



# SLOVENSKI STANDARD SIST-TS CEN/TS 81-82:2008

01-september-2008

JUfbcgfbUdfUj ]UnU\_cbgfif fUb^Y]b`j [ fUXb^c`Xj ][ U`f]Zcj L!`CVgfc^Y UXj ][ UU!  
, &^XY. :^Vc`yUb^YXcglcdbcgl]`cVgfc^Y ] `Xj ][ U`cgYVUa žj \_`^ bc`]bj U]Xca

Safety rules for the construction and installation of lifts - Existing lifts - Part 82:  
Improvement of the accessibility of existing lifts for persons including persons with  
disability

## iTeh STANDARD PREVIEW

Sicherheitsregeln für die Konstruktion und den Einbau von Aufzügen - Bestehende  
Aufzüge — Teil 82: Erhöhung der Zugänglichkeit von bestehenden Aufzügen für  
Personen einschließlich Personen mit Behinderungen

<https://standards.iteh.ai/catalog/standards/sist/1d28edca-b878-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008>

Regles de sécurité pour la construction et l'installation des ascenseurs - Ascenseurs  
existants — Partie 82 : Amélioration de l'accessibilité aux ascenseurs existants pour  
toutes des personnes y compris des personnes avec handicap

**Ta slovenski standard je istoveten z: CEN/TS 81-82:2008**

### ICS:

91.140.90      Öcã aããV^[\ ^Á d ] } &^      Lifts. Escalators

**SIST-TS CEN/TS 81-82:2008**      en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST-TS CEN/TS 81-82:2008](https://standards.iteh.ai/catalog/standards/sist/1d28edca-b878-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008)

<https://standards.iteh.ai/catalog/standards/sist/1d28edca-b878-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008>

ICS 91.140.90

English Version

**Safety rules for the construction and installation of lifts - Existing lifts - Part 82: Improvement of the accessibility of existing lifts for persons including persons with disability**

Règles de sécurité pour la construction et l'installation des  
élévateurs - Ascenseurs existants - Partie 82 :  
Amélioration de l'accessibilité aux ascenseurs existants  
pour toutes des personnes y compris des personnes avec  
handicap

Sicherheitsregeln für die Konstruktion und den Einbau von  
Aufzügen - Bestehende Aufzüge - Teil 82: Erhöhung der  
Zugänglichkeit von bestehenden Aufzügen für Personen  
einschließlich Personen mit Behinderungen

This Technical Specification (CEN/TS) was approved by CEN on 25 September 2007 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.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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 United Kingdom.



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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

# Contents

page

Foreword.....	3
Introduction .....	4
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	5
4 List of significant hazards .....	5
5 Requirements for safe access and use and/or protective measures.....	5
5.1 General.....	5
5.2 Entrances – Door opening .....	5
5.2.1 Entrance clear opening .....	5
5.2.2 Accessible and obstacle free landings .....	6
5.2.3 Door dwell time .....	6
5.2.4 Re-opening device without physical contact.....	6
5.3 Car dimensions, equipment in the car, stopping/levelling accuracy .....	6
5.3.1 Car dimensions .....	6
5.3.2 Equipment in the car .....	6
5.3.3 Levelling and stopping accuracy.....	6
5.4 Control devices and signals .....	7
5.4.1 Landing control devices .....	7
5.4.2 Car control devices.....	7
5.4.3 Landing signals.....	7
5.4.4 Car signals.....	7
6 Verification of improvement measures .....	7
7 Information for use .....	7
Annex A (informative) Guideline to improve accessibility.....	8
A.1 General.....	8
A.2 Use of the accessibility checklist together with the effectiveness ranking .....	13
Annex B (informative) Accessibility check list for existing lifts .....	14
Bibliography .....	19

ITeH STANDARD PREVIEW

(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/1d28edca-b876-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008>

## Foreword

This document (CEN/TS 81-82:2008) has been prepared by Technical Committee CEN/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 have embarked on a programme of work to produce a series of related machinery and lift safety standards as part of European standardisation. This document makes use of and refers to EN 81-70.

