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To: All Registered Lift Engineers /Registered Escalator Engineers and  
All Registered Lift Contractors /Registered Escalator Contractors

Dear Sirs,

**Circular No. 11/2016**

**Code of Practice On the Design and Construction of Lifts and Escalators  
(2012 Edition) Addendum No. DC02**

With a view to specifying the provision of guidance on the new requirements based on the latest development of the relevant international safety standards and newly identified local requirements, the Code of Practice On the Design and Construction of Lifts and Escalators (2012 Edition) Addendum No. DC02 (see attachment) was gazetted in March 2016.

All the updated information of the Code of Practice including the Gazette Notices can be found in the following web page:

[http://www.emsd.gov.hk/en/lifts\\_and\\_escalators\\_safety/publications/code\\_of\\_practice/index.html](http://www.emsd.gov.hk/en/lifts_and_escalators_safety/publications/code_of_practice/index.html)

Yours faithfully,



(CHEUNG Kim-ching)

for Director of Electrical and Mechanical Services

- c.c. The Director of Housing (Attn: SM/QM)  
The Director of Buildings  
Director of Architectural Services (Attn: CBSE/2)  
The Lift and Escalator Contractors Association  
The Registered Elevator and Escalator Contractors Association Limited  
The International Association of Elevator Engineers (HK-China Branch)  
The Hong Kong General Union of Lift and Escalator Employers

**Electrical and Mechanical Services Department**  
**Code of Practice**  
**On**  
**the Design and Construction of Lifts and Escalators**  
**2012 Edition**

**Addendum No. DC02**  
**(taking effect from 4 March 2016)**

Section A: Clause 1, 3 and 8(e) of the above code of practice are revised as follows:

(Replaced Section A: Clause 1)

**1. Scope and Field of Application**

The Code, unless the Director of Electrical & Mechanical Services (the Director) provides otherwise, is applicable to all lifts and escalators subject to the Lifts and Escalators Ordinance (the Ordinance).

The Code is divided into six sections: Section A on General Introduction, Section B on References listing the referencing material available to better understand the Code, Section C on Definitions giving the interpretation of certain terms used in the Code, Section D on Symbols and Abbreviations, Section E on Specifications, and Section F on Fireman's Lifts.

Section E on Specifications is further divided into six parts where:

Part 1 deals with the technical details of electric lifts, where the car is suspended by ropes or chains.

Part 2 deals with the hydraulic lifts, defined in Section C, driven hydraulically, where the car is directly or indirectly driven by the action of one or more hydraulic single acting jacks and whereby the down movement, even with the empty car, takes place by the influence of gravity. This Part covers the safety requirements for hydraulic lifts, with rated speed  $V_s$  up to 1.0 m/s. For lifts with higher rated speed  $V_s$  additional requirements shall be applied as appropriate in order to maintain the same level of safety.

For lifts with double acting jacks or for traction drive or positive drive lifts driven by a hydraulic motor, Part 1 and/or 2 of this Code shall be used by analogy according to the technical characteristics of the installation.

Part 3 deals with electrically driven service lifts defined in the Ordinance.

Part 4 deals with escalator defined in the Ordinance, which include pallet type and belt type passenger conveyors.

Part 5 deals with stairlifts.

Part 6 deals with powered vertical lifting platforms for persons with ambulant disabilities and wheelchair users.

New lifts and escalators and any major alteration works tendered on or after the effective date of the Code shall comply with Parts 1 to 4 of Section E of the Code.

Existing lifts and escalators installed before that date shall preferably be upgraded to comply with this Code or at least continue to comply with BS5655, BS5656 or BS2655 where appropriate.

Compliance with the Code is deemed to have satisfied the relevant requirements of the Lifts and Escalators Ordinance.

(Replaced Section A: Clause 3)

### 3. **Guidance on Fire Protection, Environment and Building Requirements**

The Code does not give rules relating to the protection against fire of building elements. Fire resistance requirements are made under the **Code of Practice for Fire Safety in Buildings 2011** issued by the Building Authority. However, as far as possible, lifts and escalators shall be made of materials that are not easy to ignite. If lifts and escalators have to be operated under special conditions, such as directly exposed to the weather or explosive atmosphere, appropriate design criteria, components, materials and instructions for use shall be employed to satisfy the particular conditions. In case where lifts and escalators would be exposed to weather conditions, a suitable roof and enclosure shall be provided for lifts, and a suitable top shelter / canopy covering the entire structure shall also be provided for escalators.

The Code does not give rules relating to building works for lifts and escalators. Such requirements are made under the Code of Practice for Building Works for Lifts and Escalators issued by the Building Authority.

(Replaced Section A: Clause 8 (e))

8 (e) The design and construction of any lift for persons with a disability (whether provided in accordance with regulation 72 of the Building (Planning) Regulations (Chapter 123) or not) shall also comply with the requirements provided for in **Division 19** of the Third Schedule to the Building (Planning) Regulations, in addition to those specified in Parts 1 and 2 of Section E of the Code.

