



WDS[®] Shape

Product Data Sheet

Product Description

WDS Shape is a heat treated, rigid and compact microporous insulation board designed for applications where excellent machining properties and/or extremely low shrinkage is required up to its classification temperature of 950°C (1742°F).

All WDS microporous insulation solutions offer exceedingly low thermal conductivity at high temperatures by limiting convection, conduction and radiation through advanced techniques. 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 its handling and machining properties

Heat treated and pre-shrunk

Low dustiness in comparison to conventional microporous insulators

Zirconium Silicate based Opacifier

Low thermal conductivity over the full temperature range

Unaffected by thermal shock

Easy to cut and with proven installation techniques

Homogeneous structure

Does not contain hazardous components such as Rutile (TiO₂)

Available as a raw board or pre-machined components with or without a protective coating

Benefits

Suitable for superior and complex machining resulting in high quality machined components

Dimensionally stable up to maximum continuous use temperature with minimal shrinkage and LOI

Reduced irritation from dust during machining and installation

Suitable for use in specific applications such as the glass industry

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 a variety of applications

Applications

Suitable for a range of industrial and domestic applications, predominantly used for:

- Glass industry
- Furnace insulation
- Electronic devices
- Measuring equipment insulation components
- Data storage media system
- Insulation for laboratory instruments
- Heating element insulation in the cooking industry

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Properties		WDS Shape
Classification Temperature, °C (°F)		950 (1742)
Density, kg/m ³ (pcf), DIN 66133		325 (20.3)
Linear Shrinkage, %, ASTM C356		
	950°C (1742°F), 24 hour full soak	3.0
	950°C (1742°F), 12 hour, single side soak	0.6
Compressive Strength, MPa (psi), ASTM C165		0.40 (58.0)
Chemical Analysis, %		
	Silica, SiO ₂	40-60
	Zirconium Silicate, ZrSiO ₄	35-55
	Others	0-5
Thermal Conductivity, W/m·K (BTU·in/hr·ft ² ·°F), ASTM C177		
	200°C (392°F)	0.025 (0.173)
	400°C (752°F)	0.031 (0.215)
	600°C (1112°F)	0.037 (0.257)
	800°C (1472°F)	0.042 (0.291)

Shelf Life

- WDS Shape has unlimited shelf life if it is stored properly
- WDS Shape must be handled and stored in dry conditions
- WDS Shape 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 (39.37 x 25.59)	10, 12, 15, 17, 20, 25, 30, 35, 40, 45, 50 (0.4, 0.5, 0.6, 0.7, 0.8, 1, 1.18, 1.37, 1.57, 1.77, 2)

*Non-standard dimension requirements available upon review

Environmental and Health Safety

WDS Shape 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 Shape 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. Non condensed moisture does not affect the product. Sensitivity to liquids of WDS Shape can be fully eliminated by using various surface treatment options outlined at the end of this document.

Encapsulation and Surface Protection

WDS Shape 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 Shape is available as a rigid board or can be supplied as a machined shape.

Whilst the values and application information in this datasheet are typical, they 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 - Thermal Ceramics.