SLOVENSKI STANDARD
SIST EN ISO 4871:2009

01-november-2009

Nadomešča:
SIST EN ISO 4871:1997

Akustika - Deklariranje in preverjanje podatkov o emisiji hrupa naprav in opreme (ISO 4871:1996)

Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)

Akustik - Angabe und Nachprüfung von Geräuschemissionswerten von Maschinen und Geräten (ISO 4871:1996)

Acoustique - Déclaration et vérification des valeurs d'émission sonore des machines et équipements (ISO 4871:1996)

Ta slovenski standard je istoveten z: **EN ISO 4871:2009**

ICS:

17.140.20	Emisija hrupa naprav in opreme	Noise emitted by machines and equipment
21.020	Značilnosti in načrtovanje strojev, aparatov, opreme	Characteristics and design of machines, apparatus, equipment

SIST EN ISO 4871:2009 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 4871

August 2009

ICS 21.020; 17.140.20

Supersedes EN ISO 4871:1996

English Version

Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)

Acoustique - Déclaration et vérification des valeurs d'émission sonore des machines et équipements (ISO 4871:1996)

Akustik - Angabe und Nachprüfung von Geräuschemissionswerten von Maschinen und Geräten (ISO 4871:1996)

This European Standard was approved by CEN on 20 July 2009.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN ISO 4871:2009: E

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Foreword

The text of ISO 4871:1996 has been prepared by Technical Committee ISO/TC 43 "Acoustics" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 4871:2009 by 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 February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.

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 4871:1996.

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 EC Directive.

For relationship with EC Directive, see informative Annex ZA, which is an integral part of this document.

ISO 4871 is related to Essential Requirement 1.7.4.2 u) of 2006/42/EC according to which machine manufacturers must provide information on airborne sound emission.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 4871:1996 has been approved by CEN as a EN ISO 4871:2009 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC on machinery.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard, except clause 5.d (1), confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

INTERNATIONAL STANDARD

ISO 4871

Second edition
1996-12-15

Acoustics — Declaration and verification of noise emission values of machinery and equipment

Acoustique — Déclaration et vérification des valeurs d'émission sonore des machines et équipements

Reference number
ISO 4871:1996(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 4871 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This second edition cancels and replaces the first edition (ISO 4871:1984), which has been technically revised.

Annexes A, B, C and D of this International Standard are for information only.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

Information on the acoustic noise emitted by machinery and equipment is needed by users, planners, manufacturers and authorities. This information is required for comparing the noise emitted by different products, for assessing noise emissions against noise limits, for planning workplace noise levels, as well as for checking noise reduction achievements, and may be used for estimating requirements for workplace noise immission.

In order for machinery noise emission data to be useful, uniform methods of measurement and declaration are necessary to achieve the following purposes.

a) **Measurement of noise emission**

The ISO 3740 series specifies methods for determining the sound power levels of noise sources from sound pressure level measurements; the ISO 9614 series specifies methods for determining the sound power levels from sound intensity level measurements; the ISO 11200 series describes methods for determining emission sound pressure levels at specified positions in the vicinity of machinery and equipment. Many other standards give test codes for the measurement of the noise emissions of individual types of machinery which are based on these methods.

b) **Determination of the noise emission value to be declared**

The ISO 7574 series gives methods for determining declared noise emission values which are based primarily on the sound power levels of noise sources. For a complete presentation of declared noise emission values, it is necessary to state the sound pressure levels at specified positions as well as the sound power level. Because of the possible confusion in terminology with respect to sound pressure levels used to define noise immission, the term "emission sound pressure level" is used in this International Standard.

c) **Presentation of declared noise emission values**

It is of prime importance to declare sound power levels. It is recognized, however, that information on emission sound pressure levels is sometimes required. It is recommended, therefore, that both kinds of quantity be declared, unless otherwise specified. Noise emission declarations can take the form of either a single-number or dual-number presentation; the choice is made in the noise test code appropriate to the particular family.

d) **Verification of declared noise emission values**

The ISO 7574 series gives procedures for the verification of a declared noise emission value. In that International Standard, the procedures are applied to verification of declared sound power levels. The procedures of this International Standard are applied to the verification of

both sound power levels and emission sound pressure levels. The information in this International Standard on the verification of declared noise emission values may be used both by a buyer of equipment to compare the relative noise levels of various products, and by a manufacturer as part of a statistical quality control programme.

Requirements on the declaration of noise emission values are given in clause 4.

As the declaration of noise emission of machinery and equipment is the responsibility solely of the manufacturer or supplier, guidelines concerning the declaration are found in annex A.

Requirements on the presentation of declared noise emission values are given in clause 5 and annex B, and those on verification are given in clause 6 and annex C.

Acoustics — Declaration and verification of noise emission values of machinery and equipment

1 Scope

This International Standard

— gives information on the declaration of noise emission values,

— describes acoustical and product information to be presented in technical documents for the purposes of noise emission declaration, and

— specifies a method for verifying the noise emission declaration.

It is applicable to machinery and equipment.

The values to be used for the purposes of noise emission declaration are either declared single-number noise emission values, L_d, or declared dual-number noise emission values, L and K. L is a noise emission value determined directly from measurements and K is the uncertainty associated with those measurements. L_d is the sum of L and K and represents an upper limit which values from repeated measurements are unlikely to exceed at a given confidence level; L_d corresponds to the stated or labelled value, L_c, defined in ISO 7574-1.

The two forms of noise declaration are alternative means of representing any or all of the A-weighted sound power level, L_{WA}, the A-weighted emission sound pressure level at specified positions, L_{pA}, and the C-weighted peak emission sound pressure level at specified positions, $L_{pC,peak}$. The choice as to which of the two forms is used in a particular case depends upon the requirements to be fulfilled. This selection is made, and guidance on the values of K is given, in the appropriate noise test code.

Guidelines for determining declared noise emission values are given in annex A.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3740:1980, *Acoustics — Determination of sound power levels of noise sources — Guidelines for the use of basic standards and for the preparation of noise test codes.*

ISO 3741:—[1], *Acoustics — Determination of sound power levels of noise sources using sound pressure — Precision methods for reverberation rooms.*

ISO 3743-1:1994, *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.*

ISO 3743-2:1994, *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.*

1) To be published. (Revision of ISO 3741:1988 and ISO 3742:1988)