



Information Note

EN 81-70:2021 +A1:2022

Safety rules for the construction and installation of lifts - Particular applications for passenger and goods passenger lift - Part 70: Accessibility to lifts for persons including persons with disability

**Summary of the document and main changes
from EN 81-70:2003, to EN 81-70: 2021 +A1:2022**

March 2024

SAEL Working Group

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Contents

Contents	1
Background to the revision of EN 81-70	2
Application of EN 81-70	3
European Foreword	4
Luminance contrast and sound levels	5
Entrances – Door openings	5
Car Dimensions	6
Car Dimensions - Type 1:	6
Car Dimensions – Type 2:	7
Car Dimensions – Type 3 (New):	7
Car Dimensions – Type 4 (New):	8
Car Dimensions – Type 5:	9
Equipment in the car	9
Control devices & signals	10
Landing control devices	11
Landing signals	12
Car control devices	12
Car signals	13
Destination control systems	13
Information for use	14
Annexes	14
Annex C (normative) (New)	14
Annex D (informative) (New)	15
Annex E (informative) (New)	15

Note: This information note is a summary of the main changes from EN 81-70:2003 to EN 81-70: 2021 +A1:2022. For detailed requirements of the current version of standard, always refer to EN 81-70: 2021 +A1:2022. Official versions of standards are available for purchase.

Background to the revision of EN 81-70

EN 81-70:2018 was published to supersede the **2003 +A1:2004** version, however it failed EU Commission approval and was not cited in the Official Journal (OJ). The document was amended to address the concerns and re-published in 2021, however the document then immediately went into revision for reconsideration of contrast requirements on buttons, hence the latest published version is now **EN 81-70:2021 +A1:2022**

The amendment 1 was approved by CEN on 8 May 2022.

The document is to be given the status of a national standard, either by publication of an identical text, or by endorsement, at the latest by January 2023.

EN 81-70:2021 +A1:2022 was listed within the OJ in August 2023. The 2003 +A1:2004 version will be removed from the OJ listing on 21/02/2025.

EN 81-70:2018 was a full revision of the standard and reflected developments since the initial publication of the **EN 81-70:2003** and experiences gained from its application.

The main changes were identified as:

- additional details for contrast;
- door widths (increased);
- the removal of items now covered by EN 81-20 (door reversal devices, stopping / levelling accuracy);
- car types increased to five;
- extra detail for handrails in the car;
- improved requirements for control devices and indicators;
- improved requirements for landing control arrangements used in lift groups;
- the addition of detailed requirements for landing control devices for destination control systems using touch screens;
- the clarification of requirements for extra-large buttons;
- the deletion of previous Annexes A, C, D and E. Some of this information has been transferred into normative requirements within the standard. For remaining information, reference to ISO 21542 has been added.

Application of EN 81-70

EN 81-70 does not define when it should be used; this may be determined by the national building regulations.

Essential Health & Safety Requirements (EHSRs) 1.2 and 1.6.1 of Directive 2014/33/EU state:

“where its dimensions permit, the car must be designed and constructed in such a way that its structural features do not obstruct or impede access and use by disabled persons and so as to allow any appropriate adjustments intended to facilitate its use by them.”

“The controls of lifts intended for use by unaccompanied disabled persons must be designed and located accordingly.”

European Foreword

Comparing **EN 81-70:2018** and **EN 81-70:2021 +A1:2022**, the following significant changes have been made to the document:

- Relationship to other EN 81 standards clarified;
- Information on building related issues removed;
- Information in assumption on negotiations deleted;
- Scope editorially modified;
- Normative references updated;
- References to negotiations in Clause 5 deleted;
- Optional use of additional control devices removed from 5.4.1.1 and 5.4.1.2;
- Verification table amended to remove references to EN 81-20 and EN 81-28;
- Content of information for use updated;
- Annex ZA modified;
- Bibliography updated.

Amendment A1:2022 was based upon:

- Modified requirements on luminance contrast by changing the Light Reflectance Value (LRV) difference, to Michelson contrast for symbols to their background;
- Requirement for illumination of control devices added;
- A new Annex E for guidance on measurement of luminance contrast added.

Luminance contrast and sound levels

Where required, Table 2 provides the requirements for luminance contrast (Michelson contrast C_M) between adjacent surfaces. Table 2 has been duplicated below:

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

Source : EN 81-70:2021+A1:2022 © Afnor

Where audible signals or voice announcements are required, the upper value of adjustment has increased to '**at least 65 dB(A)**', and in noisy environments (e.g. train stations) '**up to 80 dB(A)**'.

Entrances – Door openings

Only automatic power operated horizontal sliding doors allowed

Minimum clear door opening widths:

- Type 1 cars (450 kg) = **800 mm** (existing buildings only)
- Type 2 cars (630 kg) = **900 mm** (or 800 mm minimum in existing buildings)
- Type 3 & 4 cars (1000 kg) = **900 mm**
- Type 5 cars (1275 kg) = **1100 mm**

Door dwell time to be adjustable (2 s – 20 s).

At least 6 s recommended for persons with reduced mobility.

Car Dimensions

Car dimensions shall be measured between structural car walls.

Decorative finishes on each wall that reduce the minimum car dimensions given in Table 3, shall not exceed 15 mm in thickness.

No additional features attached to car walls below 800 mm are allowed if they restrict persons using wheelchairs or walking aids.

Quick guide to Table 3:

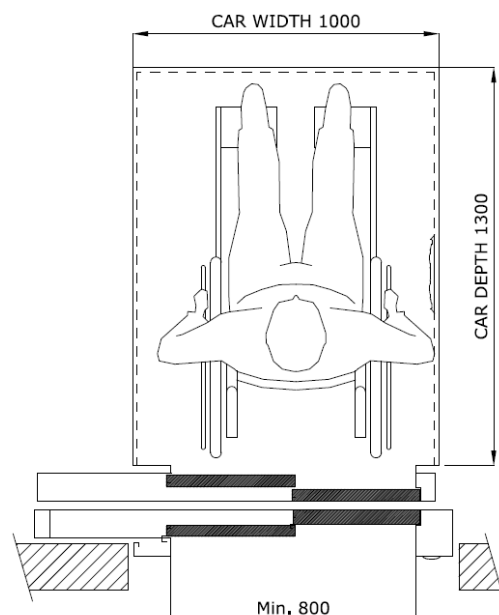
Type of Car	Minimum car dimensions	Min. door opening	Quick reference notes
1	1000 mm (w) x 1300 mm (d) (450 kg)	800 mm	Existing buildings only, and only when the building constraints do not permit Type 2. Can accommodate one wheelchair user without an accompanying person.
2	1100 mm (w) x 1400 mm (d) (630 kg)	900 mm	Minimum sizes for new buildings. Can accommodate one wheelchair user and an accompanying person.
3	1100 mm (w) x 2100 mm (d) (1000 kg)	900 mm	Can accommodate one wheelchair user and some other passengers. Can accommodate stretchers.
4	1400 mm (w) x 1600 mm (d) (1000 kg); or 1600 mm (w) x 1400 mm (d) (1000 kg);	900 mm	Can accommodate one wheelchair user and a few other passengers. Allows a wheelchair to rotate within the car. Minimum size for a car with adjacent entry.
5	2000 mm (w) x 1400 mm (d) (1275 kg); or 1400 mm (w) x 2000 mm (d) (1275 kg);	1100 mm	Notes as Type 4.

Car Dimensions - Type 1:

Important: Shall only be used in existing buildings where building constraints do not permit the installation of a Type 2 car.

- **1000 mm wide x 1300 mm deep**
- **450 kg (6 persons)**
- **Min. 800 mm door opening**

Provides limited accessibility for persons using a manual wheelchair (EN 12183:2014) or a class A electrically powered wheelchair (EN 12184:2014), and persons using walking aids (e.g. walking stick).



