

Accessibility Requirements for Lifts

Building Plan and Universal Design Department
Building Plan and Management Group

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Aim

- Provide overview on the accessibility requirements of passenger lifts and lifts designated for wheelchair users.
- Explain the rationale behind various accessibility requirements for lifts and clarify common misinterpretations of the relevant clauses in the Code on Accessibility 2019.



Agenda

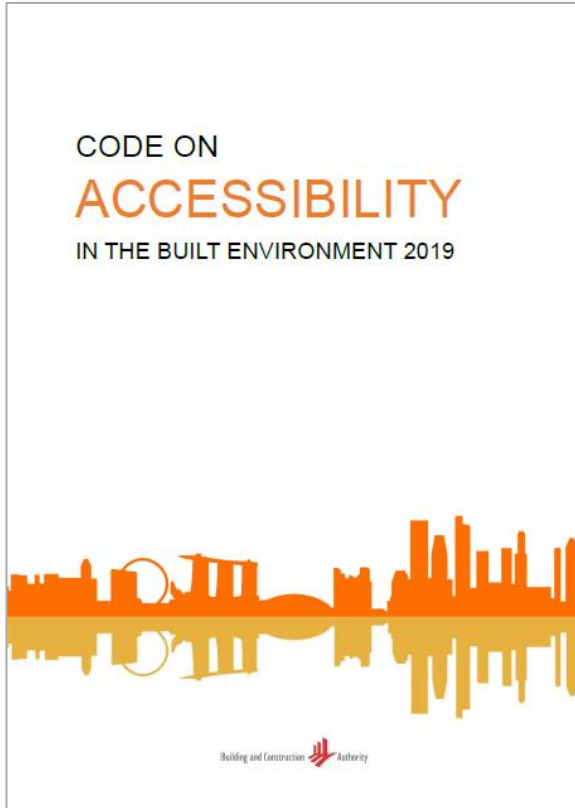
- 1 Introduction**
- 2 Accessible Requirements**
 - a) Lifts Provision
 - b) Lift Lobby and Landing Space
 - c) Lift Car
 - d) Lift Buttons
 - e) Lift Visual & Audio Assistance
 - f) Platform Lifts / Stairlifts
- 3 Q&A / Enquiries**



1 Introduction

Code on Accessibility in the
Built Environment 2019





CONTENTS		
Chapter 1: Accessibility In The Built Environment		
1.1	Scope	1
1.2	Definitions	2
Chapter 2: Provisions For Accessibility		
2.1	Accessibility in the Built Environment	5
2.2	Residential Development	11
2.3	Minimum Accessible Provisions	12
2.4	Inter-connectivity	15
2.5	Exemptions	16
2.6	Additions and Alteration Works	16
Chapter 3: Arriving At The Building		
3.1	Access to Buildings	17
3.2	Approach to Buildings	18
3.3	Passenger Alighting and Boarding Points	18
3.4	Taxi Shelters	20
3.5	Accessible Vehicle Parking	22
3.6	Kerb Ramps	27
3.7	Pedestrian Crossing	31
Chapter 4: Accessibility Around And Within The Building		
Horizontal Circulation		
4.1	Floor and Ground Surfaces	33
4.2	Accessible Routes, Corridors and Paths	35
4.3	Headroom	45
4.4	Doors	46
Vertical Circulation		
4.5	Changes in Levels	59
4.6	Ramps	61
4.7	Handrails and Grab Bars	70
4.8	Passenger Lifts	73
4.9	Lifts Designated for Wheelchair Users	76
4.10	Platform Lifts and Wheelchair Stairlifts	80
4.11	Stairs	82
4.12	Stairs for the Ambulant Disabled	88
Chapter 5: Sanitary Provision		
5.1	General	89
5.2	Accessible Individual Washrooms	92
5.3	Accessible Water Closet Compartments	100
5.4	Water Closet Compartments for the Ambulant Disabled	104

<https://go.gov.sg/codeonaccessibility2019>

Code on Accessibility in the Built Environment 2019

Chapter 4 Accessibility around and within the Building

CODE ON ACCESSIBILITY 2019

4.8 PASSENGER LIFTS Passenger lifts

4.8.1 General

4.8.1.1 All lifts provided in a building must include suitable provisions for the ambulant disabled and persons with sensory impairments as a means of access from one level to another.

4.8.1.2 The emergency bell in the lift must be connected to a blinking light in the lift car to signal to persons with hearing impairments that the emergency bell has been activated.

CODE ON ACCESSIBILITY 2019

4.9 LIFTS DESIGNATED FOR WHEELCHAIR USERS Lift for wheelchair users

4.9.1 General

4.9.1.1 Where lifts are provided in a building, at least one lift must be made accessible for wheelchair users from the entrance level for vertical circulation.

4.9.1.2 The lift must serve all levels intended for access by wheelchair users.

4.9.1.3 Lift lobby space with lifts designed for wheelchair users must have a clear manoeuvring space of 1200 mm wide by 1500 mm deep as illustrated in Figure 10.

2 Accessibility Requirements

Lifts Provision

Lift Lobby and Landing Space

Lift Car

Lift Buttons

Lift Visual & Audio Assistance

Platform Lifts / Stairlifts



LIFTS PROVISION

Passenger Lifts

All passenger lifts must include provisions for **ambulant disabled and persons with sensory impairments** (cl 4.8.1.1)

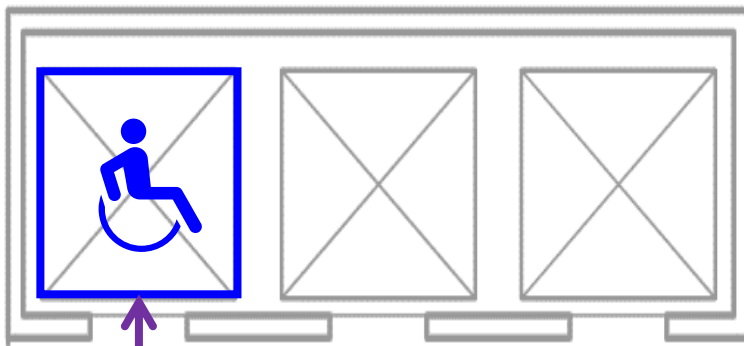


Grab Bars
For the ambulant disabled



Braille & Tactile
For the visually impaired

Lifts Designated for Wheelchair Users



min 1 no of accessible lift

At least one lift must be accessible for wheelchair users from entrance level and must serve all levels intended for access by wheelchair users (cl 4.9.1.1 & cl 4.9.1.2)

