

Lightweight Refractory Can Improve Kiln Insulation Performance and Fuel Efficiency

Ever-widening end use application possibilities, allied to novel production techniques, have resulted in a higher strength version of a unique refractory insulating product. The product in question is manufactured by **Mantec Refractories** in Stoke-on-Trent in the UK. The company is a division within **Mantec Technical Ceramics** that has a historical pedigree going back over 50 years and was constituted in its current form in 2005.



The lightweight refractory's central role is as an insulating refractory in kilns and furnaces, helping companies to employ easier car configuration techniques or to lighten the overall weight while increasing thermal efficiencies in the superstructure, and thereby substantially reducing fuel consumption. It is seen as a modern substitute for more traditional insulation materials across several quite distinct applications.

Ultralite is an ultra-lightweight, microporous refractory material – a specialist foamed aluminosilicate aggregate product that was formulated by ceramic technologists in the UK. The new refractory formulation that is used to produce it is said to give it the edge over, for instance, micaceous and siliceous minerals and it routinely offers a suite of in-use benefits, such as:

- Stability at elevated temperatures above 900 °C
- High open porosity- in excess of 70 %
- Low thermal mass
- Ultra-lightweight (~ 70 kg/m³)
- High internal void space
- Low thermal conductivity
- Low bulk density
- Free flowing – easy void filling
- No ceramic fibre – so it does not become brittle and lose its insulation efficiency over time
- Negligible free silica – significantly reduced carcinogenic exposure
- High energy saving characteristic
- No volatiles produced
- Disposal at end of life is problem-free – standard landfill disposal is acceptable



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The standard grades of **Ultralite** currently available from **Mantec Technical Ceramics** are:

Product Code	Classification Temperature	Density	Typical Industrial Sector
ULF-10	1050°C (1922°F)	75Kg/m ³ (4.68 lb/ft ³)	Heavy Clay (Brick & Roof Tile) Sanitaryware
ULF-12	1250°C (2282°F)	110Kg/m ³ (6.87 lb/ft ³)	Sanitaryware, Tableware, Refractories
ULF-14	1450°C (2642°F)	232Kg/m ³ (14.48 lb/ft ³)	Refractories, Technical Ceramics, Industrial Ceramics



If you would like to know more about the benefits of using **Ultralite** within your process, then please contact:

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