

**Acoustics - Guidelines for the measurement and assessment of exposure to noise in a working environment**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-ISO 9612:2007 sisaldab rahvusvahelise standardi ISO 9612:1997 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 23.08.2007 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

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

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-ISO 9612:2007 consists of the English text of the international standard ISO 9612:1997.

This standard is ratified with the order of Estonian Centre for Standardisation dated 23.08.2007 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 .

The standard is available from Estonian standardisation organisation.

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Võtmesõnad:

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# INTERNATIONAL STANDARD

**ISO  
9612**

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## **Acoustics — Guidelines for the measurement and assessment of exposure to noise in a working environment**

*Acoustique — Guide pour le mesurage et l'évaluation de l'exposition au  
bruit en milieu de travail*



Reference number  
ISO 9612:1997(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 9612 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

Annexes A to E of this International Standard are for information only.

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## Introduction

The uniform measurement, analysis and evaluation of noise at the workplace is important in order to assess the potential effects of noise on the health, well-being, safety and working efficiency of the worker. Although standards exist specifying the noise measurements at the operator positions and in the environment of specific equipment and other standards describing the effects of noise on specific human functions, the present International Standard provides general guidance for what type of measurements at which positions are required for evaluation of the noise with respect to its effects on the worker in order to monitor compliance with established documents and in order to indicate the need for reducing noise by abatement measures.

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# Acoustics — Guidelines for the measurement and assessment of exposure to noise in a working environment

## 1 Scope

This International Standard describes the determination of the acoustical quantities, especially the type and locations of sound pressure level measurements to be conducted, the time sampling and frequency analysis required and the special characteristics of the noise to be considered. The purpose is to allow an assessment of the noise in the working environment with respect to its various effects on the worker as a result of daily habitual exposure. This International Standard is intended to be used by appropriate authorities responsible for specifying and monitoring compliance with noise limits at the workplace and for deciding on the need for hearing conservation programmes and noise reduction measures. It does not by itself specify or recommend acceptable noise limits. The standard does not specify statistical sampling procedures to characterize the noise exposure of groups, although references to such procedures are included in the bibliography. The applications of the measurement results are described with respect to the effects of noise on hearing, interference with communication and other effects of noise. Special requirements for the description of infrasound and ultrasound exposure are included. Applications of the Standard to evaluate effects of the noise on health, working efficiency, well-being and the audibility of warning signals are summarized in Annex A. Annex B gives examples of equivalent continuous A-weighted sound pressure level calculations. Annex C discusses calculation of the rating level including tone and impulsive adjustment. Annex D specifies classes of accuracy for noise measurements. All the annexes are informative.

## 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 listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 266:1975, *Acoustics - Preferred frequencies for measurements*<sup>1</sup>

ISO 532:1975, *Acoustics - Method for calculating loudness level*

ISO 1996-1:1982, *Acoustics - Description and measurement of environmental noise - Part 1: Basic quantities and procedures*

ISO 1999:1990, *Acoustics - Determination of occupational noise exposure and estimation of noise-induced hearing impairment*

ISO/TR 3352:1974, *Acoustics - Assessment of noise with respect to its effect on the intelligibility of speech*

ISO 3891:1978, *Acoustics - Procedure for describing aircraft noise heard on the ground*

ISO 4869-1:1990, *Acoustics - Hearing protectors - Part 1: Subjective method for the measurement of sound attenuation*

ISO 4869-2:1994, *Acoustics - Hearing protectors - Part 2: Estimation of effective A-weighted sound pressure levels when hearing protectors are worn*

ISO/TR 4870:1991, *Acoustics - The construction and calibration of speech intelligibility tests*

ISO 7196:1995, *Acoustics - Frequency weighting characteristic for infrasound measurements*

ISO 7731:1986, *Acoustics - Danger signals for work places - Auditory danger signals*

ISO 9921-1:1995, *Ergonomic assessment of speech communication - Part 1: Speech interference level and communication distances for persons with normal hearing capacity in direct communication (SIL method)*

IEC 651:1979, *Electroacoustics - Sound level meters*<sup>1</sup>  
Amendment 1:1993

IEC 804:1985, *Electroacoustics - Integrating-averaging sound level meters*<sup>1</sup>  
Amendment 1:1989. Amendment 2:1993

IEC 942:1988, *Electroacoustics - Sound calibrators*<sup>1</sup>

IEC 1252:1993, *Electroacoustics - Specifications for personal sound exposure meters*

IEC 1260:1995, *Electroacoustics - Octave-band and fractional-octave-band filters*

### 3 Quantities and definitions

The following quantities are used in this International Standard. Instead of repeating the definitions of the quantities, reference is made to the relevant International Standards where the definitions are given.

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<sup>1</sup>Under revision