

SLOVENSKI STANDARD

SIST EN ISO 3382-3:2022

01-april-2022

Nadomešča:

SIST EN ISO 3382-3:2012

Akustika - Merjenje parametrov prostorske akustike - 3. del: Velike odprte pisarne (ISO 3382-3:2022)

Acoustics - Measurement of room acoustic parameters - Part 3: Open plan offices (ISO 3382-3:2022)

Akustik - Messung von Parametern der Raumakustik - Teil 3: Großraumbüros (ISO 3382-3:2022)

Acoustique - Mesurage des paramètres acoustiques des salles - Partie 3: Bureaux ouverts (ISO 3382-3:2022)

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Ta slovenski standard je istoveten z: **EN ISO 3382-3:2022**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 3382-3

January 2022

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Supersedes EN ISO 3382-3:2012

English Version

Acoustics - Measurement of room acoustic parameters -
Part 3: Open plan offices (ISO 3382-3:2022)

Acoustique - Mesurage des paramètres acoustiques des
salles - Partie 3: Bureaux ouverts (ISO 3382-3:2022)

Akustik - Messung von Parametern der Raumakustik -
Teil 3: Großraumbüros (ISO 3382-3:2022)

This European Standard was approved by CEN on 17 December 2021.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN ISO 3382-3:2022) has been prepared by Technical Committee ISO/TC 43 "Acoustics" in collaboration with Technical Committee CEN/TC 126 "Acoustic properties of building elements and of buildings" 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of an identical text or by endorsement, at the latest by July 2022, and conflicting national standards shall be withdrawn at the latest by July 2022.

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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INTERNATIONAL STANDARD

ISO
3382-3

Second edition
2022-01

Acoustics — Measurement of room acoustic parameters —

Part 3: Open plan offices

*Acoustique — Mesurage des paramètres acoustiques des salles —
Partie 3: Bureaux ouverts*

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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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 43, *Acoustics*, Subcommittee SC 2, *Building acoustics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 126, *Acoustic properties of building products and buildings*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 3382-3:2012), which has been technically revised. The main changes compared to the previous edition are as follows:

- new single-number quantity, comfort distance, added, and privacy distance removed;
- sole use of omnidirectional sound source in all measurement phases emphasized;
- definitions ([Clause 3](#)), measurement conditions ([Clause 4](#)), and determination of single-number values ([Clause 5](#)) clarified;
- use of impulse response method better described and a new [Annex B](#) added;
- [Clause 6](#) "Precision" and an informative [Annex D](#) were added;
- STI is determined in conformity with IEC 60268-16 using weighting factors α and β for male gender;

A list of all parts in the ISO 3382 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

Open-plan office is a large and open office space where large number of occupants can simultaneously work in well-defined workstations. Both flexible offices and activity-based offices often involve spaces that resemble open-plan offices. Open working areas, which can be considered as open-plan offices, can also be found in many libraries, hospital wards, industrial workplaces, and schools.

Noise and lack of speech privacy are among the largest contributors to environmental dissatisfaction in open-plan offices^[1]. Colleagues' speech is the main source of office noise. Inadequate room acoustic design of the office is one reason to the perception of noise and lack of speech privacy. Distraction due to colleagues' speech weakens the ability to concentrate and reduces work performance, especially in tasks requiring cognitive resources. Insufficient speech privacy prevents confidential conversations. Several experimental studies suggest that distraction can be reduced by reducing speech intelligibility^[2]^[3]. A large field survey supports that reduced speech intelligibility is associated with reduced noise disturbance^[4]. According to Reference [4], many of the single-number quantities described in this standard are associated with the perceived noise disturbance in open-plan offices.

The outcomes of this method describe the acoustic performance of the open-plan office in a standardized condition where a single occupant is speaking with normal speech effort^[5]. The background sound caused by building appliances or sound masking system is considered in the measurements. The measurements are conducted in an unoccupied open-plan office because the method concerns the permanent building properties and stable room acoustic conditions as well as ISO 3382-1 and ISO 3382-2. The activity sound caused by the occupants does not belong to the scope of this standard, although the level of activity sound can be significantly larger than the level of background sound.

The method uses omnidirectional sound source to provide reproducible results between measurement operators. Furthermore, the speaking direction of occupant in the office workstation is not always known nor constant in time. The use of directional sound sources would lead into different results between measurement operators due to different choices of source direction and source directivities.

Room acoustic quality can be affected by the amount and positioning of wall and ceiling sound absorption materials, room geometry, workstations, screens, other furniture, floor coverings, and background sound level (e.g., masking sound). Presentation of acoustic design guidelines is beyond the scope of this document because literature gives sufficient advice how to reach good room acoustic quality^[5]^[6]^[7].