MICROTHERM® QUILTED

High temperature flexible microporous insulation panel

The MICROTHERM® QUILTED and SEMI-QUILTED range of products are custom made flexible microporous insulation panels with very good thermal properties. The panels are produced in a glass cloth outer envelope, making them clean and easy to handle.

Stitching can be one-directional (2D flexure) for the MICROTHERM® SEMI-QUILTED panels, or two-directional (3D flexure) for the MICROTHERM® QUILTED panels. The formulation is an opacified blend of filament reinforced pyrogenic silica (alumina for 1200 grade).

MICROTHERM® (SEMI-)QUILTED-1000R is a very flexible, custom made insulation panel.

MICROTHERM® (SEMI-)QUILTED-1000R HY is a very flexible, custom made insulation panel with a hydrophobic core treatment to repel water. It is ideal for applications where contact with liquid water or condensation (dew point) is possible.

MICROTHERM® (SEMI-)QUILTED-1200 is a very flexible, alumina based, custom made insulation panel which is capable of withstanding peak temperatures of 1200 °C.

Technical data

		MICROTHERM® SEMI-QUILTED			MICROTHERM® QUILTED		
Grade		-1000R	-1000R HY	-1200	-1000R	-1000R HY	-1200
Standard finishing		Glass cloth (E-Glass)*			Glass cloth (E-Glass)*		
Stitching pitch size	mm	25			25 x 25		
Classification temperature	°C	1000	1000	1200	1000	1000	1200
Nominal density	kg/m³	220	260	350	220	260	350
Compressive strength (ASTM C165)	MPa = N/mm²	0.14	0.12	0.22	0.14	0.12	0.22
Thermal conductivity (ISO 8302, ASTM C177)							
200 °C	W/m K	0.027	0.027	0.035	0.027	0.027	0.035
400 °C	W/m K	0.031	0.031	0.041	0.031	0.031	0.041
600 °C	W/m K	0.039	0.039	0.050	0.039	0.039	0.050
800 °C	W/m K	0.050	0.050	0.065	0.050	0.050	0.065
Specific heat capacity							
200 °C	kJ/kg K	0.92	0.92	0.89	0.92	0.92	0.89
400 °C	kJ/kg K	1.00	1.00	0.99	1.00	1.00	0.99
600 °C	kJ/kg K	1.04	1.04	1.04	1.04	1.04	1.04
800 °C	kJ/kg K	1.08	1.08	1.07	1.08	1.08	1.07
Shrinkage							
1-sided 12h – 1000 °C	%	< 0.5	< 0.5	< 0.05	< 0.5	< 0.5	< 0.05
Full-soak 24h –1000 °C	%	< 3	< 3	< 0.1	< 3	< 3	< 0.1
Full-soak 24h –1150 °C	%	–	–	< 3	–	–	< 3

* Special coverings and coatings are available on request.

Delivery sizes

Although there are some standard stock sizes available, MICROTHERM® (SEMI-)QUILTED can be custom made according to customer specifications. Please contact your regional Promat agency to request your MICROTHERM® (SEMI-)QUILTED sizes. The standard thickness range is from 3 mm up to 10 mm. Additionally, thicknesses lower than 3 mm and up to 15 mm are available on request.

Production tolerances

Length and width	mm	± 3
Thickness	mm	± 0.5

MICROTHERM® QUILTED

Properties & advantages

- custom made and very flexible
- extremely low thermal conductivity
- high thermal stability
- shock and vibration resistant
- available in different temperature grades, including a hydrophobic version
- non-combustible
- clean and easy to install (procedure can be found on our website)
- simple to cut and shape (procedure can be found on our website)
- no harmful respirable fibres
- environmentally friendly, free of organic binders
- resistant to most chemicals

Application areas

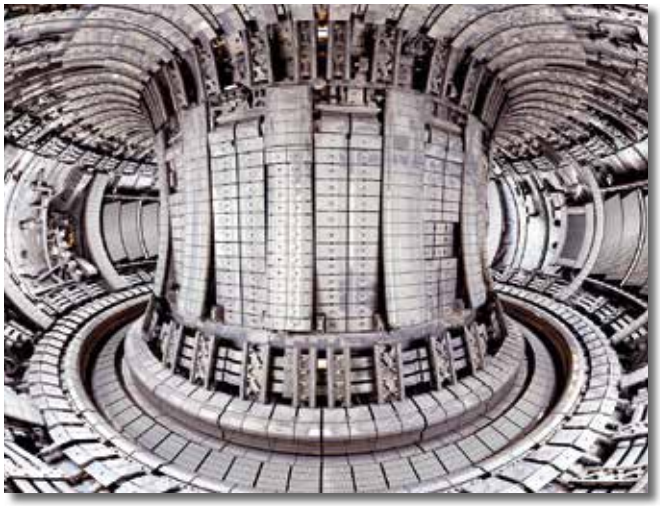
Microporous insulation offers an extremely low thermal conductivity, close to the lowest theoretically possible at high temperatures. Microporous materials are the preferred choice when a large temperature reduction is required within a limited space, or when strict heat loss or surface temperature requirements are specified.

TRANSPORTATION

- 3D geometries
- aerospace
- automotive

ENERGY

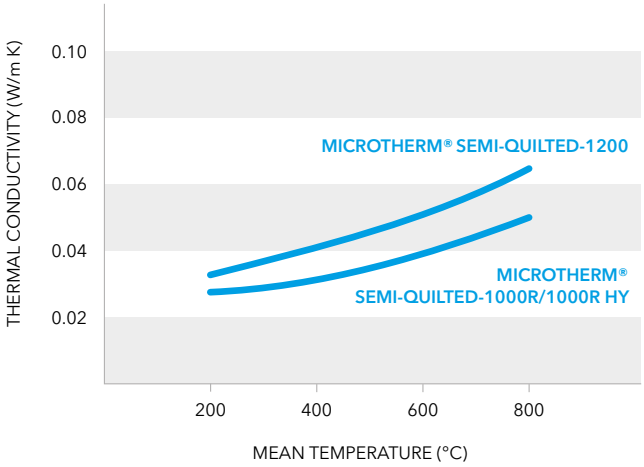
- small radius pipe insulation
- R&D centres – advanced research



Working & processing

MICROTHERM® (SEMI-)QUILTED can be shaped easily with a simple cutter (the procedure can be found on our website). The panels can be fixed in place with glue or by mechanical means such as anchors, pins and clips.

Thermal conductivity



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