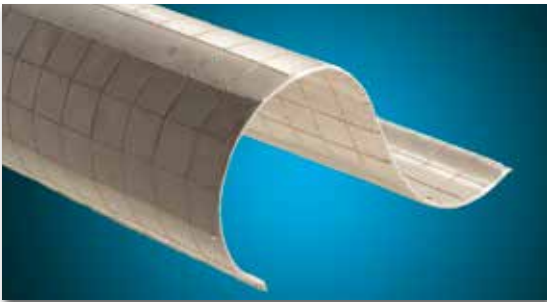


# MICROTHERM® OVERSTITCHED



### High temperature flexible microporous insulation panel

The MICROTHERM® OVERSTITCHED and SEMI-OVERSTITCHED 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-OVERSTITCHED panels, or twodirectional (3D flexure) for the MICROTHERM® OVERSTITCHED panels. The formulation is an opacified blend of filament reinforced pyrogenic silica (alumina for 1200 grade).

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

MICROTHERM® (SEMI-)OVERSTITCHED-1000R HY is a 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-)OVERSTITCHED-1200 is a flexible, alumina based, custom made insulation panel which is capable of withstanding peak temperatures of 1200 °C.

Technical data							
		MICROTHERM® SEMI-OVERSTITCHED			MICROTHERM® OVERSTITCHED		
Grade		-1000R	-1000R HY	-1200	-1000R	-1000R HY	-1200
Standard finishing		Glass cloth (E-Glass)*			Glass cloth (E-Glass)*		
Stitching pitch size	mm	50			50x50		
Classification temperature	°C	1000	1000	1200	1000	1000	1200
Nominal density	kg/m <sup>3</sup>	220	260	350	220	260	350
Compressive strength (ASTM C165)	MPa = N/mm <sup>2</sup>	0.14	0.12	0.22	0.14	0.12	0.22
Thermal conductivity (ISO 8302, ASTM C177)							
200 °C	W/m K	0.026	0.026	0.034	0.026	0.026	0.034
400 °C	W/m K	0.030	0.030	0.040	0.030	0.030	0.040
600 °C	W/m K	0.038	0.038	0.049	0.038	0.038	0.049
800 °C	W/m K	0.049	0.049	0.063	0.049	0.049	0.063
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-)OVERSTITCHED can be custom made according to customer specifications. Please contact your regional Promat agency to request your MICROTHERM® (SEMI-)OVERSTITCHED sizes. The standard thickness range is from 3 mm up to 10 mm. Additionally, thicknesses between 10 mm and 15 mm are available on request.

### Production tolerances

Length and width	mm	± 3
Thickness	mm	± 0.5

# MICROTHERM<sup>®</sup> OVERSTITCHED

### Properties & advantages

- custom made and 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
- simple to cut and shape
- 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.

#### OIL AND GAS

- petrochemical industry
- piping insulation
- back-up insulation in refractory lined pipes
- hot pipe support insulation
- filler material for mattresses
- cassettes
- heat shields
- expansion joints
- PFP (Passive Fire Protection)

#### ENERGY

- turbine insulation
- pipe insulation

#### HEAVY INDUSTRY

- rotary kiln insulation
- exhaust system

#### TRANSPORTATION

- thermal batteries
- exhaust systems
- PFP of train floors

#### MARINE

- exhaust systems
- engines

### Working & processing

MICROTHERM<sup>®</sup> (SEMI-)OVERSTITCHED 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. For piping applications, the panels are installed with wire and straps, identical to conventional insulation materials (the procedure can be found on our website).

### Thermal conductivity

