

Sound power levels of noise sources —

Part 1: Precision methods for determination of sound power levels for broad-band sources in reverberation rooms

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Environment and Pollution Standards Policy Committee (EPC/-) to Technical Committee EPC/1, upon which the following bodies were represented:

Association of Consulting Engineers	Health and Safety Executive
British Broadcasting Corporation	Incorporated Association of Architects and Surveyors
British Occupational Hygiene Society	Institute of Acoustics
British Telecommunications plc	Institute of Occupational Hygienists
Department of Health	Institute of Physics
Department of the Environment (Building Research Establishment)	Institute of Sound and Vibration Research
Department of Trade and Industry (Air Division)	Institution of Civil Engineers
Department of Trade and Industry (National Physical Laboratory)	Institution of Electronic and Radio Engineers
Engineering Equipment and Materials Users' Association	Royal Institute of British Architects
	Transmission and Distribution Association (BEAMA Ltd.)

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

AFRC Institute of Engineering Research	Federation of Associations of Specialists and Sub-Contractors
Advanced Manufacturing Technology Research Institute	Federation of Manufacturers of Construction Equipment and Cranes
Agricultural Engineers Association	Federation of Piling Specialists
British Cement Association	Hevac Association
British Compressed Air Society	Institution of Mechanical Engineers
British Hydromechanics Research Association	Institution of Production Engineers
British Steel Corporation	Rotating Electrical Machines Association (BEAMA Ltd.)
Business Equipment and Information Technology Association	Society of Motor Manufacturers and Traders Ltd.
Construction Industry Research and Information Association	
Department of Trade and Industry (National Engineering Laboratory)	

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National foreword

This revision of this Part of BS 4196 has been prepared under the direction of the Environment and Pollution Standards Policy Committee and is identical with ISO 3741:1988 “*Acoustics — Determination of sound power levels of noise sources — Precision methods for broad-band sources in reverberation rooms*”, prepared by subcommittee 1, Noise, of ISO technical committee 43, Acoustics, and published by the International Organization for Standardization (ISO).

In 1991 the European Committee for Standardization (CEN) accepted ISO 3741:1988 as European Standard EN 23741:1991.

This Part of BS 4196 supersedes BS 4196-1:1981, which is now withdrawn.

This edition of BS 4196-1 differs from the previous edition in the following principal respect: an informative annex with guidelines for the design of rotating diffusers has been transferred to this Part from Part 2 of this standard. Minor editorial changes have also been made.

BS 4196 at present comprises the following Parts which have been published:

- *Part 0: Guide for the use of basic standards and for the preparation of noise test codes;*
- *Part 1: Precision methods for determination of sound power levels for broad-band sources in reverberation rooms;*
- *Part 2: Precision methods for determination of sound power levels for discrete-frequency and narrow-band sources in reverberation rooms;*
- *Part 3: Engineering methods for determination of sound power levels for sources in special reverberation test rooms;*
- *Part 4: Engineering methods for determination of sound power levels for sources in free-field conditions over a reflecting plane;*
- *Part 5: Precision methods for determination of sound power levels for sources in anechoic and semi-anechoic rooms;*
- *Part 6: Survey method for determination of sound power levels of noise sources;*
- *Part 7: Survey method for determination of sound power levels of noise sources using a reference sound source;*
- *Part 8: Specification for the performance and calibration of reference sound sources.*

Cross-references

International Standard	Corresponding British Standard
ISO 266:1975	BS 3593:1963 <i>Recommendation on preferred frequencies for acoustical measurement</i> (Technically equivalent)
ISO 354:1985	BS 3638:1987 <i>Method for measurement of sound absorption in a reverberation room</i> (Identical)
ISO 3740:1980	BS 4196 <i>Sound power levels of noise sources</i> Part 0:1981 <i>Guide for the use of basic standards and for the preparation of noise test codes</i> (Identical)
ISO 3742:1988	Part 2:1991 <i>Precision methods for determination of sound power levels for discrete-frequency and narrow-band sources in reverberation rooms</i> (Identical)

International Standard	Corresponding British Standard
ISO 3743:1988	Part 3:1991 <i>Engineering methods for determination of sound power levels for sources in special reverberation test rooms</i> (Identical)
ISO 3744:1981	Part 4:1981 <i>Engineering methods for determination of sound power levels for sources in free-field conditions over a reflecting plane</i> (Identical)
ISO 3745:1977	Part 5:1981 <i>Precision methods for determination of sound power levels for sources in anechoic and semi-anechoic rooms</i> (Identical)
ISO 3746:1979	Part 6:1981 <i>Survey method for determination of sound power levels of noise sources</i> (Identical)
ISO 3747:1987	Part 7:1988 <i>Survey method for determination of sound power levels of noise sources using a reference sound source</i> (Identical)
ISO 6926:1990 ^a	Part 8:1991 <i>Specification for the performance and calibration of reference sound sources</i> (Identical)
IEC 225:1966	BS 2475:1964 <i>Specification for octave and one-third octave band-pass filters</i> (Technically equivalent)
IEC 651:1979	BS 5969:1981 <i>Specification for sound level meters</i> (Identical)

^a Now published.

The Technical Committee has reviewed the provisions of ISO 2204, to which reference is made in the text, and has decided that they are acceptable for use in conjunction with this standard.

IEC Publication 50(08) has been superseded by IEC Publication 50(801):1984, to which BS 4727 “*Glossary of electrotechnical, power, telecommunication, electronics, lighting and colour terms*” Part 3 “*Terms particular to telecommunications and electronics*” Group 08:1985 “*Acoustics and electroacoustics terminology*” is technically equivalent.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, the EN title page, pages 2 to 16, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Descriptors: Acoustics, acoustic measurement, noise: sound, sound sources, laboratory tests, sound power, acoustical reverberation

English version

Acoustics — Determination of sound power levels of noise sources — Precision methods for broad-band sources in reverberation rooms

(Identical with ISO 3741:1988)

Acoustique — Détermination des niveaux de puissance acoustique émis par les sources de bruit — Méthodes de laboratoire en salles réverbérantes pour les sources à large bande (Identique à l'ISO 3741:1988)

Bestimmung des Schalleistungspegels von Geräuschquellen — Rahmenmeßverfahren der Genauigkeitsklasse 1 für Breitbandspektren in Hallräumen
(Identisch mit ISO 3741:1988)

This European Standard was approved by CEN on 7th October 1991 and is identical to the ISO standard as referred to.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

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Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been taken over by CEN/TC 211 “Acoustics” from the work of the International Organization for Standardization (ISO).

This document has been submitted to the formal vote and has been approved.

National Standards identical to this European Standard shall be published at the latest by 92-04-09 and conflicting national standards shall be withdrawn at the latest 92-04-09.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Endorsement notice

The text of the International Standard ISO 3741:1988 has been approved by CEN as a European Standard without any modification.