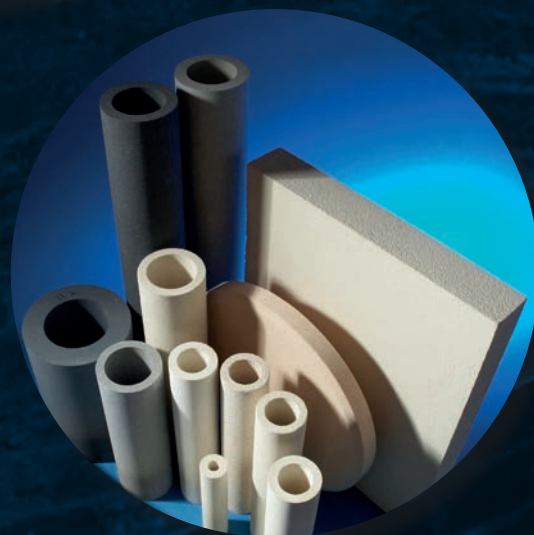




[www.mantectechnicalceramics.com](http://www.mantectechnicalceramics.com)





Mantec Technical Ceramics, with an historical pedigree spanning more than 50 years, is a diverse manufacturing technology company providing bespoke and innovative ceramic-based solutions to global industries.

The Mantec ethos revolves around customer service, product quality, technical development and strong brand identities.

Mantec has its headquarters in Stoke-on-Trent, the heart of the UK ceramics region. This area is world famous for its ceramic expertise and heritage, which enables Mantec to employ the very best in technical know-how. Mantec constantly strives to remain industry specialists in all its fields of expertise and is able to export its ceramic-based solutions around the world.

A mix of wide ranging ceramic materials combined with class leading and diverse ceramic manufacturing and technological experience fully equips Mantec to provide the innovative and world class product solutions to a number of key industrial market sectors - including Heavy Clay, Sanitaryware, Tableware, Aerospace & Defence, Technical & Advanced Ceramics, Electronics, Waste Water Treatment and others.

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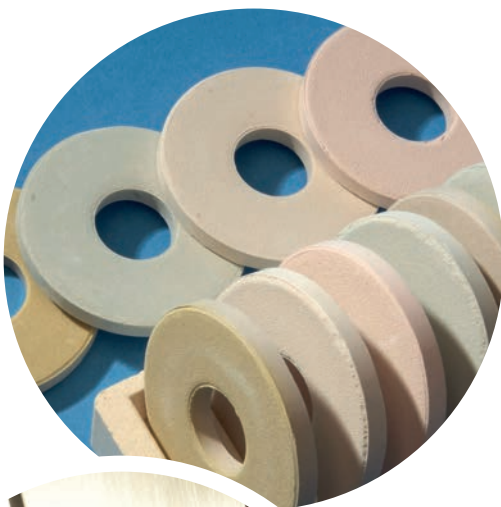


# Temperature Control

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Mantec Technical Ceramics is the home of the globally renowned and industry standard Bullers Temperature Control Devices. The world's leading ceramic manufacturers consider Bullers Rings and Bullers Process Control Discs as an essential part of their Quality Assurance System as they are a key indicator of consistent and optimal firing regimes and give an independent, accurate, reliable and essential indication that the firing of the ceramic product is correct and unaffected by any variations in temperature and kiln loading.

The most common ceramic sectors where Bullers Temperature Control Devices are utilised are Tableware, Sanitaryware, Heavy Clay, Refractories, Electronics, Technical & Advanced Ceramics.



## **BULLERS™** Pyrometric Rings

While the principle for making Bullers Rings was determined over 110 years ago, they are manufactured today using the latest production technology and pre-tested to Mantec's exacting standards before being released into our ISO9001:2008 accredited manufacturing process. This consistency ensures a reliable and reproducible quality time after time.

The five different types of Bullers Rings have overlapping operating parameters that allow ceramic manufacturers to monitor and control a wide range of temperatures from 750°/1382°F through to 1420°C/2588°F. Mantec believes they are the most flexible and cost efficient temperature control devices available today.



## **BULLERS™** Process Control Discs

Bullers Process Control Discs (BPCDs) are the new generation of Bullers Temperature Control Devices and have been designed so that they are suitable for any type of kiln/furnace. Due to the practical small size of BPCDs, they can be conveniently positioned in almost any location, which makes them ideal in the firing of Technical Ceramics, Single/Multilayer Ceramic Capacitors, Ceramic Insulators etc.

There are five different types of BPCDs available, all with a nominal diameter of 20mm and a nominal thickness of 3.5mm, covering an even wider overlapping range of temperatures from 770°C/1418°F through to 1770°C/3218°F.





# Ultralite Thermal Insulation

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## Save up to 40% on Kiln Car Energy Costs

Mantec Technical Ceramics has a complete range of innovative and energy efficient Ultralite Thermal Insulation products for a wide variety of high temperature applications.

Uniquely available from Mantec, Ultralite is a lightweight, microporous refractory material developed and manufactured in the UK. Mantec's smart processing of largely traditional materials has resulted in a range of Ultralite products, which have exceptional thermal insulation properties.

The superior thermal performance of Ultralite means it is becoming invaluable across a wide range of industries including global Heavy Clay, Sanitaryware, Tableware, Refractories, Iron and Steel and Glass industries - reducing energy consumption and saving manufacturers significant costs associated with the overall kiln and furnace operations

## Typical Applications for Ultralite

The Ultralite technology can be designed for use in all types of kilns and furnaces. Mantec offers a number of important ultra-lightweight products for this industry, including:

- Insulation firebricks
- Cover tiles for kiln cars
- Loose fill insulation for kiln car bases
- Kiln wall cavity insulation
- Refractory castables
- Pre-cast shapes
- Graded aggregate

# Ultralite™

## Advanced Solutions



### Ultralite Insulating Firebricks

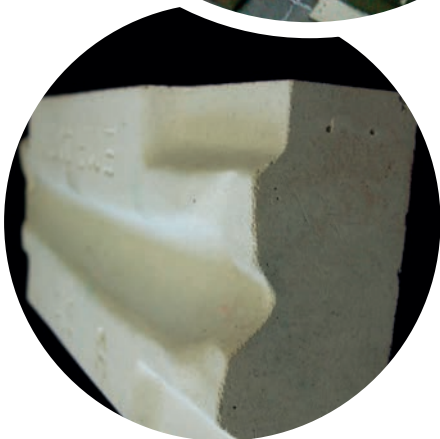
Following extensive research, Ultralite Insulating Firebricks have been developed in response to increasing market demands for ultra-lightweight and highly insulating refractory products. Ultralite Firebricks are now probably the **LIGHTEST** firebricks, for their classification, with **HALF THE WEIGHT** and **HALF THE DENSITY** of other leading comparable products. Independent testing has confirmed their superior thermal insulation and mechanical properties that enable customers to benefit from even greater energy savings.



### Ultralite Loose Fill

Ultralite is the ultimate kiln car loose fill insulator. It is a lightweight refractory aggregate with exceptional insulating properties and has been designed to replace less thermally stable kiln car insulation media such as ceramic fibre, vermiculite and perlite.

The unique properties of Ultralite make it an ideal loose fill insulator especially within kiln car bases. Unlike other typical insulation materials, the thermal efficiency of Ultralite Loose Fill insulation does not degrade so it will perform consistently over its whole lifetime.



### Additional Ultralite Products

Manufactured from Ultralite Loose Fill, Mantec's range of Ultralite Thermal Insulation products is complemented by the following additional products:

- **Ultralite Cavity Fill Castable**
- **Ultralite Refractory Castable**
- **Ultralite Graded Aggregate**
- **Ultralite Pre-Cast Shapes**



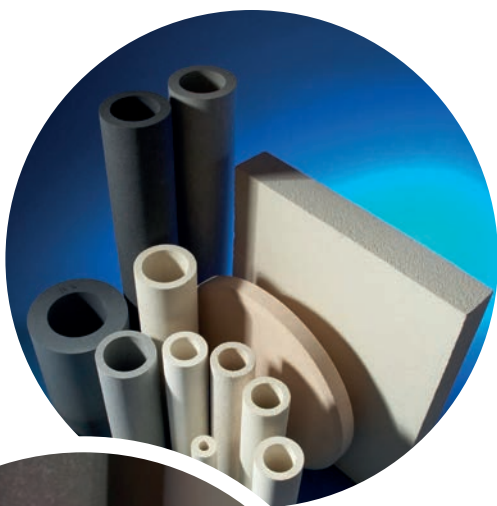


# Porous Ceramics

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Mantec Technical Ceramics offers unique solutions in tackling specialist applications, which add significant value to its customers' products and processes in a wide range of industries such as Aerospace, Water and Waste Water Treatment, Specialist Compressed Gas Systems, Electronics and Food and Beverage production. Tightly controlled ceramic pore structures with predictable permeability are two of the key features in delivering technical solutions to these industrial sectors where quality and reliability are paramount.





## Ceramic Membranes

Ceramic crossflow microfiltration membranes are used in continuous processes where the feed stream flows parallel to the membrane surface. Membranes are available in different configurations including traditional round hole and Star-Sep.

