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English Version

**Safety rules for the construction and installation of lifts -  
Particular applications for passengers and goods passenger lifts  
- Part 76: Evacuation of disabled persons using lifts**

Règles de sécurité pour la construction et l'installation des  
élévateurs - Applications particulières pour les ascenseurs  
et ascenseurs de charge - Partie 76: Utilisation des  
ascenseurs pour l'évacuation des personnes handicapées  
en cas d'urgence

Sicherheitsregeln für die Konstruktion und den Einbau von  
Aufzügen - Besondere Anwendungen für Personen- und  
Lastenaufzüge - Teil 76: Personenaufzüge für die  
Evakuierung von Personen mit Behinderungen

This Technical Specification (CEN/TS) was approved by CEN on 14 May 2011 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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# Contents

Page

<b>1</b>	<b>Scope .....</b>	<b>7</b>
1.1	Use of the lift .....	7
1.2	Application of this Technical Specification .....	7
1.3	Requirements of this Technical Specification .....	7
1.4	Assumptions .....	8
1.5	Consideration of type of disability .....	9
1.6	Combinations of disabilities .....	9
1.7	Type of evacuation being considered .....	9
<b>2</b>	<b>Normative references .....</b>	<b>9</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>10</b>
<b>4</b>	<b>List of significant hazards .....</b>	<b>12</b>
4.1	General .....	12
4.2	Significant hazards .....	12
4.3	Hazards not addressed .....	12
<b>5</b>	<b>Requirements for the use of a lift for evacuation of persons with impaired mobility .....</b>	<b>13</b>
5.1	Lift size and speed .....	13
5.2	Fundamental "evacuation lift" requirements .....	13
5.3	Control systems .....	14
5.3.1	Building Input signal .....	14
5.4	Output signal(s) (Interfaces) .....	14
5.4.1	Interface requirements between the fire alarm system and the lift control system .....	15
5.5	Landing equipment .....	15
5.5.1	Landing signals .....	15
5.5.2	Controls .....	16
5.5.3	Car signals .....	16
5.6	Car communication system .....	16
5.7	Behaviour of the lift on the receipt of an evacuation signal .....	17
5.7.1	Services provided .....	17
5.7.2	Operation of the lift in evacuation mode .....	17
<b>6</b>	<b>Verification of safety measures and/or protective devices .....</b>	<b>18</b>
<b>Table 3</b>	<b>— Verification Table .....</b>	<b>18</b>
<b>7</b>	<b>Information for use .....</b>	<b>19</b>
<b>Annex A (informative)</b>	<b>Concept of this evacuation lift .....</b>	<b>20</b>
A.1	General .....	20
A.2	Design of the lift .....	21
<b>Annex B (informative)</b>	<b>Essential building requirements .....</b>	<b>22</b>
B.1	General .....	22
B.2	Number of lifts dedicated to evacuation .....	22
B.2.1	Safe area .....	22
B.2.2	Safe area size .....	23
B.2.3	Enclosure .....	23
B.2.4	Doors of the safe area .....	23
B.2.5	Signs and signals .....	23
<b>Illustration in white</b>	<b>.....</b>	<b>23</b>
B.2.6	Communications .....	24
B.2.7	Emergency lighting .....	24
B.2.8	Smoke protection of the shaft and safe area .....	24

B.2.9	Smoke management.....	24
B.2.10	Temperature.....	24
B.2.11	Evacuation chair.....	24
B.3	Alert and/or fire detection system .....	25
B.4	Fire/smoke detection provisions .....	25
B.5	Hydraulic lifts .....	25
B.6	Power supplies .....	25
B.7	Signals required for lift operation.....	25
Annex C (informative) Provision of automatic fire detection and lift interfaces .....		26

## **Foreword**

This document (CEN/TS 81-76:2011) has been prepared by Technical Committee /TC 10 “Lifts, Escalators and moving walks”, the secretariat of which is held by AFNOR.

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.

CEN/CENELEC has embarked on a programme of work to produce a series of related machinery and lift safety standards as part of European standardisation.