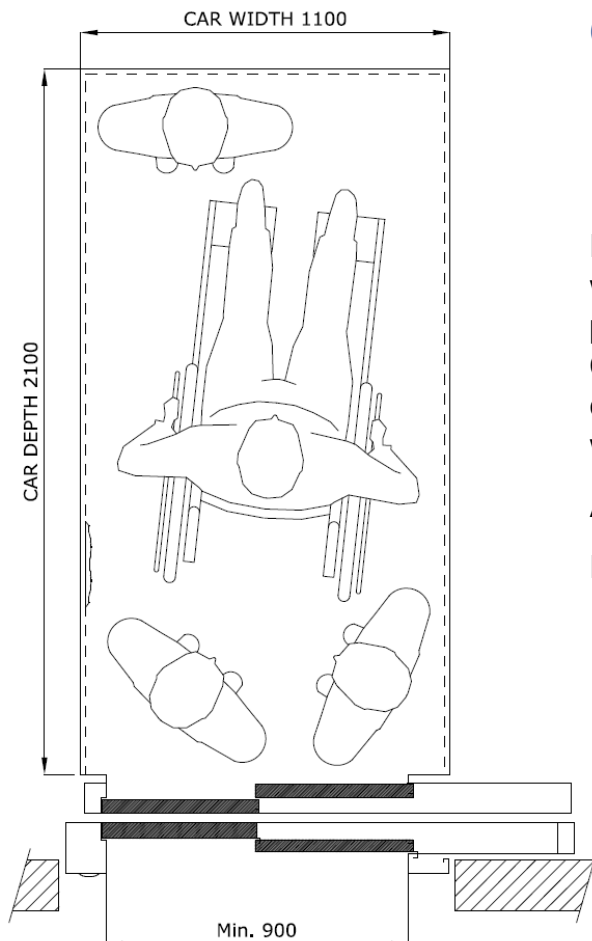
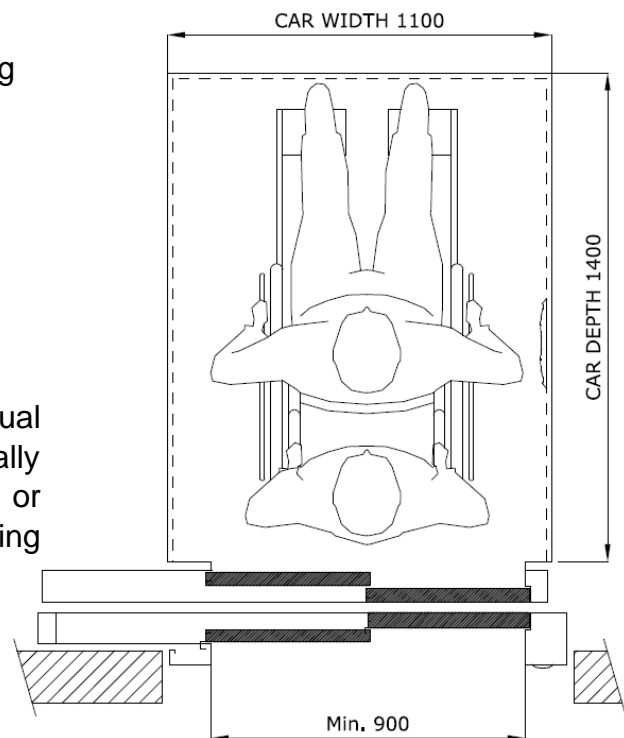
Car Dimensions – Type 2:

Minimum size for new buildings (and existing buildings – See Type 1 notes)

- **1100 mm wide x 1400 mm deep**
- **630 kg (8 persons)**
- **Min. 900 mm door opening**

(May be min. 800 mm door opening if used in an existing building)

Provides accessibility for persons using a manual wheelchair (EN 12183:2014) or an electrically powered wheelchair (EN 12184:2014 class A or B), and persons using walking aids (e.g. walking stick, crutches, rollator).



