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AKUSTIKA

Keskkonnamüra kirjeldamine, mõõtmine ja hindamine
Osa 1: Põhimäärad ja hindamiskord

Acoustics

Description, measurement and assessment of
environmental noise

Part 1: Basic quantities and assessment procedures

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

Käesolev Eesti standard EVS-ISO 1996-1:2006 "Akustika. Keskkonnamüra kirjeldamine, mõõtmine ja hindamine. Osa 1: Põhimäärad ja hindamiskord" sisaldab rahvusvahelise standardi ISO 1996-1:2003 "Acoustics - Description, measurement and assessment of environmental noise - Part 1: Basic quantities and assessment procedures" identset ingliskeelset teksti.

Standard EVS-ISO 1996-1:2006 on kinnitatud Eesti Standardikeskuse 10.04.2006 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti Standardikeskusest.

This Estonian Standard EVS-ISO 1996-1:2006 consists of the identical English text of the International Standard ISO 1996-1:2003 "Acoustics - Description, measurement and assessment of environmental noise - Part 1: Basic quantities and assessment procedures".

This standard is ratified with the order of Estonian Centre for Standardisation dated 10.04.2006 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian Centre for Standardisation.

Käsitlusala

Käesolev ISO 1996 osa defineerib elukeskkonnades müra kirjeldamise põhimäärad ja kirjeldab põhilisi hindamismenetlusi. See täpsustab ka meetodid keskkonnamüra hindamiseks ning annab juhised potentsiaalse häirituse prognoosimiseks elu- või töökeskkonnas, kus puututakse pikaajaliselt kokku erinevat tüüpi keskkonnamüraga. Müraallikad võivad olla eraldiseisvad või erinevate allikate kombinatsioonid. Häirituse prognoosimise meetodi rakendamine on piiratud aladega, kus inimesed elavad ja on seotud pikaajalise maa kasutamisega.

Elanike reaktsioon mürale võib vaadeldavate sama akustikatasemega heliallikate puhul olla väga erinev. See ISO 1996 osa kirjeldab kohanemist helidega, millel on erinevad omadused. Terminit "müra hinnatud tase" (rating level) kasutatakse füüsiliste heliprognoside või -mõõtmiste kohta, mida on ühel või mitmel viisil kohandatud. Nende müra hinnatud tasemete põhjal saab hinnata pikaajalist tagasisidet elanikelt.

Helisid hinnatakse kas ühekaupa või kombinatsioonis, võimaldades vastutavatel võimudel vajadusel arvestada nende impulsiivsuse, tonaalsuse ja madalsageduste hulga erijoontega ning teeliikluse või muu transpordimüra (nagu lennukimüra) ja tööstusmüra erijoontega.

Käesolev ISO 1996 osa ei täpsusta keskkonnamüra limiite.

MÄRKUS 1 Akustikas saab detsibellides väljendada mitut erinevat helitaset kirjeldavat määra (nt helirõhk, maksimaalne helirõhk, püsiva helirõhu ekvivalent). Nendele füüsilikele mõõtmistele vastavad tasemed on tavaliselt sama heli puhul erinevad.

Scope

This part of ISO 1996 defines the basic quantities to be used for the description of noise in community environments and describes basic assessment procedures. It also specifies methods to assess environmental noise and gives guidance on predicting the potential annoyance response of a community to long-term exposure from various types of environmental noises. The sound sources can be separate or in various combinations. Application of the method to predict annoyance response is limited to areas where people reside and to related long-term land uses.

Community response to noise can vary differently among sound sources that are observed to have the same acoustic levels. This part of ISO 1996 describes adjustments for sounds that have different characteristics. The term "rating level" is used to describe physical sound predictions or measurements to which one or more adjustments have been added. On the basis of these rating levels, the long-term community response can be estimated.

The sounds are assessed either singly or in combination, allowing for consideration, when deemed necessary by responsible authorities, of the special characteristics of their impulsiveness, tonality and low-frequency content, and for the different characteristics of road traffic noise, other forms of transportation noise (such as aircraft noise) and industrial noise.

