



Microtherm[®] Insulation for Furnace Applications

Optimised efficiency with the thinnest protection

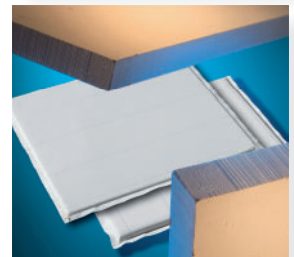
MICROTHERM[®] - THE KEY TO ENERGY EFFICIENCY

Energy is the key to industry and the conservation of energy by controlling energy losses is a key factor in reducing the environmental impact of industry.

A furnace is a high energy stage in any manufacturing process. Any reduction in the energy consumption of a furnace will have a dramatic effect on the profitability of that process.

Energy loss is controlled by the use of an insulation.

The most efficient thermal insulation currently available for use in hot manufacturing operations is **Microtherm[®] microporous insulation**.

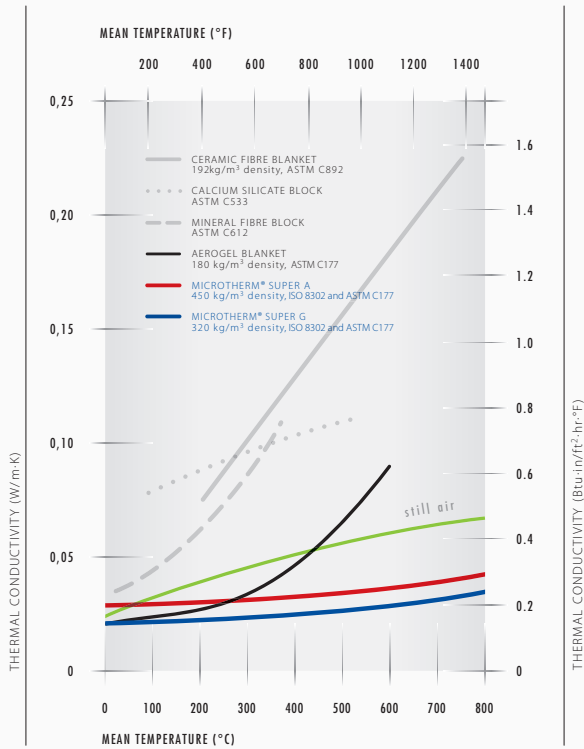


Microtherm[®] - cool answers to hot problems

 **MICROTHERM**
THERMAL INSULATION SOLUTIONS

The company, the products, the benefits

Thermal Conductivity of MICROTHERM® Insulation Compared to Conventional Insulating Materials



The **Microtherm Group** of companies has been the global market leader in high temperature thermal insulation solutions for almost 40 years.

Microtherm® is a microporous insulation with a thermal conductivity so low that it is almost down to the lowest theoretically possible figure according to the laws of physics - an insulation with a thermal conductivity even lower than that of still air!

Moreover, this very low thermal conductivity is, and stays stable over a wide range of temperatures right up to a maximum of 1000 °C (1832 °F) due to the inclusion of an opacifier to block the transmission of all infra red radiation.

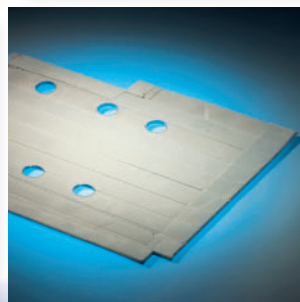
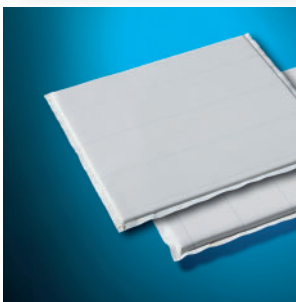
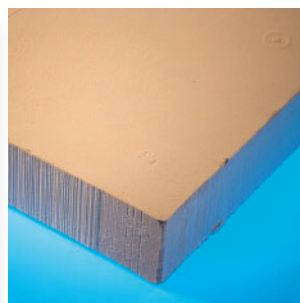
Microtherm® has been used by the designers of furnaces for around 40 years and we are still assisting designers in achieving truly cost effective volume production in hot manufacturing processes.

