

**Metsandusmasinad. Käeskantavate
sisepõlemismootoriga masinate mürakatsete eeskirjad.
Tehniline meetod (täpsusklass 2) (ISO 22868:2011)**

Forestry and garden machinery - Noise test code for portable hand-held machines with internal combustion engine - Engineering method (Grade 2 accuracy) (ISO 22868:2011)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 22868:2011 sisaldab Euroopa standardi EN ISO 22868:2011 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 31.03.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 01.03.2011.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 22868:2011 consists of the English text of the European standard EN ISO 22868:2011.

This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 01.03.2011.

The standard is available from Estonian standardisation organisation.

ICS 13.140, 17.140.20, 65.060.80

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English Version

Forestry and garden machinery - Noise test code for portable
hand-held machines with internal combustion engine -
Engineering method (Grade 2 accuracy) (ISO 22868:2011)

Machines forestières et machines de jardin - Code d'essai
acoustique pour machines portatives tenues à la main à
moteur à combustion interne - Méthode d'expertise (classe
de précision 2) (ISO 22868:2011)

Forst- und Gartenmaschinen - Geräuschmessnorm für
handgehaltene Maschinen mit Verbrennungsmotor -
Verfahren der Genauigkeitsklasse 2 (ISO 22868:2011)

This European Standard was approved by CEN on 15 January 2011.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 22868:2011) has been prepared by Technical Committee ISO/TC 23 "Tractors and machinery for agriculture and forestry" in collaboration with Technical Committee CEN/TC 144 "Tractors and machinery for agriculture and forestry" the secretariat of which is held by AFNOR.

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 September 2011, and conflicting national standards shall be withdrawn at the latest by September 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 22868:2008.

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, see informative Annex ZA, which is an integral part 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, Croatia, 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 22868:2011 has been approved by CEN as a CEN ISO 22868:2011 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 one 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 Essential Requirement 1.7.4.2 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.

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Introduction

This document is a type-C standard as stated in ISO 12100.¹⁾

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

During the first steps in the preparation of this International Standard it became obvious that the repeatability of the test results could become better if the operator were to be replaced by a simulation process, representing the normal operating modes with chain-saws and trimmers/brush-cutters. Furthermore, it was found that the cutting process performed with chain-saws causes considerable deviations, which are not related to the measured object but to the test procedure itself.

Based on these observations, it was concluded that the operators in both test procedures, i.e. for chain-saws and trimmers/brush-cutters, ought to be replaced by a defined fixture and the cutting process with chain-saws by a brake simulating the load. In this manner, the operating conditions during measurement would simulate normal operating conditions.

The determination of noise emission characteristics is primarily intended for

- manufacturers' declarations of noise emitted,
- comparing the noise emitted by machines in the family concerned, and
- purposes of noise control at source at the design stage.

The use of this noise test code will ensure reproducibility of the determination of the noise emission characteristics within specified limits determined by the grade of accuracy of the basic noise measurement method used. Noise measurement methods allowed by this International Standard give results with Grade 2 accuracy.

The operating modes specified for the tests are consistent with those involved in the assessment of the exposure sound pressure levels, for example, over a typical working day.

NOTE Exposure sound pressure levels are the mean sound pressure levels experienced by the operator over a defined period of time.

The work cycles chosen for this test code are based on the following considerations of application:

- a) chain-saws with an engine of $< 80 \text{ cm}^3$ are used for various operations, including felling, bucking and delimbing;
- b) chain-saws with an engine of $\geq 80 \text{ cm}^3$ are normally used for felling and bucking.

Delimbing will cause the saw to run at racing speed; therefore, racing is included only for saws with a $< 80 \text{ cm}^3$ engine.

1) *Safety of machinery — General principles for design — Risk assessment and risk reduction.*

For brush-cutters, grass-trimmers, hedge-trimmers and pole-mounted powered pruners, the cutting mode (full load) is estimated to be valid only for short periods, while racing and idling are the two dominant modes. Moreover, it has also been found to be diverse and not able to be performed under repeatable conditions.

For trimmers, the full load and the racing modes are integrated in one single mode due to the loading effect of the flexible line.

For brush-cutters, hedge-trimmers and pole-mounted powered pruners, it is not possible to simulate the full load mode in a feasible way since there are no constant load conditions comparable to chain-saws. Since the operating mode "racing" is anyhow the worst case, it is used as representative.

For garden blowers, full load and idling are the two dominant modes.

In either case, transport and other tasks between operations will cause the machine to run at idling. Experience has lead to the conclusion that, except for hedge-trimmers and blowers, equal duration for the different working modes is a good estimation of daily exposure.

For hedge-trimmers, experience has shown that the machine is used 1/5 at idling and 4/5 at racing, while for garden blowers it is used 1/7 at idling and 6/7 at racing.

A summary of results from "round robin" tests, carried out between 2007 and 2008 in up to eight test laboratories on a single chain-saw, brush-saw and grass-trimmer, is given in Annex G.

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CAUTION — Some of the test procedures specified in this International Standard involve processes that could lead to a hazardous situation. Any person performing tests in accordance with this International Standard shall be appropriately trained in the type of work to be carried out.

1 Scope

This International Standard specifies a noise test code for determining, efficiently and under standardized conditions, the noise emission characteristics of portable, hand-held, combustion-engine-powered forest and garden machines, including chain-saws, brush-cutters, grass-trimmers, pole-mounted powered pruners, hedge-trimmers and garden blowers/vacuums. Noise emission characteristics include the A-weighted emission sound pressure level at the operator position and the A-weighted sound power level.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 354, *Acoustics — Measurement of sound absorption in a reverberation room*

ISO 3744, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

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

ISO 6531, *Machinery for forestry — Portable chain-saws — Vocabulary*

ISO 7112, *Machinery for forestry — Portable brush-cutters and grass-trimmers — Vocabulary*

ISO 7293, *Forestry machinery — Portable chain saws — Engine performance and fuel consumption*

ISO 8893, *Forestry machinery — Portable brush-cutters and grass-trimmers — Engine performance and fuel consumption*

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*

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