

Acoustic Supplement Performance Acoustic Panels

BUILDING ACOUSTICS

DEFINITION:

Building acoustics is the art of controlling noise within a building. If 'sound' is the pleasurable experience to be gained from music and the spoken word, then 'noise' is the undesirable sound that can at best reduce a persons comfort, concentration and efficiency, and at worse cause stress and physical discomfort.

REFERENCE DOCUMENTS USED:

Several documents exist to give guidance on the acoustic design of buildings: -

Building Regulations Approved Document E is a substantial publication that covers many aspects of building acoustics, mainly in the residential sector, but is also relevant for many commercial sector applications, for example long term hospital patient accommodation.

HTM08-01 (Health Technical Memorandum) covers acoustic design in healthcare buildings. (Supersedes both HTM 2045 & HTM 56).

Building Bulletin 93 (BB93) Department for Children, Schools & Families (DCSF) covering sound insulation, attenuation, reverberation & speech intelligibility in education environments.

SOUND INSULATION:

Is a method of controlling noise passing from one part of a structure to another. Airborne sound can pass directly through a dividing element (for example a partition, door or access panel), or indirectly around the surrounding structure (known as flanking sound transmission).

No specific acoustic regulations exist to cover access panels. Therefore the table below taken from BB93 offers a guide to performance based on 'doorsets' (shown in Rw dB)

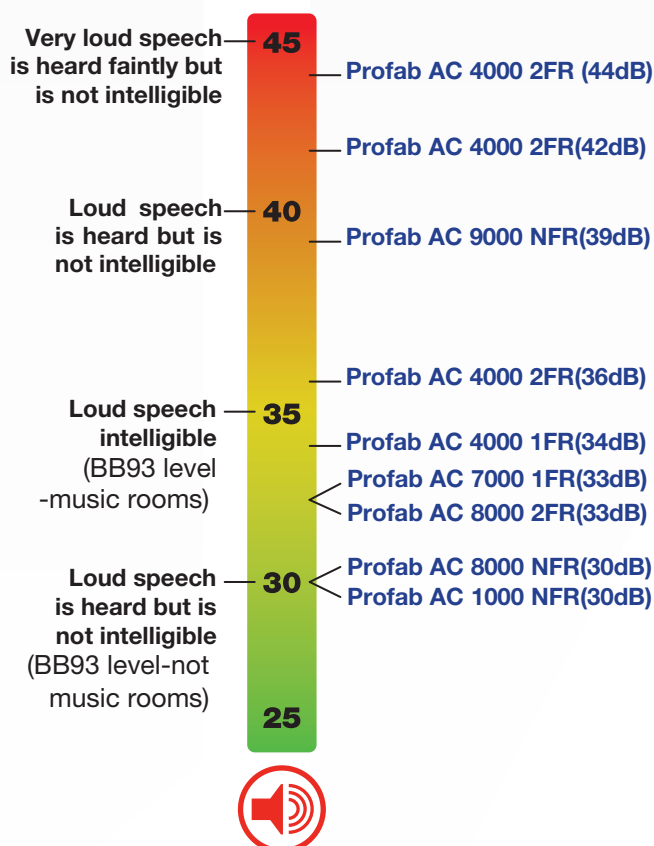
Type of space used by students	Wall (Including any glazing)	Doorset
All spaces except music rooms	40	30
Music rooms	45	35



PROFAB ACOUSTIC PANELS

(AC SOUND INSULATION type)

Most of Profab's standard range of access panels is available upgraded for enhanced acoustic performance. Upgraded panels are designated **AC** followed by the series number. The following table offers guidance on the performance of acoustic upgraded Profab access panels (shown in Rw dB).



Please specify Profab AC type if upgraded acoustic sound insulation is required

PROFAB SOUND INSULATION RANGE:

Profab AC1000 series 30dB: Acoustic gasket upgrade & mineral wool door infill. A cost effective entry level acoustic solution for walls or ceilings.