Car Dimensions – Type 3 (New):

- **1100 mm wide x 2100 mm deep**
- **1000 kg (13 persons)**
- **Min. 900 mm door opening**

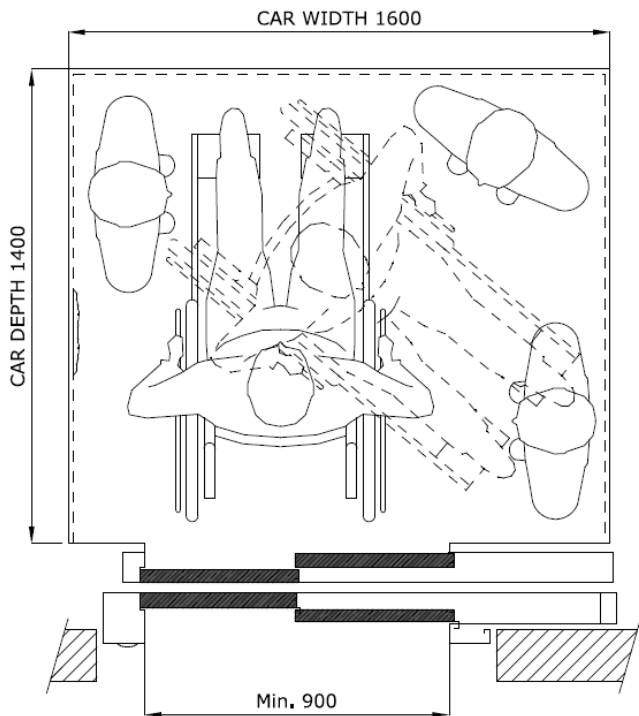
Provides accessibility for persons using a manual wheelchair (EN 12183:2014) or an electrically powered wheelchair (EN 12184:2014 class A, B or C), persons using walking aids (e.g. walking stick, crutches, rollator), and persons using a manual wheelchair with a tractor unit.

Allows the transport of stretchers

Recommended size for:

- lifts in public areas,
- cars with two opposite entrances, providing straight through circulation.

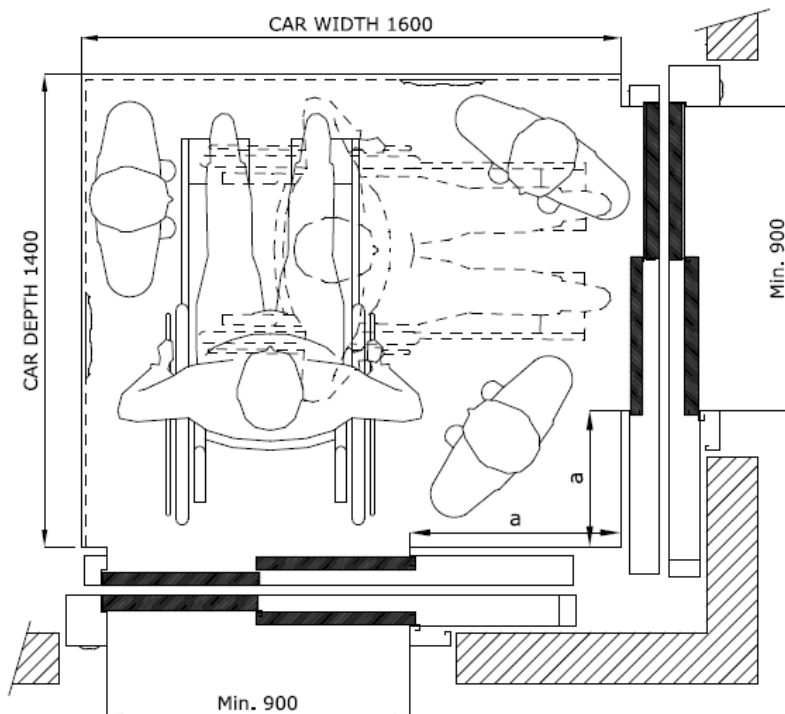
Car Dimensions – Type 4 (New):



