

# WDS® Ultra Board

## Product Data Sheet



### Product Description

WDS Ultra Board is a rigid microporous insulation board designed for applications up to 1000°C (1832°F) where excellent handling characteristics and a high compressive strength to density ratio are the main selection criteria.

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

- Best-in-class for highest compressive resistance it provides within its nominal density
- Ultra low thermal conductivity over the full temperature range
- Unaffected by thermal shock
- Stable product mineral matrix, free from binders
- Easy to cut and with proven installation techniques
- Improved product mineral matrix core features minimal dust release
- Homogeneous structure
- Does not contain hazardous components such as Rutile (TiO<sub>2</sub>)
- Available as a raw board or in a variety of protective coatings or coverings
- Available as a flexible slatted board or pre-shaped shell

### Benefits

- Light weight and low heat capacity while retaining high strength
- Design flexibility whether you need to save energy or create space
- Suitable for applications requiring rapid heat up or cool down
- Dimensionally and structurally stable up to the maximum classification temperature
- Quick and easy dimensional modifications
- Excellent handling and machining capabilities
- Reliable and consistent performance throughout the board
- Environmentally friendly and safe
- Suitable for a variety of applications
- Suitable for curved surfaces and pipes

### Applications

Suitable for a range of industrial and domestic applications including:

- Metal production
- Petrochemical process units
- Energy storage
- Fuel Cells
- Glass production
- Ceramic kilns
- Cement kilns
- Power generation
- Incineration

# WDS® Ultra Board

## Product Data Sheet



| Properties   |  | WDS Ultra Board |
|--|--|-----------------|
| Classification Temperature, °C (°F)                                    |  | 1000 (1832)     |
| Density, kg/m <sup>3</sup> (pcf), DIN 66133                            |  | 230 (14.4)      |
| Linear Shrinkage, %, ASTM C356   |  |                 |
| 1000°C (1832°F), 24 hour full soak                                     |  | 3.8             |
| 1000°C (1832°F), 12 hour, single side soak                             |  | 0.6             |
| Compressive Strength, MPa (psi), ASTM C165                             |  | 0.38 (55.1)     |
| Chemical Analysis, %   |  |                 |
| Silica, SiO <sub>2</sub>   |  | 75-85           |
| Silicon Carbide, SiC   |  | 12-20           |
| Others   |  | 3-10            |
| 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)   |  | 0.044 (0.305)   |

### Shelf Life

- WDS Ultra Board has unlimited shelf life if it is stored properly
- WDS Ultra Board must be handled and stored in dry conditions
- WDS Ultra Board is resistant to diffusion by atmospheric humidity (water vapor) providing condensation is avoided

### \*Standard Dimensions and Availability

| Dimensions, mm (in)         | Thickness, mm (in)                                      |
|-----------------------------|---|
| 1000 x 650 (39 x 24.41)     | 10, 12, 15, 17, 20, 25, 30, 35, 40, 45, 50              |
| 1320 x 1000 (47.24 x 39.27) | (0.4, 0.5, 0.6, 0.7, 0.8, 1, 1.18, 1.37, 1.57, 1.77, 2) |

\*Non-standard dimension feasibility reviewed upon request

### Environmental and Health Safety

WDS Ultra Board 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

WDS Ultra Board has a porous surface, therefore it is sensitive to all liquids that can wet it; this includes substances such as water, oil and petroleum spirit, since they can densify the pore structure which would in turn affect the insulation properties. Non condensed moisture, on the contrary, does not affect the product.

Sensitivity to liquids of WDS Ultra Board can be fully eliminated by using various surface treatment options outlined at the end of this document.

# WDS® Ultra Board

## Product Data Sheet



### Encapsulation and Surface Protection

WDS Ultra Board is available with various encapsulation and surface protection options in order to add additional features to the board.

| Encapsulation Selection Criteria         | Improved handling | Mechanical protection | System flexibility | Water resistance | Heat reflection | Dust prevention |
|--|-------------------|-----------------------|--------------------|------------------|-----------------|-----------------|
| *Non-woven glass fiber protection (GFE2) | X                 | X                     |                    |                  |                 | X               |
| *Aluminium foil encapsulation (ALE2)     | X                 | X                     | X                  | X                | X               | X               |
| Shrink wrapped in PE foil (FO)           | X                 | X                     |                    | X                |                 | X               |
| Sprayable bi-component coating (G-Plus)  | X                 | X                     |                    |                  |                 | X               |

\*Also offered with edge protection only.

### Alternative Formats

WDS Ultra Board is also available as:

#### WDS UltraShell

#### WDS Ultra Slatted



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.