Akustika. Soovituslikud juhised müravabade mehhanismide ja seadmete konstrueerimiseks. Osa 1: Kavandamine

Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 11688-1:1999 sisaldab Euroopa standardi EN ISO 11688-1:1998+AC:1998 ingliskeelset teksti. Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 11688-1:1999 consists of the English text of the European standard EN ISO 11688-1:1998+AC:1998. This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: See rahvusvaheline tehniline aruanne on abiks mehhanismide ja seadmete mürataseme alandamise põhimõistetest arusaamisel.	**Scope:**

ICS 17.140.20, 21.020

Võtmesõnad: akustika, kavandamine, konstruktsioon, mehhanismid, mootorimüra, müra (heli), müra vähendamine, seadmed

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN ISO 11688-1

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ICS 17.140.20; 21.020

Descriptors: Acoustics, low-noise machinery, planning.

English version

Acoustics

Recommended practice for the design of low-noise machinery and equipment

Part 1: Planning
(ISO/TR 11688-1 : 1995)

Acoustique – Pratique recommandée pour la conception de machines et d'équipements à bruit réduit – Partie 1: Planification (ISO/TR 11688-1 : 1995)

Akustik – Richtlinien für die Gestaltung lärmarmer Maschinen und Geräte – Teil 1: Planung (ISO/TR 11688-1 : 1995)

This European Standard was approved by CEN on 1997-11-23.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

CEN

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

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO/TR 11688-1 : 1995 Acoustics – Recommended practice for the design of low-noise machinery and equipment – Part 1: Planning,

which was prepared by ISO/TC 43 'Acoustics' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 211 'Acoustics', the Secretariat of which is held by DS, as a European Standard.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of the relevant EU Directive. For relationship with this directive, see Annex ZB.

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 December 1998 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, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Warning

This document was published as a European Standard to provide a harmonized base for national standards. It is a guidance document and is not intended to be exhaustive, but to highlight important aspects to which attention should be given.

Endorsement notice

The text of the International Standard ISO/TR 11688-1 : 1995 was approved by CEN as a European Standard, with the following addition to clause 1 'Scope':

> ISO/TR 11688-1 does not deal directly with the reduction of noise emission of the workpiece itself. Nevertheless, the present theory from excitation through transmission to radiation, can be generally applied to estimating the noise generation of workpieces and hence its reduction.

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

Contents

Introduction

This International Technical Report provides a guideline for the design of low-noise machinery. Most of the existing International Technical Reports prepared in ISO/TC 43/SC 1 specify methods for the measurement and/or evaluation of noise. The final objective of this International Technical Report, however, will be noise control in existing machinery and noise control at the design stage.

It is important that non-acoustic engineers are engaged in noise control practice. It is of great importance for these engineers to have a basic knowledge of noise generation and propagation characteristics and to understand the basic principles of noise control measures. Hence, this International Technical Report also serves as an introduction into acoustical terms, and as a basis to the acquisition of further knowledge in noise control.

It is strongly required to support the dissemination of the design rules given here through standardisation.

Such considerations have led to the preparation of International Technical Reports in the area of noise control.

1 Scope

This International Technical Report is an aid to understanding the basic concepts of noise control in machinery and equipment.

The recommended practice presented here is intended to assist the designer at any design stage to control the noise of the final product. Methodical development of products was chosen as a basis for the structure of this document (see Clause 4).

The list of design rules given in this International Technical Report is not exhaustive. Other technical measures for reducing noise at the design stage may be used if their efficacy is identical or higher.

To solve problems going beyond the scope of this International Technical Report, the designer can refer to the bibliography in Annex D, which presents the general state of acoustic handbooks at the time of publication. Furthermore, reference is made to the numerous technical publications dealing with acoustical problems.

2 References

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:—[1)], *Acoustics — Determination of sound power levels of noise sources — Survey method employing an enveloping measurement surface over a reflecting plane.*

ISO 4871:—[1)], *Acoustics — Declaration and verification of noise emission values of machinery and equipment.*

ISO 9611:—[1)], *Acoustics — Characterization of sources of structure-borne sound with respect to the airborne sound radiation of connected structures — Measurement of velocity at the contact points of machinery when resiliently mounted.*

ISO 9614-1:1994, *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 1: Measurement at discrete points.*

ISO 9614-2:—[1)], *Acoustics — Determination of sound power levels of noise sources using sound intensity — Part 2: Measurement by scanning.*

ISO 11200:—[1)], *Acoustics — Noise emitted by machinery and equipment — Guidelines for the use of basic standards for the determination of emission sound pressure levels at the work station and at other specified positions.*

ISO 11689:—[1)], *Acoustics — Systematic collection and comparison of noise-emission data for machinery and equipment.*

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1) To be published.