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Transportation loads - Measurement and evaluation of dynamic-mechanical loads - Part 5: Derivation of Test Specifications

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EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

<p>Käesolev Eesti standard EVS-EN 15433-5:2008 sisaldab Euroopa standardi EN 15433-5:2007 ingliskeelset teksti.</p>	<p>This Estonian standard EVS-EN 15433-5:2008 consists of the English text of the European standard EN 15433-5:2007.</p>
<p>Standard on kinnitatud Eesti Standardikeskuse 28.01.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p>	<p>This standard is ratified with the order of Estonian Centre for Standardisation dated 28.01.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p>
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ICS 55.180.01

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ICS 55.180.01

English Version

Transportation loads - Measurement and evaluation of dynamic mechanical loads - Part 5: Derivation of Test Specifications

Charges de transport - Mesurage et analyse des charges
mécaniques dynamiques - Partie 5: Dérivation des
spécifications d'essai

Transportbelastungen - Messen und Auswerten von
mechanisch-dynamischen Belastungen - Teil 5: Ableitung
von Prüfvorschriften

This European Standard was approved by CEN on 28 October 2007.

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Foreword

This document (EN 15433-5:2007) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by June 2008, and conflicting national standards shall be withdrawn at the latest by June 2008.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

This standard was originally prepared by working group NAVp-1.4, Requirements and Testing, of the German Standardization Institute (DIN). It is part of a complete normative concept to acquire and describe the loads acting on goods and influencing them during transport, handling and storage.

This standard becomes significant when related to the realisation of the European Directive on Packaging and Packaging Waste (Directive 94/62 EC, 20 December 1994). This directive specifies requirements on the avoidance or reduction of packaging waste, and requires that the amount of packaging material is adjusted to the expected transportation load, in order to protect the transportation item adequately. However, this presumes some knowledge of the transportation loads occurring during shipment.

At present, basic standards, based on scientifically confirmed values, which can adequately describe and characterize the magnitudes of transportation loads, especially in the domain of dynamic mechanical loads do not exist nationally or internationally. Reasons for this are mainly the absence of published data, insufficient description of the measurements or restrictions on the dissemination of this information.

This standard will enable the measurement and evaluation of dynamic mechanical transportation loads, thus enabling the achievement of standardized and adequately documented load values.

- This series of standards consists of the following parts:
- Part 1: General requirements;
- Part 2: Data acquisition and general requirements for measuring equipment;
- Part 3: Data validity check and data editing for evaluation;
- Part 4: Data evaluation;
- Part 5: Derivation of Test Specifications;
- Part 6: Automatic recording systems for measuring randomly occurring shock during monitoring of transports.

1 Scope

This standard gives guidelines for the derivation of test specifications from data acquired according to EN 15433-2, EN 15433-3 and EN 15433-4.

NOTE To simulate transportation loads, it is helpful to work with standardized load assumptions that are based on the actual loads acquired according to EN 15433-2 up to EN 15433-4. The derivation of test specifications is based fundamentally on considerations concerning the reproduction of damage, whereby time compressed fatigue simulation in particular has to be considered for the determination of the test intensity.

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.

Not applicable

3 Derivation of test conditions

The ideal way to simulate transportation loads is to use actual measured transportation loads. These are usually represented as acceleration-time functions and contain the overall dynamic mechanical load profile of the transport process. The duration of the simulation corresponds with the duration of the actual transportation.

NOTE In practice, however, tests have to be performed by test laboratories, which do not have measured values for that particular case available. In such cases, a standard load should be used. If transport processes are to be time-compressed because the actual transport duration is too long, then the assumption concerning the time compression should comply with the state of the art. The time compression factor should be mentioned in the test report.

4 Parameters for the derivation of test conditions

For each derivation of a test condition, the following parameters can have an influence on the derived result:

- transportation means;
- transportation route;
- duration of transportation;
- transportation conditions;
- viewed aspect of damage;
- dynamic mechanical particularities;
- other boundary conditions.

NOTE For more details reference should be made to EN 24178:1992 Complete, filled transport packages - Distribution trials - Information to be recorded

For each derivation, the parameters that have been taken into consideration should be recorded, along with the cases for which they are valid. The derivation procedure chosen should also be recorded.