

**Käeshoitavad mitteelektrilised jõuseadised.  
Müramõõtmise kood. Tehniline meetod  
(klass 2)**

Hand-held non-electric power tools - Noise  
measurement code - Engineering method (grade 2)

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 15744:2002 sisaldab Euroopa standardi EN ISO 15744:2002 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 06.08.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 15744:2002 consists of the English text of the European standard EN ISO 15744:2002.</p> <p>This document is endorsed on 06.08.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This International Standard specifies methods for the measurement, determination and declaration of the noise emission from hand-held non-electric power tools. It prescribes the loading and working conditions under which can be determined a) the noise emission, under specified load conditions, expressed as the sound power level and b) the emission sound pressure level at the work station under specified load conditions.</p>	<p><b>Scope:</b></p> <p>This International Standard specifies methods for the measurement, determination and declaration of the noise emission from hand-held non-electric power tools. It prescribes the loading and working conditions under which can be determined a) the noise emission, under specified load conditions, expressed as the sound power level and b) the emission sound pressure level at the work station under specified load conditions.</p>
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**Võtmesõnad:** absorption spectrophotometry, animal fats, animal oils, atomic absorption spec, cadmium, cadmium content, chemical analysis and testin, chemical analysis and testing, determination of content, fats, graphitic tube furnaces, oils, vegetable fats, vegetable oils

ICS 17.140.20; 25.140.01

English version

Hand-held non-electric power tools

Noise measurement code – Engineering method (grade 2)  
(ISO 15744 : 2002)

Machines à moteur portatives non  
électriques – Code pour le mesurage  
du bruit – Méthode d'expertise  
(classe de précision 2)  
(ISO 15744 : 2002)

Handgehaltene nicht-elektrisch  
betriebene Maschinen –  
Geräuschmessverfahren – Verfahren  
der Genauigkeitsklasse 2  
(ISO 15744 : 2002)

This European Standard was approved by CEN on 2002-03-11.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

International Standard

ISO 15744 : 2002 Hand-held non-electric power tools – Noise measurement code – Engineering method (grade 2),

which was prepared by ISO/TC 118 'Compressors, pneumatic tools and pneumatic machines' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 255 'Hand-held, non-electric power tools – Safety', the Secretariat of which is held by SIS, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by September 2002 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 15744 : 2002 was approved by CEN as a European Standard without any modification.

NOTE: Normative references to international publications are listed in Annex ZA (normative).

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## Introduction

The noise test code presented by this International Standard gives methods for determining and declaring the noise emission values of hand-held non-electric power tools: i.e. the total noise level from the power tool expressed as sound power level and as the emission sound pressure level at the work station. These methods have been designed to give results that make it possible to compare the acoustic performance of various power tools.

The power tools are either run at no load, when this gives a representative value, or in an on-load condition but with the process noise muffled so that it is well below the noise level of the power tool. The methods were chosen to give a satisfactory reproducibility of results and are based on present practice in industry.

For many power tools in a real work situation the noise from the process dominates the total noise emission in actual use. The process noise varies within very wide limits and cannot be predicted. Users are cautioned that the emission sound pressure level as determined by this code may not be representative of actual operator exposure levels, which are unique characteristics of individual applications and environmental factors beyond the control of the manufacturers of the equipment covered by this International Standard, and are under the exclusive control (and therefore the responsibility) of the users of the equipment.

This International Standard was prepared with the assistance of both PNEUROP, the European body representing manufacturers of compressors, vacuum pumps, pneumatic tools, pneumatic machines and allied equipment, and CAGI, the compressed air and gas institute, in the United States.

## 1 Scope

This International Standard specifies methods for the measurement, determination and declaration of the noise emission from hand-held non-electric power tools. It prescribes the loading and working conditions under which can be determined

- a) the noise emission, under specified load conditions, expressed as the sound power level, and
- b) the emission sound pressure level at the work station under specified load conditions.

This International Standard is applicable to typical hand-held non-electric power tools including rotary tools, orbital and random orbital sanders, rotary and non-rotary reciprocating and percussive tools and a variety of assembly tools. It is not applicable to cartridge-operated tools, fastener driving tools (e.g. nailers, staplers) or any tool powered by an internal combustion engine, nor is it applicable to breakers or other power tools which, when placed on the market, are required to meet the provisions of legislation specifying test methods and imposing limits on noise emission from, for example, equipment used outdoors.

**NOTE** This noise measurement code could also be applied to other equipment such as winches, pneumatic motors, auto-feed drills and tappers, pumps, hydraulic motors and screw feed systems, provided their principles of operation were in accordance with those of pneumatic and hydraulic equipment.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 2787:1984, *Rotary and percussive pneumatic tools — Performance tests*

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 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

ISO 5391, *Pneumatic tools and machines — Vocabulary*

ISO 8662-2, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 2: Chipping hammers and riveting hammers*

ISO 8662-3, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 3: Rock drills and rotary hammers*

ISO 8662-7, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 7: Wrenches, screwdrivers and nut runners with impact, impulse or ratchet action*

ISO 8662-8, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 8: Polishers and rotary, orbital and random orbital sanders*



ISO 8662-14, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 14: Stone-working tools and needle scalars*

ISO 11203:1995, *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*

IEC 60651, *Sound level meters*

IEC 60804, *Integrating-averaging sound level meters*

EN 292-2:1991, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications*

### 3 Terms, definitions and symbols

For the purposes of this International Standard, the terms and definitions given in ISO 5391 and the following apply. For the symbols, see Table 1.

#### 3.1

##### **declared dual-number noise emission value**

$L, K$

measured noise emission value,  $L$ , and its associated uncertainty  $K$ , both rounded to the nearest decibel

[ISO 4871:1996]

#### 3.2

##### **emission**

airborne sound radiated by a well-defined noise source (e.g. the machine under test)

[ISO 11203:1995]

NOTE Emission values may be incorporated in a product label or published in a product specification, or both these. The basic noise emission descriptors are the sound power level of the product itself and the emission sound pressure levels at the work station and at other specified positions (if any) in the vicinity of the product.

#### 3.3

##### **emission sound pressure**

$p$

sound pressure, at a specified position near a noise source, when the source is in operation under specified operating and mounting conditions on a reflecting plane surface, excluding the effects of background noise as well as the effects of reflections other than those from the plane or planes permitted for the purpose of the test; expressed in pascals

[ISO 11203:1995]

#### 3.4

##### **emission sound pressure level**

$L_p$

ten times the logarithm to the base 10 of the ratio of the square of the emission sound pressure,  $p^2(t)$ , to the square of the reference sound pressure,  $p_0^2$ , measured with a particular time weighting and a particular frequency weighting selected from those defined in IEC 60651; expressed in decibels

NOTE 1 The reference sound pressure is 20  $\mu$ Pa.

NOTE 2 Adapted from ISO 11203:1995.