

Data sheet

ENGLISH

WDS® LambdaFlex®

Description

WDS LambdaFlex, is an encapsulated flexible and compact microporous insulation sheet specifically designed for applications requiring resistance to compression, together with low shrinkage and very low thermal conductivity up to their classification temperature.

Flexibility and water repellence are ensured by an outer encapsulation facing, constituted of a PE foil envelope which protects the microporous core.

Like any other microporous insulation of our industrial range produced with our exclusive WDS Technology process, this product features extremely good handling and cutting properties, low thermal conductivity coefficient giving it very good insulating properties in limited thickness allowing to design equipment where high energy efficiency and energy storage, space optimization and reduction of weight are premium factors to be considered.

Environmental & Health Safety

WDS LambdaFlex 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 is completely sealed tight 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 could occur.

Moisture, providing it is not in a condensed form, will not affect the microporous insulation core of these sheets.

Features

- Flexible
- Large variety of format and sizes
- Very high compressive strength
- Very low thermal conductivity in a wide temperature spectrum
- Not affected by thermal shock
- Non combustible
- Excellent handling properties
- Homogeneity throughout the entire surface and thickness of the blanket leading to consistency in performances per square area of material installed
- Water-repellent through encapsulation

Benefits

- Dimensionally stable over time up to the maximum using temperature
- Helps to control energy efficiency and heat flow very precisely
- Easy to cut and with proven installation techniques
- Easy to install
- Adapt well on curved surfaces
- Increases effective volume inner capacity or reduces encumbrance in equipment of various kind
- Environmentally friendly

Applications

WDS LambdaFlex microporous Insulation highly contributes in delivering premium valued solutions where size and weight are premium, where space is limited, to improve heat flow control, for optimal energy efficiency and to reduce carbon footprint.

- Back up insulation of transport and process ladles, torpedo ladles, tundishes.
- Back-up insulation of metal transfer systems
- Batteries
- Data recorder devices



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| | Test Method | WDS LambdaFlex |
|---|---|----------------|
| Classification Temperature, °C (°F) | | 1000 (1832) |
| Encapsulation | | PE Foil Vacuum |
| Density, kg/m³ (pcf), nominal | | 310 (19.3) |
| Cold Compressive strength, MPa (psi) | ASTM C 165 | 0.41 (59.4) |
| Linear Shrinkage, % | | |
| | Full soak, 1000°C (1832°F), 24 hours | ASTM C365 |
| | One side exposed, 1000°C (1832°F), 12 hours | |
| | | <0.4 |
| | | <0.6 |
| Thermal Conductivity, W/m•K (BTU•in/hr•ft²•°F), per ASTM C177 | | |
| | 200°C (392°F) | ASTM C177 |
| | 400°C (752°F) | |
| | 600°C (1112°F) | |
| | 800°C (1472°F) | |
| | | 0.024 (0.166) |
| | | 0.028 (0.194) |
| | | 0.034 (0.235) |
| | | 0.044 (0.305) |
| Chemical Analysis, % weight basis after firing | | |
| | Silica, SiO ₂ | 45-55 |
| | Zirconium Silicate, ZrSiO ₄ | |
| | Others | |
| | | 43-53 |
| | | 3 |

Shelf life

- WDS LambdaFlex sheets should be kept in dry conditions, not exposed to sunlight or source 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 be 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) | |

Other thickness available on demand

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