This document is part of the EN 81 series of standards: “Safety rules for the construction and installation of lifts”. This is the first edition of this Technical Specification.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## 0 Introduction

### 0.1 Background to this Technical Specification

At present, there are no European and few national regulations for lifts, which include specifications related to the evacuation from buildings of persons with impaired mobility using lifts.

This has the consequence that persons with a disability may experience difficulty and delay whilst waiting for assistance to evacuate.

This document has been developed as a first step towards defining requirements for a European Standard for evacuation of lifts. It is believed that since recommendations have been put in place to provide disabled access to buildings, by using lifts complying with EN 81-70, a standardised evacuations lift design would be a useful step to providing safe evacuation.

In Europe today, the European Lift Directive defines strict safety requirements that must be met by all new lifts going into service. In support of the Lift Directive a number of harmonised standards have been developed namely, EN 81-1 and EN 81-2 which address the fundamental safety requirements of any new lift design. EN 81-73 describes how any lift that is not intended to be used during a fire should be removed from service in an organised manner. Fire fighting lifts designed to EN 81-72 may also be suitable for the evacuation of disabled persons with prior agreement of the fire service. However, some of the features provided by EN 81-72 may not be essential for evacuation use.

### 0.2 General situation in Europe concerning evacuation

- a) Implementation of fire regulations in buildings are not harmonized and usually differ:
  1. from country to country;
  2. from city to city;
  3. depending on the building type.
- b) Evacuation and fire fighting concepts as well as fire management can also differ. There are however some points of commonality:
  1. in a building, horizontal and vertical circulation corridors and stairs are dimensioned in number and in width so as to allow for building evacuation within defined a time in accordance with the applicable local or national regulation;
  2. lifts are rarely considered as a means of escape;
  3. the normal rule is, "in case of emergency do not use lifts";
  4. this rule is usually communicated by different means to all building occupants:
    - signs;
    - audible messages;
    - training;
    - written evacuation plan and procedures.

- c) In some particular cases and under particular conditions in some countries, specific lifts can be used for transportation of the disabled in case of emergencies.
- d) In office buildings and buildings where the public may enter, such as hotels etc., personnel are often appointed responsible for evacuation of the building or particular levels. These may be called "evacuation assistants" or "fire wardens". The term evacuation assistant is used throughout this document.

Their task is to:

1. verify in case of an evacuation alert that all areas have been effectively evacuated;
2. help disabled persons and particularly people with impaired mobility to evacuate.

### **0.3 Basic principle of evacuation of the disabled taken into account in this document**

The principle that stairs are the recognised main means of escape from the building remains unchanged.

The purpose of this document is not to reconsider this principle, but to study under which conditions lifts could be used to supplement stairs with reasonable safety, in order to assist the evacuation of persons with impaired mobility.

Lifts for evacuation should be lifts normally used for daily vertical transportation but include special functions used in cases of evacuation. This is deliberate to ensure the lifts are regularly used thus increasing the probability that when required for an evacuation, they will be working.

This Technical Specification also highlights certain building features that shall be provided in order to ensure the safety and security of the lifts, lift users and those waiting for the lift.

This document describes only a basic "evacuation lift" in order to provide a reasonable and practical solution suitable for implementation in some buildings.

This Technical Specification is not suitable for all building types such as buildings without a person responsible to manage the building and its evacuation, who are not located in the buildings, or residential buildings with multiple owners sharing common escape routes and no one individual responsible in the building. These cases require different solutions than described in this document.

### **0.4 Aims of the document**

This Technical Specification deals with:

- a) the reduction of risk to persons in the lift car that may be exposed to fire and smoke;
- b) the reduction of the risk of persons being trapped in a lift car during an evacuation;
- c) the reduction of evacuation time for persons unable to use the stairs.

### **0.5 Use of this Technical Specification**

The purpose of this Technical Specification is to show how a lift(s) can be designed in order to be used for evacuation and to list the requirements not directly part of the lift itself, but which have to be satisfied in order to make its use practical and safe. See Annex A, B and C.

This Technical Specification can be used as a guideline for:

- a) national authorities to determine its own programme of implementation;
- b) owners to follow their responsibilities according to existing regulations;
- c) a basis for future National, International or European standards on this subject;

- d) assistance to standards making committees that work on building evacuation concepts.

## 0.6 Relationship between this standard and others in the EN 81-70 series

It is important to understand the relationship between this standard and others in the EN 81-70 series.

EN 81 parts 1 and 2 define the basic safety requirements essential to any lift design. EN 81-70 provides additional requirements that make a lift more easily accessible to all users including those with disabilities.

EN 81-72 defines requirements for a lift suitable for use by fire fighters. At the discretion of the fire service and local legislation, it may be acceptable to use such a lift prior to arrival of the fire service for the evacuation of persons with a disability. This is not acceptable in all countries or desirable in all cases. Local legislation should determine what is acceptable in their jurisdiction.

EN 81-73 defines how a lift can be safely removed from service if local legislation or rules or building management requires that lifts are not used during an emergency. E.g., fire. See also Annex A.

Management can determine on the day if the building is to be evacuated and if they wish to use the evacuation lift. If they do, they can bring the lift back into evacuation service by use of a switch. This is not considered a contradiction with EN 81-73.

# 1 Scope

## 1.1 Use of the lift

This Technical Specification gives rules for the intended use of the lift by persons with disabilities in order to assist the evacuation of a building. To achieve this objective, the selected lift(s) should be incorporated within an overall building design that includes all the usual stairs and escape routes without any reduction in their quantity or capacity.

It specifies the special provisions and safety rules to assist persons with a disability to safely evacuate a building using lifts in relative safety with the help of suitably trained evacuation assistants.

This specification does not define the number and size of lift required, or the size of door openings that shall be determined on a case-by-case basis by the building designer in line with applicable national regulations.

## 1.2 Application of this Technical Specification

This Technical Specification can be applied to permanently installed new:

- a) electric lifts, with traction or positive drive (as defined in EN 81-1);
- b) hydraulic lifts (as defined in EN 81-2).

## 1.3 Requirements of this Technical Specification

This Technical Specification defines requirements to allow safe lift use where:

- a) the building has not sustained structural damage e.g. from explosion, flood, lightning strike, earthquake, storm etc.
- b) the well and car are safe for persons to use. e.g. free from smoke, etc.
- c) a fire resisting structure for the lift provides suitable protection;
- d) some form of fire detection is provided at least at the lift and safe areas;

- e) power supplies are secure and reliable, the provision of a secondary supply is not essential but the cable providing power to the lift shall be fire protected to the same fire protection level as given to the lift well structure;
- f) a building secondary supply is not called for by national rules or provided, the lift shall have a provision to allow the lift to be recovered electrically to an adjacent safe area (floor);
- g) responsibility for safe evacuation rests with and is in the control of trained persons located at the building premises.

#### **1.4 Assumptions**

The following assumptions are made:

- a) The building is provided with a means to protect the lift from the effects of fire and smoke e.g. safe area directly outside lift door, fire resistant structure etc.
- b) In addition to the requirements stipulated in this document, the lift shall also meet the requirements of EN 81-1 or EN 81-2 as applicable, and EN 81-70 and EN 81-73 as applicable.
- c) There is an individual person available in the building who is responsible for managing any evacuation in addition to the person assigned to assist the disabled person and/or drive the lift. This should be included in the evacuation plan.
- d) The lift will not be used for general evacuation as it is assumed those without a disability will use the stairs.
- e) The lift is for normal use. In the case of an emergency, it becomes a tool only for the evacuation of persons with disabilities and is not considered a general escape route.
- f) A means of communication is available to people on each landing to enable them to speak with those in charge of the evacuation.
- g) Those with a disability will be evacuated with the help of specially trained persons with the physical ability to assist those persons who require assistance.
- h) Any alarm or fire detection system is operating as intended.
- i) The lift size is appropriate for the intended purpose e.g., evacuation of wheelchairs, beds, stretchers, walking aids etc.
- j) A safe area (see definition in 3.14) is provided at each level adjacent to the lift for persons to wait in safety.
- k) The building is designed to minimise the risk of flooding into the lift or lift well. To this end, sprinkler discharge, burst pipes, fire hose etc. should not be located to discharge towards the lift and any water close to the lift should be directed away from it by sloping floors etc.
- l) The lift is in normal service and is operating correctly.
- m) The lift is maintained and the evacuation operation is tested at suitable regular intervals.
- n) Negotiations have been made between the owner/customer and installer concerning:
  - 1) the intended use of the lift;
  - 2) the building evacuation strategy;



- 3) the design of the lift to fulfil the requirements of the evacuation strategy e.g. attendant control with visual signals and verbal announcements, automatic doors etc.
- 4) environmental conditions;
- 5) civil engineering problems;
- 6) any other aspects related to the place of installation;
- 7) interface requirements and responsibilities for detection systems and any building management systems etc.

