

This is a free page sample. Access the full version online.

TECHNICAL REPORT RAPPORT TECHNIQUE TECHNISCHER BERICHT

CEN/TR 15172-1

November 2005

ICS 13.160; 17.160

English Version

Whole-body vibration - Guidelines for vibration hazards reduction - Part 1: Engineering methods by design of machinery

Vibrations globales du corps - Guide pour la réduction des risques de vibrations - Partie 1: Mesures techniques lors de la conception des machines

Ganzkörper-Schwingungen - Leitfaden zur Verringerung der Gefährdung durch Schwingungen - Teil 1: Technische Maßnahmen durch die Gestaltung von Maschinen

This Technical Report was approved by CEN on 25 July 2005. It has been drawn up by the Technical Committee CEN/TC 231.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

© 2005 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. CEN/TR 15172-1:2005: E

Contents

Foreword		
Introduction4		
1	Scope	5
2	Identification of main sources and operational modes producing vibration that might be hazardous to health	5
2.1 2.2	Identification of main sources and operational modes Factors that can combine with vibration to increase the likelihood of injury	5 6
3 3.1	Reduction of vibration at source Travelling on uneven surfaces	6 6
3.2 3.3 3.4 3.5	Operating of working equipment (tools) Information from the manufacturer on the use of tools and accessories Vibrating tools mounted to the machinery Engine	/ 7 7 8
4 4.1 4.2 4.3 4.4 4.5	Reduction of transmission of vibration from source to the operator	8 8 9 0 1
5 5.1 5.2 5.3 5.4	Elimination of incorrect posture	1 2 3 4
6 6.1 6.2 6.3 6.4	Summary of questions to be considered when evaluating the design of mobile machinery in view of protecting operator's safety and health	5 5 5 5 6
Annex	A (informative) Vibration isolation1	7
Bibliography		

Foreword

This Technical Report (CEN/TR 15172-1:2005) has been prepared by Technical Committee CEN/TC 231 "Mechanical vibration and shock", the secretariat of which is held by DIN.

CEN/TR 15172 consists of the following parts:

CEN/TR 15172-1, Whole-body vibration — Guidelines for vibration hazards reduction — Part 1: Engineering methods by design of machinery

CEN/TR 15172-2, Whole-body vibration — Guidelines for vibration hazards reduction — Part 2: Management measures at the workplace

Introduction

This Technical Report deals with engineering methods for design of machinery transmitting vibration to the human body. Guidance on management measures at the workplace is given in CEN/TR 15172-2.

Significant whole-body vibration is mainly related to operators of mobile machinery. Mobile machinery transmits vibration and shock from the seat for seated operators, from the floor for standing operators, which may cause adverse health effects, primarily damage to the spine. The effects of vibration depend on its frequency, direction, intensity, presence of shocks and on the exposure time. They also depend on the operator's posture. It is important to understand that the design and manufacture of mobile machinery is complex, requiring extensive technical background.

The EC Directive 98/37/EC on the approximation of the laws of the member states relating to machinery (Machinery Directive), amended by Directive 98/79/EC, requires that the machinery is so designed and constructed that risks resulting from vibration produced by the machinery are reduced to the lowest level, taking account of technical progress and the availability of means of reducing vibration, in particular at source. Limiting vibration by design is one of the measures that EN ISO 12100-2 suggests machine manufacturers and designers should consider as part of a strategy to achieve safety by design of machinery in conformity with European Legislation.

The reduction of vibration by design of machinery can make an important contribution to the effective protection of people at work from the harmful effects of vibration. In practical situations, however, a combination of engineering measures and management measures may be necessary.



This is a free preview. Purchase the entire publication at the link below:

Product Page

S Looking for additional Standards? Visit Intertek Inform Infostore

> Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation