SLOVENSKI STANDARD
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Varnostna pravila za konstruiranje in vgradnjo dvigal (liftov) - Dvigala za prevoz oseb in blaga - 28. del: Alarmi v osebnih in osebno-tovornih dvigalih

Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 28: Remote alarm on passenger and goods passenger lifts

Sicherheitsregeln für die Konstruktion und den Einbau von Aufzügen - Aufzüge für den Personen- und Gütertransport - Teil 28: Fern-Notruf für Personen- und Lastenaufzüge

Règles de sécurité pour la construction et l'installation des élévateurs - Élévateur pour le transport de personnes et d'objets - Partie 28 : Téléalarme pour ascenseurs et ascenseurs de charge

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13.320	Alarmni in opozorilni sistemi	Alarm and warning systems
91.140.90	Dvigala. Tekoče stopnice	Lifts. Escalators

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Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 28: Remote alarm on passenger and goods passenger lifts

Règles de sécurité pour la construction et l'installation des élévateurs - Élévateur pour le transport de personnes et d'objets - Partie 28 : Téléalarme pour ascenseurs et ascenseurs de charge

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 10.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

European foreword ... 3

Introduction ... 4

1 Scope ... 5

2 Normative references ... 5

3 Terms and definitions ... 5

4 Safety requirements and/or protective measures ... 7
4.1 General ... 7
4.2 Technical characteristics ... 9

5 Information for use ... 10
5.1 Information to be provided with the alarm system ... 10
5.2 Information to be provided with the lift ... 10
5.3 Information for the rescue service ... 11

6 Verification of the safety requirements and/or protective measures ... 11
6.1 General ... 11
6.2 Examinations and tests ... 13

7 Marking ... 14

Annex A (normative) **Typical 2-way communication between lift(s) and rescue service** ... 15

Annex B (informative) **General information for the operation of rescue services** ... 16

Annex ZA (informative) **Relationship between this European Standard and the essential requirements of Directive 2014/33/EU aimed to be covered** ... 18

Bibliography ... 19

European foreword

This document (prEN 81-28:2020) has been prepared by Technical Committee CEN/TC 10 “Lifts, escalators and moving walks”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This document will supersede EN 81-28:2018.

Significant changes made are as follows:

— All externally referenced standards have now been dated;

— Editorial corrections to assist in understanding;

— A new Annex ZA has been developed in order to be aligned with the requirements of the EU Commission Standardization Request “M/549 C(2016) 5884 final”.

No technical changes have been made during this revision.

The content of this document provides the design rules, examinations and tests for alarm systems for lifts.

This document is intended to be used in conjunction with the parts of the EN 81 series of standards calling for the use of this standard, which give the basic requirements for passenger and goods passenger lifts.

This document is part of the EN 81 series of standards. The structure of the EN 81 series is described in CEN/TR 81-10:2008.

Introduction

This document is a type-C standard as stated in EN ISO 12100:2010.

The lifts concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

1 Scope

This document covers the risk of entrapment of users in the car and in the well, and gives the technical requirements for the alarm systems for passenger and goods passenger lifts, as described in the EN 81 series.

This includes:

— activation of the alarm,

— transmission of the alarm,

— information for use and maintenance,

— site testing to verify the requirements of this document have been met before the lift is used.

Excluded are:

— the failure of the communication network (see Annex A), including mobile network signal strength or similar;

— the failure of the network power supply such that all the lifts in a geographical area create entrapment simultaneously.

This document is not applicable to alarm systems for lifts installed before the date of its publication.

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.

EN 81-20:2020, *Safety rules for the construction and installation of lifts - Lifts for the transport of persons and goods - Part 20: Passenger and goods passenger lifts*

EN ISO 12100:2010, *Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)*

ISO 4190-5:2006, *Lift (Elevator) installation - Part 5: Control devices, signals and additional fittings*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010, EN 81-20:2020 and the following apply.

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 https://www.iso.org/obp

3.1
alarm
status between a person who is entrapped pushing the initiation device until the time all rescue actions are completed

3.2
acknowledgement
confirmation (answer) by the rescue service to the alarm equipment that the alarm has been received

3.3
alarm equipment
part of the alarm system able to detect, identify, validate as true alarm and initiate 2-way communication

Note 1 to entry: The alarm equipment is part of the lift.

3.4
end of alarm
information issued by the alarm system and destined for the rescue service in order to inform it that the entrapment situation is ended

3.5
alarm initiation device
device intended for users trapped in the lift installation in order to call for external assistance, exemplified in Annex A

3.6
alarm system
combination of alarm initiation device(s) and alarm equipment exemplified in Annex A

3.7
human response
response performed directly by a person of the rescue service via the alarm system

3.8
reception equipment
equipment outside of the lift (e.g. at the rescue service) capable of handling alarm identification and 2-way communication exemplified in Annex A

3.9
rescue service
organization in charge of receiving alarm identification and rescuing users trapped in the lift installation, exemplified in Annex A

Note 1 to entry: A rescue service can be part of the maintenance organization.

Note 2 to entry: See Annex B.

3.10
transmitter
part of a 2-way communication system which sends voice and data to the reception equipment exemplified in Annex A

4 Safety requirements and/or protective measures

4.1 General

4.1.1 Introduction

Alarm systems shall comply with the safety requirements and/or protective measures of Clause 4.

In addition, alarm systems shall be designed according to the principles of EN ISO 12100:2010 for relevant but not significant hazards which are not dealt with by this document.

4.1.2 Alarm information

The alarm equipment shall ensure that subject to 4.1.6 alarm filtering, the full alarm identification (see 4.1.7) will be emitted until acknowledgement, even during maintenance.

If an emission fails before acknowledgement, the delay between re-emission(s) shall be reduced to the minimum compatible with the communication network.

If the communication is interrupted any re-emission after acknowledgement shall not be impeded by the alarm equipment. The alarm system shall be able to accept communication from the rescue service until the end of the alarm has occurred.

Emission of the alarm identification to the transmitter shall not be delayed, except during alarm filtering.

Between the acknowledgement and the end of alarm, any alarm filtering shall be bypassed.

After acknowledgement, if the communication is interrupted, the alarm equipment shall stop automatic re-emission.

4.1.3 End of alarm

Means shall be provided to enable indication, from the alarm system to the rescue service, that the alarm has been dealt with and no user is trapped in the lift.

The end of alarm shall be initiated at lift installation from which the alarm call was made. The means to initiate the end of alarm shall be accessible only to competent persons.

Resetting of the alarm by a signal coming from the rescue centre shall be possible.

4.1.4 Emergency electrical power supply

Any alarm shall not be impeded or lost even in cases of electrical power supply switching or power supply failure.

Where an emergency electrical power supply is used, means shall be provided to automatically inform the rescue service and to indicate at the installation of the failure of the emergency electrical power supply. This is considered to occur whenever the emergency electrical power supply is incapable of holding sufficient capacity to provide one hour of function of the alarm system including 15 minutes voice communication.

If the transmitter is integrated in the alarm system (e.g. GSM-module), the requirements of the standard regarding the emergency electrical power supply apply to the transmitter.

4.1.5 Visible and audible signals in the lift car

The alarm system shall be equipped with visible and audible signals, integrated in or above the car operating panel, consisting of:

a) a yellow graphical symbol in accordance with ISO 4190-5:2006, Table C.1, No 1, illuminated when an alarm has been validated as a true alarm, i.e. after the end of filtering, until the end of alarm;

b) an audible signal with a sound pressure level at 1m from the source between 35 dB(A) and 65 dB(A) adjustable to suit the site conditions when an alarm has been validated as a true alarm, i.e. after the end of filtering, until the voice communication is established. The acoustic signal is not required to be continuous;

c) a green graphical symbol in accordance with ISO 4190-5:2006, Table C.1, No 8., illuminated during voice communication.

See Figure 1 which clarifies the operation of the visible and audible signals.