- 1600 mm wide x 1400 mm deep or
- 1400 mm wide x 1600 mm deep
- 1000 kg (13 persons)
- Min. 900 mm door opening

Provides accessibility for persons using a manual wheelchair (EN 12183:2014) or an electrically powered wheelchair (EN 12184:2014 class A or B),

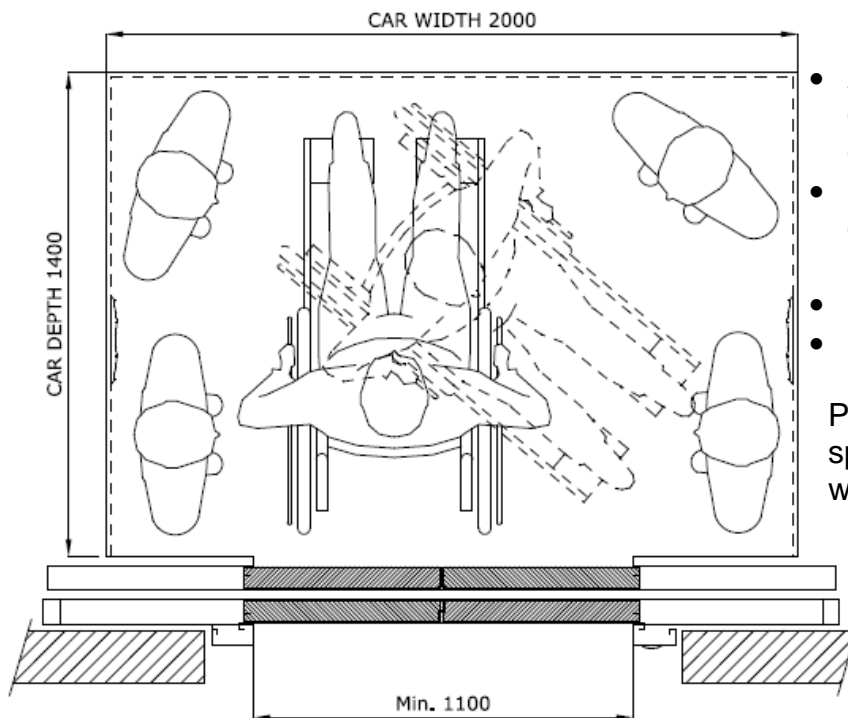
Allows a wheelchair to be rotated within the car.



Also the minimum size for lifts with adjacent doors

Note: Distances (a) between door and adjacent wall shall be as large as possible.

Car Dimensions – Type 5:



- 2000 mm wide x 1400 mm deep
or
- 1400 mm wide x 2000 mm deep
- 1275 kg (17 persons)
- Min. 1100 mm door opening

Provides sufficient turning space for class A or B wheelchairs,

Provides accessibility for persons using a manual wheelchair (EN 12183:2014) or an electrically powered wheelchair (EN 12184:2014 class A, B or C), and persons using walking aids (e.g. walking stick, crutches, rollator, etc.),

Equipment in the car

Handrail

- A handrail shall be installed on the car operating panel (**COP**) side wall
- The handrail shall be interrupted in front of COP
- Handrail may be installed on **one side of COP** if shorter side ≤ 400 mm
- Gripping part of handrail to be 30 - 45 mm in width, with a minimum radius of 10 mm
- Space between wall and handrail to be at least 35 mm
- Top edge of handrail shall be 900 mm (± 25 mm) above finished floor level
- Handrail ends shall be closed and if there is a risk of collision with projecting ends, e.g. in front of COP, it shall return towards the wall
- **Car types 1, 2 & 3** may install handrail on opposite side wall if handrail would restrict the car entrance width
- **Car types 4 & 5** shall have a second handrail, either on the opposite wall or the rear wall.

Tip-up seat (where fitted):

- Height above finished floor level = 500 mm (\pm 25 mm)
- Depth = 300 mm - 400 mm
- Width = 400 mm - 500 mm
- Able to support a load of **at least 120 kg**.

Visual reversing aid

- Car types 1, 2 & 3 shall have a device installed to allow a passenger to observe obstacles behind them when moving backwards out of the car.

Car Floor

- Slip-resistant, taking into consideration the environment that the lift is installed.
- Same material as the landing lobbies may be used.

Control devices & signals

Collective control systems

- Collective control systems shall be used in general applications.

Control devices shall comply with 5.4.2 and shall consist of the following:

- Push buttons in the car and on the landings; or
- Extra large push buttons in the car and on the landings; or
- Keypads for floor selection, push buttons for other control devices in the car, and push buttons on the landing.

Destination control systems

- May only be used where guidance to passengers about the particular and specific operational features of the lift can be ensured.

Control devices shall comply with 5.4.3 and shall consist of the following:

- Keypads and if applicable accessibility buttons on the landing, and push buttons in the car; or
- Touch screens and accessibility buttons on the landings, and push buttons in the car.

Design requirements for design and arrangement of control devices

- EN 81-70:2003 Table 2 'Control devices – Requirements' has now been divided into two tables.
 - Table 4: Requirements for design.
 - Table 5: Requirements for arrangement.

Changes (2003 to 2022):

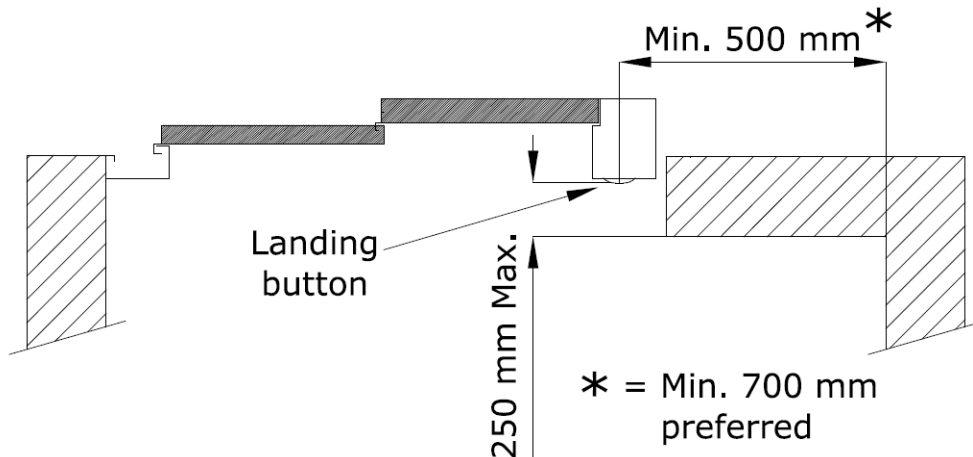
- Identification - **Luminance** contrast between symbol, active part of button, faceplate & surround
- Operating feedback – **movement or mechanical** feedback
- Minimum height of the lowest car button - **850 mm** (door close button & additional control devices not included).
- Minimum height of the landing button – **850 mm**.

Note: For extra large car control devices, the maximum height between the finished floor level and the centre line of the highest button is now 1000 mm maximum.

Landing control devices

Minimum lateral distance between button centreline and corner of any adjacent walls is 500 mm (preferably 700 mm).

Depth of any recess to the button shall be limited to 250 mm



Where call button symbols are provided they should comply with ISO 4190-5: 2006, Table C.1, No. 6:



For two or more lifts in a group, at least one set of controls per wall shall be located between two landing doors.

Landing signals

Indicator arrows to be 1,8 – 2,5 m above floor level.

Height of arrows to be at least 40 mm.

Indicator arrows to have angle of view of at least:

- 140° in horizontal plane
- 70° from horizontal in vertical down plane

For single lifts, indicator arrows may be placed inside the car at a height **between 1,6 m – 2,0 m** and be visible from the landing.

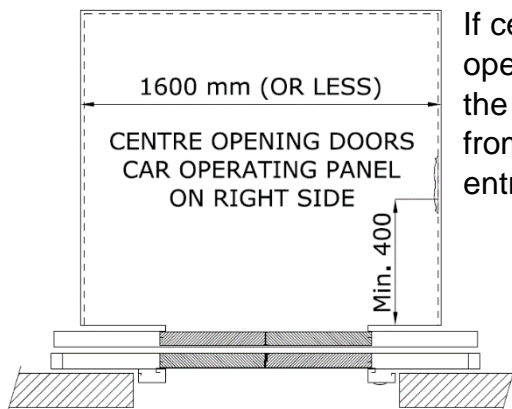
Audible signal accompanying the arrows **shall be**:

- 1 sound for up.
- 2 sounds for down.

If door noise ≥ 45 dB(A) this is a suitable audible signal.

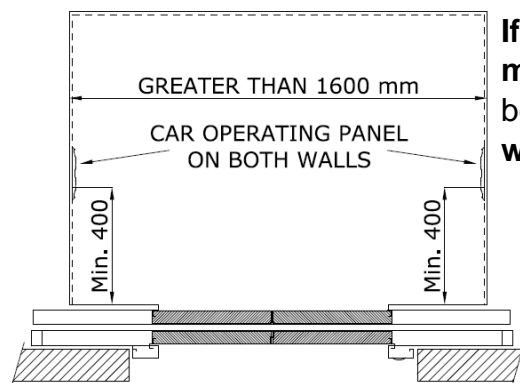
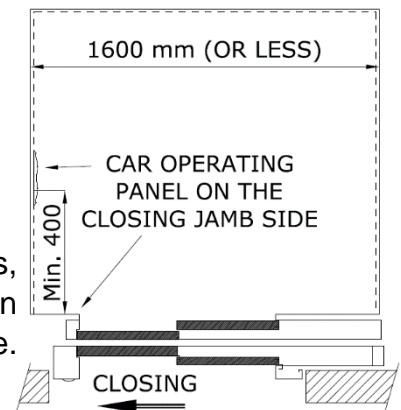
Car control devices

Floor button symbols are to be consistent with **building floor markings** (preferably: -2, -1, 0, 1, 2 etc.).



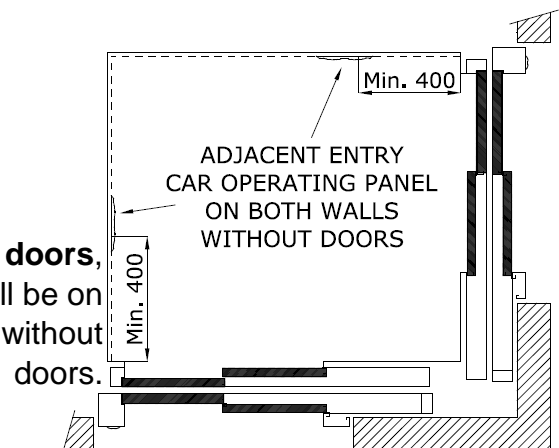
If centre opening doors, car operating panel (COP) on the right-hand side (viewed from the main floor if dual entry).

If side opening doors, the COP shall be on closing jamb side.



If car width >1600 mm, a COP shall be on **both side walls**.

If adjacent doors, a COP shall be on each wall without doors.



Car signals

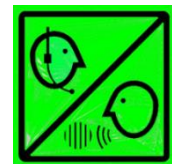
Centreline of the car position indicator in or above the car operating panel shall be 1600 mm - 1800 mm above finished floor level.

Height of floor numbers to be between 30 mm - 60 mm.

Voice announcer to state the floor **when the lift stops**.

Alarm activation shall consist of:

- illuminated **YELLOW** symbol to indicate alarm initiation.
- audible signal from alarm initiation until communication established.
- illuminated **GREEN** symbol during communication.



An EN 60118-4: 2015 induction loop may be provided to assist the alarm system and car position announcements.

If provided, a sign (ISO 4190-5: 2006, Table C.1, No. 9) shall be placed close to the microphone.



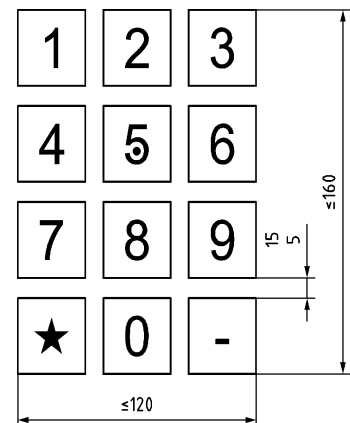
Destination control systems

Landing controls & signals

Where keypads are used they shall be:

- **width ≤ 120 mm**
- **height ≤ 160 mm**

At least one set of control devices shall be arranged between two landing doors.



An **accessibility button** shall be provided and marked with the symbol for provision for disabled (ISO 4190-5:2006, Table C.1, No 10).

The accessibility button shall initiate:

- floor and lift announcements (if not permanently activated), and
- allocate the car adjacent to control device, or increase the door dwell time of the allocated car.



The accessibility button may also activate additional features, etc.

Lift identification markings (e.g. A, B, C etc.) are to be above or **adjacent** to the landing doors, at a height between **1,8 m – 2,5 m**.

Information for use

The following shall be included in the owner's documentation:

- instructions about adjusting the door dwell time.
- information for adjusting the sound level of audible signals.
- **instructions for passenger** on how to use specific controls, e.g. accessibility button, destination control etc.

Any feature that is designed to be controlled by the owner shall be provided with instructions.

Annexes

Annex A (normative) Categories of disability considered

Minor changes to table of categories covered by this document.

Table of categories not covered by the document has been removed.
Previously normative Annex B (2003) and informative Annex A (2018)

Annex B (normative) Extra-large (XL) control devices

Centre line of highest button in the car not to exceed 1000 mm.

Other smaller changes

Previously informative Annex G.1 (2003)

Annex C (normative) Touch screen devices for destination control systems – New Annex

Annex D (informative) Guidance for increased accessibility and usability – New Annex

Annex E (informative) Guidance on determination of luminance contrast and light reflectance values – New Annex

Annex C (normative) (New)

Touch screen devices for destination control systems:

- Display screen shall be capable of providing a luminance of at least 300 cd/m².
- Active areas and symbols on display screens shall have a suitable luminance contrast to their immediate surrounding
- Background design shall be solid and static
- Exit button shall preferably be green or have green frame
- Symbols shall be on active area of 'button' and be 15 mm - 40 mm high

- Distance between active area of buttons shall be at least 5 mm
- Touch screen location requirements same as landing control devices (Table 5)
- An accessibility button shall be placed adjacent to the screen, preferably below
- In buildings with many floors, a zone of destinations may be selected first, before the final destination is selected with another operation of the accessibility button.

Annex D (informative) (New)

Guidance for increased accessibility and usability - Particularly important in public facilities and where passengers have a higher degree of disability

- Glass landing doors to be marked to avoid optical confusion & easy identification of lift entrances.

NOTE Further guidance on design for visually impaired persons in ISO 21542

- Transparent car walls, well walls and doors may reduce the risk of panic by lift users and trapped passengers. However, they may increase anxiety of any fear of heights
- Clear height of car and landing doors should be at least 2100 mm
- Handrails should be installed on all car walls without doors
- Walls should have matt surface to prevent reflections, optical confusion and glare. If a car wall is substantially mirrored, the glass should be decorated or bottom edge of mirror at least 300 mm above the floor
- Braille characters according to ISO 17049 may be provided in addition to tactile symbols, but they should be a minimum of 5 mm apart.

Annex E (informative) (New)

Guidance on determination of luminance contrast and light reflectance values

- E.1 Relevant values for determination of Michelson contrast.
- E.2 Measurement methods and means for determination of luminance contrast.
 - E.2.1 Measurement means
 - E.2.2 Determination of luminance contrast of control devices
 - E.2.3 Determination of light reflectance values
 - E.2.4 Determination of luminance contrast of lift designation markings