Ultralite™
Advanced Solutions

Mantec Technical Ceramics
ISO 9001:2008 accredited manufacturing

Ultralite Technology

The unique, patent pending Ultralite technology has been developed by Mantec's in-house ceramic experts as a highly porous open structure and is manufactured in its factory in Stoke-on-Trent in the heart of the UK ceramics region. It is designed to be a modern substitute for more traditional materials across a number of quite distinct applications – **Loose Fill Insulation for kiln cars, Insulating firebricks, Cover tiles for kiln cars, Kiln wall cavity insulation, Refractory castables, Pre-cast refractory shapes & Graded aggregate.**

What is Ultralite Loose Fill (ULF)?

- The ultimate kiln car loose fill insulator
- A unique lightweight refractory aggregate with **exceptional insulating properties**
- Heavy Clay, Sanitaryware & Tableware Industries globally are benefiting from the combined energy and cost savings associated with an Ultralite installation

Ultralite Loose Fill (ULF) Product Range

Product Code	Classification Temperature	Density	Typical Industrial Sectors
ULF-10	1050°C (1922°F)	75Kg/m³ (4.68 lb/ft³)	Brick, Roof Tile, Sanitaryware
ULF-12	1250°C (2282°F)	110Kg/m³ (6.87 lb/ft³)	Sanitaryware, Tableware, Refractories
ULF-14	1450°C (2642°F)	132Kg/m³ (8.24 lb/ft³)	Refractories, Technical Ceramics, Industrial Ceramics

The Benefits of Ultralite Loose Fill (ULF)

- Highly efficient and lightweight = **real energy savings on every firing and ease of handling**
- Low density, low thermal mass, low thermal conductivity, high porosity = **lower kiln energy costs which reduces carbon footprint**
- Free flowing loose fill = **very easy to install, pours very conveniently into awkward spaces, no physical packing required**
- No refractory ceramic fibre (RCF) = **not classified as hazardous waste**
- Superior alternative to less thermally stable kiln car insulation media such as ceramic fibre, vermiculite and perlite etc
- Longevity = **can be re-used time and again after kiln car repairs and maintenance**
- Does not degrade, stable at high temperatures = **consistent performance over its lifetime**
- Reduced construction & maintenance costs = **extended maintenance intervals**

Continued overleaf

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Ultralite Loose Fill (ULF) versus Refractory Ceramic Fibre (RCF)

Ultralite Loose Fill (ULF) is designed to replace the more traditional insulation material within kiln car bases without any of the growing concerns about the health and safety implications of Refractory Ceramic Fibres (RCFs). ULF is therefore a real alternative choice for the discerning manufacturer.

The low thermal mass of ULF, coupled with its superior lower thermal conductivity compared to RCFs, gives energy savings on every kiln car fired. This significantly helps to reduce energy usage. The graph to the right shows a comparison of material densities in which the standard Ultralite Loose Fill ULF-10 can be seen with the lowest value at 75 Kg/m³ (4.68 lb/ft³).

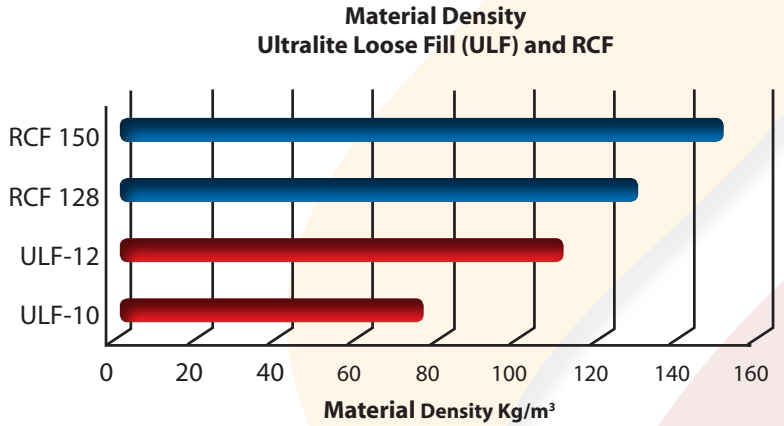
The installed density of RCF is often misunderstood. Whilst the nominal density stated by the supplier may be 90 Kg/m³ (5.62 lb/ft³), the actual installed density can typically be 125 to 200 Kg/m³ (7.80 to 12.49 lb/ft³) depending on how tightly packed the RCF material is inside the kiln car.

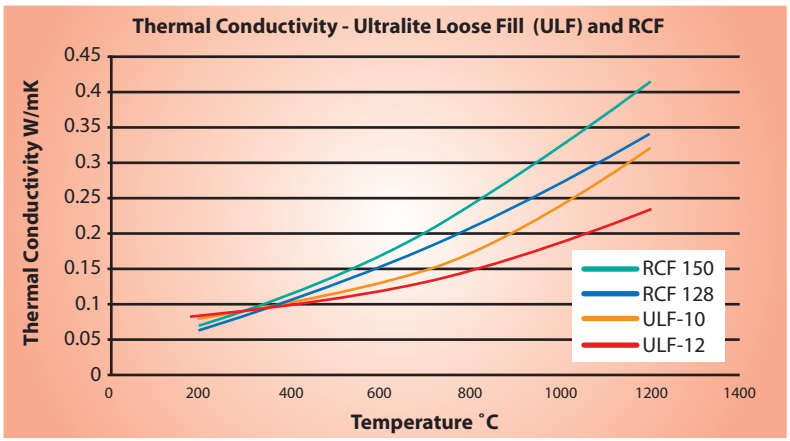
ULF on the other hand is free flowing (can be conveniently poured into spaces), easy to install (no tight packing required) and achieves an even density throughout the kiln car base.

The graph shown right shows a thermal conductivity comparison between ULF and various grades of RCF. It can be seen that ULF has a lower thermal conductivity, particularly at elevated temperatures (above 1000°C / 1832°F).

Practical benefits over ceramic fibre

Ultralite does not have the same associated health and safety issues as RCF. It does not break down or become brittle in use, therefore its thermal performance remains stable for much longer periods, thereby improving the whole life cost of the installation.





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