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Acoustics — Audible and other emergency evacuation signals

Acoustique — Signal sonore et autres signal d'évacuation d'urgence

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Foreword

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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 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 21, *Equipment for fire protection and fire fighting*, Subcommittee SC 3, *Fire detection and alarm systems*.

This second edition cancels and replaces the first edition (ISO 8201:1987), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the evacuation signal temporal pattern has been modified to allow for the use of signals from voice alarm evacuation systems.

Introduction

There has been a growing interest in the past decade in the development of an international audible signal which, when heard, would unequivocally mean “evacuate the building immediately”.

In searching for an appropriate audible signal, it was considered that levels of background noise and frequency patterns are so variable, particularly in the industry, that no signalling device would be able to “penetrate” all background noises and frequency patterns. For this reason, it seemed prudent to select the kind of sound best able to audibly “penetrate” a particular background noise in a given building and then make that sound unique and understandable by imposing on it a standard recognizable pattern of “on” and “off” times.

It is frequently found that, whatever sounding device is already in place in a building, it is there because it has been shown to be successful. Consequently, all that is needed in many cases is to impose a standardized temporal pattern on the existing sounding devices. For new buildings, a signal that can “penetrate” the background noise inside that building should be selected and then the standardized temporal pattern is imposed on that signal.

An additional advantage of using a standardized temporal pattern as the distinguishing characteristic of the audible emergency evacuation signal is that the temporal pattern can be applied to visual and tactile signals to aid those who have impaired hearing. Visual and tactile signals incorporating the temporal pattern can also be applied in areas where the background noise is so intense that no signal is capable of “penetrating” audibly.

This document is one of a series of standards covering danger signals. Other standards include ISO 7731, ISO 11428 and ISO 11429.

Acoustics — Audible and other emergency evacuation signals

1 Scope

This document specifies the requirements for an audible emergency evacuation signal intended to indicate without ambiguity, to all persons within the reception area of the signal, that an emergency situation (fire, gas leaks, explosion, nuclear radiation, etc.) requires immediate evacuation.

Two acoustic parameters of the audible emergency evacuation signal are defined: the temporal pattern and the required sound pressure level at all places within the intended reception area of the signal.

NOTE Recognition of the signal does not require the specification of its spectral content, which can be selected to satisfy specific site requirements.

The signal specified in this document is intended to be used in buildings, including but not limited to schools, hotels, residential buildings, public institutions and work places (such as factories and offices) The signal can also be used in outside areas.

This document is not applicable to warning signals, to signals for public disaster control or to alarm systems on board ships or in outdoor moving vehicles, such as police cars, fire engines and ambulances.

The individual signalling-system components of the signal are also out of the scope of this document.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

4 Requirements

4.1 General

The audible emergency evacuation signal shall only be used for evacuation. Its use shall be restricted to emergencies where it is desired to have all the occupants in the signal reception area evacuate the building immediately.

Where the evacuation plan requires sequential evacuation with only the affected zones or floors having to be immediately evacuated, the audible emergency evacuation signal shall only be used for the zones or floors to be immediately evacuated. It shall not be used when the planned action during the emergency is not evacuation, but relocation of the occupants from the affected area to a safe area inside the building or for their protection in the place where they find themselves (e.g. high-rise buildings, health care facilities and penal institutions).