2 Accessibility Requirements

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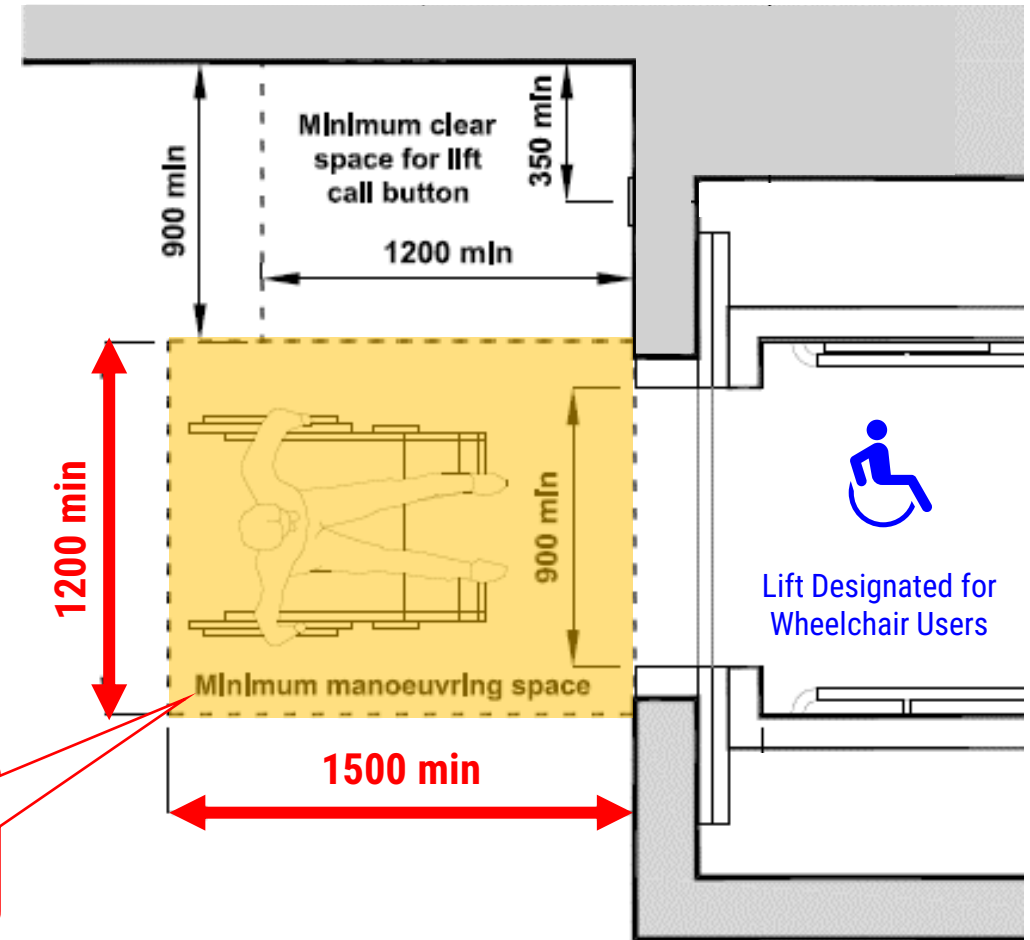


LIFT LOBBY AND LANDING SPACE

Clear Maneuvering Space

(applicable to lifts for wheelchair users)

Lift lobby space of the accessible lift designed for wheelchair users must have a clear maneuvering space of **min 1200 W x 1500 D** (cl 4.9.1.3)



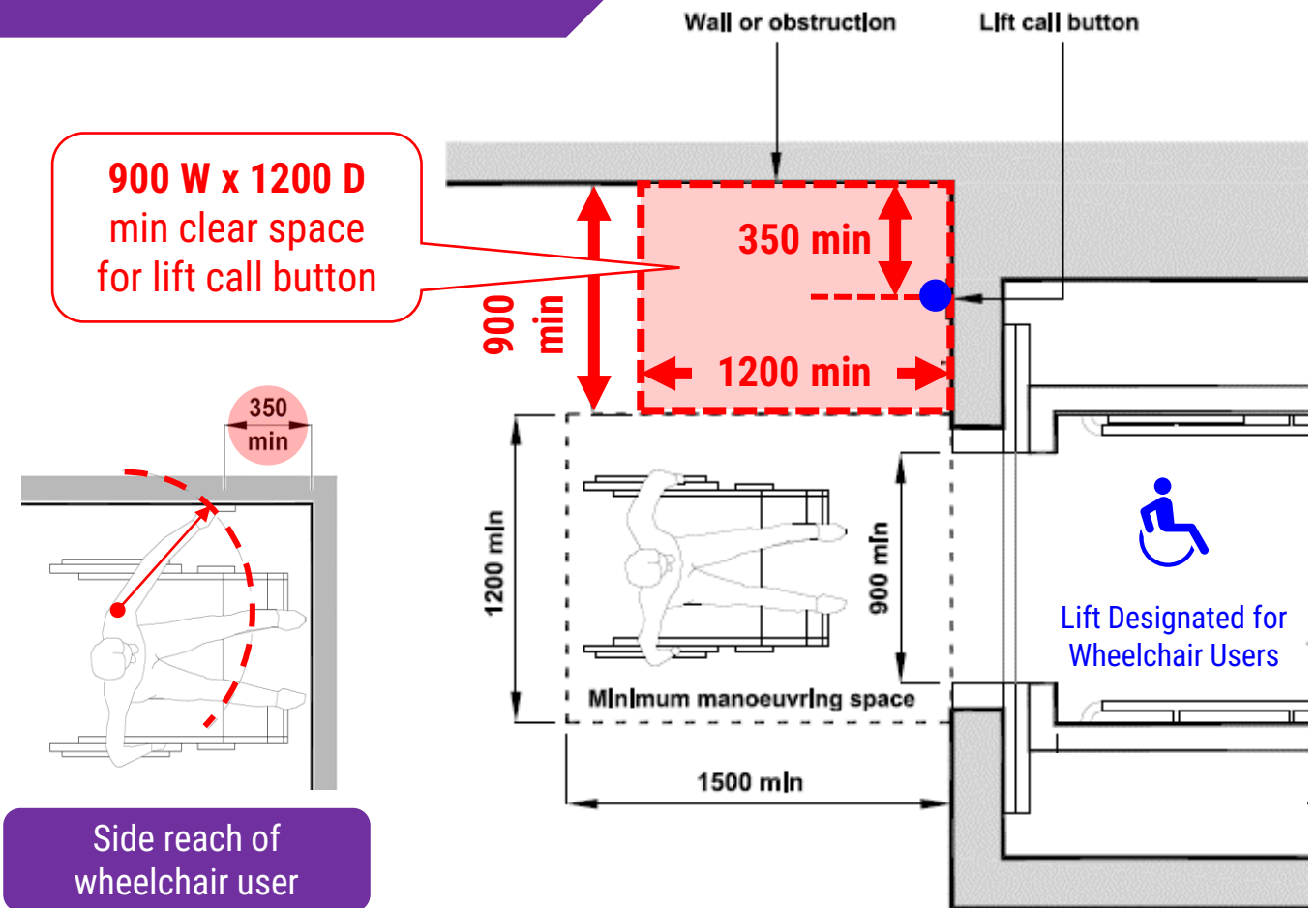
1200 W x 1500 D
min clear
maneuvering space

LIFT LOBBY AND LANDING SPACE

Clear Floor Space for Lift Landing Button

(applicable to lifts for wheelchair users)

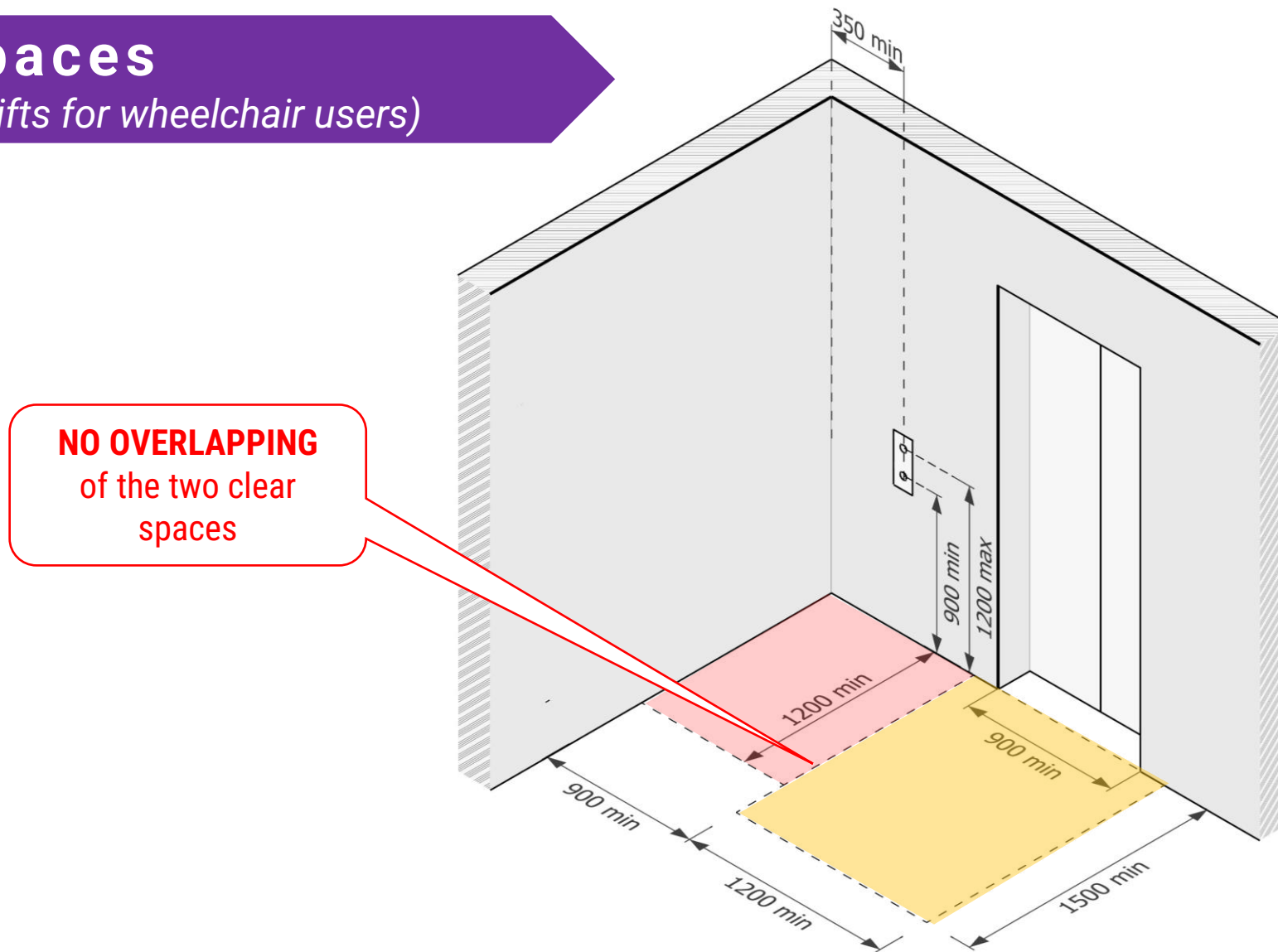
- Maintain a clear floor space of **900 W x 1200 D** for lift landing /call button
- Position lift call button **min 350mm away** from wall/obstruction *(cl 4.9.4.1)*



LIFT LOBBY AND LANDING SPACE

Clear Spaces

(applicable to lifts for wheelchair users)



LIFT LOBBY AND LANDING SPACE



Things to note

Lift Door

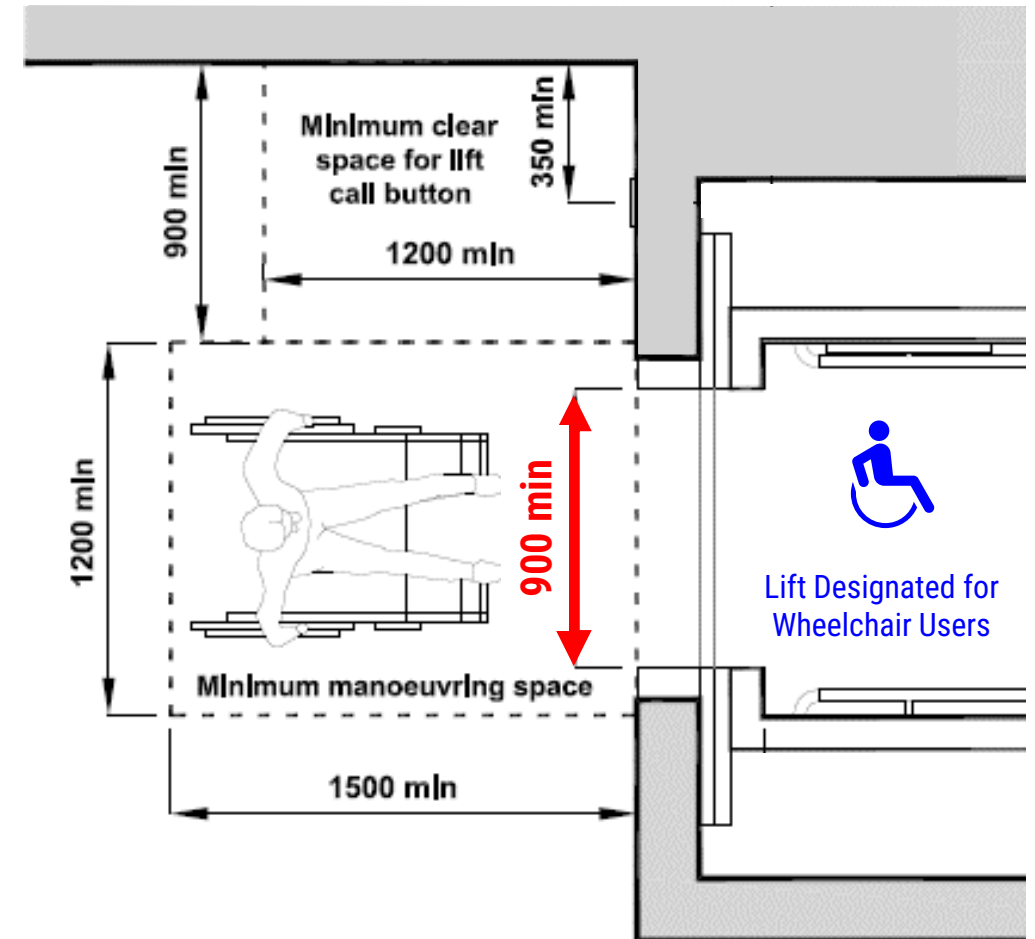
(applicable to lifts for wheelchair users)

It is recommended that lift doors have a **vision panel** to enable persons with hearing impairment to signal for help or assistance in the event of an emergency

Lift car must have a **clear door opening of min 900 mm** (cl 4.9.3.1)



Vision panels on lift doors are recommended



LIFT LOBBY AND LANDING SPACE

Lift Call Buttons Position

(applicable to lifts for wheelchair users)

- placed between **900 to 1200 mm** (cl 4.9.4.1)
- must be mounted **adjacent to the lift** (cl 4.8.2.4)
- provide **symbol of access** to identify the lifts designated for wheelchair users (cl 4.9.6.1)

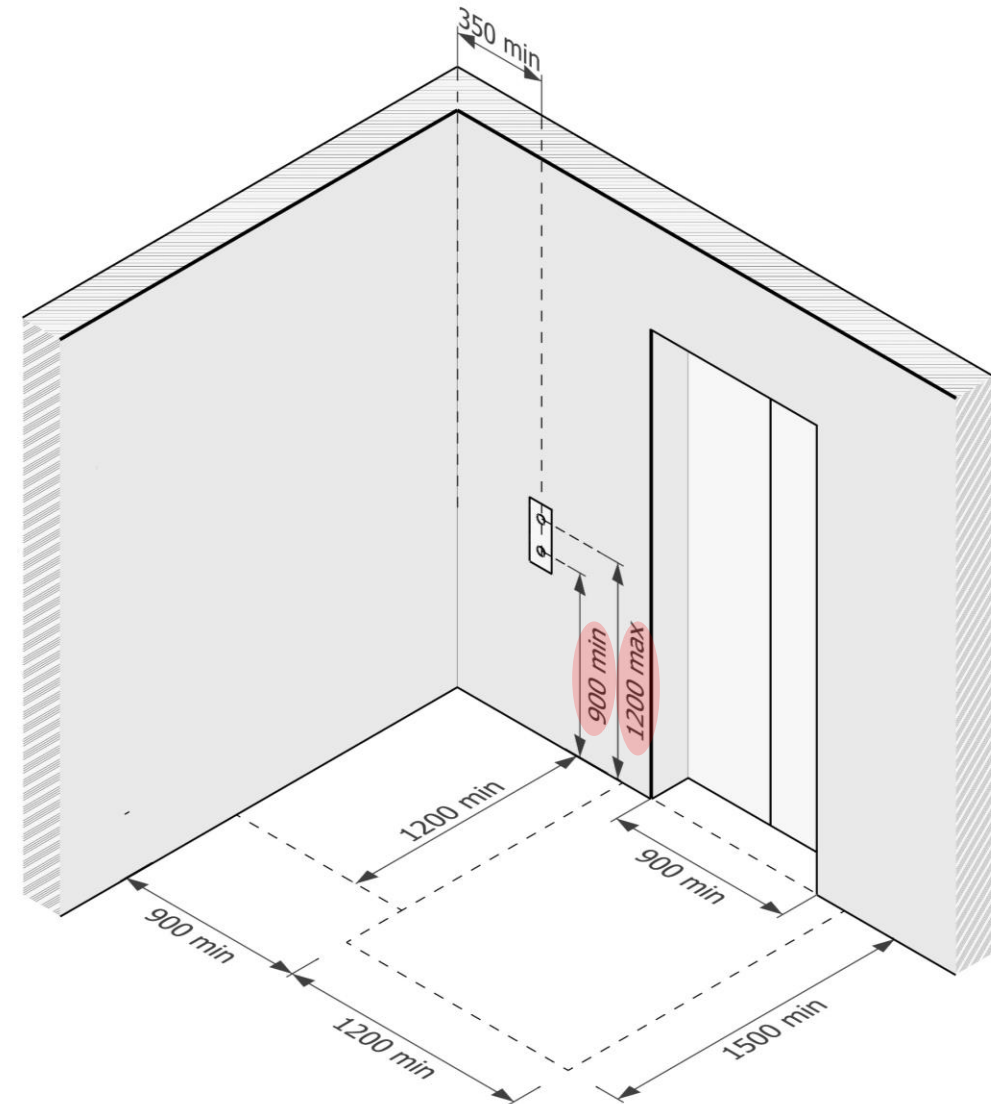


International Symbol of Access



Things to note

- Must be in **white on a blue** background
- For Signage requirement, see **Clause 8.5** in Code



2 Accessibility Requirements

Lifts Provision

Lift Lobby and Landing Space

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Lift Buttons

Lift Visual & Audio Assistance

Platform Lifts / Stairlifts

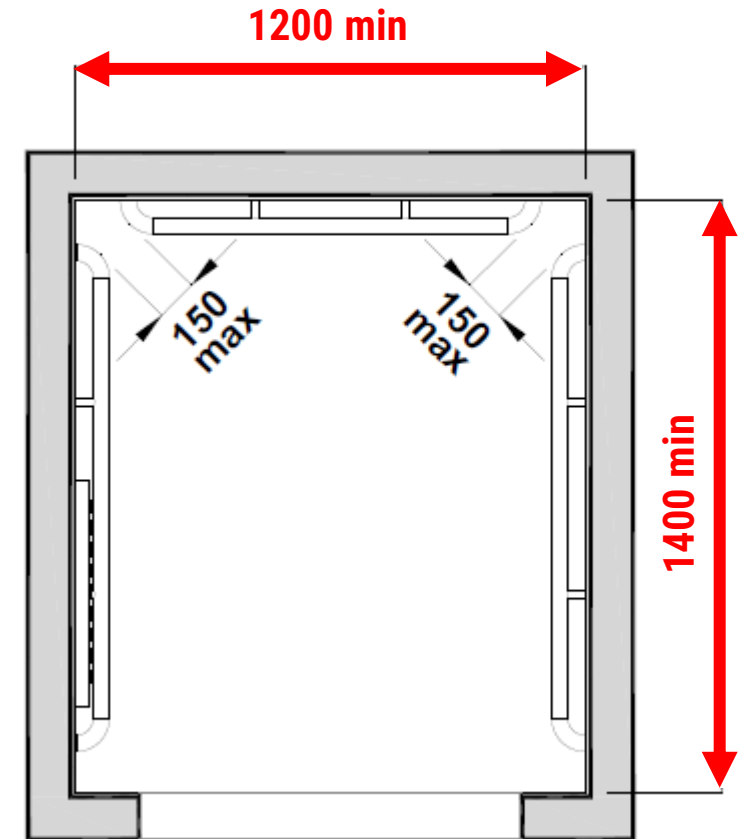


LIFT CAR REQUIREMENTS

Lift Car Size

(applicable to lifts for wheelchair users)

Minimum internal lift car dimension must be
1200 W x 1400 D (cl 4.9.2.1)



LIFT CAR REQUIREMENTS



Rationale

Lift Car Grab Bar

(applicable to lifts for wheelchair users & passenger lifts)

Grab bars should not have any open ends to avoid hooking when used by passengers

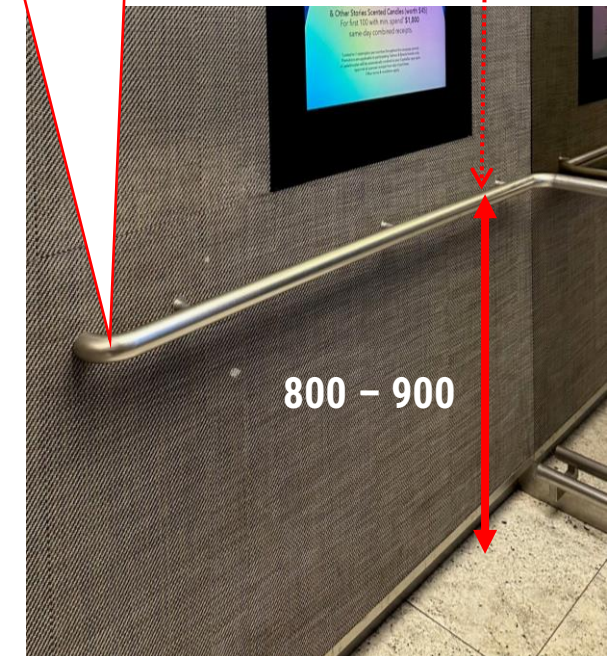
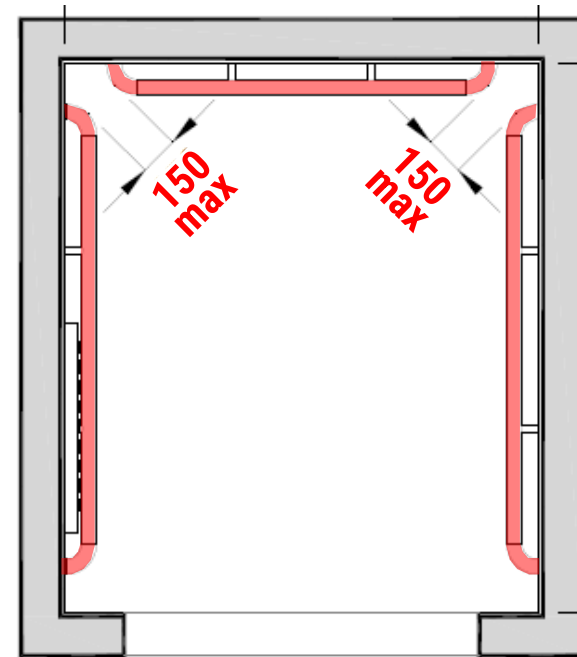
Grab bars must (cl 4.8.3.1)

- be placed at a height of between **800 mm and 900 mm** from the floor level;
- be **fixed on both sides and at the rear** of the lift car; and
- if it is not continuous, it is allowed to have a gap of **150 mm or less**



Grab bars with **return ends** to lift car wall

Measured to **top of grab bar**



Grab bar height

LIFT CAR REQUIREMENTS



Rationale

Facilitate wheelchair user to back in or out of the lift safely without having to turn, preventing injury and damage to wheelchair

Lift Car Mirror

(applicable to lifts for wheelchair users)

- non-breakable mirrors / mirror-like finish surfaces must be provided at **the rear of lift car interiors**

Note: Other mirror-like surfaces such as laminated glass, aluminum, stainless-steel, and etc can be accepted so long as they achieve the intended performance requirement.

- distance between bottom of mirror & floor level must not exceed **1000mm**

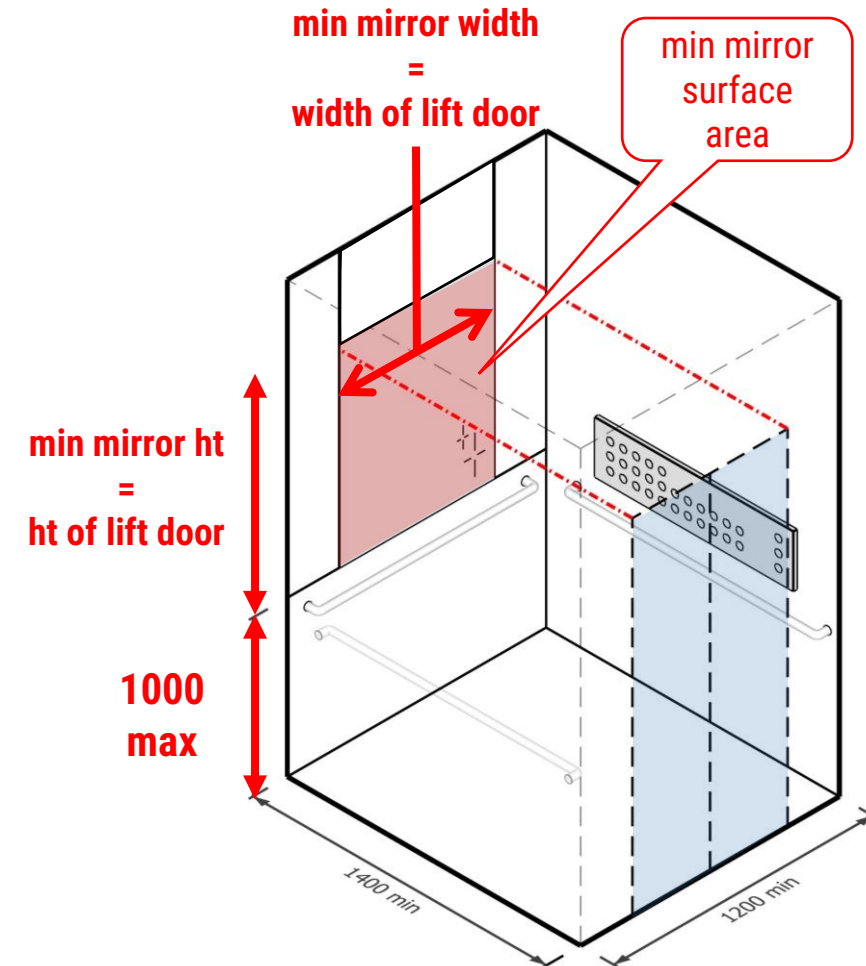
1000mm

- minimum width of the rear mirror must be **the width of the lift door opening** (cl 4.9.2.2 & 4.9.2.3)

If mirror glass is used, please ensure that it is a safety glass



Rear Mirror



2 Accessibility Requirements

Lifts Provision

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Platform Lifts / Stairlifts



LIFT CAR CONTROL BUTTONS



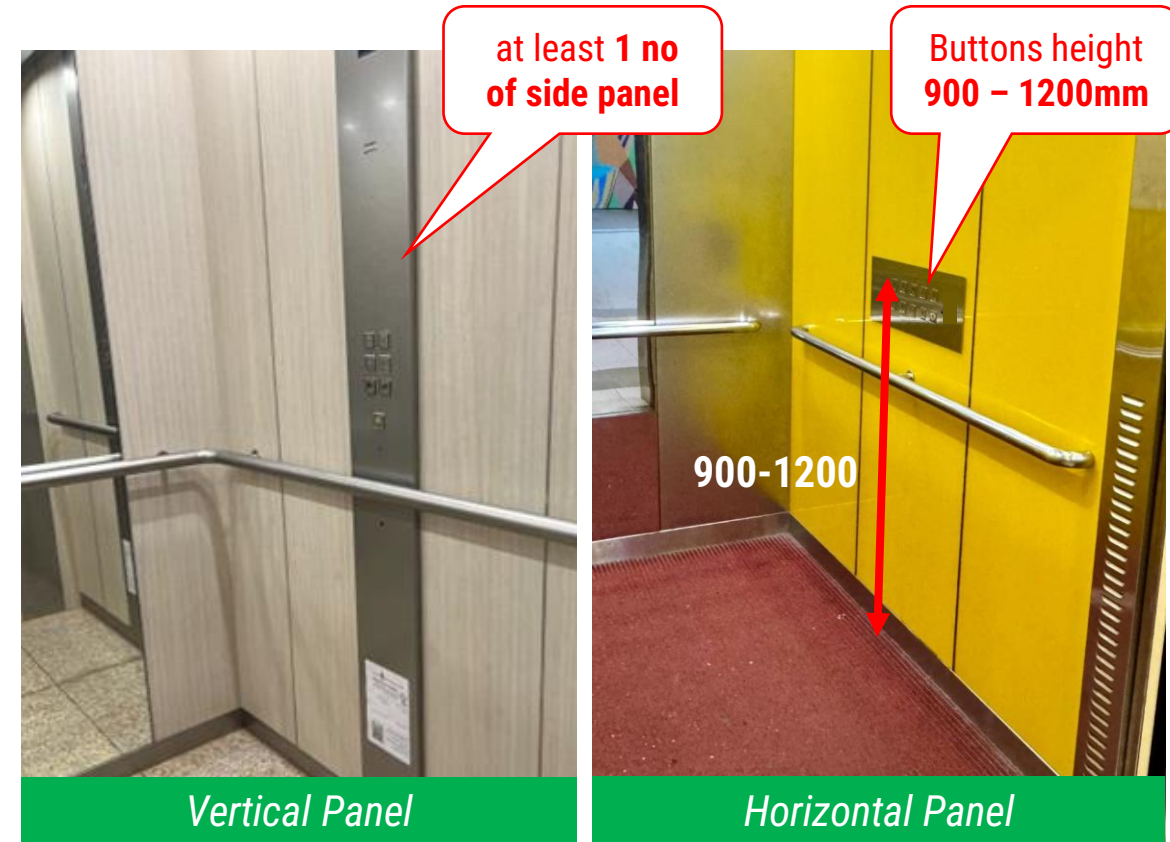
Things to note

Placement of Lift Car Control Buttons (applicable to lifts for wheelchair users)

*Side Panel is recommended to be placed to the **RIGHT** side when entering the lift*

The lift car control buttons located inside the lift (cl 4.9.5.1)

- must be placed at a height of **between 900 mm and 1200 mm** from the floor level;
- may be placed **vertically or horizontally** or **both vertically and horizontally**; and
- must have **at least one panel** placed to the **side** of the lift car.



LIFT CAR CONTROL BUTTONS



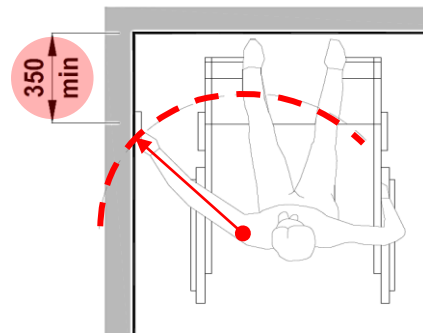
Rationale

Placement of Lift Car Control Buttons (applicable to lifts for wheelchair users)