NOTE Developers and architects will need to take account of national building regulations.

### 1.5 Consideration of type of disability

Since not all people with disabilities need a lift in order to evacuate a building this Technical Specification deal principally with the use of lift(s) for evacuation of people with impaired mobility (see definition in 3.10).

### 1.6 Combinations of disabilities

After detailed study, it has been determined that not all combinations of disability can be addressed just by lift design, especially cases of severe mental disability. However, the use of trained evacuation assistants to help those with a disability to use the lift permits persons with multiple or severe disabilities to also evacuate from the building when required.

### 1.7 Type of evacuation being considered

This document considers only the evacuation using the lift for persons with impaired mobility assisted by a specially trained person (assisted evacuation).

As soon as the rescue service, i.e. firefighters, arrive on site, they will determine the most appropriate way to continue the evacuation if necessary. See Annex A.

## 2 Normative references

The following referenced documents are indispensable for the application 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 54-1:2011, *Fire detection and fire alarm systems — Part 1: Introduction*.

EN 81-1:1998+A3:2009, *Safety rules for the construction and installation of lifts — Part 1: Electric lifts*.

EN 81-2:1998+A3:2009 *Safety rules for the construction and installation of lifts — Part 2: Hydraulic lifts*.

EN 81-70:2003, *Safety rules for the construction and installations of lifts — Particular applications for passenger and good passenger lifts — Part 70: Accessibility to lifts for persons including persons with disability*.

EN 81-70:2003/A1:2004, *Safety rules for the construction and installations of lifts — Particular applications for passenger and good passenger lifts — Part 70: Accessibility to lifts for persons including persons with disability*.

EN 81-72:2003, *Safety rules for the construction and installation of lifts — Particular applications for passenger and goods passenger lifts — Part 72: Firefighters lifts*.

EN 81-73:2005, *Safety rules for the construction and installation of lifts — Particular applications for passenger and goods passenger lifts — Part 73: Behaviour of lifts in the event of fire.*

EN 1838, *Lighting applications — Emergency lighting*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 54-1:1996 and EN 81 series of standards shall apply other than the following terms and definitions.

#### 3.1

##### **building management**

those persons or the organisation responsible for ensuring the day-to-day safe and efficient running of the building and responsible for ensuring the building is safely evacuated in an emergency in line with the evacuation strategy

#### 3.2

##### **BMS**

Building Management System. A system capable of making intelligent decisions based on information sent to it.

#### 3.3

##### **building evacuation strategy**

plan that has been documented and put in place to ensure the safe evacuation of the building

#### 3.4

##### **disability**

disability includes any condition, physical or mental that creates difficulty for persons using stairs (impaired mobility) or follow simple signs or instructions without assistance

#### 3.5

##### **emergency**

condition requiring the evacuation of all or part of a building where persons are instructed to use the emergency stairs

#### 3.6

##### **emergency and test panel**

panel meeting the requirements of 6.6 of EN 81-1 and EN 81-2

#### 3.7

##### **evacuation assistant**

person appointed by building management to assist in the evacuation process and drive the lift when required

#### 3.8

##### **evacuation lift**

lift designed to be operated by trained persons and used for the evacuation of persons with disability in cases of emergency, under the direction of building management, trained evacuation assistant or rescue services

#### 3.9

##### **evacuation lift switch**

a manual device located at the main evacuation exit floor, outside of the well or in the car that is intended to be used to switch the lift to evacuation service and give priority service to the evacuation assistant

#### 3.10

##### **impaired mobility**

difficulties in using stairs because of physical or mental impairment.