

**Mehaaniline võnkumine ja löök.  
Kämba-käsivarre vibratsioon. Meetod  
kinnaste vibratsiooni ülekanduvuse  
mõõtmiseks ja hindamiseks kinda  
peopesast**

Mechanical vibration and shock - Hand-arm vibration  
- Method for the measurement and evaluation of the  
vibration transmissibility of gloves at the palm of the  
hand

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10819:1999 sisaldab Euroopa standardi EN ISO 10819:1996 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 10819:1999 consists of the English text of the European standard EN ISO 10819:1996.</p> <p>This document is endorsed on 23.11.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> See standard esitab laborimõõtmise meetodi, andmete analüüsi ja esitamise korra kinnaste omaduste kohta vibratsiooni ülekandel, kui vibratsioon sageduspiirkonnas 31,5÷1250 Hz kandub käepidemelt peopessa.</p>	<p><b>Scope:</b></p>
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**ICS** 13.160

**Võtmesõnad:** kaitserõivad, kasutaja kaitse, kindad, käelaba, käeshoitavad tööriistad, käsivarred, mehaaniline löök, piiritlemine, teimid, teimiseadmed, vibratsioon, vibratsiooniteimid, ülekanne

ICS 13.160; 13.340.10

Descriptors: Machinery, hand-arm vibration, vibration, measurement.

**English version**

Mechanical vibration and shock

Hand-arm vibration

**Method for the measurement and evaluation  
of the vibration transmissibility of gloves at  
the palm of the hand  
(ISO 10819:1996)**

Vibrations et chocs mécaniques; vibrations main-bras; méthode pour mesurer et évaluer le facteur de transmission des vibrations par les gants à la paume de la main (ISO 10819:1996)

Mechanische Schwingungen und Stöße; Hand-Arm-Schwingungen; Verfahren für die Messung und Bewertung der Schwingungsübertragung von Handschuhen in der Handfläche (ISO 10819:1996)

This European Standard was approved by CEN on 1996-03-19 and is identical with the ISO Standard as referred to.

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.

This European Standard exists 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and 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

The text of EN ISO 10819:1996 has been prepared by Technical Committee CEN/TC 162 "Protective clothing including hand and arm protection and lifejackets", the secretariat of which is held by DIN, in collaboration with Technical Committees ISO/TC 108 "Mechanical vibration and shock" and CEN/TC 231 "Mechanical vibration and shock".

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 December 1996, and conflicting national standards shall be withdrawn at the latest by December 1996.

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).

There are five annexes to this standard whereof annex A is normative and annexes B, C, D and ZA are for information only.

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

This European Standard was developed in response to the growing demand to protect people from the risks of vibration damage caused by exposure to hand-transmitted vibration.

In the field of personal protective equipment (PPE), gloves are being marketed which are intended to reduce the magnitude of vibration exposure.

On present evidence, there have been no circumstances in which gloves have been shown to provide adequate attenuation of vibration to prevent vibration injuries.

Within the current state of knowledge, gloves do not provide significant attenuation in the frequency range below 150 Hz. Some gloves may provide amplification in this frequency range. Also, the use of gloves might alter the gripping force which would alter the transmission of vibration into the arms thus increasing the risk of damage. However, it must be emphasized that an important purpose of gloves is to keep the hands warm and dry, as this may help to limit some vibration-induced effects.

This standard describes a method of measuring the vibration transmissibility of gloves in the laboratory, but as far as possible under conditions typical of use at actual working places. The measurement is performed at the palm of the hand and so does not give the transmission of vibration to the fingers. However, when evaluating the protective effects of a glove, it must be remembered that in many work situations vibration is transmitted not only to the palm but also to the fingers. A different measurement procedure will be required to establish the vibration transmissibility of gloves at the fingers.

This standard describes a method of measuring the vibration transmissibility of gloves worn by a test subject. For the measurement of the vibration transmissibility of resilient materials which are used to cover handles of tools or make gloves, EN ISO 13753 should be consulted.

## 1 Scope

This European Standard specifies a method for the laboratory measurement, the data analysis and reporting of the vibration transmissibility of gloves in terms of vibration transmission from a handle to the palm of the hand in the frequency range from 31,5 Hz to 1250 Hz.

The standard is intended to define a screening test for the vibration transmission through gloves. It is recognised that many factors influence the transmission of vibration through gloves. Therefore the transmissibility value according to this standard is not sufficient to assess the health risk due to vibration.

The transmissibility of vibration is measured and reported for two input spectra, which are representative of the vibration of some tools, and may be reported as a function of frequency.

## 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.

EN 420	General requirements for gloves
ENV 25349	Mechanical vibration – Guidelines for the measurement and the assessment of human exposure to hand-transmitted vibration (ISO 5349:1986)
ENV 28041	Human response to vibration – Measuring instrumentation (ISO 8041:1990)
EN 61260	Electroacoustics - Octave-band and fractional octave-band filters (IEC 1260:1995)
ISO 2041	Vibration and shock – Vocabulary
ISO 5805	Mechanical vibration and shock affecting man – Vocabulary