



NSAI
Standards

Irish Standard
I.S. EN ISO 9295:2015

Acoustics - Determination of high-frequency sound power levels emitted by machinery and equipment (ISO 9295:2015)

I.S. EN ISO 9295:2015

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EUROPEAN STANDARD

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NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2015

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English Version

Acoustics - Determination of high-frequency sound power levels emitted by machinery and equipment (ISO 9295:2015)

Acoustique - Détermination des niveaux de puissance
acoustique à haute fréquence émis par les machines et
équipements (ISO 9295:2015)

Akustik - Bestimmung der hochfrequenten
Schallleistungspegel von Maschinen und Geräten (ISO
9295:2015)

This European Standard was approved by CEN on 21 February 2015.

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EN ISO 9295:2015 (E)

Contents	Page
Foreword.....	3

Foreword

This document (EN ISO 9295:2015) has been prepared by Technical Committee ISO/TC 43 “Acoustics” in collaboration with Technical Committee CEN/TC 211 “Acoustics” the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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INTERNATIONAL STANDARD

**ISO
9295**

Second edition
2015-05-15

Acoustics — Determination of high-frequency sound power levels emitted by machinery and equipment

Acoustique — Détermination des niveaux de puissance acoustique à haute fréquence émis par les machines et équipements



Reference number
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Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Conformity requirements	1
5 Requirements for measurements in a reverberation test room	1
5.1 General.....	1
5.2 Meteorological conditions.....	2
5.3 Instrumentation.....	2
5.4 Installation and orientation of microphone.....	2
5.5 Installation and orientation of equipment.....	3
5.6 Calibration of measurement system.....	3
5.7 Measurement of sound pressure level.....	3
6 Method using measured reverberation time	4
6.1 General.....	4
6.2 Measurement of reverberation time.....	5
6.3 Calculation of room absorption.....	5
6.4 Installation of microphone and equipment.....	5
6.5 Measurement of sound pressure level.....	5
6.6 Calculation of sound power level.....	6
7 Method using calculated air absorption	6
7.1 General.....	6
7.2 Calculation of room constant.....	6
7.3 Installation of microphone and equipment.....	6
7.4 Measurement of sound pressure level.....	6
7.5 Calculation of sound power level.....	7
8 Method using a reference sound source	8
8.1 Reference sound source.....	8
8.2 Installation of microphone and equipment.....	8
8.3 Installation of reference sound source.....	9
8.4 Measurement of sound pressure level.....	9
8.5 Calculation of sound power level.....	9
8.5.1 Equipment emitting broad-band noise.....	9
8.5.2 Equipment emitting discrete tone(s).....	10
9 Method using a free field over a reflecting plane	10
9.1 General.....	10
9.2 Meteorological conditions.....	10
9.3 Instrumentation.....	11
9.4 Installation and orientation of microphone.....	11
9.5 Installation of equipment.....	11
9.6 Calibration of measurement system.....	11
9.7 Measurement of sound pressure level.....	12
9.8 Calculation of surface sound pressure level and sound power level.....	12
10 Calculation of sound power level under reference meteorological conditions	13
10.1 Reverberation rooms.....	13
10.2 Hemi-anechoic rooms.....	13
11 Measurement uncertainty	13
12 Information to be recorded	13

ISO 9295:2015(E)

12.1	General.....	13
12.2	Equipment under test.....	13
12.3	Acoustic environment.....	14
12.4	Instrumentation.....	14
12.5	Acoustical data.....	14
13	Information to be reported.....	14
Annex A	(normative) Calculation of air absorption coefficient.....	16
Bibliography	18

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This second edition cancels and replaces the first edition (ISO 9295:1988), which has been technically revised.

ISO 9295:2015(E)

Introduction

Some machinery and equipment emit high-frequency noise which might be broad-band noise (e.g. paper noise of high-speed printing) or narrow-band noise and discrete tones (e.g. noise of switching power supplies and video display units or medical devices).

This International Standard specifies methods for the determination of the sound power levels in the frequency range covered by the octave band centred at 16 kHz. The measured levels are not frequency-weighted. The principal objective of this International Standard is to prescribe methods for determining the sound power levels and frequencies of tones which are contained within the 16 kHz octave band.

Acoustics — Determination of high-frequency sound power levels emitted by machinery and equipment

1 Scope

This International Standard specifies four methods for the determination of the sound power levels of high-frequency noise emitted by machinery and equipment in the frequency range covered by the octave band centred at 16 kHz, which includes frequencies between 11,2 kHz and 22,4 kHz. They are complementary to the methods described in ISO 3741 and ISO 3744. The first three methods are based on the reverberation test room technique. The fourth method makes use of a free field over a reflecting plane.

The test conditions which prescribe the installation and operation of the equipment are those specified in ISO 3741 or ISO 3744 as applicable.

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.

ISO 3741, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Precision methods for reverberation test rooms*

ISO 3744, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

ISO 6926, *Acoustics — Requirements for the performance and calibration of reference sound sources used for the determination of sound power levels*

ISO 9613-1, *Acoustics — Attenuation of sound during propagation outdoors — Part 1: Calculation of the absorption of sound by the atmosphere*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 3741 and ISO 3744 apply.

4 Conformity requirements

A method for the measurement of high-frequency noise is in conformance with this International Standard if it satisfies all the mandatory requirements of one of the four methods described herein specified in [Clauses 6 to 9](#), and if the information recorded and reported is as specified in [Clauses 12 and 13](#), respectively.

5 Requirements for measurements in a reverberation test room

5.1 General

This International Standard describes three methods using the reverberation test room technique of ISO 3741. The first and the second methods are usually called “direct methods” because they use directly measured or calculated reverberation times. The third method is a so-called “comparison method”. A calibrated reference sound source is used from which the sound power levels of the equipment are determined by comparison.

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