

Consultation response: BS 8233 Sound insulation and noise reduction for buildings – Guide

Comments for **Introduction**

Comment on this section:

There has been a lot of debate among ANC members about how this draft of BS 8233 differs substantially (in parts) from the current standard. Regarding dwellings and rooms in residential use, this draft does not align with the current guidance in Professional Practice Guidance on Planning & Noise (ProPG) New Residential Development published jointly by the Association of Noise Consultants (ANC), Institute of Acoustics (IOA) and Chartered Institute of Environmental Health (CIEH) in 2017. Given the anticipated (large) number of comments from these three bodies, as well as acoustic consultancies, environmental health departments and other stakeholders, we request a further consultation period for the next draft of this standard, after all the comments are addressed.

Proposed changes:

N/A – we request another public consultation

Comments type: General

Comments for **3 Terms, definitions and symbols**

Comments on this section:

There should be full definitions for L_{den} and L_{night} in this section, with the equations for how these are calculated (just as there is for equivalent continuous A-weighted sound pressure level).

The list of symbols states that L_{den} is a “noise indicator for overall annoyance (dB)” and L_{night} is a “noise indicator for sleep disturbance (dB)”. These descriptions seem inadequate and does not explain what the subscripts $_{den}$ and $_{night}$ mean.

A definition for $D_{nT,A,tr}$ is also missing from this section, although it is mentioned in NOTE 1 of Table 9. Other missing definitions include $D_{S,A}$, privacy factor (PF) and noise rating (NR).

Proposed changes:

Addition of missing terms, definitions and symbols including: L_{den} , L_{night} , $D_{nT,A,tr}$, $D_{S,A}$, PF and NR.

Comments type: Editorial

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Comments for **6.6.1 Limits for reverberation time**

Comments on this section:

Most ANC members feel it would be useful if this section provided some guideline values for reverberation times in non-residential spaces. Guideline values could come from:

- Acoustic design of schools: performance standards – Building bulletin 93;
- BS ISO 22955:2021 Acoustics – Acoustic quality of open office spaces; and
- The collective experience of acoustic/noise practitioners on which reverberation times provide reasonable conditions in completed buildings (along with supporting evidence from building occupiers/owners).

For most geometrically simple rooms, reverberation times are straightforward to predict and measure. However, for some room types the reverberation time is not the most appropriate indicator for the control of reverberant sound. The standard could refer to other acoustic parameters such as: sound strength, early decay time, clarity (defined in the BS EN ISO 3382 series) and speech transmission index (STI) (defined in BS EN 60268-16:2011).

Proposed changes:

Addition of a table displaying guideline reverberation times for common non-residential spaces.

Addition of text to state:

“For some rooms, other acoustic parameters are better predictors for the control of reverberant sound. In these cases, it may be more appropriate to consider the sound strength, early decay time, clarity, speech transmission index or other acoustic parameters.”

NOTE 2 *The BS EN ISO 3382 series covers the measurement and calculation of sound strength, early decay time and clarity.*

NOTE 3 *BS EN 60268-16:2011 covers the measurement and calculation of speech transmission index.”*

Comment type: Technical

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Comments for **Table 9 – Façade sound insulation by source type and category**

Comment on this section:

There is concern that the guideline façade sound insulation values given for each sound exposure category will lead to over specification of the façade when the external sound levels are at the lower end of the category range.

The paragraph that immediately follows Table 9 (and its NOTES) acknowledges that designing the façade sound insulation to meet internal level criteria is likely to result in lower levels of facade sound insulation and more sustainable design (i.e. fewer materials, lower carbon emissions etc.). Sustainable design should be pursued wherever possible. Therefore, we suggest that designing to internal level targets should be the preferred option and strongly encouraged (using Table 10).

Proposed changes:

Remove Table 9. (The sound exposure categories are still useful for Table 11.)

Comments type: Technical

Comments for **Table 10 – Sound level targets inside habitable rooms for different transportation source types**

Comment on this section:

The vast majority of ANC members would like this British Standard to provide guidance on internal sound levels for habitable rooms in residential buildings. So, it is positive to see some guidance on this in Table 10. However, there is considerable concern that the targets are given as L_{den} values. L_{den} (and L_{night}) are not commonly used in the UK. $L_{Aeq,T}$ is commonly used in the UK for British Standards, industry noise guidance documents and planning requirements. Because of this widespread use over many years, $L_{Aeq,T}$ is also well understood by acoustics/noise practitioners, environmental health officers, town planners and other stakeholders. Furthermore, typical representative values of $L_{Aeq,T}$ can be measured within the building, making it simple to demonstrate whether the target values are met.

Proposed changes:

Include internal level targets as $L_{Aeq,T}$ values alongside the L_{den} values.

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The $L_{Aeq,T}$ values could be given as:

- day (07:00-19:00 hours) $L_{Aeq,12hr}$
- evening (19:00-23:00 hours) $L_{Aeq,4hr}$
- night (23:00-07:00 hours) $L_{Aeq,8hr}$

so that the combined $L_{Aeq,24hr}$ level corresponds to the relevant L_{den} value.

Comments type: Technical