ICS 13.160 SLOVENSKÁ TECHNICKÁ NORMA Október 2021

STN	**Pôsobenie kmitania (vibrácií) na človeka Meracie prístroje Časť 2: Osobné vibračné expozimetre (ISO 8041-2: 2021)**	**STN EN ISO 8041-2** 01 1422

Human response to vibration - Measuring instrumentation - Part 2: Personal vibration exposure meters (ISO 8041-2:2021)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 09/21

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EUROPEAN STANDARD

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EN ISO 8041-2

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Supersedes EN ISO 8041:2005

English Version

Human response to vibration - Measuring instrumentation - Part 2: Personal vibration exposure meters (ISO 8041-2:2021)

Réponse des individus aux vibrations - Appareillage de mesure - Partie 2: Instruments de mesure de l'exposition des personnes aux vibrations (ISO 8041-2:2021)

Schwingungseinwirkung auf den Menschen - Messeinrichtung - Teil 2: Messgeräte für die personenbezogene Schwingungseinwirkung (ISO 8041-2:2021)

This European Standard was approved by CEN on 24 May 2021.

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European foreword

This document (EN ISO 8041-2:2021) has been prepared by Technical Committee ISO/TC 108 "Mechanical vibration, shock and condition monitoring" in collaboration with 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of an identical text or by endorsement, at the latest by December 2021, and conflicting national standards shall be withdrawn at the latest by December 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 8041-2:2021 has been approved by CEN as EN ISO 8041-2:2021 without any modification.

INTERNATIONAL STANDARD

ISO 8041-2

First edition
2021-05

Human response to vibration — Measuring instrumentation —

Part 2: Personal vibration exposure meters

Réponse des individus aux vibrations — Appareillage de mesure —

Partie 2: Instruments de mesure de l'exposition des personnes aux vibrations

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 231, *Mechanical vibration and shock,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 8041 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

ISO 8041-1 specifies instruments for measuring human exposure to vibration. These instruments are used for temporary, short time measurements or controlled measurements.

This document specifies personal vibration exposure meters (abbreviated to PVEM) for measuring human exposure to vibration over long time periods, e.g. a whole working shift.

It is not necessary for PVEM to fulfil all of the specifications given in ISO 8041-1. On the other hand, it is necessary for them to fulfil other requirements which allow non-controlled measurements or stand-alone measurements over longer time periods. In combination with alarm functions, PVEM can make it possible to alert the user before vibration exposure reaches certain values (action value, limit value). For this reason, it is necessary to distinguish PVEM from the instrumentation specified in ISO 8041-1.

Whilst some potential applications and artefacts are covered in the informative annexes, this standard is an instrument standard and does not cover all potential applications of the PVEM. The reader should refer to measurement standards and guidance for further information.

Annex A describes the treatment of transient acceleration artefacts, Annexes B and C describe possible extension features with additional information for the measurement procedure.

INTERNATIONAL STANDARD **ISO 8041-2:2021(E)**

Human response to vibration — Measuring instrumentation —

Part 2: Personal vibration exposure meters

1 Scope

This document specifies minimum requirements for personal vibration exposure meters (PVEM).

This document is applicable to instruments designed for measurements of whole-body vibration in the context of industrial hygiene applications (according to ISO 2631-1, ISO 2631-2 and ISO 2631-4) and/or hand-arm vibration (according to ISO 5349-1) together with the associated exposure times.

This document provides specified design goals and permitted tolerances that define the minimum performance capabilities and functional requirements of instruments designed to measure personal daily vibration exposure.

This document does not apply to instruments designed to measure or log exposure times without also performing vibration measurement. Instrumentation of this type is described in ISO/TR 19664.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 2041, *Mechanical vibration, shock and condition monitoring — Vocabulary*

ISO 2631-1, *Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 1: General requirements*

ISO 2631-2, *Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 2: Vibration in buildings (1 Hz to 80 Hz)*

ISO 2631-4, *Mechanical vibration and shock — Evaluation of human exposure to whole-body vibration — Part 4: Guidelines for the evaluation of the effects of vibration and rotational motion on passenger and crew comfort in fixed-guideway transport systems*

ISO 5347 (all parts), *Methods for the calibration of vibration and shock pick-ups*

ISO 5349-1, *Mechanical vibration — Measurement and evaluation of human exposure to hand-transmitted vibration — Part 1: General requirements*

ISO 5805, *Mechanical vibration and shock — Human exposure — Vocabulary*

ISO 8041-1:2017, *Human response to vibration — Measuring instrumentation — Part 1: General purpose vibration meters*

ISO 10326-1, *Mechanical vibration — Laboratory method for evaluating vehicle seat vibration — Part 1: Basic requirements*

ISO 15230-1, *Mechanical vibration and shock — Coupling forces at the man-machine interface for hand-transmitted vibration*

ISO 16063 (all parts), *Methods for the calibration of vibration and shock transducers*

ISO 16063-21, *Methods for the calibration of vibration and shock transducers — Part 21: Vibration calibration by comparison to a reference transducer*

ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques — Electrostatic discharge immunity test*

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test*

IEC 61000-4-6, *Electromagnetic compatibility (EMC) — Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-6-2:2016, *Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity standard for industrial environments*

CISPR 22:2008, *Information technology equipment — Radio disturbance characteristics — Limits and methods of measurement*