

Data sheet

WDS[®] Ultra[™] Plus Board

ENGLISH

Description

WDS Ultra Plus Board is a compact rigid microporous insulation with an engineered mineral matrix designed for applications where the lowest shrinkage up to 1000°C (1832°F) is the main selection criteria.

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

Environmental and Health Safety

WDS Ultra Plus 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 EC Directive 97/69/EC.

Resistance to Moisture and Water

WDS Ultra Plus 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 Plus Board can be fully eliminated by using a surface treatment such as temperature resistant aluminum foil or shrink wrapping with PE Film.

Features

- Best-in-class amongst other market solutions within the same classification temperature and similar chemistry, for the lowest shrinkage it provides up to its classification temperature
- Improved (low) thermal conductivity in the widest temperature spectrum
- Not affected by thermal shock
- Improved product mineral matrix core features minimal dust release and very good handling and machining abilities
- Good resistance to compression associated to its low density
- Homogeneity throughout the entire surface and thickness of the board leading to consistency in performances per square area of material installed

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
- Freedom in engineering at the design stage
- Increases effective volume inner capacity or reduces encumbrance in equipment and apparels of any kind.
- Largest product dimensions available
- Very low weight lining system can be foreseen due to the extremely favorable product density /thickness ratio
- Environmentally friendly

Applications

WDS Ultra Plus Board has been designed to meet superior compressive strength as highly effective back-up insulation even under high temperature exposure and features the lowest shrinkage amongst those products from our range classified 1000°C (1832°F).

Process	Application
Agglomeration and Sintering	Metals production
Calcining	Lime calcining
Curing and Forming	Coating, polymer production, enameling
Firing	Heating of clay, frits
Drying	Organic compound and water removal, recycling
Forming	Extrusion, molding
Fluid heating	Chemical production, reforming, distillation, cracking, hydro-heating
Heating and Melting	Casting, metals making, glass making, recycling
Heat Treating	Hardening, annealing, tempering
Incineration	Waste handling and disposal, recycling
Metal Reheat, Tempering	Forging, rolling, extruding, annealing, galvanizing, coating, joining, tempering
Separating	Air separation, refining, chemical cracking
Smelting, Melting	Metals making, glass making
Heating	Hot air and water production
Energy Collection	Solar energy collection
Energy Production	Production of electricity and distribution
Energy Storage	Transport, energy distribution



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	Test Method	WDS Ultra Plus Board
Classification Temperature, °C (°F)		1000 (1832)
Denisty, kg/m³ (pcf), nominal		255 (15.9)
Cold Compressive strength, MPa (psi)	ASTM C 165	0.28 (40.6)
Linear Shrinkage, %		
Full soak, 1000°C (1832°F), 24 hours	ASTM C365	<2.5
One side exposed soak, 1000°C (1832°F), 12 hours		<0.8
Thermal Conductivity, W/m•K (BTU•in/hr•ft²•°F), per ASTM C177		
200°C (392°F)	ASTM C177	0.023 (0.160)
400°C (752°F)		0.024 (0.167)
600°C (1112°F)		0.029 (0.201)
800°C (1472°F)		0.038 (0.264)
Chemical Analysis, % weight basis after firing		
Silica, SiO ₂		60-80
Silicon Carbide, SiC		15-30
Others		5-15
Loss of Ignition, Dry condition)		<2.0

Shelf life

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

Size and Availability

Board Size, 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)

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