

DIN EN ISO 3746



ICS 17.140.01

Supersedes
DIN EN ISO 3746:2009-11**Acoustics –****Determination of sound power levels and sound energy levels of noise sources using sound pressure –****Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:2010)****English translation of DIN EN ISO 3746:2011-03****Akustik –****Bestimmung der Schallleistungs- und Schallenergiepegel von Geräuschquellen aus Schalldruckmessungen –****Hüllflächenverfahren der Genauigkeitsklasse 3 über einer reflektierenden Ebene (ISO 3746:2010)****Englische Übersetzung von DIN EN ISO 3746:2011-03****Acoustique –****Détermination des niveaux de puissance acoustique et des niveaux d'énergie acoustique émis par les sources de bruit à partir de la pression acoustique –****Méthode de contrôle employant une surface de mesure enveloppante au-dessus d'un plan réfléchissant (ISO 3746:2010)****Traduction anglaise de DIN EN ISO 3746:2011-03**

Document comprises 57 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.



A comma is used as the decimal marker.

National foreword

This standard has been prepared by Technical Committee ISO/TC 43 “Acoustics”, Subcommittee SC 1 “Noise” (Secretariat: DS, Denmark), Working Group WG 28 “Basic machinery noise emission standards” in collaboration with Technical Committee CEN/TC 211 “Acoustics” (Secretariat: DS, Denmark).

The responsible German body involved in its preparation was the *Normenausschuss Akustik, Lärminderung und Schwingungstechnik im DIN und VDI* (Acoustics, Noise Control and Vibration Engineering Standards Committee in DIN and VDI), Working Committee NA 001-01-04 AA *Geräuschemission von Maschinen und Anlagen; Messung, Minderung, Datensammlung*.

The original ISO document ISO 3746:2010 contains errors in Equation (11) (it should read N_M instead of n), and Equation (17) (it should read N_e instead of N). These have been corrected in the German version of DIN EN ISO 3746:2010, and correspondingly in the English version.

The DIN Standards corresponding to the International Standards referred to in this document are as follows:

ISO 3740	DIN EN ISO 3740	ISO 7574-4	DIN EN 27574-4
ISO 3741	DIN EN ISO 3741	ISO 9614-1	DIN EN ISO 9614-1
ISO 3743-1	DIN EN ISO 3743-1	ISO 9614-2	DIN EN ISO 9614-2
ISO 3743-2	DIN EN ISO 3743-2	ISO 9614-3	DIN EN ISO 9614-3
ISO 3744	DIN EN ISO 3744	ISO 11200	DIN EN ISO 11200
ISO 3745	DIN EN ISO 3745	ISO 11201	DIN EN ISO 11201
ISO 3747	DIN EN ISO 3747	ISO 11202	DIN EN ISO 11202
ISO 4871	DIN EN ISO 4871	ISO 11203	DIN EN ISO 11203
Standards series	Standards series	ISO 11204	DIN EN ISO 11204
ISO 5725	DIN ISO 5725	ISO 12001	DIN EN ISO 12001
ISO 6926	DIN EN ISO 6926	ISO 80000-8	DIN EN ISO 80000-8
ISO 7574-1	DIN EN 27574-1	IEC 60942	DIN EN 60942
ISO 7574-2	DIN EN 27574-2	IEC 61672-1	DIN EN 61672-1
ISO 7574-3	DIN EN 27574-3	ISO/IEC Guide 98-3	DIN V ENV 13005

The national standards are given in Annex NA “Bibliography”.

Amendments

This standard differs from DIN EN ISO 3746:2009-11 as follows:

- the determination of sound energy levels has been included;
- specifications relating to the measurement uncertainty have been extended and a GUM-based approach has been included;
- the previous qualification procedures for the acoustic environment have been reduced to a simplified method for the determination of the environmental correction (Annex A);
- specifications relating to microphone positions on a quarter-hemispherical measurement surface (sound source located in a corner) have been included;
- the former Annex D “Guidelines for the detection of impulsive noise” has been deleted;

- f) a new Annex D “Guidelines on the development of information on measurement uncertainty” has been added;
- g) the standard has been editorially revised.

