



**International
Standard**

ISO 8100-7

**Lifts for the transport of persons
and goods —**

**Part 7:
Accessibility to lifts for persons
including persons with disability**

Elévateurs pour le transport de personnes et d'objets —

*Partie 7: Accessibilité aux ascenseurs pour toutes les personnes y
compris les personnes avec handicap*

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Significant hazards and barriers to accessibility	2
5 Safety requirements and/or protective measures	2
5.1 General.....	2
5.2 Entrances — Door openings.....	3
5.3 Car dimensions and equipment in the car	3
5.3.1 Car dimensions	3
5.3.2 Equipment in the car.....	5
5.4 Control devices and signals.....	7
5.4.1 General.....	7
5.4.2 Control devices and signals for collective control systems.....	7
5.4.3 Control devices and signals for destination control systems.....	11
6 Verification of safety requirements and/or protective measures	12
7 Information for use	15
Annex A (normative) Categories of disability considered	16
Annex B (normative) Extra large control devices	17
Annex C (normative) Touch screen devices for destination control systems	19
Annex D (informative) Guidance for increased accessibility and usability	20
Annex E (informative) Determination of luminance contrast and light reflectance values	21
Bibliography	25

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by the European Committee for Standardization (CEN) (as EN 81-70:2021+A1:2022) and was adopted, without modification other than those given below by Technical Committee ISO/TC 178, *Lifts, escalators, passenger conveyors*, and adopted under the "fast-track procedure".

- EN ISO 12100 references have been changed to ISO 12100;
- "this standard" has been replaced with "this document".

A list of all parts in the ISO 8100 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

0.1 General

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

The lifts concerned and the extent to which hazards, hazardous situations or hazardous events are covered is 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 B standards, the provisions of this type C standard take precedence over the provisions of the other standards for lifts that have been designed and built according to the provisions of this type C standard.

0.2 Principles

For the revision of this document the following have been considered:

- a) practical experience with the first version of this document;
- b) market demand for including new technology;
- c) CEN-CENELEC Guide 6;
- d) current legal framework for accessibility and usability, in particular:

The UN Convention on the Rights of Persons with Disabilities with reference also to accessibility in the built environment – considering human diversity, social inclusion and equality for all people - is ratified also by most Member States.

It is also the first international legally binding instrument on human rights setting minimum standards for the rights for people with disabilities around the world.

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Lifts for the transport of persons and goods —

Part 7:

Accessibility to lifts for persons including persons with disability

1 Scope

This document specifies the minimum requirements for the safe and independent access and use of lifts by persons, including persons with disabilities. It covers the needs of persons with disabilities according to [Annex A](#).

NOTE For guidance on solutions for increased accessibility and usability, see [Annex D](#).

This document is not applicable to 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.

ISO 8100-1:2019, *Lifts for the transport of persons and goods — Part 1: Safety rules for the construction and installation of passenger and goods passenger lifts*

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

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 following terms and definitions apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 collective control system

lift control system where required direction of travel is registered on the landing and the destination floor is registered in the car.

3.2 destination control system

lift control system where the destination floor is registered on the landing

3.3 accessibility button

means to activate enhanced accessibility features or services for a single trip

4 Significant hazards and barriers to accessibility

This clause contains all significant hazards, hazardous situations and events as far as they are dealt with in this document, identified by risk assessment as significant for this type of machinery and which require actions to eliminate or reduce the risk (see [Table 1](#)).

In this document, barriers to accessibility and additional risks encountered by the person with disability or by the devices used by that person are identified particularly in [Table 1](#), No 8 (ergonomic hazards).

Table 1 — List of significant hazards

No	Hazards listed in ISO 12100:2010, Annex B	Relevant clauses
1	Mechanical hazards due to:	
	Crushing	5.3.2.3
	Impact	5.3.2.3
	Slip, trip, fall	5.3.2.4
8	Ergonomic hazards due to:	
	Access	5.2.1 , 5.2.2 , 5.3.1 , 5.3.2.3
	Design or location of indicators, visual and audible display units	5.1.3 , 5.4.2.4 , 5.4.2.5 , 5.4.3.3 , 5.4.3.4
	Design, location or identification of control devices	5.1.2 , 5.4.2.1 , 5.4.2.2 , 5.4.2.3 , 5.4.3.1 , 5.4.3.2
	Effort	5.3.2.1 , 5.3.2.2

5 Safety requirements and/or protective measures

5.1 General

5.1.1 Passenger and goods passenger lifts shall comply with the safety requirements and/or protective measures of the following clauses. In addition, lifts shall be designed according to the principles of ISO 12100 for relevant but not significant hazards which are not dealt with by this document.

5.1.2 Where luminance contrast between adjacent surfaces is required, it shall comply with [Table 2](#).

Table 2 — Requirements for luminance contrast

Clause	Item	Minimum light reflectance value point difference $LRV_1 - LRV_2$	Minimum luminance contrast C_M [%]	Minimum light reflectance value of lighter surface LRV_1	Viewing angle
Table 4 , item c)	Active part of push buttons to their surrounding	30	-	-	45° above horizontal
Table 4 , item d)	Face plates to their surrounding	30	-	-	Horizontal
Table 4 , item j)	Symbols on push buttons to active areas	-	50	50	45° above horizontal
5.4.3.3 c)	Lift designation markings to background	-	50	50	Horizontal

NOTE 1 For determination of luminance contrast and light reflectance values, see informative [Annex E](#). For further guidance on contrast, see ISO 21542:2021, 10.3 and Annex E.

NOTE 2 On shiny and direct reflective surfaces, unfavourable reflections can reduce luminance contrast. Light colour tones for ceiling and wall surfaces, diffuse reflective materials and a wide light distribution prevent disturbing reflections on the control devices.

5.1.3 When an audible signal or voice announcement is required, the sound level shall be adjustable between 35 dB(A) and at least 65 dB(A) to suit the site conditions. In noisy environments (e.g. on landings in train stations), the maximum sound level shall be adjustable up to 80 dB(A). The means of adjustment shall be accessible only to authorized persons.

5.2 Entrances — Door openings

5.2.1 The landing and car doors shall be automatic power operated horizontally sliding doors. The clear opening width shall be at least 800 mm for type 1 cars, 900 mm for type 2, type 3 and type 4 cars and 1 100 mm for type 5 cars. In existing buildings, the clear opening width shall be at least 800 mm for type 2 cars.

5.2.2 The door dwell time shall be adjustable at least between 2 s and 20 s to suit the conditions where the lift is installed. The means of adjustment shall be accessible only to authorized persons.

NOTE A door dwell time of at least 6 s is needed for persons with reduced mobility (see also [5.4.2.2.3](#)).

A door close button may be provided to reduce the door dwell time.

5.3 Car dimensions and equipment in the car

5.3.1 Car dimensions

The inside dimensions of cars with a single entrance or with two opposite or two adjacent entrances shall be chosen in accordance with [Table 3](#).

Car dimensions shall be measured between the structural car walls. Decorative finishes on each wall that reduce the minimum car dimensions given by [Table 3](#) shall not exceed 15 mm in thickness.

There shall be no additional features attached to the car walls below a height of 800 mm which may restrict the accommodation and turning of passengers using wheelchairs or passengers with other walking aids. This would particularly be the case for type 1 and type 2 cars restricting the minimum depth and for type 4 cars restricting the smaller minimum dimension.

Table 3 — Minimum car dimensions for cars with a single entrance or two entrances

Type of car	Minimum car dimensions ^a	Accessibility level	Building types, usage	Remarks
1	Car width: 1 000 mm Car depth: 1 300 mm (450 kg)	This car accommodates one wheelchair user without an accompanying person.	Shall only be used in existing buildings where building constraints do not permit the installation of a type 2 car.	Type 1 provides only limited accessibility for persons using a manual wheelchair as described in EN 12183:2014 or an electrically powered wheelchair of class A described in EN 12184:2014. This type also provides accessibility for persons using walking aids (e.g. a walking stick) and for persons with sensory and intellectual disabilities.
2	Car width: 1 100 mm Car depth: 1 400 mm (630 kg)	This car accommodates one wheelchair user and an accompanying person.	Shall be the minimum size for new buildings.	Type 2 provides accessibility for persons using a manual wheelchair as described in EN 12183:2014 or an electrically powered wheelchair of class A or B as described in EN 12184:2014. This type also provides accessibility for persons using walking aids (e.g. walking sticks, crutches or rollators). Passengers with wheelchairs or walking aids are unlikely to be able to turn around in this type of car and have to leave the car backwards.
3	Car width: 1 100 mm Car depth: 2 100 mm (1 000 kg)	This car accommodates one user with a wheelchair of class C and some other passengers. It also allows transport of stretchers.	Recommended size for cars in public areas (e.g. outdoor facilities, stations, etc.) and for cars where transport of wheelchairs of class C shall be provided.	Type 3 provides accessibility for persons using a manual wheelchair as described in EN 12183:2014 or an electrically powered wheelchair of class A, B or C described in EN 12184:2014. It also provides accessibility for persons using a manual wheelchair with tractor unit (propulsion attachment). When cars of this type are configured with two opposite entrances this can provide straight through circulation from the main entrance to different floor levels.

^a The car width is defined as the horizontal distance between the inner surface of the structural walls of the car, measured parallel to the front entrance. The car depth is defined as the horizontal distance between the inner surfaces of the structural walls of the car, measured perpendicular to the width.

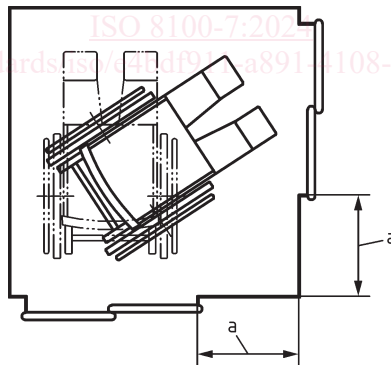
^b The distances between doors and adjacent car walls as shown in [Figure 1](#) should be as large as possible.

Table 3 (continued)

Type of car	Minimum car dimensions ^a	Accessibility level	Building types, usage	Remarks
4	Car width: 1 600 mm Car depth: 1 400 mm or Car width: 1 400 mm Car depth: 1 600 mm (1 000 kg)	This car accommodates one wheelchair user and a few other passengers. It also allows a wheelchair to be rotated within the car.	Shall be the minimum size for cars with doors on adjacent walls ^b .	Type 4 provides accessibility for persons using a manual wheelchair as described in EN 12183:2014 or an electrically powered wheelchair of class A or B as described in EN 12184:2014. Type 4 provides sufficient space for most wheelchairs users and for passengers with walking aids.
5	Car width: 2 000 mm Car depth: 1 400 mm or Car width: 1 400 mm Car depth: 2 000 mm (1 275 kg)	This car accommodates one wheelchair user and several other passengers. It also allows a wheelchair to be rotated within the car.		Type 5 provides accessibility for persons using a manual wheelchair as described in EN 12183:2014 or an electrically powered wheelchair of class A, B or C as described in EN 12184:2014. Type 5 provides sufficient turning space for persons using wheelchairs of class A or B and for persons using walking aids (e.g. walking frames, rollators, etc.).

^a The car width is defined as the horizontal distance between the inner surface of the structural walls of the car, measured parallel to the front entrance. The car depth is defined as the horizontal distance between the inner surfaces of the structural walls of the car, measured perpendicular to the width.

^b The distances between doors and adjacent car walls as shown in Figure 1 should be as large as possible.



^a Distance between door and adjacent car wall.

Figure 1 — Cars with doors on adjacent walls

5.3.2 Equipment in the car

5.3.2.1 A handrail shall be installed on the side wall where the car operating panel is located as follows:

- a) the handrail shall be interrupted where the car operating panel is located in order to avoid obstructing control devices;