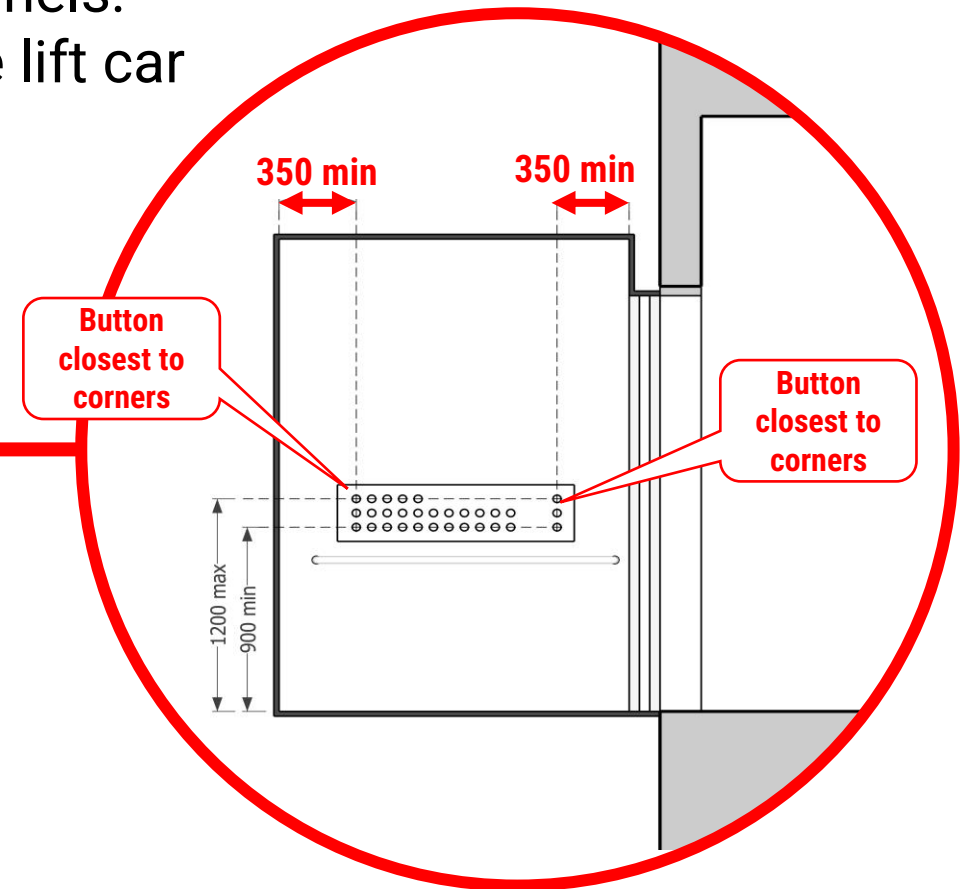
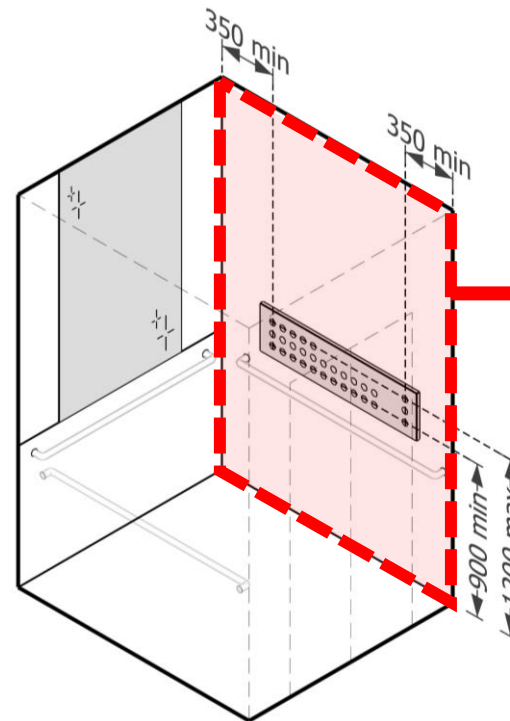
Wheelchair users encounter difficulties when they have to turn around their wheelchairs to reach the lift control buttons, especially if the panels are positioned at the front. This challenge is exacerbated in crowded lift situations.

For accessible lifts with one or more than one control panels:

- must have **at least one panel** placed to the **side** of the lift car
(cl 4.9.5.1(c))



Side reach of wheelchair user



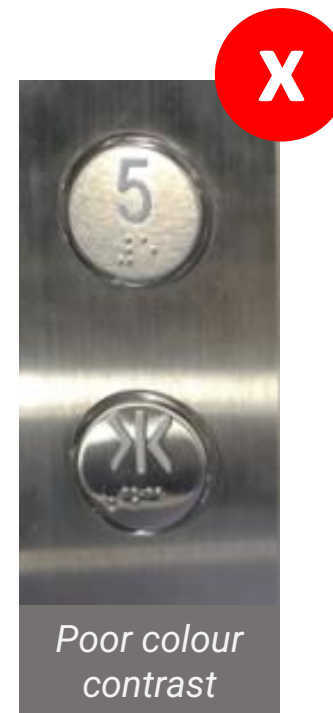
LIFT LANDING & CALL BUTTONS

Button Requirements

(applicable to lifts for wheelchair users & passenger lifts)

Lift landing call and car control buttons (cl 4.8.2.5)

- must require a **light positive pressure** to activate them
- min activation force must be **3.5 N or 350 g**
- must **contrast with the background** of the lift control panel or wall finish



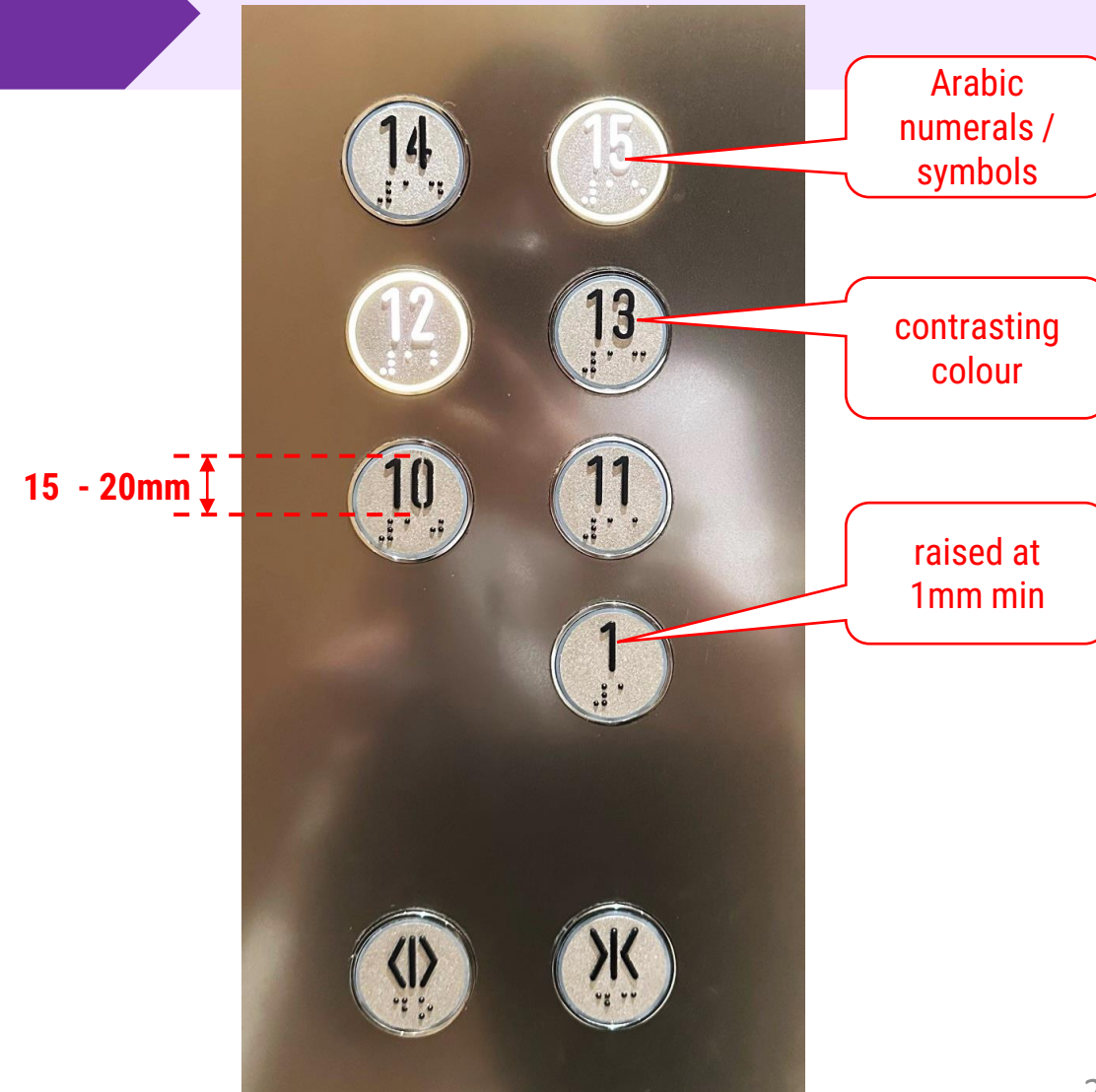
LIFT LANDING & CALL BUTTONS

Tactile Markings

(applicable to lifts for wheelchair users & passenger lifts)

Tactile markings must (cl 4.8.2.3)

- be in **Arabic numerals or symbols**;
- have a dimension of between **15 mm and 20 mm high**
- be raised at a minimum of **1 mm**
- be in a **high contrasting colour** to the background.