Previous editions

DIN 45635: 1970-03
 DIN 45635-1: 1972-01, 1984-04
 DIN EN ISO 3746: 1995-12, 2009-11

National Annex NA (informative)

Bibliography

DIN V ENV 13005, *Guide to the expression of uncertainty in measurement*

DIN EN 27574-1, *Acoustics — Statistical methods for determining and verifying stated noise emission values of machinery and equipment — Part 1: General considerations and definitions*

DIN EN 27574-2, *Acoustics — Statistical methods for determining and verifying stated noise emission values of machinery and equipment — Part 2: Methods for stated values for individual machines*

DIN EN 27574-3, *Acoustics — Statistical methods for determining and verifying stated noise emission values of machinery and equipment — Part 3: Simple (transition) method for stated values for batches of machines*

DIN EN 27574-4, *Acoustics — Statistical methods for determining and verifying stated noise emission values of machinery and equipment — Part 4: Methods for stated values for batches of machines*

DIN EN 60942, *Electroacoustics — Sound calibrators*

DIN EN 61672-1, *Electroacoustics — Sound level meters — Part 1: Specifications*

DIN EN ISO 3740, *Acoustics — Determination of sound power levels of noise sources — Guidelines for the use of basic standards*

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

DIN EN ISO 3743-1, *Acoustics — Determination of sound power levels of noise sources — Engineering methods for small, movable sources in reverberant fields — Part 1: Comparison method for hard-walled test rooms*

DIN EN ISO 3743-2, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering methods for small, movable sources in reverberant fields — Part 2: Methods for special reverberation test rooms*

DIN EN ISO 3744, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essential free field over a reflecting plane*

DIN EN ISO 3745, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for anechoic and hemi-anechoic rooms*

DIN EN ISO 3747, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Comparison method for use in situ*

DIN EN ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

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

DIN EN ISO 9614-1, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points*

DIN EN ISO 9614-2, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning*

DIN EN ISO 9614-3, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 3: Precision method for measurement by scanning*

DIN EN ISO 11200, *Acoustics — Noise emitted by machinery and equipment — Guidelines for the use of basic standards for the determination of emission sound pressure levels at a work station and at other specified positions*

DIN EN ISO 11201, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections*

DIN EN ISO 11202, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying approximate environmental corrections*

DIN EN ISO 11203, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level*

DIN EN ISO 11204, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions applying accurate environmental corrections*

DIN EN ISO 12001, *Acoustics — Noise emitted by machinery and equipment — Rules for the drafting and presentation of a noise test code*

DIN EN ISO 80000-8, *Quantities and units — Part 8: Acoustics*

DIN ISO 5725 (all parts), *Accuracy (trueness and precision) of measurement methods and results*

English Version

Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane (ISO 3746:2010)

Acoustique — Détermination des niveaux de puissance acoustique et des niveaux d'énergie acoustique émis par les sources de bruit à partir de la pression acoustique — Méthode de contrôle employant une surface de mesure enveloppante au-dessus d'un plan réfléchissant (ISO 3746:2010)

Akustik — Ermittlung der Schallleistungs- und Schallenergiepegel von Geräuschquellen aus Schalldruckmessungen — Hüllflächenverfahren der Genauigkeitsklasse 3 über einer reflektierenden Ebene (ISO 3746:2010)

This European Standard was approved by CEN on 13 November 2010.

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Foreword

This document (EN ISO 3746:2010) 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 DS.

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 June 2011, and conflicting national standards shall be withdrawn at the latest by June 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 3746:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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Endorsement notice

The text of ISO 3746:2010 has been approved by CEN as a EN ISO 3746:2010 without any modification.