Akustika. Mehhanismide ja seadmete müra. Helirõhutaseme mõõtmine töö- ja muudes piiritletud kohtades. Keskkonnakontrolli nõudev meetod

Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at a work station and at other specified positions - Method requiring environmental corrections

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 11204:2009 sisaldab Euroopa standardi EN ISO 11204:2009 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 11204:2009 consists of the English text of the European standard EN ISO 11204:2009.
Standard on kinnitatud Eesti Standardikeskuse 30.10.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.10.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 12.08.2009.	Date of Availability of the European standard text 12.08.2009.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 17.140.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 11204

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ICS 17.140.20

Supersedes EN ISO 11204:1995

English Version

Acoustics - Noise emitted by machinery and equipment - Measurement of emission sound pressure levels at a work station and at other specified positions - Method requiring environmental corrections (ISO 11204:1995, including Cor 1:1997)

Acoustique - Bruit émis par les machines et équipements - Mesurage des niveaux de pression acoustique d'émission au poste de travail et en d'autres positions spécifiées - Méthode nécessitant des corrections d'environnement (ISO 11204:1995, Cor 1:1997 inclus)

Akustik - Geräuschabstrahlung von Maschinen und Geräten - Messung von Emissions-Schalldruckpegeln am Arbeitsplatz und an anderen festgelegten Orten - Verfahren mit Umgebungskorrekturen (ISO 11204:1995, einschließlich Cor 1:1997)

This European Standard was approved by CEN on 27 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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 11204:2009: E

Foreword

The text of ISO 11204:1995, including Cor 1:1997 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 11204:2009 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 11204:1995.

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 Directives.

For relationship with EU Directives, see informative Annexes ZA and ZB, which are integral parts of this document.

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 11204:1995, including Cor 1:1997 has been approved by CEN as a EN ISO 11204:2009 without any modification.

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/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 98/37/EC, amended by 98/79/EC on machinery.

Once this standard is cited in the Official Journal of the European Union 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 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.

Annex ZB
(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 Union 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 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

0.1 This International Standard specifies a method for measuring the emission sound pressure levels at a work station and at other specified positions in the vicinity of a machine or piece of equipment. The method specified in this International Standard follows the method specified in ISO 11201 (engineering method), except for the following:

a) measurements are permitted *in situ*; and

b) a method is specified for determining a local environmental correction which yields results approximating those obtained in a free field over a reflecting plane. This correction is used to derive the emission sound pressure levels at specified positions, including work stations. If this correction is less than the specified value, the results meet the engineering grade of accuracy, but otherwise they meet the survey grade.

0.2 This International Standard is one of a series (ISO 11200 to ISO 11204) which specifies various methods for determining the noise emissions of a piece of machinery or equipment, or a sub-assembly of such equipment (machine under test). ISO 11200 gives guidance on the choice of the method to be used to determine the emission sound pressure levels of machinery and equipment. It also gives details of International Standards giving methods for the determination of sound power levels.

Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Method requiring environmental corrections

1 Scope

1.1 General

This International Standard specifies a method for measuring the emission sound pressure levels of machinery and equipment, at a work station and at other specified positions nearby, in any environment which meets certain qualification requirements.

Emission sound pressure levels are measured as A-weighted and, if required, C-weighted peak, and in frequency bands.

NOTE 1 The contents of this and related International Standards are summarized in table 1 of ISO 11200:1995.

A method is given for determining a local environmental correction (the acceptable maximum value of which is specified) to be applied to the measured sound pressure levels to exclude the effects of reflections from reflecting surfaces other than the plane on which the machinery or equipment is placed. This correction is based upon the mean sound pressure level on a measurement surface, the sound pressure level measured at a specified position, and either an environmental indicator or the equivalent absorption area of the test room. The grade of accuracy of the measurements (engineering or survey) depends upon the vaule of the local environmental correction.

A work station is occupied by an operator. It may be located in open space in the room where the source operates, or in a cab fixed to the source, or in an enclosure remote from the source. One or more specified positions may be located in the vicinity of an attended or unattended machine. Such positions are sometimes referred to as bystander positions.

This International Standard specifies requirements on the test environment. Instructions are given for the installation and operation of the machine under test and for the choice of microphone positions for the work station and for other specified positions. The purpose of the measurements is to permit comparison of the performance of different units of a given family of machinery or equipment, under defined environmental conditions and standardized mounting and operating conditions. The data obtained may also be used for the declaration and verification of emission sound pressure levels as specified in ISO 4871.

NOTE 2 At any given position in relation to a particular machine, and for given mounting and operating conditions, the emission sound pressure levels determined by the method of this International Standard will in general be lower than the directly measured sound pressure levels for the same machine in the typical workroom where it is used. This is due to reverberation and the contributions of other machines. A method of calculating the sound pressure levels in the vicinity of a machine operating alone in a workroom is given in ISO 11690-3. Commonly observed differences are 1 dB to 5 dB, but in extreme cases the difference may be even greater.

1.2 Types of noise and noise sources

The method specified in this International Standard is applicable to all types of machinery, both moving and stationary, for indoor or outdoor use.

The method is applicable to machines of all sizes, and to all types of noise as defined in ISO 2204 and ISO 12001.

1.3 Test environment

The method is applicable to an indoor or outdoor environment with one or more reflecting planes present, meeting specified requirements.

1.4 Specified positions

This International Standard is applicable to work stations and other specified positions where emission sound pressure levels are to be measured.

Examples of appropriate positions where measurements may be made include the following:

a) work station located in the vicinity of the machine under test; this is the case for many industrial machines and domestic appliances;

b) work station within a cab which is an integral part of the machine under test; this is the case for many industrial trucks and earth-moving machines;

c) work station within a partial or total enclosure (or behind a screen) supplied by the manufacturer as an integral part of the machinery or equipment;

d) work station partially or totally enclosed by the machine under test; this situation may be encountered with some large industrial machines;

e) bystander positions occupied by individuals not responsible for the operation of the machine under test, but who may be in its immediate vicinity, either occasionally or continuously;

f) other specified positions, not necessarily work stations or bystander positions.

The work station may also lie on a specified path along which an operator moves (see 11.4).

1.5 Measurement uncertainty

While it is not possible to give universal values for the standard deviation of reproducibility of emission sound pressure levels at work stations, guidance is given in clause 4.

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 2204:1979, *Acoustics — Guide to International Standards on the measurement of airborne acoustical noise and evaluation of its effects on human beings.*

ISO 3744:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane.*

ISO 3746:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane.*

ISO 11200:1995, *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.*

ISO 12001:—[1], *Acoustics — Noise emitted by machinery and equipment — Rules for the drafting and presentation of a noise test code.*

IEC 651:1979, *Sound level meters.*

IEC 804:1985, *Integrating-averaging sound level meters.*

IEC 942:1988, *Sound calibrators.*

IEC 1260:—[2], *Electroacoustics — Octave-band and fractional-octave-band filters.*

3 Definitions

For the purposes of this International Standard, the following definitions apply. More detailed definitions may be found in noise test codes for specific types of machinery and equipment.

1) To be published.

2) To be published. (Revision of IEC 225:1966)