Profab AC8000 series 30dB: To suit ceramic tiles with a concealed finish door & frame.

Profab AC8000 series 33dB: To suit the application of tiles, stone or marble with acoustic gasket upgrade. 1 or 2 hour fire resistance.

Profab AC7000 series 33dB: Ceiling access panel with acoustic gasket upgrade & mineral wool door infill.

Profab AC4000 series 34dB: 1 hour fire rated wall panel with acoustic gasket upgrade. A medium duty access panel suitable for use up to 600 x 1200mm.

Profab AC4000 series 36dB: 2 hour fire rated wall panel with acoustic gasket upgrade.

Profab AC9000 series 39dB: Non fire rated with acoustic gasket & laminated acoustic steel door construction for walls or ceilings.

Profab AC4000 series 42dB: 2 hour fire rated wall panel with acoustic gasket & acoustic steel door upgrade.

Profab AC4000 series 44dB: 2 hour fire rated wall panel with double level acoustic gasket, acoustic steel door upgrade with an additional door panel.

BENEFITS OF PROFAB'S ACOUSTIC RANGE

Proven Performance: The acoustic panels detailed in this supplement have been tested in accordance with stringent acoustic standards (BS EN ISO 140- 3) at a UKAS accredited facility.

Clean Aesthetic Appearance: The acoustic range is based on Profab's market leading access panels and riser doors, with features such as concealed frames and hinges.

Fire Safety: Up to 2 hours fire resistance from our 4000 or 8000 series acoustic panels, and 1 hour fire resistance from our 7000 series.

Easy Installation: Access panel frames are simply screw fixed through pre-punched fixing holes into the structure (e.g. drywall screws fixed into metal stud partitions).



Profab access panel undergoing acoustic testing

SOUND ABSORPTION

Sound absorption refers to the sound energy that can be absorbed by different materials within a space. Once a sound is produced the time taken for the 'echo' to disappear can be measured. This is known as reverberation time. Correct sound absorption levels are important for speech clarity, especially for pupils in an education environment.

PROFAB SOUND ABSORBENT RANGE

Profab manufacture a range of access panels to suit sound absorbent ceilings, such as Rigitone* or Gyptone*. Additionally we offer a bespoke design service for wall mounted sound absorbent panels. A vast number of bespoke design options are available regarding shape, size and perforation patterns. Contact Profab Technical for further information.



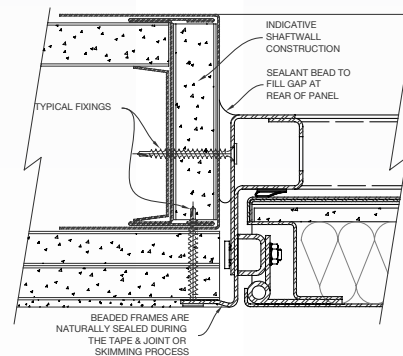
Profab access panel into Rigitone ceiling at the Curve Performing Arts Centre Leicester



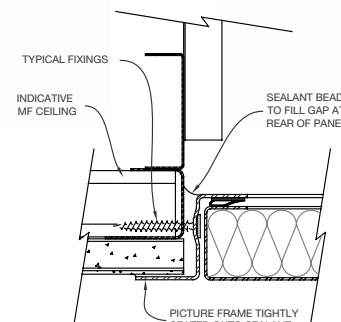
Example of design options using Profab wall mounted sound absorbent panels.

MINIMISING FLANKING SOUND

The figures quoted in this document are laboratory acoustic results solely for the access panels. To achieve the best possible performance on site any potential paths for flanking sound transmission should be prevented. When fitting access panels, this is relatively easy to achieve; see below for example details.



PROFAB 4000 SERIES 2FR INTO SHAFTWALL



PROFAB 1000 SERIES INTO MF CEILING

QUALITY & DEVELOPMENT

Profab access panels are manufactured under strictly controlled quality systems and so we reserve the right to amend any of our published information and specification.

Acoustic Supplement Performance Acoustic Panels continued . . .

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