

# WDS<sup>®</sup> Flexipor<sup>®</sup>

## Product Data Sheet



### Product Description

WDS Flexipor is a light weight microporous flexible insulation designed for applications up to 1000°C (1832°F) where high compressive strength and flexibility associated to low thermal conductivity are the main selection criteria. WDS Flexipor is a sheet constituted of high performance WDS microporous insulation core and either of two encapsulation options. The standard encapsulation includes a low biopersistence fiber paper on both sides which is then encapsulated in a PE film to provide high flexibility and sharp edges. The second encapsulation option is an evacuated PE envelope for additional handleability and puncture resistance.

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

- Flexible
- Very high compressive resistance
- Dual encapsulation option
- Thickness from as low as 3mm
- Low thermal conductivity over the full temperature range
- Unaffected by thermal shock
- Easy to cut and die cut
- Homogeneous and compact mineral structure
- Does not contain hazardous components such as Rutile (TiO<sub>2</sub>)
- Available as a raw board

### Benefits

- > Suitable for use on curved surfaces
- > Limited deformation under high loads such as furnace floors
- > Good handling properties and limited dust release
- > Suitable for applications with limited space
- > 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

Suitable for a range of industrial and domestic applications including:

- Hobby kilns
- Transfer lines
- Process heaters
- Batteries
- Electronic devices
- Automotive parts
- Pipes
- Exhaust systems

Properties		WDS Flexipor
Product form		Flexible
Classification Temperature, °C (°F)		1000 (1832)
Density, kg/m <sup>3</sup> (pcf), DIN 66133		375 (23.4)
Compressive Strength (10% deformation), MPa (psi), ASTM C165		
	Core only / board data	0.85 (123.3)
Linear Shrinkage, %, ASTM C356		
	1000°C (1832°F), 24 hour full soak	4.0
	1000°C (1832°F), 12 hour, single side soak	1.0
Chemical Analysis, %		
	Silica, SiO <sub>2</sub>	55-75
	Zirconium Silicate, ZrSiO <sub>4</sub>	20- 40
	Others	0-3
Thermal Conductivity, W/m·K (BTU·in/hr·ft <sup>2</sup> ·°F), ASTM C177		
	200°C (392°F)	0.022 (0.153)
	400°C (752°F)	0.027 (0.187)
	600°C (1112°F)	0.034 (0.236)
	800°C (1472°F)	0.046 (0.319)

### Shelf Life

- WDS Flexipor has unlimited shelf life if it is stored properly
- WDS Flexipor must be handled and stored in dry conditions and should not be exposed to sunlight for prolonged periods or sources of heat
- The WDS Flexipor core is resistant to diffusion by atmospheric humidity (water vapor) providing condensation is avoided

### Dimensions and Availability

Standard	Dimensions, mm (in)	Thickness, mm (in)
	1000 x 600 (40 x 24)	5, 7, 9, 10, 12 (0.2, 0.28, 0.36, 0.40, 0.48)
600 x 500 (24 x 20)		
500 x 300 (20 x 12)		
300 x 300 (12 x 12)		

Evacuated PE Envelope	Dimensions, mm (in)	Thickness, mm (in)
	1000 x 500 (40 x 20)	3, 5, 7, 10 (0.12, 0.2, 0.28, 0.4)
500 x 500 (20 x 20)		
500 x 250 (20 x 10)		

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### Environmental and Health Safety

WDS Flexipor does not contain any hazardous or decomposition substance according to the EU Directive 2006/1907/EEC and IARC. The fibers or filaments used as reinforcement of the mineral core are also exonerated from any classification as defined by the WHO (World Health Organization) and EU Directive 97/69/EC.

### Resistance to Moisture and Water

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

For applications where there is a significant amount of liquids such as behind a castable, it is recommended to use the evacuated PE envelope which is thicker and has additional puncture resistance.

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.