



# WDS<sup>®</sup> LambdaFlex<sup>®</sup> Super

## Product Data Sheet

### Product Description

WDS LambdaFlex Super is an encapsulated flexible and compact microporous insulation sheet for applications up to 1050°C (1922°F) and is specifically designed for applications where a high classification temperature, low shrinkage and the highest possible compressive strength are the main selection criteria. Flexibility and water repellence are ensured by an outer encapsulation facing, constituted of a PE/Aluminium foil envelope which protects the microporous core.

All WDS microporous insulation solutions offer exceedingly low thermal conductivity at high temperatures by limiting convection, conduction and radiation with the most effective methods possible. This results in an insulating solution that is several times better than typical high temperature lightweight insulation materials.

WDS microporous insulation solutions are the ideal choice for increased energy savings, space optimization and/or reduction of weight.

### Features

- Excellent compressive strength
- High Classification Temperature
- Low shrinkage up to its classification temperature
- Flexible
- Thickness from as low as 3mm
- Non-porous and durable evacuated envelope
- Low thermal conductivity over the full temperature range
- Unaffected by thermal shock
- Easy to cut and with proven installation techniques
- Homogeneous and compact mineral structure
- Does not contain hazardous components such as Rutile (TiO<sub>2</sub>)
- Available as a raw board

### Benefits

- > Limited deformation under high loads such as furnace floors
- > Suitable for higher temperature applications
- > Limited deformation while in use creating a stable backup insulation base behind other refractories
- > Suitable for use on curved surfaces
- > Suitable for applications with limited space
- > Excellent handleability, water repellent and limited dust release
- > Design flexibility whether you need to save energy or create space
- > Suitable for applications requiring rapid heat up or cool down
- > Quick and easy dimensional modifications
- > Reliable and consistent performance throughout the board
- > Environmentally friendly and safe
- > Suitable for when an ultra thin, rigid board is required

### Applications

High temperature, high strength back up insulation applications including:

- Transport and process ladles, torpedo ladles, tundishes
- Rotary kilns
- Cyclones
- Calciners
- Furnace floors

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Properties		WDS LambdaFlex Super
Product form		Flexible
Classification Temperature, °C (°F)		1050 (1922)
Density, kg/m <sup>3</sup> (pcf), DIN 66133		415 (25.9)
Compressive Strength (10% deformation), MPa (psi), ASTM C165		
	Core only / board data	0.95 (137.8)
Linear Shrinkage, %, ASTM C356		
	1050°C (1922°F), 24 hour full soak	3.0
	1050°C (1922°F), 12 hour, single side soak	0.6
Chemical Analysis, %		
	Silica, SiO <sub>2</sub>	40-60
	Zirconium silicate, ZrSiO <sub>4</sub>	25-45
	Others	20-35
Thermal Conductivity, W/m·K (BTU·in/hr·ft <sup>2</sup> ·°F), ASTM C177		
	200°C (392°F)	0.032 (0.222)
	400°C (752°F)	0.037 (0.257)
	600°C (1112°F)	0.045 (0.312)
	800°C (1472°F)	0.060 (0.416)

### Shelf Life

- WDS LambdaFlex Super has unlimited shelf life if it is stored properly
- WDS LambdaFlex Super should be kept in dry conditions, not exposed to sunlight or sources of heat, and inside their original packaging
- Although unlikely, loss of vacuum of the outer envelope may occur time to time in case the material is not properly stored. Should this occur, the properties of the product, notably thermal and mechanical performances overall, are not affected.

### Standard Dimensions and Availability

Board Size, mm (in)	Thickness, mm (in)
1000 x 600 (39.3 x 23.6)	3, 5, 7, 10, 12 (0.12, 0.19, 0.27, 0.29, 0.47)
500 x 600 (19.5 x 23.6)	
500 x 500 (19.5 x 19.5)	
500 x 250 (19.5 x 9.7)	

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## Environmental and Health Safety

WDS LambdaFlex Super does not contain any hazardous substance as defined by EU Directive 2006/1907/EEC and IARC. The fibers or filaments used as reinforcement of the mineral core are also exonerated from any classification falling under EU Directive 97/69/EC.

## Resistance to Moisture and Water

Thanks to an encapsulation process, WDS LambdaFlex Super is completely sealed tight and therefore not affected by liquids; when cutting the material, it is good practice to re-seal the cut part with bi-adhesive aluminum tape to ensure no liquid infiltration can occur.

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product, and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials.