

Data sheet

FireMaster® WDS® MarineFlex

ENGLISH

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Description

FireMaster® WDS® MarineFlex mats are an engineered 3D flexible microporous insulation product offering extremely low and flat thermal conductivity values in a wide temperature range, providing outstanding insulating performance which is up to five times better than other conventional insulators, together with excellent thermal stability up to 1000°C (1832°F).

FireMaster® WDS® MarineFlex is a high-performance fire resistant product. Unlike other insulating materials, FireMaster® WDS® MarineFlex offers both high-temperature resistance and high thermal insulation. This means fire protection up to jet fire standard can be achieved with minimal thickness, less layers and space-saving designs. These benefits also provide a low weight solution.

FireMaster® WDS® MarineFlex uses WDS® Technology; it is today the only available technology that allows to perfectly and consistently control and engineer both the texture and the distribution of the microporous mineral matrix core in order to obtain superior thermal characteristics but with improved mechanical properties overall.

FireMaster® WDS® MarineFlex core is a composition of reinforced blend of opacified premium grade inorganic silicates available in different property formulations; this homogeneous mineral matrix is then covered with an outer envelope which is a glass cloth to enable fast and clean manipulation; the stitched grid guarantees the necessary flexibility and twisting properties.

FireMaster® WDS® MarineFlex complies with the standard specification for microporous insulation ASTM C1676.

FireMaster® WDS® MarineFlex products are EU MED approved as non-combustible materials.

Typical Applications

- Any fire protection application, particularly where space to fit fire insulation is limited.
- Lightweight and space saving fire protection of steel, aluminium and FRP structures in ships and offshore platforms.
- Minimising space required to fit fire insulation on yachts especially for FRP structures.
- High-performance fire insulation of process equipment such as a pipework
- Thin constructions for fire doors.
- A critical insulation component of thin fire insulation systems such as flexible jacket systems for fire protection of valves and actuators.
- Non-combustible high-performance thermal insulation for exhaust systems.

Advantages

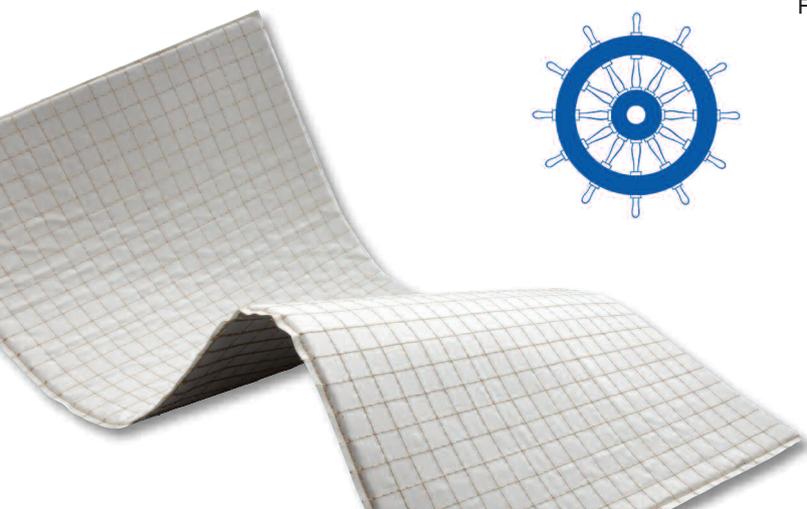
- 'Twist & Flex' type of ultra-thin insulation for best accessibility of complex geometries, limited space or weight savings.
- Remarkable low and flat thermal conductivity.
- Inorganic and non-combustible.
- High operating temperature limit with negligible shrinkage.
- Easy and fast handling, installation and fixing.
- Optimal for warehousing and logistic saving, high packing density.
- Easy to cut and preform in complex shapes.
- High performance insulation, up to 5 times more effective than conventional insulators.

The squared edges of FireMaster® WDS MarineFlex mats, another unique characteristic offered by Morgan, also allow tighter sealing joints from one panel to another, minimising gaps, thus reducing thermal bridges and consequent heat loss. Furthermore, the core density can be tailored to specific requirements and needs in order to provide specific insulating property results and desired compression resistance.

FireMaster® WDS® MarineFlex flexible insulation mats are the best choice when wide ranges of application temperatures are involved and the lowest thermal conductivity together with a perfect thermal integrity over time is required.

Safety directions

FireMaster® WDS® MarineFlex is not a hazardous material as defined in EU directive 2006/1907/EEC. The fibers used for mechanical reinforcement of FireMaster® WDS® MarineFlex are not respirable as defined by WHO.



Data sheet

Metric information

FireMaster® WDS® MarineFlex

Physical Properties	
Classification temperature (°C)	1000
Textile covering	Glass
Nominal density (core) (kg/m ³)	210
Cold compressive strength at room temperature ASTM C 165 (N/mm ²)	0.417
Thermal conductivity at mean temperature of: ASTM C 177 (W/m·K*)	
	@200°C 0.025
	@400°C 0.03
	@600°C 0.038
	@800°C 0.049
Specific heat capacity (Kj/Kg·K)	
	@400°C 0.945
Shrinkage with temperature applied to one side, %	
	@1000°C 0.6
Linear shrinkage with temperature applied to all sides, 24hrs, %	
	@800°C 1.4

The above data is only intended as a guide and should not be used in preparing specifications.

Standard specifications	2D50	3D50	2D25	3D25
Standard dimensions (core panel) (mm)	1200 x 1000 x (10,12.5)			
	1000 x 500 x (5,6,8,10,12.5)			
Stitching direction	Horizontal or vertical	Horizontal and vertical	Horizontal or vertical	Horizontal and vertical
Stitching space (mm)	50	50 x 50	25	25 x 25

*Pure core tested under ASTM C177, given values are extrapolated by both mathematical calculation and lab simulations.

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Data sheet

Imperial information

FireMaster® WDS® MarineFlex

Physical Properties	
Classification temperature (°F)	1832
Textile Covering	Glass
Nominal density (core) (pcf)	13.1
Cold compressive strength at room temperature ASTM C 165 (psi)	60.48
Thermal conductivity at mean temperature of: ASTM C 177 (BTU · in./hr · ft ² · °F)	
@392°F	0.173
@752°F	0.208
@1112°F	0.263
@1472°F	0.340
Specific heat capacity (BTU/lb · °F)	
@752°F	0.226
Shrinkage with temperature applied to one side (%)	
@1832°F	0.6
Linear shrinkage with temperature applied to all sides, 24hrs (%)	
@1472°F	1.4

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Standard specifications	2D50	3D50	2D25	3D25
Standard dimensions (core panel) (in)	47.24 x 39.37 x (0.39, 0.49)			
	39.4 x 19.7 x (0.20, 0.24, 0.31, 0.39, 0.49)			
Stitching direction	Horizontal or vertical	Horizontal and vertical	Horizontal or vertical	Horizontal and vertical
Stitching space (in)	1.97	1.97 x 1.97	0.98	0.98 x 0.98

*Pure core tested under ASTM C177, given values are extrapolated by both mathematical calculation and lab simulations.

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