BS 8233:2014

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Guidance on sound insulation and noise reduction for buildings

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 78, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 28 February 2014. It was prepared by Technical Committee B/564, *Noise control on building sites*, and Subcommittee EH/1/6, *Building acoustics*. A list of organizations represented on these committees can be obtained on request to their secretaries.

Supersession

This British Standard supersedes BS 8233:1999, which is withdrawn.

Information about this document

This British Standard draws on the results of research and experience to provide information on the design of buildings that have internal acoustic environments appropriate to their functions. It deals with control of noise from outside the building, noise from plant and services within it, and room acoustics for non-critical situations. This document is intended for use by non-specialist designers and constructors of buildings and those concerned with building control, planning and environmental health.

This is a full revision of the standard. The principal changes have been made to reflect:

- changes to the legislative framework since publication of the 1999 edition;
- revisions to Building Regulations Approved Document E [1];
- the publication of specialist documents for specific sectors, such as healthcare and education;
- the publication in England of the National Planning Policy Framework [2] in March 2012, with the concurrent withdrawal of numerous individual planning guidance and policy statement documents, including those specifically relating to noise;
- a reappraisal of the tabular content with respect to setting targets for various classes of living space in the light of research findings; and
- the need to transfer some of the more detailed information from the main text to annexes.

BS 8233:1999 was, like its predecessor CP3 Chapter III:1972, published as a code of practice. However, it was decided to publish this edition as a guide because the text largely comprises guidance that does not support claims of compliance.

Use of this document

As a guide, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice and claims of compliance cannot be made to it.

Presentational conventions

The guidance in this standard is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

0 Introduction

Noise control in and around buildings is discussed in this British Standard guide on an objective and quantifiable basis as far as is currently possible. For many common situations, this guide suggests criteria, such as suitable sleeping/resting conditions, and proposes noise levels that normally satisfy these criteria for most people. However, it is necessary to remember that people vary widely in their sensitivity to noise, and the levels suggested might need to be adjusted to suit local circumstances. Moreover, noise levels refer only to the physical characteristics of sound and cannot differentiate between pleasant and unpleasant sounds. Important though psychological factors are, it is not practicable to consider them in this guide.

NOTE The standard is intended to be used routinely where noise sources are brought to existing noise-sensitive buildings.

Attention is drawn to the fact that measures taken to control sound might also impinge on fire precautions and other health and safety requirements. All such requirements need to be considered together at an early stage of the design.

1 Scope

This British Standard provides guidance for the control of noise in and around buildings. It is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building.

This British Standard does not cover:

a) specialist applications, such as auditoria and cinemas (for cinemas, see BS ISO 9568);

b) vibration control, except where it is evident in the form of radiated sound; or

c) noise that breaks out from the building that might affect external receptors.

NOTE Annex A describes some of the simpler types of noise calculation. A method of rating noise is described in Annex B. Methods of measurement of sound insulation are described in Annex C. Annex D outlines some special problems requiring expert advice. Annex E describes airborne and impact sound insulation. Annex F sets out the legislative framework applicable to noise producing developments. Annex G provides example calculations for resolving a typical design problem. Examples of design criteria adopted by various hotel groups are included for reference in Annex H.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 4142, *Methods for rating and assessing industrial and commercial sound* [1)]

BS 5502-32, *Buildings and structures for agriculture – Part 32: Guide to noise attenuation*

BS EN 20354, *Acoustics – Measurement of sound absorption in a reverberation room*

[1)] Revision in preparation.