Mehaaniline võnkumine ja löök. Seadmete vibroisoleerimine. Teave vibratsioonniallika isoleerimise kohta

Mechanical vibration and shock - Vibration isolation of machines - Information for the application of source isolation

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1299:1999 sisaldab Euroopa standardi EN 1299:1997 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 1299:1999 consists of the English text of the European standard EN 1299:1997. 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: Selles standardis antud juhiste abil saab tagada, et seadmete tootjad esitaksid küllaldast teavet vibroisolatsiooni kasutamise kohta nende toodetud seadmetel.	**Scope:**

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Võtmesõnad: andmed, isolatsioon, kasutusjuhend, klassid, masinad, mehaaniline löök, teave, tehnilised andmed, vibratsioon, vibroisolaatorid

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Mechanical vibration and shock

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Information for the application of source isolation

Vibrations et chocs mécaniques – Isolation vibratoire des machines – Informations pour la mise en œuvre de l'isolation des sources

Mechanische Schwingungen und Stöße – Schwingungsisolierung von Maschinen – Angaben für den Einsatz von Quellenisolierungen

This European Standard was approved by CEN on 1996-12-29.

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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.

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CEN

European Committee for Standardization
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Contents

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 231 "Mechanical vibration and shock", the secretariat of which is held by DIN.

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 August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

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 EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Vibration isolation is a measure used to either reduce significantly any transmission of periodic, shock or random type forces from a machine into surrounding structures (source isolation, protection from emission) or to protect sensitive machines, instruments, buildings and people from vibration received from their surroundings (receiver isolation, protection from immission). In both cases, the use of vibration isolators creates a mass-spring system whose vibration response is critically influenced by the characteristics of the source of vibration, the dynamic characteristics of the machine, the structure to which the machine is mounted and the characteristics of the elastic and damping elements. Optimization of the system to satisfy protection criteria requires a full and detailed knowledge of all the factors which influence the design and effective application of vibration isolation to a particular machine or installation. The interchange of information between the machinery manufacturer, the isolation supplier and the user plays a key role in achieving this.

1 Scope

This European Standard gives guidelines to ensure that manufacturers of machines provide adequate information on application of vibration isolation to reduce the risks arising from vibration generated by their machines. Guidelines are also provided to ensure that users furnish sufficient information regarding their applications to suppliers of machines or, where applicable, to the supplier of the isolation system, to enable the optimum selection and design of vibration isolation.

This European Standard is restricted to source isolation.

Although this standard is primarely intended for the use of new machines, it may be applied to the installation of used machines, too.

This European Standard is addressed to manufacturers and installors of a machine, as a guide to define relevant parameters for the choice and installation of a vibration isolation system to be used with the machine.

NOTE : This European Standard may also be applied by users of machines already installed, who use or wish to use vibration isolation to solve a vibration problem caused by the machine.

This European Standard shall not be considered as a manual for the design or installation of an isolation system. Examples of elements of vibration isolation are shown in annex A only for information.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

ISO 2041:1990 Vibration and shock – Vocabulary

ISO 7626-1:1986 Vibration and shock – Experimental determination of mechanical mobility – Part 1: Basic definitions and transducers

3 Definitions

For the general terms and their definitions used in this European Standard, see ISO 2041 and ISO 7626-1.

4 Purpose of source isolation

The purpose of source isolation is to protect the surrounding structure from vibration by taking action on the installation of the source itself.

A source isolation system may be necessary

a) for the safety of the operators of the vibrating machines;

b) for the safety of bystanders to vibrating machines;

c) for the safety of structures or buildings containing vibrating equipment;

d) for the safety of people in buildings that may be subjected to intense vibration excitation;

e) when there are limiting values for vibration in legislation which are exceeded.

5 Applicability of vibration isolation

A source isolation shall be used aditionally to design measures for reducing vibration; it shall not be a substitute to such measures. It can be applied

a) when vibrating machines are designed or installed;

b) when buildings containing vibrating machines are designed or modified.