

Acoustic Comfort

Aim of the Credit

To reward projects that provide appropriate and comfortable acoustic conditions for occupants.

Credit Criteria

1	Internal Noise Levels	1 point is awarded where internal ambient noise levels in the nominated area are suitable and relevant to the activity type in the room. This includes all sound generated by the building systems and the external noise ingress.
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Compliance Requirements

1 - Internal Noise Levels

Nominated area

For purposes of this credit criterion, the nominated area includes all primary and secondary spaces and living and sleeping areas in residential units. A space can be excluded if the standard recommends that specialist advice be sought, such as in a theatre.

Demonstrating compliance

To consider this credit criterion met, the internal ambient sound levels in the nominated area are to be no more than 5dB(A) above or below the “satisfactory” sound levels provided in Table 1 of AS/NZS 2107:2000.

Is the ambient sound level range defined in the criterion too large to reflect best practice?

Should the benchmark be relaxed for buildings that are naturally ventilated?

The noise measurement and documentation must be in accordance with AS/NZS 2107:2000. It must account for all internal and external noise sources. In naturally ventilated buildings, all measurement must be carried out with ventilation openings open.

Steady state, or quasi steady state, noise sources to be included are building services equipment, noise emission from outdoor sources such as traffic, and (where known) noise from any noise generation process. Regardless of ventilation mode, occupational noise can be disregarded in accordance with AS/NZS 2107:2000.

When compliance is demonstrated through measurement at the time of commissioning, the measurements shall be conducted in at least 10% of the spaces in the project. The range of measurement locations shall be a representation of all the spaces available within.

Do you agree with the requirement that for naturally ventilated buildings, as acoustic measurements should be carried out with ventilation openings open? If not, what should the requirements be changed to?

Innovation Opportunities

Innovation Challenge - Reverberation Time

The aim of this innovation challenge is to encourage the design and construction of buildings that control reverberation time. Projects will be rewarded where the nominated area has been built to control reverberation time to a level suitable to the activities in the space. To consider this challenge met, the reverberation time in the nominated area must be below the maximum stated in the 'Recommended Reverberation Time' provided in table 1 of AS/NZS 2107:2000.

Innovation Challenge - Minimise Disturbance to Enclosed Spaces

This aim of this Innovation Challenge is encourage project teams to design buildings that minimise sounds disturbance to enclosed spaces. Projects will be rewarded where to acoustic separation has been provided to an appropriate standard between nominated enclosed spaces, and between these enclosed spaces and open areas.

To consider this Innovation Challenge met, the project must address noise transmission between two enclosed spaces and between an enclosed spaces an open areas in the project through appropriate levels of acoustic separation.

Guidance

Standards Noted in this Credit

AS/NZS 2107:2000 Acoustics — Recommended design sound levels and reverberation times for building interiors.

ISO 140-4:1998 Acoustics -- Measurement of sound insulation in buildings and of building elements -- Part 4: Field measurements of airborne sound insulation between rooms.

ISO/FDIS 16283-1 Acoustics – Field measurement of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation.

Other standards can be submitted for approval through a Credit Interpretation Request. For a standard to be recognised, this standard must:

- Have been developed by an industry organisation;
- Have demonstrated uptake by the construction industry; and
- Be specific to acoustics, and provide recommendations for measuring, testing, and setting both maximum levels and recommended levels for all aspects of this credit.

Definitions

Enclosed space - Meeting rooms, private offices, classrooms, residential units and any other similar space, where it is expected that noise should not carry over from one space to the next.

Reverberation - In simple terms, the persistent prolonged reflections of sound in a space. However, a technical definition is provided in AS/NZS 2107:2000.

Qualified acoustic consultant - A member of the Australian Acoustical Society (AAS) or equivalent international recognised body. Or, a qualified staff member within an Association of Australian Acoustical Consultants (AAAC) member firm.

Documentation Requirements

'Design Review' Submission (Optional)

Project teams are to submit information/documentation marked with an asterisk* for 'design review'.

As Built Submission

All project teams are to submit the following documentation:

Submission Template*

- Description of all relevant internal and external noise sources.*

- Description of the design features that insure the credit criteria have been met.*
- Measured noise levels in all relevant spaces and the noise levels required to meet the credit criteria.
- If the building is mechanically ventilated, confirmation that the plant was fully in operation when the tests were carried out.

Project teams are required to provide documentation supporting credit compliance. The following documents may be used to demonstrate compliance:

- **Report by a qualified acoustics consultant** confirming credit compliance.
- **Extracts from the commissioning report** detailing relevant measured noise levels and target noise levels.

Please provide feedback on the technical content of this credit: