SECTOR CRITERIA

There are many different standards that relate to the acoustic performance of buildings, some legislated and others for guidance only. The following sections describe those standards that are relevant to the SAS product portfolio.

Commercial Offices

The 2014 BCO (British Council of Offices) 'Making The Business Case for Well Being Study' states:

'' ... 26% of UK employees found the acoustics of their office unpleasant and 77% of those blamed this on a noisy open-plan environment. A further 27% are frustrated by a lack of privacy.''

In light of this study, the BCO published the 'Guide to Specification 2014' which includes reference and guidance for acoustic issues. This includes advice on acceptable levels of acoustic privacy between cellular offices and reverberance in various type of spaces, referencing BS 8233:1999.

The acoustic characteristics of open plan spaces are often different from smaller rooms because of their 'flat' proportions where the height is much less than the plan dimensions. Given that the ceiling is such a significant surface, it is essential that a sound absorbing product is employed in this area to control reverberance and occupational noise. A suspended ceiling is often a suitable solution, though if the thermal mass of the soffit needs to be exposed, rafts or baffles can be employed.

Transport Hubs and Retail

The speech intelligibility of public address and voice alarm (PAVA) systems is a regulatory requirement in many countries. Failure to properly understand these broadcasts can hinder evacuation in the case of an emergency. Speech intelligibility is a function of background noise and reverberance, both of which can be controlled with sound absorbing materials.

Education

Worldwide studies have shown that well designed acoustic environments boost learning potential. Classrooms with poor acoustics can have a detrimental effect on children's learning and development as well as possibly leading to voice and throat problems for teachers. In the UK, Building Bulletin 93 (BB93): Acoustic Design of Schools (2014) sets out mandatory requirements for the acoustic performance of schools. Compliance with these regulations must be demonstrated to the Building Control Officer through a comprehensive design report. BB93 applies to all primary and secondary schools. It does not apply to nurseries (unless part of a school), sixth form colleges (unless established as a school) or higher education facilities.

BB93 performance targets include schedules for reverberance, internal noise levels and internal sound insulation. Satisfying these three acoustic criteria depends, to a greater or less extent, on the sound absorption present in a space. Sound absorbing suspended ceilings, baffles, rafts and wall panels represent various options open to the designer.

Residental

Part E3 of the UK Building Regulations stipulates that sound absorbing finishes are required in the circulation spaces of apartment buildings. This measure limits the passage of sound around a building, thus minimising the noise egress from one apartment to another via the corridor. Part E identifies ceilings as the most practical surface on which to place sound absorption.

Healthcare

Occupant comfort within a healthcare environment is known to be associated with patient recovery times. The UK National Health Service has provided guidance on these matters through its Health and Technical Memorandum 08–01 (HTM 08–01). This standard, and similar ones published in other countries, have increased the profile of acoustic design within hospitals. HTM 08–01 sets out acoustic performance requirements relating to reverberance in sensitive spaces and advises that products achieving at least Sound Absorption Class C should cover not less than 80% of the floor area. A smaller area is acceptable if a product can offer Class A or B absorption – advice should be sought from an Acoustic Consultant to properly quantify this.