text{m}$ ; therefore they are not respirable (in accordance to the WHO definition) WDS® LambdaFlex® Super 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%



Data sheet

Metric information

# WDS® LambdaFlex® Super

Physical properties		
Colour		Silver
Nominal density kg/m <sup>3</sup>		300 - 450
Classification temperature °C		1100
Shrinkage % @1000°C for 12 hrs exposed on single side AAW 906-00		0.6
Linear shrinkage % 24hrs full soak	@950°C	1.1
	@1000°C	2.0
	@1050°C	6.1
Compressive strength MPa ASTM C165 @600°C		1.35
Specific heat capacity kJ/kg·K DIN 51007 @700°C		0.999
Thermal conductivity W/m·K ASTM C177	@20°C	0.024
	@200°C	0.030
	@400°C	0.035
	@600°C	0.044
	@800°C	0.058

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

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Data sheet

Imperial information

# WDS® LambdaFlex® Super

Physical properties		
Colour		Silver
Nominal density pcf		18.73 - 28.09
Classification temperature °F		2012
Shrinkage % @1832°F for 12 hrs exposed on single side AAW 906-00		0.6
Linear shrinkage % 24hrs full soak	@1742°F	1.1
	@1832°F	2.0
	@1922°F	6.1
Compressive strength MPa ASTM C165 @1112°F		1.35
Specific heat capacity kJ/kg·K DIN 51007 @1292°F		0.999
Thermal conductivity BTU·in./hr·ft²·°F ASTM C177	@68°F	0.17
	@392°F	0.21
	@752°F	0.24
	@1112°F	0.31
	@1472°F	0.40

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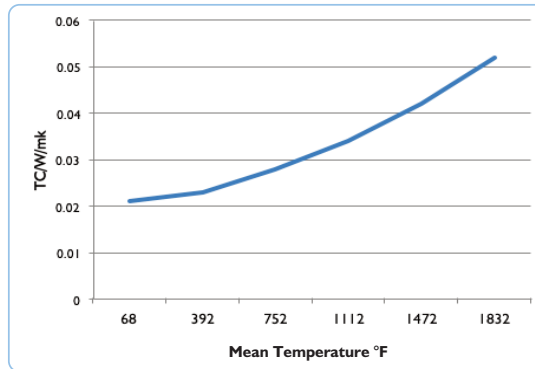
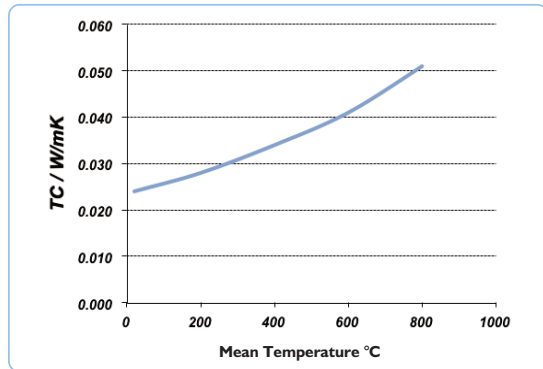
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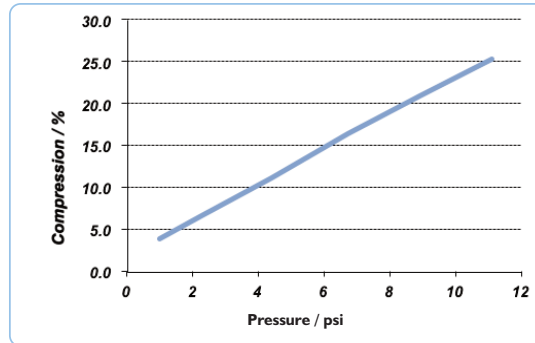
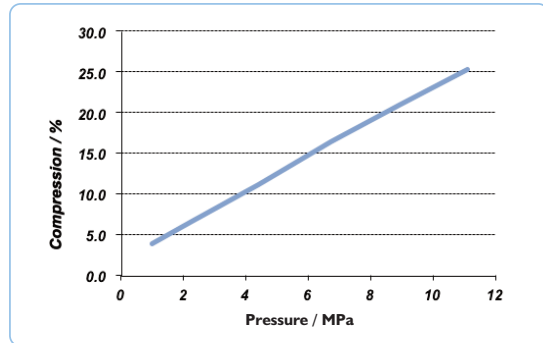
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Thermal conductivity as a function of mean temperature



Compression behavior (panel core)



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