The Star-Sep Membrane filter has been specifically developed for efficient crossflow microfiltration. The filter channel's unique star shaped section increases the filtration area and induces turbulence at lower crossflow velocities. This lowers the volume compared with a circular channel of the same diameter, but also results in a reduction of the pumping energy requirement.

## Aeration

Porous ceramics are used to disperse compressed air and other gases, including Ozone, as fine bubbles in a variety of situations. Typical applications include sewage treatment and the purification of drinking water.

Available in a variety of shapes and sizes; with or without housings, our units are used across the world in these most demanding of industries.

## Industrial Filtration

Mantec's porous ceramic filters and housings remove particles from air, gases and liquids not only in normal circumstances but also at high temperatures, high and low pressures and in unusual or extreme conditions.

## Puremet Metal Pour Filters

Puremet Metal Pour Filters are unique ceramic filters formed as reticulated, irregular, three dimensional, open cell structure with a high average surface area. These filters are used extensively in casting aluminium alloys, stainless steel, super alloys, cobalt and copper alloys, zinc and zinc alloys, iron and steel.

## Fluidisation

Fluidisation is the process whereby a powder or granular material is converted from a static solid-like state to a dynamic fluid-like state. This process occurs when a fluid (liquid or gas) is passed up through the material. Mantec's products for this application are designed to maximise the transfer efficiency without reducing quality.

## Flame Arrestors

Mantec manufactures high quality flame arrestors whose proven characteristics effectively allow gases to escape whilst preventing a spark, ignition, or flame from penetrating casings.

# Technical Ceramics

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## Ceramic Gas Fire Radiants

Mantec is the only UK based company with the ability and expertise to manufacture a full range of standard and bespoke Ceramic Gas Fire Radiants, which are renowned for their high efficiency characteristics.

Many of the global brand leaders and manufacturers of specialist gas fires rely on Mantec's technical know-how spanning more than 40 years to design and produce their gas fire radiants in accordance with their exacting requirements.



## Electrical Insulators

A wide range of materials, such as Electrical Porcelain, Mullite & Steatite, is used to manufacture Mantec's electrical insulators such as Busbar Supports, Die-Pressed Components, Tubes, Rods, Terminal Blocks, Connector Blocks, Electrical Element Supports, Element Carriers, Ceramic Plugs and Arc Shields.

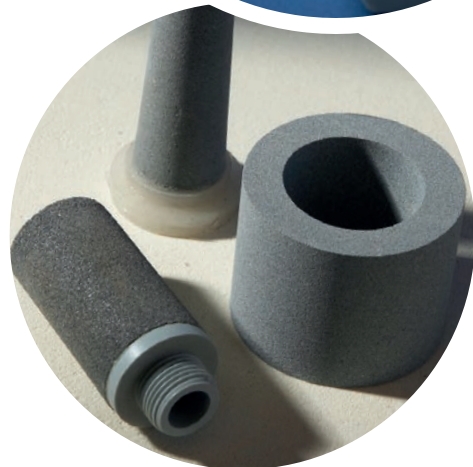


## Speciality Ceramics

Mantec supplies a wide range of speciality ceramics for applications as diverse as Soil Science, the controlled release of vapours and the manufacture of optical crystals where the physical and chemical properties are an important characteristic.

Along with all our applications, further details and case studies can be found on our website:

**[www.mantectechnicalceramics.com](http://www.mantectechnicalceramics.com)**





# Sub-Contract Services

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## Component Forming

A range of on-site component forming equipment, such as Slip Pressing, Chemical/Cement/Low Cement Casting, Isostatic Pressing, Hydraulic/Mechanical Uniaxial Pressing & Extrusion is available for our customers to hire.



## Thermal Processing

Mantec has the capabilities to offer sub-contract services for Curing, De-Binding, Sintering and Calcination.

## Plant Rental

Pilot plants are available to rent ranging from bench scale filtration systems to medium scale plants with full instrumentation enabling all process parameters to be recorded.

## Mixing

A wide range of mixing capabilities is on offer including Ball Mills, Slip Blungers, Storage Arcs, Z-Blade, Pan Mills & Eirich Mixers.



## Spray Drying

Mantec has a large atomising nozzle spray dryer for hire either on a contract or daily basis. Customers are provided with full technical support in order to achieve their desired dried granulate size distribution for each individual application.

## Product Development

With its wide range of manufacturing technologies and experienced technical team, Mantec has the ability to undertake small to medium-sized research and development projects to transform a customer's product idea/concept into a commercially manufactured product.



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