

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

ICS 17.140.20

National foreword

This British Standard is the UK implementation of EN ISO 4871:2009. It is identical to ISO 4871:1996. It supersedes BS EN ISO 4871:1997 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EH/1/4, Machinery noise.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2010.
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ISBN 978 0 580 67417 4

Amendments/corrigenda issued since publication

Date	Comments

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.

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Management Centre: Avenue Marnix 17, B-1000 Brussels

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of an identical text or by endorsement, at the latest by February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.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.

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.