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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 44808.3-2024

**Ergonomics - Accessible design - Part 3: Sound pressure levels
of spoken announcements for products and public address
systems**

人类工效学 无障碍设计 第3部分：产品和公共广播系统语音播报的声压级
(English Translation)

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 3 of GB/T 44808 "Ergonomics and Accessibility Design". GB/T 44808 has been published as follows part.

--- Part 1: Voice prompts in consumer products;

--- Part 2: Color combination method considering changes in color vision with age;

--- Part 3: Sound pressure levels of products and public address system speech announcements;

--- Part 4: Estimation method of the minimum recognizable character size for people of different ages.

This document is equivalent to ISO 24504:2014 Ergonomics for barrier-free design of products and public address systems for voice announcements.

"Reduction in Level".

The following minimal editorial changes were made to this document.

--- To coordinate with the existing standards, the name of the standard is changed to "Ergonomic Accessibility Design Part 3: Products and Public Broadcasting Sound pressure level of system voice announcements.

Introduction

People can hear voice messages from various products everywhere in their daily lives, such as household appliances, information and communication products, office automation, etc.

Automation equipment, heating equipment, toys, sanitary equipment and healthcare products. Some products use voice announcement systems to announce messages in indoor and outdoor public areas.

Public address systems are often used to play voice announcements.

Due to hearing loss caused by long-term exposure to noise or the influence of environmental noise, some listeners may not be able to hear such voice broadcasts clearly.

This document provides a method for determining the appropriate sound pressure level range for speech broadcasts so that everyone can hear them clearly in scenes with ambient noise.

The sound pressure level range is based on the number of people of different ages.

The sound pressure level range determined in this document can ensure that most people can hear the sound even in the presence of background noise.

Hear clear and comfortable voice.

The use of this document should take into account the product type and usage scenario. This document is not applicable to voice broadcasts for evacuation or other emergency situations.

ISO 9921 specifies the recommended levels of voice communication quality required to convey comprehensive information in different applications.

The files are different.

This document follows the accessible design principles of ISO/IEC Guide 71, which are described in detail in ISO/T R22411.

GB/T 44808 aims to take into account the differences in user capabilities and the diversity of usage scenarios, and to establish barrier-free design for each human-computer interaction factor.

Requirements, make the product and system suitable for the widest range of users in the target user group, and it is planned to consist of multiple parts.

--- Part 1: Voice prompts in consumer products. The purpose is to establish the ergonomic requirements for voice prompts in consumer products.

--- Part 2: Color combination methods that take into account changes in color vision with age. The purpose is to establish the creation of eye-catching color combinations method.

--- Part 3: Sound pressure levels for speech announcements in products and public address systems. The purpose is to establish the sound pressure level range for speech announcements.

Determine the method.

--- Part 4: Estimation method for the minimum recognizable character size for people of different ages. The purpose is to establish a method for estimating the minimum recognizable character size for people of different ages.

A method for estimating the minimum recognizable character size of a group.

--- Part 5: Touch symbols and characters. The purpose is to establish barrier-free design requirements for touch symbols and characters.

--- Part 6: Indicator lights in consumer products. The purpose is to establish barrier-free design requirements for indicator lights in consumer products.

--- Part 7: Controllers in consumer products. The purpose is to establish accessible design principles for consumer product controllers.

--- Part 8: Ease of use. The purpose is to establish barrier-free design requirements for ease of use of consumer products.

Ergonomics and Accessibility Design Part 3.

Sound pressure levels for products and public address system announcements

1 Scope

This document specifies the method for determining the sound pressure level range of voice broadcasts when the background noise is less than 80dB.

The guidance of ISO/IEC Guide 71 considers the hearing loss of the elderly to determine the sound pressure level of speech announcements.

The pressure level is applicable to products and public broadcasting systems. To improve

the accessibility and usability of products, voice broadcasts must not only be audible, but also and the volume is comfortable.

This document applies to consumer products such as home appliances with voice broadcast function, information and communication technology service products, as well as railway stations, airports, Products that provide services to ordinary users in indoor and outdoor public places such as conference rooms, playgrounds and markets.

This document does not apply to products that provide private information, such as ATMs in public places.

This document applies to the following situations. the voice broadcast speaker is close to the user, and the A-weighted sound pressure of the background noise in the user's environment the level does not exceed 80dB. This document is applicable to users with normal hearing in a quiet and non-reflective environment who have a clear hearing loss.

Products that produce audible speech. This document applies to both recorded and synthesized speech.

This document does not apply to products with automatic sound pressure level control systems that can offset the impact of ambient time-varying noise.

Speech heard through headphones or earphones, or speech heard with the ear close to the sound source, such as in-ear headphones as specified in IEC 60268-7.

It only considers the audibility of speech but not the speech comprehension process.

This document does not apply to voice signals used in emergency situations, such as fire alarms, gas leaks and crime prevention signals. ISO 7240-16 this document does not apply to voice announcements in cars, which are covered by ISO 15006.

Note 1: Voice announcements presented repeatedly in products such as household appliances can be considered as sound signals and do not belong to voice information. Therefore, their sound pressure level can be Lower than specified in this document.

Note 2: It is well known that native speakers have a better ability to recognize words in speech broadcasts than non-native speakers.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

ISO 389-1 Acoustic calibration of audiometric equipment - Reference zero level - Part 1: