Irish Standard
I.S. EN ISO 24504:2016

Ergonomics - Accessible design - Sound pressure levels of spoken announcements for products and public address systems (ISO 24504:2014)

I.S. EN ISO 24504:2016

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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This document is based on:	*Published:*
EN ISO 24504:2016	2016-06-15

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2016-07-04	13.180
	NOTE: If blank see CEN/CENELEC cover page

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National Foreword

I.S. EN ISO 24504:2016 is the adopted Irish version of the European Document EN ISO 24504:2016, Ergonomics - Accessible design - Sound pressure levels of spoken announcements for products and public address systems (ISO 24504:2014)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 24504

June 2016

ICS 13.180

English Version

Ergonomics - Accessible design - Sound pressure levels of spoken announcements for products and public address systems (ISO 24504:2014)

Ergonomie - Conception accessible - Niveaux de pression acoustique des annonces vocales pour les produits et systèmes de sonorisation (ISO 24504:2014)

Ergonomie - Barrierefreie Gestaltung - Schalldruckpegel von gesprochenen Ansagen für Produkte und öffentliche Lautsprecheranlagen (ISO 24504:2014)

This European Standard was approved by CEN on 27 May 2016.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

The text of ISO 24504:2014 has been prepared by Technical Committee ISO/TC 159 “Ergonomics” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 24504:2016 by Technical Committee CEN/TC 122 “Ergonomics” 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 2016, and conflicting national standards shall be withdrawn at the latest by December 2016.

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

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Endorsement notice

The text of ISO 24504:2014 has been approved by CEN as EN ISO 24504:2016 without any modification.

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I.S. EN ISO 24504:2016

INTERNATIONAL STANDARD

ISO 24504

First edition
2014-08-01

Ergonomics — Accessible design — Sound pressure levels of spoken announcements for products and public address systems

Ergonomie — Conception accessible — Niveaux de pression acoustique des annonces vocales pour les produits et systèmes de sonorisation

Reference number
ISO 24504:2014(E)

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Published in Switzerland

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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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 159, *Ergonomics*, Subcommittee SC 5, *Ergonomics of the physical environment.*

Introduction

Today, people conduct their daily lives along with spoken announcements from various products such as home electrical appliances, information and telecommunication products, office-automation equipment, heating equipment, toys, sanitary equipment, and health care products. Some products use spoken announcements to provide instructions in indoor and outdoor public areas such as ticket vending machines, elevators, and escalators. Public address systems are often installed to provide spoken announcements. Such announcements can be indistinct to listeners because of hearing loss that can occur with ageing or because of ambient noise in the surroundings.

This International Standard specifies methods for determining an appropriate sound level range of spoken announcements so that all listeners, including people with age-related hearing loss, can hear them properly against ambient noises. This sound level range specification was determined based on results of experiments in which people of different ages participated. Spoken announcements for which sound pressure levels are within the range specified in this International Standard are expected to be audible and comfortably loud for most users in the presence of ambient noise.

This International Standard is intended to be applied as necessary to products depending on the product type and its conditions of use. It does not apply to spoken announcements used for evacuation or emergency purposes.

ISO 9921 specifies recommended levels of speech-communication quality necessary for conveying comprehensive messages in different applications. Therefore, ISO 9921 differs from this International Standard.

This International Standard adopts the principles of accessible design from ISO/IEC Guide 71, which are amplified in ISO/TR 22411.

Ergonomics — Accessible design — Sound pressure levels of spoken announcements for products and public address systems

1 Scope

This International Standard specifies methods to determine an appropriate sound pressure level range for spoken announcements in environments where ambient noise is less than 80 dB. The specified methods follow the concepts of ISO/IEC Guide 71 and includes consideration of older persons with decreased hearing ability to determine sound pressure levels of spoken announcements. The spoken speech levels that are specified in this International Standard are for products and public-address systems. To improve the accessibility and usability of products, spoken announcements must not only be audible but also presented at comfortable speech levels.

The target products that present spoken announcements are consumer products such as electronic home appliances, information and communication technology services, and products providing services for general users in public facilities indoors and outdoors such as train stations, airports, meeting rooms, amusement parks, and fairs.

This International Standard is not applicable to products providing private information such as automated teller machines in public spaces.

This International Standard is applicable when a loudspeaker producing a spoken announcement is located a short distance from the user in an environment where the sound pressure level with a standard frequency weighting A of ambient noise does not exceed 80 dB. This International Standard is applicable to spoken announcements that are audible to persons with normal hearing for their age when presented by a target product under quiet and anechoic conditions. This International Standard is applicable for both recorded voice and synthetic speech announcements.

This International Standard does not specify sound pressure levels of spoken announcements for systems with automatic sound pressure level control to compensate for fluctuating ambient noise levels. This International Standard is not applicable to spoken announcements heard through headphones or earphones, or to spoken announcements heard with the ear close to the speech sound source, such as in ear speakers specified in IEC 60268-7. This International Standard considers only the audibility of speech and not the process of speech understanding.

This International Standard does not specify the sound pressure levels of spoken announcements presented in emergency situations such as signals for fire alarms, gas leakage, and crime prevention; those are covered in ISO 7240-16 and ISO 7240-19. This International Standard does not specify the sound pressure levels of spoken announcements in automobiles; those are covered in ISO 15006.

NOTE 1 A spoken announcement presented in a repetitive manner from a product such as electronic home appliance is presumed to be heard as an auditory sign but not as a message and is therefore usable with a lower sound pressure level of the spoken announcement than this International Standard specifies.

NOTE 2 It is known that the word recognition performance of native speakers of the language of the announcement is better than that of non-native speakers.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.