LIFT LANDING & CALL BUTTONS



Things to note

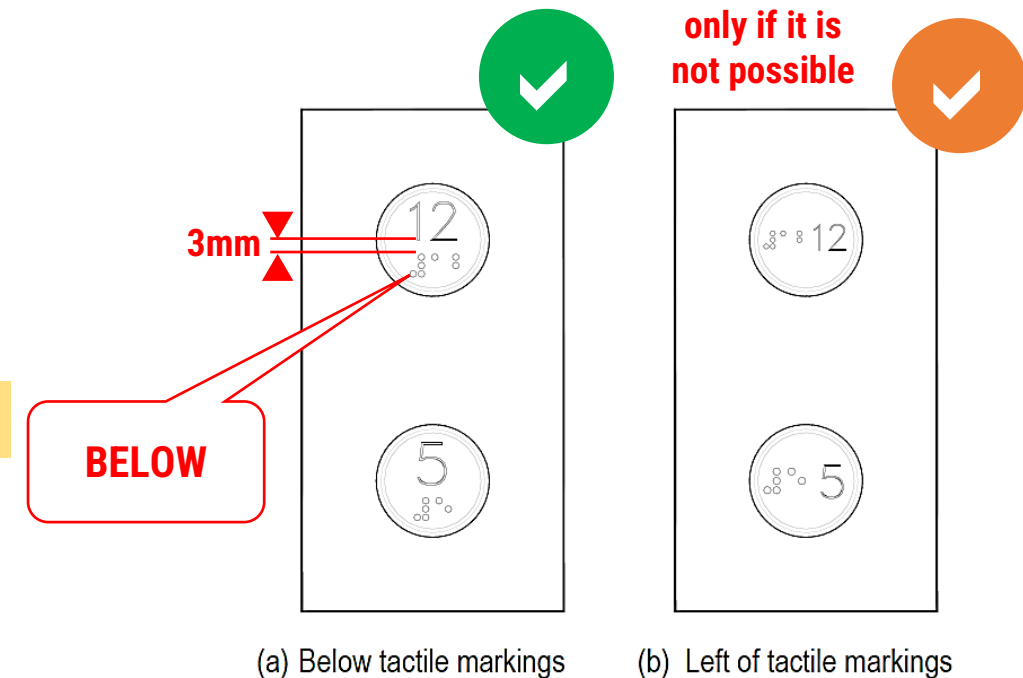
The use of **paste-on Braille** on the control button is **NOT** recommended as it may degrade over time

Braille Markings

(applicable to lifts for wheelchair users & passenger lifts)

Braille markings (cl 4.8.2.1)

- must be placed **below** the tactile markings
- can be provided to the **left** of the tactile markings *only if it is not possible to be placed below*
- must be placed at a min dist. of **3 mm** from tactile markings



LIFT LANDING & CALL BUTTONS



Rationale

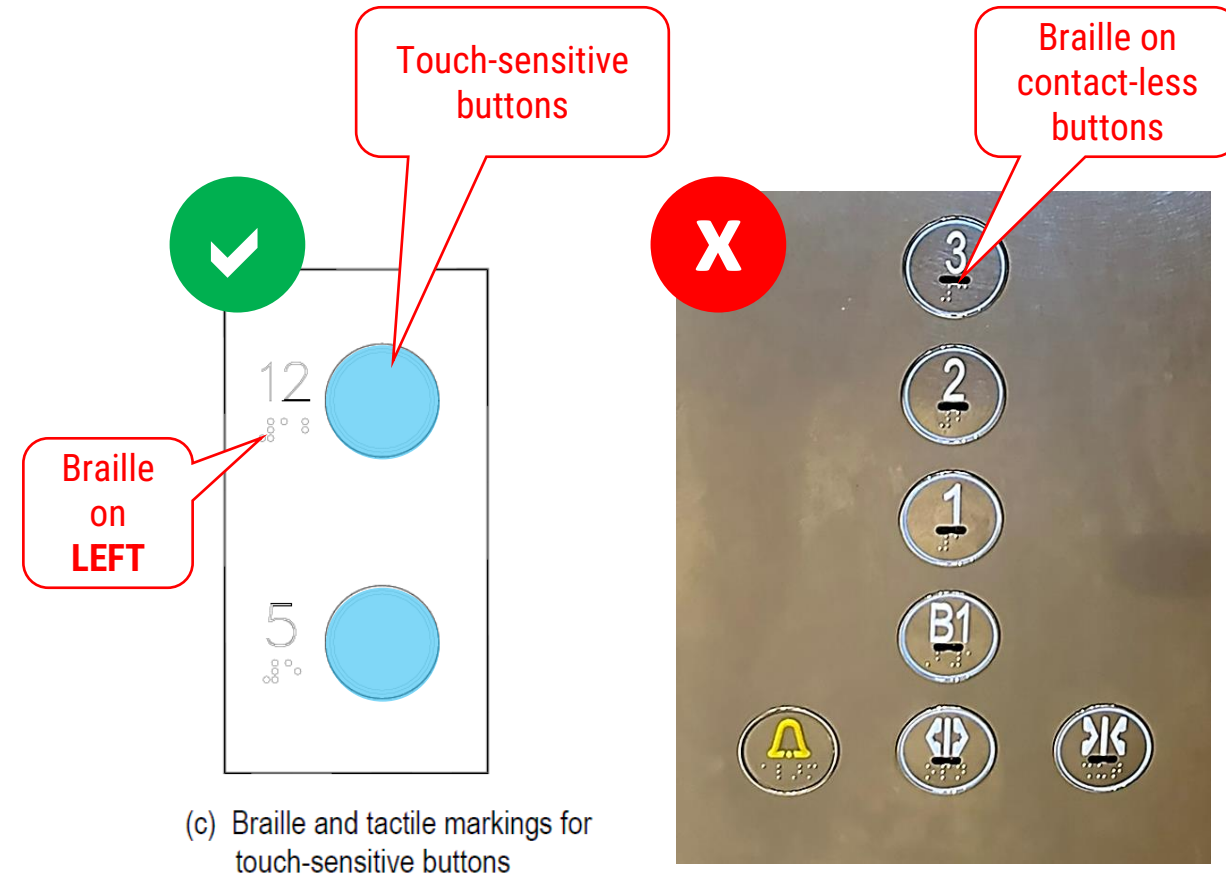
Touch-Sensitive / Contact-less Buttons

(applicable to lifts for wheelchair users & passenger lifts)

Avoid combining braille & tactile markings on lift buttons to prevent false activation

Braille and tactile markings (cl 4.8.2.1)

- **Not touch-sensitive / contact-less**
- if the buttons are **touch-sensitive / contact-less**, braille and tactile markings must be provided to the **LEFT of lift control buttons** (cl 4.8.2.2)

