

There are many reasons why metal ceiling systems compare favourably over mineral fibre, especially in hospitals. Metal offers a more hygienic option, as its inert and hardwearing properties ensure that with only simple cleaning the ceiling will provide a hygienic surface throughout its life. In addition, metal ceilings can support effective anti-bacterial coatings, offering an additional level of primary control. SAS International offers an anti-bacterial coating, SAS AB, which is applied during manufacture and effectively inhibits the growth of microorganisms.

Most non-metal ceiling systems are generally manufactured from porous, liquid absorbent materials with a form of paint sealant. At close examination, especially after the cutting of service perforations and accidental damage, product claims regarding cleaning characteristics are significantly inhibited and are not from a ceiling point of view comparable to a polyester painted steel product.

Metal ceilings also offer incredibly favourable maintenance costs and a long lifespan, factors that are increasingly important given the longer leases and responsibility for on-going maintenance that are often part of PFI projects. For example, in the last 5-10 years life cycle costing in the office sector has become increasingly significant and within that same period metal acoustic ceilings have taken a 70% plus share of this market.

The lifespan of SAS metal ceilings is in excess of 25 years whereas the industry consensus is that mineral fibre ceilings would be un-serviceable after only 10-15 years. In hospitals, maintenance of the many services requires the ceiling void to be regularly accessed resulting in high demands on the durability of the ceiling. Metal ceilings are polyester power coated and are not susceptible to the paint chipping and accidental damage normally associated with mineral fibre panels. They also have a high level of scratch resistance and do not require re-decoration during their lifespan.

SAS in conjunction with a recognised quantity surveying practice has researched the overall costs of a metal ceiling throughout its expected lifecycle in relation to a mineral fibre

Why metal ceilings systems should be the automatic choice

Andrew Jackson, SAS International

one. The exercise was based on a 20 year period and concluded that projected real cost saving of 47% are achievable.

For decades the designed environment has played a marginal role in the healthcare industry, with the focus being on clinical need. However, today there is increased understanding and evidence that hospital design impacts significantly on patient recovery, as well as staff

acoustic conditions can be alleviated by installing sound-absorbing ceilings. While mineral fibre ceilings have often been promoted as offering the best acoustic control, metal ceilings can offer equally good acoustic control through the use of perforations and/or inclusion of acoustic pads for sound absorption.

Metal ceilings also offer a more sophisticated look and are available in a variety of finishes

Life cycle cost comparison		
	SAS Metal Tile	Mineral Fibre Tile
Initial cost of ceiling tiles	£8.50/m ² (including grid)	£7.00/m ² (including grid)
Site wastage	2% (£0.11/m ²)	8% (£0.34/m ²)
Installation	£6.50/m ²	£6.50/m ²
General maintenance/ replacement per annum	Nil	4%
Maintenance	Simple washing	Decoration
10 year refit costs		
Replacement tiles at current costs	Nil	£4.54/m ²
Removal and refit labour	Nil	100%
20 year refit costs		
Replacement tiles at current costs	Nil	£4.54/m ²
Removal and refit labour	Nil	100%
Residual value at end of life span (based on current values)	15%	Nil
Disposal costs - landfill	Nil	100%

The above comparison is based on a plain (un-perforated) tegular lay-in metal tile and typical sand textured plane tegular mineral fibre tile

wellbeing and retention.

When hard, sound-reflecting surfaces are used for ceilings this can reflect the noise, causing it to travel long distances, creating nuisance where multiple reflections converge. High levels of noise have been found to increase stress levels, reduce sleep quality and degrade speech intelligibility, thereby inhibiting patient recovery and reducing staff productivity levels. The World Health Organisation recommends that continuous sound levels in patient rooms should not exceed 35 dB. However, several studies in the UK have found that continuous background noise levels are commonly 65-80 dB.

The creation of such poor

which help enhance the perceived value of a building and perception of the internal environment by staff, patients and visitors alike. Air movement between the ceiling void and the main space can generate unsightly staining at the interfaces of a mineral fibre ceiling. A quality metal product properly detailed will not suffer from this pattern staining or air movement defect. The finish on a ceiling can also impact significantly on the diffusion of light around a space. SAS has just launched a new low gloss finish that provides a plasterboard effect and diffuses light throughout a room without any unintentional light reflection from both internal and external sources.



CASE STUDY

Evelina Children's Hospital

The new Evelina Children's Hospital has been designed around the needs of children, their families and staff. The finished building of 16,000m² means that the project bypassed the normal NHS procurement process.

SAS contributed to the new design with a solution that although meeting stringent standards such as acoustics and cleanability also reflected the ethos of the client, patients, staff and design team.

In the 20-bed intensive care unit a linear plank systems with large ceiling panels highlighted the size of the open plan space. Using large ceiling panels meant



that scale was maximised and the number of joints minimised contributing to ease of cleaning.

In the larger circulation zones and corridors clip in hinge down tiles improved accessibility to services and non-perforated metal tiles were used to improve ambient acoustics creating comfortable noise free surroundings.

The design of the building reflects comfort and space, providing patients every opportunity to recover quickly.



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