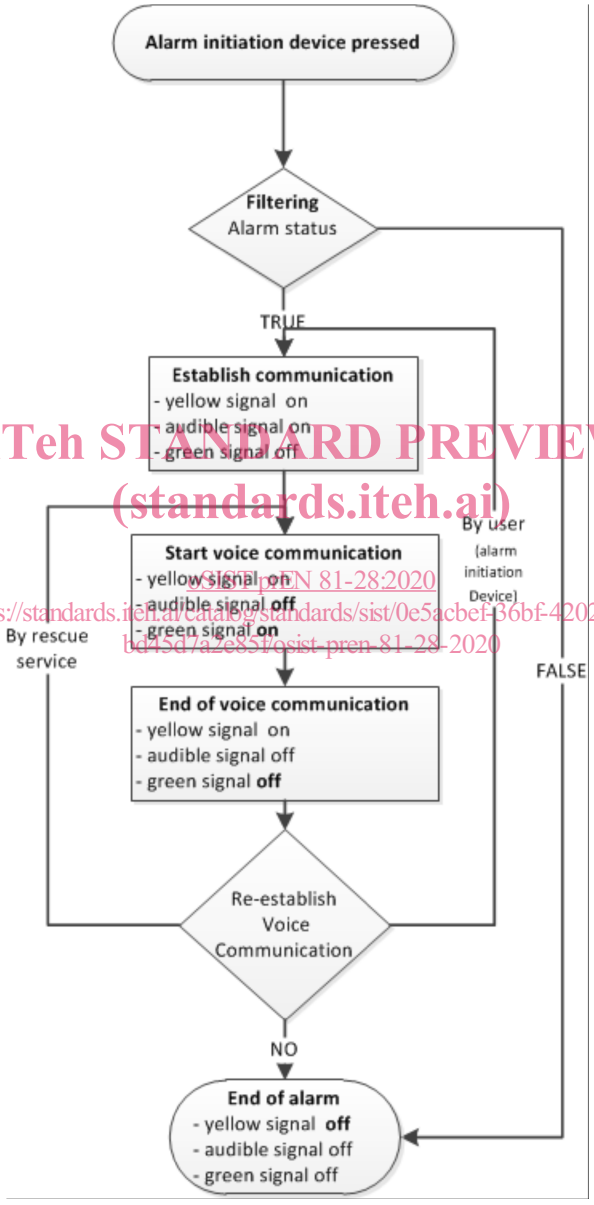

Figure 1 — Visible and audible signals flowchart

4.1.6 Alarm filtering

Provision shall be made to enable the alarm system to filter alarm initiations.

For this purpose, the filter shall be capable of not initiating the alarm when any of the following events occur:

— when the car is in an unlocking zone and the car and landing doors are fully open, or in the case of hinged landing doors, the car doors are fully open and landing doors are unlocked;

— the car is running.

Where the alarm system is designed to filter inadvertent alarm initiations by setting a minimum time to operate the alarm initiation device, this time shall not exceed 3 s.

In order to allow manual testing of the alarm system, the filter shall be bypassed when alarm initiation device is continuously pressed for an adjustable time not longer than 30 s. However, no alarms initiated during maintenance and/or repair shall be discarded.

The alarm system shall also provide means to deactivate and reactivate filtering of the alarm by competent and authorized person.

4.1.7 Identification

The alarm system shall provide the location of the lift to the rescue service even when testing.

4.1.8 Communication

After initiation of the alarm initiation device, no further action shall be necessary from within the lift car.

After initiation of the alarm 2-way communication shall not be interrupted from within the car. It shall always be possible to re-initiate the alarm from inside the car.

The voice communication equipment shall be adjustable to suit the site conditions

Any additional sound sources (e.g. music, alarm bell) shall not impede the voice communication.

NOTE Refer to prEN 81-70:2020 for induction loop.

4.2 Technical characteristics

4.2.1 Availability / reliability

The alarm equipment shall be able to emit alarm identification to alternative reception equipment.

The alarm equipment shall automatically simulate the input signal of an alarm (automatic test) and set up the subsequent connection, using the same connection means used for an alarm, to the reception equipment for testing purposes but at least every 3 days.

The graphical symbols detailed in 4.1.5 flashing in opposition (one second off, one second on) shall indicate a failure of automatic test not later than one hour from the last failed automatic test up to next successful connection.

In case of initiation of alarm, the activation of graphical symbols shall operate normally as indicated in 4.1.5 for the duration of the alarm.

NOTE The purpose of the indication of an automatic test failure within the car is to inform of the need to take appropriate action.

4.2.2 Electrical interface

Any electrical interface between the alarm system and electric safety devices of the lift shall comply with the requirements of EN 81-20:2020, 5.10.3.2 and 5.11.2.1.2.