Properties

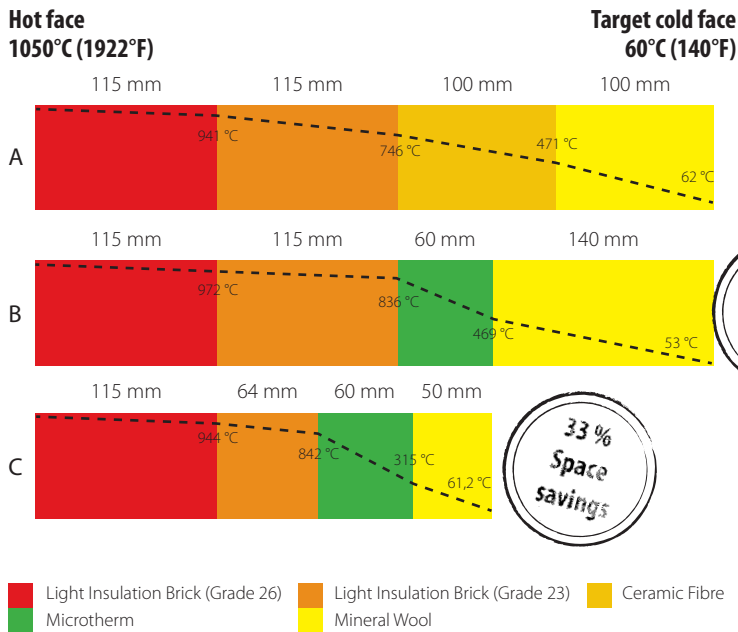
- Formulation based on pyrogenic silica with a mineral oxide opacifier and glass filament reinforcement.
- Standard range of products capable of continuous exposure to 1000 °C (1832 °F).
- Microtherm® Super A suitable for temperatures up to 1200 °C (2192 °F).
- No known health hazards when used within prescribed working temperature limits.
- Non-combustible.
- Environmentally safe.

Benefits

- Only around one quarter the thickness of conventional insulations at high temperature.
- Lightweight but load bearing.
- Thinnest protection optimises internal furnace space.
- Can be supplied pre-formed or can be easily shaped and fitted during assembly.
- Widest product range includes rigid and flexible panels, block products, pourable free flowing granules, and MT Thermosphere® non-microporous mouldable paste.
- Clean in use. Fast to fit.
- Full thermal design support available.

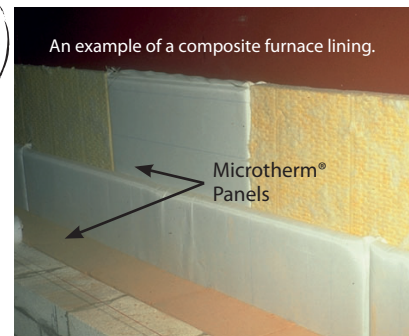


Saving energy and space with Microtherm®



Comparison of furnace linings
HF 1050 °C. CF 60 °C

	Thickness mm	Heat loss W/m ²	Surface temp (°C)
A	430	312	62,2
B	430	224	52,2
C	289	302	61,2



Energy saving:

312 W/m² – 224 W/m² = 88 W/m²
Microtherm® is better by 28%
 This results in: **28% less cost**
 on Energy

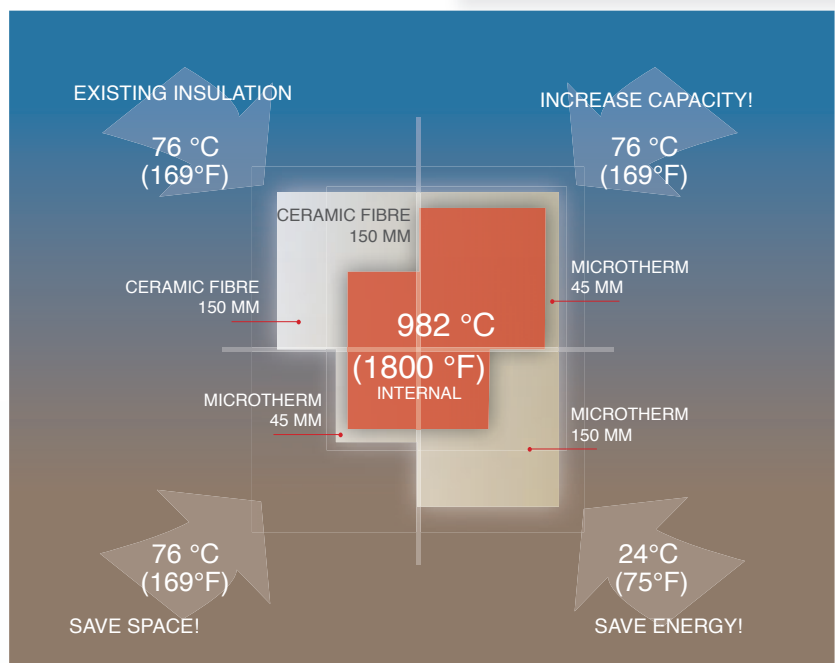
Space saving:

430 mm – 289 mm = 141 mm
Microtherm® is better by 33%
 This results in: **33% more capacity**
 in the furnace

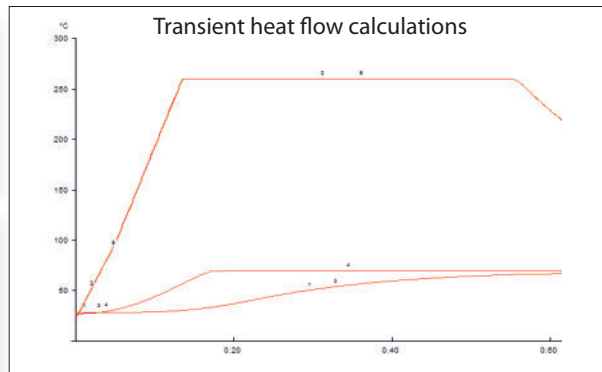
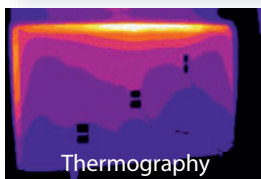
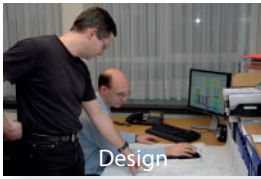
Microtherm® systems can be as little as one quarter of the thickness of conventional insulation materials at high temperatures yet still provide an equivalent level of protection.

This can be used to advantage in several different ways –

- By keeping the same external dimensions, the internal capacity of a furnace can be dramatically increased.
- If the same internal capacity is maintained, the overall outer dimensions can be dramatically reduced.
- However, if both internal and external dimensions are unaltered, the net effect is a dramatic reduction in the amount of energy used and the temperature is much lower on the outside surface.



Microtherm® – the complete service package



- Problem analysis
- Thermal calculations
- Product design
- System design
- Performance testing
- Performance verification
- Installation support and co-ordination

The Microtherm Group - truly global service of the highest standard



Microtherm Inc.
 3269 Regal Drive
 Alcoa, Tennessee 37701
 USA
 T. (+1) (865) 681 0155
 F. (+1) (865) 681 0016
 E. sales@microtherm.us

Microtherm N.V.
 Industriepark Noord 1
 9100 Sint-Niklaas
 Belgium
 T. (+32) 3 760 19 80
 F. (+32) 3 760 19 99
 E. info@microthermgroup.com

Nippon Microtherm Co., Ltd.
 Korakuen Shinjuku Bldg,
 4-15-7, Nishi-shinjuku
 Shinjuku-ku, Tokyo 160-0023, Japan
 T. (+81) 3 3377 2821
 F. (+81) 3 3378 2821
 E. sales@microtherm.co.jp

www.microthermgroup.com

Issue ref.051011/01



Microtherm is a registered trademark of Microtherm (GB) Ltd.

an **Etex** GROUP company

The information contained in this brochure is intended to assist in designing with Microtherm products. It is not intended to and does not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose or that the results shown in this brochure will be achieved by a user for a particular purpose. The user is responsible for determining the suitability of Microtherm products for each application.