Akustika. Soovituslikud juhised mehhanisme hõlmavate müravabade töökohtade loomiseks. Osa 3: Heli levik ja müra prognoosimine tööruumides

Acoustics - Recommended practice for the design of low-noise workplaces containing machinery - Part 3: Sound propagation and noise prediction in workrooms

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN ISO 11690-3:1999 sisaldab Euroopa standardi EN ISO 11690-3:1998 ingliskeelset teksti. Käesolev dokument on jõustatud 12.12.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN ISO 11690-3:1999 consists of the English text of the European standard EN ISO 11690-3:1998. This document is endorsed on 12.12.1999 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: Standardi see osa vaatleb heli levikut ruumis ja esitatakse müratasemete alandamisel rakendatav metodoloogia, et prognoosida helirõhutaset ja müraimmissiooni töökohas.	**Scope:**

ICS 13.140

Võtmesõnad: akustika, arvutusjuhised, heli edasikanne, konstruktsioon, mehhanismid, mootorimüra, müra (heli), müra vähendamine, töökohad, tööruum

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English version

Acoustics

Recommended practice for the design of low-noise workplaces containing machinery

Part 3: Sound propagation and noise prediction in workrooms
(ISO/TR 11690-3 : 1997)

Acoustique – Pratique recommandée pour la conception de locaux de travail à bruit réduit contenant des machines – Partie 3: Propagation du son et prévision du bruit dans les locaux de travail
(ISO/TR 11690-3 : 1997)

Akustik – Richtlinien für die Gestaltung lärmarmer maschinenbestückter Arbeitsstätten – Teil 3: Schallausbreitung und -vorausberechnung in Arbeitsräumen
(ISO/TR 11690-3 : 1997)

This European Standard was approved by CEN on 1998-01-09.

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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/TR 11690-3 : 1997 Acoustics – Recommended practice for the design of low-noise workplaces containing machinery – Part 3: Sound propagation and noise prediction in workrooms,

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 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 May 1999 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, which means that it cannot be used for type approval purposes.

The guidance contained in this standard 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 11690-3 : 1997 was approved by CEN as a European Standard without any modification.

Contents

Introduction

This Technical Report is intended for use by all parties involved in noise reduction in workplaces and design of low-noise workplaces. The objective is:

- to make them aware of what is the current technical consensus regarding sound propagation and noise prediction in workrooms,

- to aid the interaction between them within a common technical framework,

- to promote the understanding of the desired noise control requirements.

This Technical Report provides the connection between the emission of sound sources e.g. machines and the sound pressure level at workstations caused by their operation in a workroom. Therefore, it allows an interchange of information between machine suppliers, who are responsible for noise emission values, and machine users, who require low noise immission values.

A further target is the assessment of the acoustical performance of a workroom.

These tasks are connected by the determination of the sound propagation descriptors of a workroom.

A methodology for noise prediction in workrooms is presented and a structure is given for the classification of prediction methods according to the level of detail of input parameters.

1 Scope

In this part of ISO 11690, sound propagation in a room is considered together with the prediction of sound pressure levels and of noise immission at the workplace.

Details of the description of the physical phenomena involved in a noise prediction scheme are strongly dependent on the situation being considered and the way this situation is modelled (input parameters, calculation techniques). This dependency is surveyed and the methodology for noise prediction is described. Recommendations are provided concerning the use of noise prediction as an aid for noise control in workrooms. Examples of use of noise prediction methods are given in annexes A to E.

2 References

References listed in ISO 11690-1 should also be consulted when using this Technical Report.

3 Definitions

Definitions given in ISO 11690-1 apply to this Technical Report.

4 Basic principles of sound propagation in rooms

4.1 Sound propagation descriptors

A basic element for noise prediction in workrooms is the prediction of the distribution of sound pressure levels caused by an omnidirectional point source. This distribution is influenced by :

- the shape and the volume of the room,
- the absorption of the surfaces,
- the fittings.