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, 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.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST-TS CEN/TS 81-82:2008](https://standards.iteh.ai/catalog/standards/sist/1d28edca-b878-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008)

<https://standards.iteh.ai/catalog/standards/sist/1d28edca-b878-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008>

## Introduction

### Background of this Technical Specification

More than 4 million lifts are in use today in the EU and EFTA, and almost 50 % were installed more than 25 years ago. Existing lifts were installed to the safety and accessibility level appropriate at that time. This level is less than today's state of the art.

New technologies and social expectations have led to today's state of the art for accessibility resulting in different levels of accessibility across Europe. However, users expect a common acceptable level of safety and accessibility.

There is a growing trend for people to live longer and for disabled people to expect access and design for all. Therefore it is especially important to provide a safe means of vertical transport for all lift users including disabled and elderly persons without assistance.

Furthermore, the life cycle of a lift is longer than most other transportation systems and building equipment, which therefore means that lift design, performance, safety and accessibility can fall behind modern technologies. If existing lifts are not upgraded to today's state of the art, the number of problems related to accessibility will increase as the proportion of the population with disabilities increase thereby resulting in a less accessible environment for the society in general.

With the freedom of movement of people within the EU for all users including users with disabilities, familiarity with the different installations is becoming more desirable.

CEN/TS 81-82 has been prepared to address these issues. This Technical Specification is to help owners, authorities and lift designers/manufacturers to find practical solutions and ways of applying EN 81-70 to existing lifts to improve accessibility and use by persons including persons with disability. Where due to practical reasons EN 81-70 cannot be fully applied, this Technical Specification provides alternative proposals.

In such cases it is still considered an advantage to apply parts of EN 81-70. For example, if the existing entrance opening is not large enough for a wheelchair and cannot be modified, it is still a major improvement to make the lift controls suitable for other types of disability.

Such changes/improvements could enable elderly and disabled people to remain living in their own homes instead of having to re-locate to specialised nursing homes.

### Use of this Technical Specification

This Technical Specification can be used by:

- a) national authorities to determine a specific programme of implementation;
- b) owners to follow their responsibilities according to existing regulations (e.g. national building regulations, anti discrimination acts);
- c) maintenance companies and/or inspection bodies to inform the owners on the accessibility level of their installations;
- d) owners to upgrade the existing lifts on a voluntary basis if no regulations exist by making an audit of an existing lift installation using Annex A and Annex B.

## 1 Scope

**1.1** This Technical Specification provides rules on how to apply EN 81-70 referred to in EN 81-80:2003, 5.2.1 [1] to existing lifts to improve their accessibility for persons including persons with disability.

**1.2** This document applies to permanently installed lifts serving defined landing levels, having a car designed for the transportation of persons or persons and goods and moving between guide rails inclined not more than 15° to the vertical.

## 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 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*

## 3 Terms and definitions

For the purposes of this Technical Specification, the terms and definitions given in the EN 81 series of standards apply.

**iTeh STANDARD PREVIEW**  
(standards.iteh.ai)

## 4 List of significant hazards

EN 81-70:2003, Clause 4 applies. [standards.iteh.ai/catalog/standards/sist/1d28edca-b878-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008](https://standards.iteh.ai/catalog/standards/sist/1d28edca-b878-4530-b20b-329b1aa3d0b0/sist-ts-cen-ts-81-82-2008)

## 5 Requirements for safe access and use and/or protective measures

### 5.1 General

The general accessibility of the building needs to be taken into account.

### 5.2 Entrances – Door opening

#### 5.2.1 Entrance clear opening

If the size of the car is in accordance with Table 1 of EN 81-70:2003, the minimum entrance clear opening shall be 800 mm.

**NOTE** National regulations can require more than 800 mm. Type 2 lifts should be provided with an entrance clear opening of 900 mm, according to ISO 4190-1 (series B) [8], and type 3 lifts with a clear opening of 1 100 mm.

The car and landing doors shall be constructed as automatic power operated horizontally sliding doors. If that is not the case and if it's not possible to do so, the manual door shall be converted to a power operated door.

If the lift is equipped with hinged doors at the landings and if the size of the lift doesn't allow the use by a wheel chair user, the accessibility can nevertheless be improved for impaired mobility users by the installation of automatic power operated horizontally sliding doors even if the car entrance has to be reduced (e.g. existing hinged doors with a car entrance of 800 mm replaced by automatic power operated horizontally sliding doors with a car entrance of 700 mm).

Existing folding car doors may remain if the accessibility for wheel chair users is not restricted.

### **5.2.2 Accessible and obstacle free landings**

Obstacle-free accessibility on the landing floors is required on all eligible floors as defined in EN 81-70:2003, 5.2.2.

NOTE Special attention should be given to adequate local lighting at the landings (see EN 81-1/2:1998, 7.6.1 [6/7]).

### **5.2.3 Door dwell time**

When the lift is equipped with automatic power operated doors, the door dwell time shall be sufficiently long to facilitate access or the control system shall be equipped with an adjustable dwell time as defined in EN 81-70:2003, 5.2.3.

### **5.2.4 Re-opening device without physical contact**

When the lift is equipped with automatic power operated horizontally sliding doors, it shall at least also be equipped with a protection device preventing physical contact as defined in EN 81-70:2003, 5.2.4.

NOTE The protective device may cover the opening over a distance between at least 25 mm and 1 600 mm above the car door sill in case of interference between the device and door coupler and/or locks.

For power operated hinged doors the effort needed to prevent the door opening and closing shall not exceed 150 N. The kinetic energy shall not exceed 4 J in each direction.

## **5.3 Car dimensions, equipment in the car, stopping/levelling accuracy**

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

### **5.3.1 Car dimensions**

Car dimensions shall be in accordance with EN 81-70:2003, 5.3.1.

NOTE 1 The sizes shown in EN 81-70:2003, Table 1, are ideal sizes particularly for new buildings. However, there are many existing lifts where smaller wheelchairs can be used. Therefore no change to the car is necessary, providing this is acceptable for the expected users of the building.

NOTE 2 Attention should be given to the fact that dimensions of the well dictate dimensions of the car.

### **5.3.2 Equipment in the car**

#### **5.3.2.1 Handrail**

Handrails shall be in compliance with EN 81-70:2003, 5.3.2.

If placing the handrail on the side reduces the entrance width and prevents wheel chair user's access, it shall be placed on the rear wall.

#### **5.3.2.2 Tip-up seats**

Tip-up seats where provided shall be in compliance with EN 81-70:2003, 5.3.2.2.

NOTE It should be ensured that the relevant car wall has sufficient strength.

#### **5.3.2.3 Moving backwards out of the car**

Devices shall be installed in compliance with EN 81-70:2003, 5.3.2.3.

### **5.3.3 Levelling and stopping accuracy**

The stopping and levelling accuracy shall comply with EN 81-70:2003, 5.3.3 which means:

— stopping accuracy of the lift shall be  $\pm 10$  mm;



— levelling accuracy of  $\pm 20$  mm shall be maintained.

## 5.4 Control devices and signals

### 5.4.1 Landing control devices

#### 5.4.1.1 Button system

The push button type system shall comply with EN 81-70:2003, 5.4.1.1, in particular Table 2.

Where the existing buttons don't fully comply with one or few of the requirements of Table 2 they can be kept until modernisation of the related component is carried out. However, if some requirements (except g), registration feedback) of high level of effectiveness (i.e. 3 or 4 according to the matrix of Annex A) don't comply, the buttons shall be replaced.

If providing a new lift controller then the complete EN 81-70:2003, Table 2 shall be complied with.

#### 5.4.1.2 Keypad

Where a keypad is used it shall comply with EN 81-70:2003, 5.4.1.2.

#### 5.4.1.3 Temporary activation control

Where a temporary activation control is used it shall comply with EN 81-70:2003, 5.4.1.3.

#### 5.4.1.4 Positioning of landing control devices

Landing control devices shall be mounted according to EN 81-70:2003, 5.4.1.4.

### 5.4.2 Car control devices

Where a push button system is used it shall comply with EN 81-70:2003, 5.4.2.1 and 5.4.2.2, in particular Table 2.

Where the existing buttons don't fully comply with one or few of the requirements of Table 2 they can be kept until a modernisation of the related component is carried out. However, if some requirements (except g), registration feedback) of high level of effectiveness (i.e. 3 or 4 according to the matrix of Annex A) don't comply, the buttons shall be replaced.

If providing a new lift controller then the complete EN 81-70:2003, Table 2 shall be complied with.

The car control panel shall be located according to EN 81-70:2003, 5.4.2.3.

Where a keypad is used for call registration in the car, it shall comply with EN 81-70:2003, 5.4.2.4.

Where a destination control system with "temporary activation" is used, it shall comply with EN 81-70:2003, 5.4.2.5.

### 5.4.3 Landing signals

Landing signals shall comply with EN 81-70:2003, 5.4.3.

### 5.4.4 Car signals

Car signals shall comply with EN 81-70:2003, 5.4.4.

## 6 Verification of improvement measures

Before putting a lift back into service after modifications, it shall be subject to examinations and tests in accordance with EN 81-70:2003, Clause 6.

## 7 Information for use

Relevant documentation shall be provided for those components which are changed and completed according to Clause 5 of this Technical Specification.

## Annex A (informative)

### Guideline to improve accessibility

#### A.1 General

It is recognised that whilst the ideal situation is to apply all the requirements of EN 81-70:2003, it is not always reasonably practical to do so. In deciding the best course of action to remove the physical barriers facing disabled persons when accessing and using lifts many factors need to be considered.

For example the size of the lift well will dictate what size of lift can be installed and if it is large enough to accept wheelchairs. However, this should not prevent owners from carrying out other improvements in order to provide benefits to those persons not using wheelchairs but might otherwise struggle to use the lift, such as those with reduced mobility, impaired vision and hearing.

Another example is the need for adding power operated doors to a lift which only has manual doors at present. This is of high priority to persons in wheelchairs and those of impaired dexterity. However, for those persons with impaired hearing or impaired speech it may not be as important. What can be seen however is that fitting a light curtain to lifts which already have power operated doors results in a significant benefit to all persons since it is reasonably practical with some effectiveness and there is no reason why it should not be incorporated into accessibility improvements regardless of the anticipated use of the lift.

The above examples are showing that when making decisions on the amount and kind of improvements to be undertaken this must be related to the typical use of the lift, the existing environment and the likelihood of persons with different type of disability wishing to use the lift.

Combining the type of disability with the effectiveness of improvements enables to introduce a quantification of added value to all persons, including persons with disability, using the lift. The effectiveness levels used are:

- 1 some benefit to all;
- 2 benefit;
- 3 important;
- 4 vital.

This quantification is used in Table A.1 (accessibility matrix) to demonstrate the effectiveness of the different improvements in relation to the type of disabilities (see EN 81-70:2003, Table B.1).

Table A.1 — Effectiveness ranking

Nr.	Type of disability	Impaired mobility, wheelchair, walking frame and rollator	Impaired mobility, walking stick and crutches	Impaired endurance, equilibrium	Impaired dexterity	Impaired vision	Impaired hearing	Impaired speech	Learning difficulty
	Items to be checked								
1	Minimum door opening of 800 mm (nominal)	4	3	3	2	3	1	1	1
2	Car and landing doors are horizontal sliding and power operated.	4	3	3	3	3	1	1	2
3	Landings are accessible and obstacle free	4	3	3	1	4	1	1	1
4	Adjustable/sufficient door dwell time	4	4	4	3	4	1	1	2
5	Re-opening device without physical contact	4	4	4	2	4	1	1	1
6	Car size appropriate for the use of wheelchairs (type 1, 2 or 3)	4	1	1	1	1	1	1	1
7.1	Handrail on one side wall	1	4	4	2	2	1	1	1
7.2	Handrail of correct dimensions	1	2	2	2	2	1	1	1
7.3	Handrail interrupted in front of car operating panel	1	1	1	3	3	1	1	1
7.4	Handrail ends closed and turn in towards the car walls	2	2	1	1	2	1	1	1
8	Tip up seat of correct dimensions and able to support load of 100 kg	1	2	3	1	1	1	1	1
9.1	Device to allow persons in wheelchairs to see behind them in cars of type 1 or 2	4	1	1	1	1	1	1	1
9.2	Mirror made from safety glass	3	1	1	1	2	1	1	1
9.3	Mirrors substantially covering any wall stopped at least 300 mm from the floor or decorated to avoid optical confusion	1	1	1	1	2	1	1	1
10	Maximum out of level of the lift $\pm$ 20 mm	4	3	2	2	4	1	1	1
11	Landing push button system								
11.1	Area of active part	2	2	3	4	3	1	1	2
11.2	Dimension of active part	2	2	3	4	3	1	1	2