



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 & 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

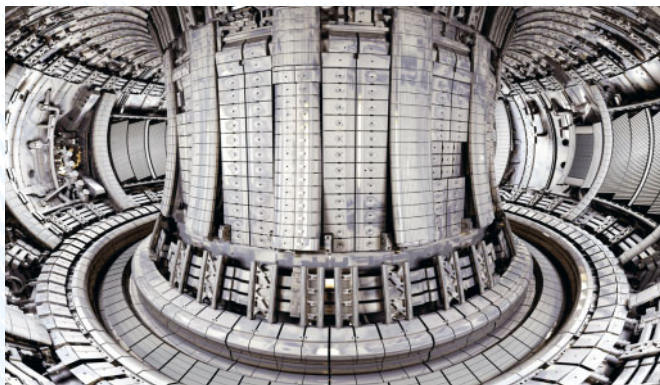
is a very flexible, custom made insulation panel with a hydrophobic core treatment to repel water. It is ideal for applications where contact with liquid water or condensation (dew point) is possible.

### MICROTHERM® (SEMI-)QUILTED-1200

is a very flexible, alumina based, custom made insulation panel which is capable of withstanding peak temperatures of 1200°C.

### Properties & advantages

- Custom made + very flexible
- Extremely low thermal conductivity
- High thermal stability
- Shock + vibration resistant
- Available in different temperature grades, including a hydrophobic version
- Non combustible
- Clean & easy to install (procedure can be found on our website)
- Simple to cut & shape (procedure can be found on our website)
- No harmful respirable fibres
- Environmentally friendly, free of organic binders
- Resistant to most chemicals



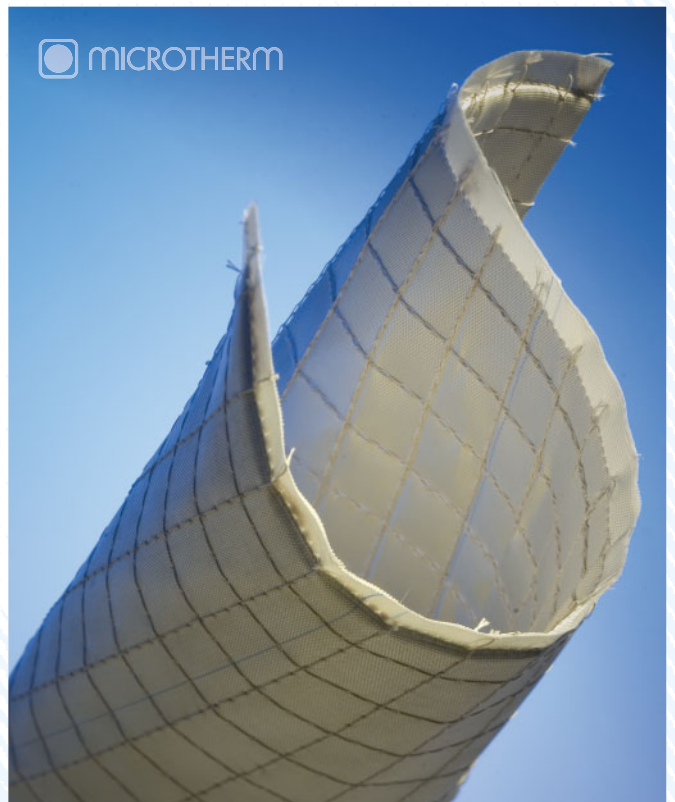
### Typical applications

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.

- 3D geometries
- Aerospace
- Automotive
- 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.



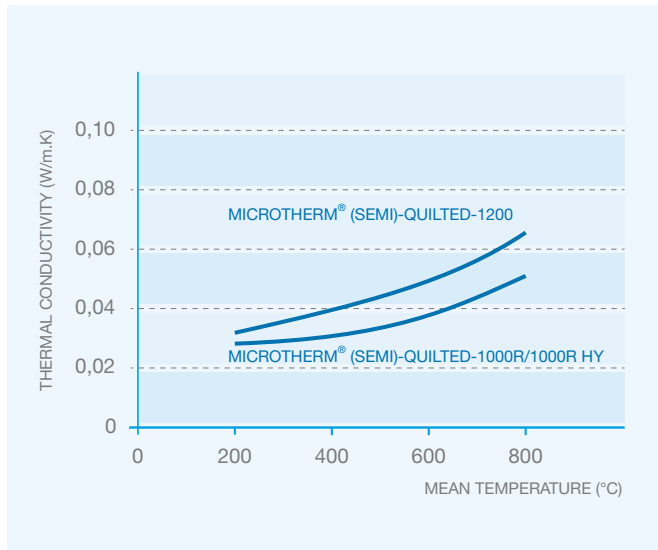


### Technical data

Brand		MICROTHERM® SEMI-QUILTED			MICROTHERM® QUILTED		
Grade		1000R	1000R HY	1200	1000R	1000R HY	1200
Standard finishing		Glass cloth (E-Glass)*					
Stitching Pitch Size		25mm			25x25mm		
Classification Temperature	°C	1000	1000	1200	1000	1000	1200
Nominal density	kg/m³	220	260	350	220	260	350
Compressive strength (ASTM C 165)	MPa = N/mm²	0,10	0,12	0,22	0,10	0,12	0,22
Thermal Conductivity (ISO 8302, ASTM C177)							
200°C mean	W/m.K	0,027	0,027	0,035	0,027	0,027	0,035
400°C mean	W/m.K	0,031	0,031	0,041	0,031	0,031	0,041
600°C mean	W/m.K	0,039	0,039	0,050	0,039	0,039	0,050
800°C mean	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.

### Thermal Conductivity Graph



### Product dimensions & size availability

Although there are some standard stock sizes available, MICROTHERM® (SEMI-)QUILTED can be custom made according customer specifications. Please contact your regional Promat agency to request your MICROTHERM® (SEMI-)QUILTED sizes.

The standard thickness range is from 3mm up to 10mm. Additionally, thicknesses lower than 3mm and up to 15mm are available on request.

### Production tolerances

Length [mm]	± 3
Width [mm]	± 3
Thickness [mm]	± 0,5

[www.promat-hpi.com](http://www.promat-hpi.com)

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