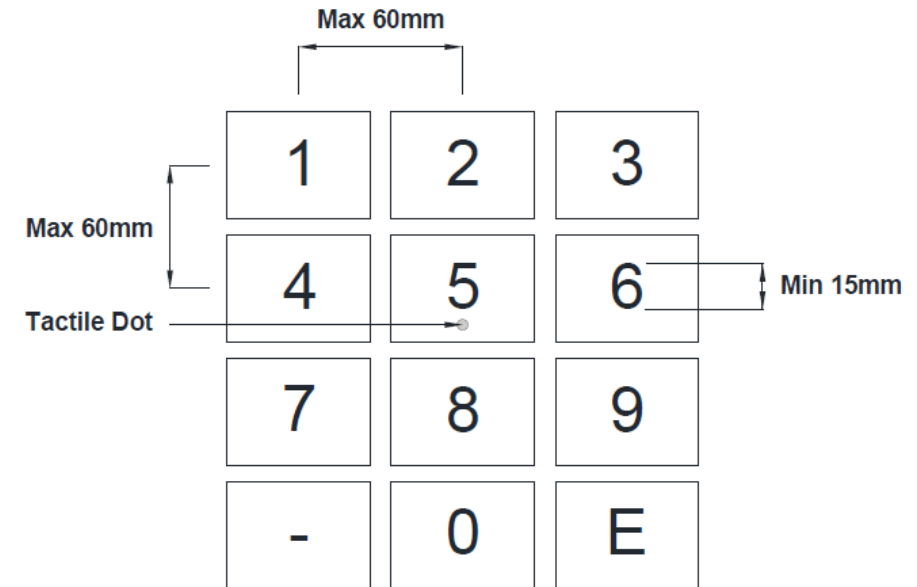


LIFT LANDING & CALL BUTTONS

Keypad Control Panels

(applicable to lifts for wheelchair users)

Where there are difficulties in providing two control panels inside the lift car in high-rise buildings, **keypad control panels** for wheelchair users can be considered; **the other control panel must be mounted at eye level** *(cl 4.9.5.2.1 & Appendix G)*



Refer to **Code on Accessibility,**
Appendix G

Destination-Based Control System

(applicable to lifts for wheelchair users & passenger lifts)

- Lifts with **destination-based control systems** must be accessible to persons with visual impairment
- The **input and output interface** should support accessibility, such as via voice commands, visual displays, tactile keypads and etc.

2 Accessibility Requirements

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VISUAL AND AUDIO ASSISTANCE



Things to note

Information Display & Audible Announcement

(applicable to lifts for wheelchair users & passenger lifts)

Lift lantern is important to signal the lift status, especially when there are many lifts

All passenger lifts must be provided with

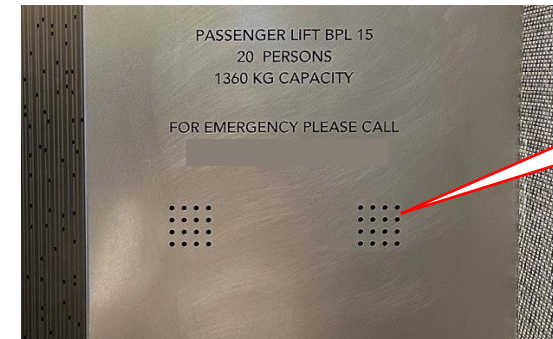
- a **visual information display system** that is suitably colour contrasted (cl 4.8.2.7)
- a **momentary audible announcement** that signal each call registered and the storey reached (cl 4.8.2.6)



Visual Information Display System



Lift Lanterns



» Third Floor

Momentary Audible Announcement

VISUAL AND AUDIO ASSISTANCE

Emergency Bell

(applicable to lifts for wheelchair users & passenger lifts)

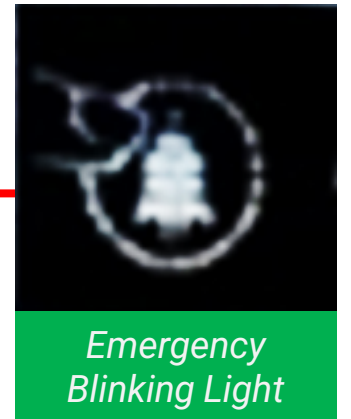


Rationale

To signal to persons with hearing impairments that the emergency bell has been activated

All passenger lifts must be provided with

- **Emergency bell** that is connected to a **blinking light** in the lift car (cl 4.8.1.2)



LIFT SAFETY

Door Protective Device

(applicable to lifts for wheelchair users & passenger lifts)

The closing of lift doors must be controlled by a **door protective device** to ensure that doors do not make physical contact with people standing in their path.

An **audible signal** must be provided to signal the closing of doors to alert the lift passengers.

(cl 4.8.4.1)

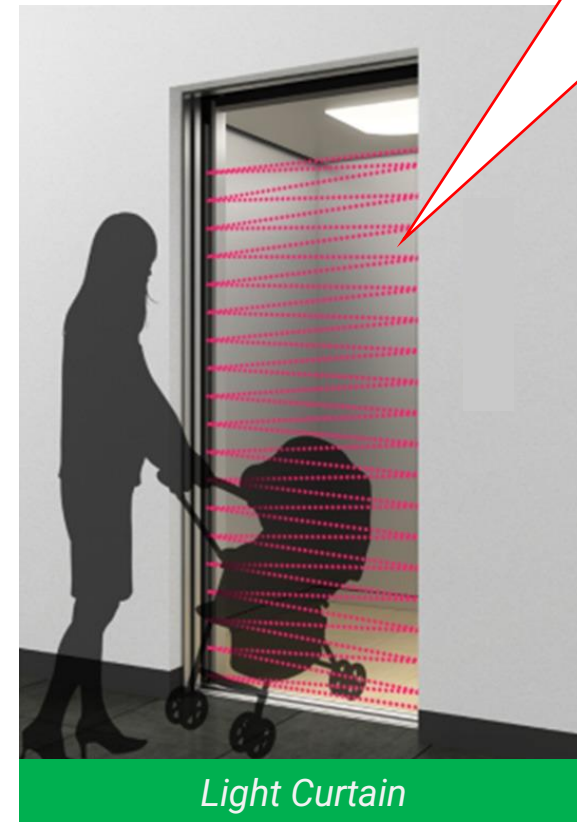


Image credit: <https://lukuabi-24h.ee/?k=door-sensors-elevator-wiki-fandom-aa-KxRLWk7>

2 Accessibility Requirements

Lifts Provision

Lift Lobby and Landing Space

Lift Car

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Lift Visual & Audio Assistance

Platform Lifts / Stairlifts



OTHER LIFTS



Rationale

Platform Lifts & Wheelchair Stairlifts

Platform lifts and stairlifts are less preferred due to high maintenance and less operational flexibility

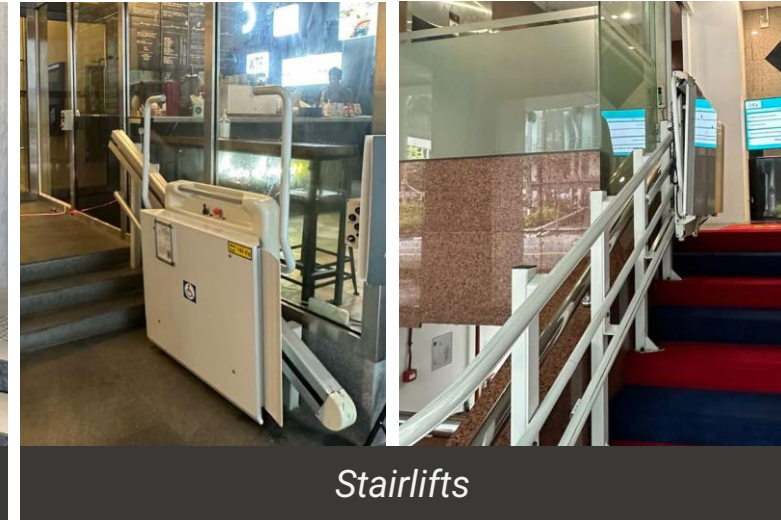


Passenger Lift

A **passenger lift** is the most suitable form of access for people moving from one storey to another (cl 4.10)



Platform Lifts



Stairlifts

For existing buildings in exceptional circumstances where a passenger lift cannot be accommodated, a **platform lift or a wheelchair stairlift** may be considered as an alternative option

Q&A

Enquiries

For clarifications, please contact us through BCA's Online Feedback Form at <https://www2.bca.gov.sg/feedback/>



Thank You



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