This part of ISO 1996 does not specify limits for environmental noise.

NOTE 1 In acoustics, several different physical measures describing sound can have their level expressed in decibels (e.g. sound pressure, maximum sound pressure, equivalent continuous sound pressure).

<p>See tekitab tihti arusaamatusi. Seega on vajalik täpsustada, millist füüsikalist mõõtmist kasutatakse (nt helirõhk, maksimaalne helirõhk, püsiva helirõhu ekvivalent).</p>	<p>The levels corresponding to these physical measures normally will differ for the same sound. This often leads to confusion. Therefore, it is necessary to specify the underlying physical quantity (e.g. sound pressure level, maximum sound pressure level, equivalent continuous sound pressure level).</p>
<p>MÄRKUS 2 Selles ISO 1996 osas väljendatakse hulkasid deetsibellide tasemega. Samas mõnes riigis kehtivad vastavate füüsikaliste hulkade väljendamiseks teised ühikud, näiteks maksimaalset helirõhku esitatakse paskalites ja heliekspositsiooni hulka paskalites ruutsekundis.</p>	<p>NOTE 2 In this part of ISO 1996, quantities are expressed as levels in decibels. However, some countries validly express the underlying physical quantity, such as maximum sound pressure in pascals, or sound exposure in pascalsquared seconds.</p>
<p>MÄRKUS 3 ISO 1996-2 käsitleb helirõhu tasemete määramist.</p>	<p>NOTE 3 ISO 1996-2 deals with the determination of sound pressure levels.</p>

ICS 13.140 Mõra toime inimesele

Võtmesõnad: akustika, mõra

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 1996-1 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This second edition of ISO 1996-1, together with the second edition of ISO 1996-2, cancels and replaces the first edition (ISO 1996-1:1982), and ISO 1996-2:1987, ISO 1996-2:1987/Amd.1:1998 and ISO 1996-3:1987.

ISO 1996 consists of the following parts, under the general title *Acoustics — Description, measurement and assessment of environmental noise*:

- *Part 1: Basic quantities and assessment procedures*
- *Part 2: Determination of sound pressure levels*

Introduction

To be of practical use, any method of description, measurement and assessment of environmental noise must be related in some way to what is known about human response to noise. Many adverse consequences of environmental noise increase with increasing noise, but the precise dose-response relationships involved continue to be the subject of scientific debate. In addition, it is important that all methods used should be practicable within the social, economic and political climate in which they are used. For these reasons, there is a very large range of different methods currently in use around the world for different types of noise, and this creates considerable difficulties for international comparison and understanding.

The broad aim of the ISO 1996 series is to contribute to the international harmonization of methods of description, measurement and assessment of environmental noise from all sources.

The methods and procedures described in this part of ISO 1996 are intended to be applicable to noise from various sources, individually or in combination, which contribute to the total exposure at a site. At the present stage of technology, the evaluation of long-term noise annoyance seems to be best met by adopting the adjusted A-weighted equivalent continuous sound pressure level which is termed a "rating level".

The aim of the ISO 1996 series is to provide authorities with material for the description and assessment of noise in community environments. Based on the principles described in this part of ISO 1996, national standards, regulations and corresponding acceptable limits for noise can be developed.

Acoustics — Description, measurement and assessment of environmental noise —

Part 1: Basic quantities and assessment procedures

1 Scope

This part of ISO 1996 defines the basic quantities to be used for the description of noise in community environments and describes basic assessment procedures. It also specifies methods to assess environmental noise and gives guidance on predicting the potential annoyance response of a community to long-term exposure from various types of environmental noises. The sound sources can be separate or in various combinations. Application of the method to predict annoyance response is limited to areas where people reside and to related long-term land uses.

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NOTE 2 In this part of ISO 1996, quantities are expressed as levels in decibels. However, some countries validly express the underlying physical quantity, such as maximum sound pressure in pascals, or sound exposure in pascal-squared seconds.

NOTE 3 ISO 1996-2 deals with the determination of sound pressure levels.

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.

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

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