

Test code for the measurement of airborne noise emitted by rotating electrical machinery

**Part 1. Engineering method for free-field
conditions over a reflecting plane**

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

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

AFRC Institute of Engineering Research
 Advanced Manufacturing Technology Research Institute
 Agricultural Engineers' Association
 British Cement Association
 British Compressed Air Society
 British Hydromechanics Research Association
 British Industrial Truck Association
 British Steel plc
 Construction Industry Research and Information Association
 Department of Trade and Industry (National Engineering Laboratory)
 EEA (the Association of Electronics, Telecommunications and Business Equipment Industries)
 Engineering Industries Association
 Federation of Associations of Specialists and Sub-Contractors
 Federation of Manufacturers of Construction Equipment and Cranes
 Federation of Piling Specialists
 HEVAC Association
 Institution of Mechanical Engineers
 Rotating Electrical Machines Association (BEAMA Limited)
 Society of Motor Manufacturers and Traders Limited
 University of Liverpool

This British Standard, having been prepared under the direction of the Environment and Pollution Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 28 June 1991

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The following BSI references relate to the work on this standard:
 Committee reference EPC/1
 Draft for comment 84/52652 DC

Amendments issued since publication

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Amendment No. 1
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Test code for the measurement of airborne
noise emitted by rotating electrical
machinery

Part 1. Engineering method for free-field
conditions over a reflecting plane

Additional text

AMD 6980
April 1992

Front and back covers

In the top right-hand corner of the front cover and on the back cover, immediately above 'ISO 1680/1 - 1986' insert 'EN 21680-1 : 1991'.

AMD 6980
April 1992

National foreword

At the end of paragraph 1, insert the following new paragraph.

'In 1991 the European Committee for Standardization (CEN) accepted ISO 1680/1 - 1986 as European Standard EN 21680-1 : 1991'.

AMD 6980
April 1992

New EN title page and foreword page

Insert the attached new EN title page and foreword page immediately before page 1 of BS 7458 : Part 1.

UDC 534.6:534.835.46

Descriptors: Acoustics, acoustic measurements, airborne sound, engine noise, rotating electric machines, acoustic tests, sound pressure, sound power

English version

Acoustics – Test code for the measurement of airborne noise emitted by rotating electrical machinery – Part 1. Engineering methods for free-field conditions over a reflecting plane

(Identical with ISO 1680-1 : 1986)

Acoustique – Code d'essai pour le
mesurage du bruit aérien émis par les
machines électriques tournantes –
Partie 1. Méthode d'expertise pour les
conditions de champ libre au-dessus
d'un plan réfléchissant
(Identique à l'ISO 1680-1 : 1986)

Akustik – Verfahren zur Messung der
Geräuschemission von rotierenden
elektrischen Maschinen –
Teil 1. Verfahren der Genauigkeitsklasse 2
für Freifeldbedingungen über einer
reflektierenden Ebene
(Identisch mit 1680-1 : 1986)

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

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

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Ref. No. EN 21680-1 : 1991 E

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 1680-1 : 1986 has been approved by CEN as a European Standard without any modification.

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National foreword

This Part of BS 7458 has been prepared under the direction of the Environment and Pollution Standards Policy Committee and is identical with ISO 1680/1-1986, 'Acoustics — Test code for the measurement of airborne noise emitted by rotating electrical machinery — Part 1 : Engineering method for free-field conditions over a reflecting plane', published by the International Organization for Standardization (ISO). ISO 1680/1 was prepared by Subcommittee 1, Noise, of ISO Technical Committee 43, Acoustics, with the active participation and support of the UK.

The UK voted disapproval of the draft International Standard, but the UK comments were taken into consideration in the published standard sufficiently to allow the UK to change its vote to one of approval. Implementation, however, had to await acceptance within IEC.

BS 7458 at present comprises the following Parts.

Part 1	Engineering method for free-field conditions over a reflecting plane
Part 2	Survey method

Cross-references

International standard	Corresponding British Standard
ISO 266 : 1975	BS 3593 : 1963 Recommendation on preferred frequencies for acoustical measurement (Technically equivalent)
ISO 354 : 1985	BS 3638 : 1987 Method for measurement of sound absorption in a reverberation room (Identical)
ISO 1680/2 : 1986	BS 7458 Test code for the measurement of airborne noise emitted by rotating electrical machinery Part 2 : 1991 Survey method (Identical)
ISO 3740 : 1980	BS 4196 Sound power levels of noise sources Part 0 : 1981 Guide for the use of basic standards and for the preparation of noise test codes (Identical)
ISO 3741 : 1988	Part 1 : 1991 Precision methods for determination of sound power levels for broad-band sources in reverberation rooms (Identical)
ISO 3742 : 1988	Part 2 : 1991 Precision methods for determination of sound power levels for discrete-frequency and narrow-band sources in reverberation rooms (Identical)
ISO 3744 : 1981	Part 4 : 1981 Engineering methods for determination of sound power levels for sources in free-field conditions over a reflecting plane (Identical)
ISO 3745 : 1977	Part 5 : 1981 Precision methods for determination of sound power levels for sources in anechoic and semi-anechoic rooms (Identical)

ISO 6926 : 1990 ¹⁾	Part 8 : 1991 Specification for the performance and calibration of reference sound sources (Identical)
IEC 225 : 1966	BS 2475 : 1964 Specification for octave and one-third octave band-pass filters (Technically equivalent)
IEC 651 : 1979	BS 5969 : 1981 Specification for sound level meters (Identical)

The Technical Committee has reviewed the provisions of ISO 2204 and IEC 34-1 to which reference is made in the text and has decided that they are suitable for use in conjunction with this standard.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

¹⁾ ISO 6926 is identified in the ISO text as 'At present at the stage of draft'. It was published in 1990 and has been implemented as BS 4196 : Part 8 : 1991.