Morgan Advanced Materials

POREXTHERM

Data sheet

WDS® Multiflex®

ENGLISH

Metric information - Page 2
Imperial information - Page 3

Description

WDS® MultiFlex® mats grade ST and HT are engineered 3D flexible microporous insulation products offering extremely low and flat thermal conductivity values in a wide temperature range, hence providing outstanding insulating performances which are up to five times better than any other conventional insulator, together with excellent thermal stability up to 1050°C (1922°F).

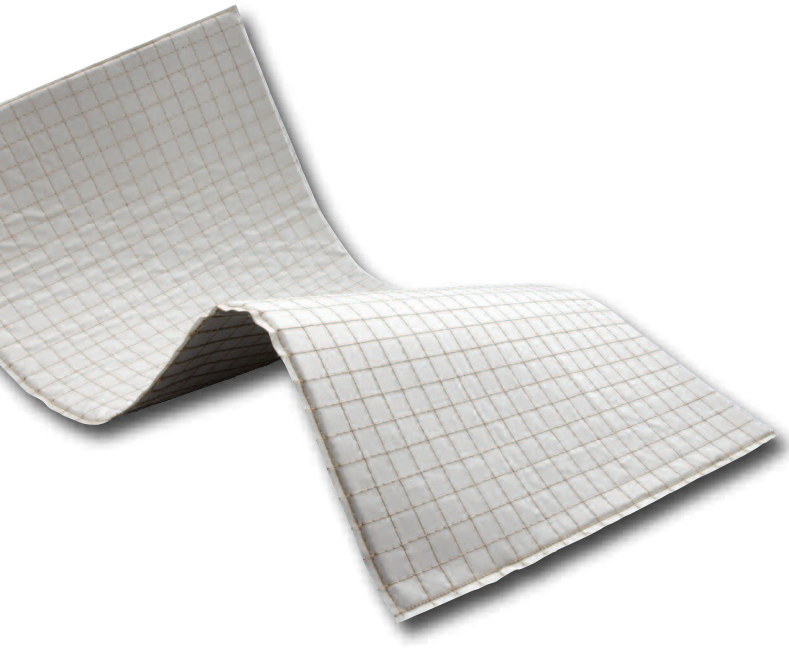
WDS® MultiFlex® uses WDS® Technology, which is the benchmark in microporous know-how: it is today the only available technology that allows to perfectly and consistently control and engineer both the texture and the distribution of the microporous mineral matrix core in order to obtain superior thermal characteristics but with improved mechanical properties overall.

WDS® MultiFlex® 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 may be either glass (ST grade) or stabilized amorphous silica (HT grade) cloths to enable fast and clean manipulation; the stitched grid guarantees the necessary flexibility and twisting properties.

WDS® super-insulation is the definitive answer to any of your most demanding thermal insulation concerns when seeking for space and weight reduction together with effective energy savings in a very wide temperature spectrum.

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

WDS® MultiFlex® products are non-flammable in accordance to DIN EN 13501-1, Euroclass A1.



Advantages

- 'Twist & Flex' type of insulation for best accessibility of complex geometries or in limited space
- Ultra-thin microporous insulation saves space & weight on apparels, equipment and transportation units
- Remarkable low and flat thermal conductivity
- Inorganic and non combustibile
- 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
- Homogeneous, compact and robust matrix core
- High performance insulation proven effective up to 5 times better than conventional insulators

Thanks to an exclusive manufacturing process developed by Porextherm Engineering Department, WDS® MultiFlex® mats feature exceptional homogeneity and perfect distribution of the mineral matrix texture resulting in superior consistency and perfect handling ability and workability to any other known similar product; in addition because of its homogeneity in density and texture distribution, the insulating properties are constantly equal all over the surface of the mats resulting in lower thermal conductivity values.

The squared edges of WDS® MultiFlex® mats, another unique characteristic offered by Porextherm, also allow tighter sealing joints from one panel to another, minimizing 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.

WDS® MultiFlex® 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

WDS® MultiFlex® core material is not a hazardous material as defined in EU directive 2006/1907/EEC. The fibers used for mechanical reinforcement of WDS® MultiFlex® core material are not respirable as defined by WHO. WDS® MultiFlex® core material does not liberate hazardous decomposition products and, as far as is known at present, does not cause any problems to human health.

The data published is in accordance with the present state of our knowledge, but does not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where materials from other companies are involved. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties 'rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.

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Metric information

Physical Properties	ST Grade	HT Grade
Classification temperature (°C)	1000	1050
Textile covering	E-glass	Amorphous silica
Nominal density (core) (kg/m³)	210	280
Cold compressive strength at room temperature ASTM C 165 (N/mm²)	1-3	1-3
Thermal conductivity at mean temperature of: ASTM C 177 W/mK		
@200°C	0.025	0.028
@400°C	0.03	0.035
@600°C	0.038	0.043
@800°C	0.049	0.06
Specific heat capacity (Kj/Kg K)		
@400°C	1.05	1.05
Shrinkage with temperature applied to one side, %		
@800°C	0.03	-
@1000°C	-	0.05
Linear shrinkage with temperature applied to all sides, 24hrs, %		
@800°C	1	-
@1000°C	-	2

Standard specifications	2D50	3D50	2D25	3D25
Standard dimensions (core panel), mm				
(further thicknesses and dimensions on demand)	1200 x 1000 x (8, 10, 12, 12,5) (only available for ST version)			
	1000 x 500 x (5, 6, 8,10, 12, 12,5)			
	500 x 500 x (5, 6, 8,10, 12, 12,5)			
	500 x 250 x (5, 6, 8,10, 12, 12,5)			
Stitching direction	Longitudinal **or** Aslant	Longitudinal **and** Aslant	Longitudinal **or** Aslant	Longitudinal **and** Aslant
Stitching space, mm	50	50 x 50	25	25 x 25
Tolerances according to DIN ISO 2768, tolerance class "C-course", mm				
> 30:	± 0.5			
> 30 -120:	± 0.8			
> 120 - 400:	± 1.2			
> 400 - 1000:	± 2.0			
> 1000 - 2000:	± 3.0			

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

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Imperial information

Physical Properties ST Grade	ST Grade
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 • ft² • °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

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) (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.

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 WDS® MarineFlex® are not respirable as defined by WHO.

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