Section B: Clause b), c), e), u), w), x) and y) of the above code of practice are revised as follows:

(Replaced Section B: Clause b)

b) **Code of Practice for Fire Safety in Buildings 2011** issued by Building Authority

(Replaced Section B: Clause c)

c) **Code of Practice for Building Works for Lifts and Escalators** issued by the Building Authority

(Replaced Section B: Clause e)

e) **BS EN12385-1 - Steel wire ropes. Safety. General requirements**

(Replaced Section B: Clause u)

u) **EN50214 - Specification for flat polyvinyl chloride sheathed flexible cables**

(Replaced Section B: Clause w)

w) **Design Manual - Barrier Free Access 2008**

(Added Section B: Clause x)

x) **BS EN81-41 Safety rules for the construction and installation of lifts – Special lifts for the transport of persons and goods, Part 41: Vertical lifting platforms intended for use by persons with impaired mobility**

(Added Section B: Clause y)

y) **DIN EN 14010 Safety of machinery – Equipment for power driven parking of motor vehicles – Safety and EMC requirements for design, manufacturing, erection and commissioning stages**

Section C: Paragraph of “Theoretical Capacity” is revised as follows:

(Replaced Section C: Paragraph of “Theoretical Capacity”)

**Handling Capacity**

For traffic flow planning, the maximum number of persons that can be carried by an escalator or moving walk in 1 h is given in table below:

Step/Pallet Width m	Rated Speed m/s		
	0.5	0.65	0.75
0.6	3600 pers/h	4400 pers/h	4900 pers/h
0.8	4800 pers/h	5900 pers/h	6600 pers/h
1.0	6000 pers/h	7300 pers/h	8200 pers/h

Section E: Part 1: Clause 1.1.1, 2.2.2 (b), 2.4.3, 3.4.1, 4.7, 4.9, 5.1.2 (c), 8.4.2.4, 8.5.1, 8.11, 9.5.1.3, 10.3.1.4, 10.3.1.5, 11.1, 11.2.4 (d) and 11.5 are revised as follows:

(Replaced Section E: Part 1: Clause 1.1.1)

1.1.1 The car and counterweight of a lift shall be enclosed in a lift well.

When the lift well is required to contribute to the protection of the building against the spread of fire (e.g. observation lift passing through different compartments), it shall be totally enclosed and comply with the relevant provisions of Building (Planning) Regulations (Chapter 123), Building (Construction) Regulations (Chapter 123), the Code of Practice for Building Works for Lifts and Escalators and the **Code of Practice for Fire Safety in Buildings 2011** issued by the Building Authority.

When the lift well is not required to contribute to the protection of the building against the spread of fire, it does not need to be totally enclosed, provided:-

- (a) the enclosure at the landing door side of every floor shall either cover the full height of the floor or be of minimum height of 3.5 m;
- (b) the height of enclosure shall be of minimum 2.5 m above any points normally accessible to persons at other sides and with a minimum horizontal distance of 0.5 m to moving parts of the lift; and
- (c) the enclosure shall be imperforate.

The height of enclosure mentioned above in (b) may be reduced to 1.1 m provided:

- (i) the horizontal distance to moving parts exceeds 2 m;
- (ii) it can prevent persons from being endangered by moving parts of the lift and from interfering with the safe operation of the lift by reaching lift equipment; and
- (iii) access to the lift pit by simply climbing over the enclosure is not possible.

(Replaced Section E: Part 1: Clause 2.2.2 (b))

2.2.2 (b) The ambient temperature in the machine room shall be maintained between +5 °C and +40 °C. **The mechanical ventilation shall be able to provide ventilation of minimum 10 air changes per hour for the machine room. Dual speed control or equivalent shall be provided for the mechanical ventilation with low speed for continuous ventilation to maintain the temperature between +5 °C and +40 °C and high speed when the machine room is occupied for carrying out maintenance activities with minimum of 10 air changes per hour.**

(Replaced Section E: Part 1: Clause 2.4.3)

### **2.4.3 Devices for emergency and test operations**

In the case of working areas on the car top of the machine room-less lift is concerned, the necessary devices for emergency and test operations shall be provided on a maintenance access panel suitable for carrying out from outside of the lift well all emergency operations and any necessary dynamic tests of the lift. The maintenance access panel shall be accessible to authorized persons only. This applies also to means for maintenance where maintenance procedure(s) require(s) moving the car and the work cannot be carried out safely from the intended work areas provided inside the well.

If the emergency and test devices are not protected inside a machinery cabinet, they shall be enclosed with a suitable cover, which:

- (a) does not open towards the inside of the well;
- (b) is provided with a key-operated lock, capable of being reclosed and relocked without a key.

The maintenance access panel located at the top floor landing shall be vandalism proof, with a key lock, and enable to perform tests and emergency operations from outside of the lift well. The devices on the maintenance access panel shall be lit by a permanently installed electric lighting with an intensity of at least 50 lux measured at the device. A switch placed on or close to the panel shall control lighting of the maintenance access panel. The maintenance access panel shall provide the following:

- (a) emergency operation devices together with an intercom system;
- (b) control equipment which enables dynamic tests (such as brake tests, traction tests, safety gear tests, buffer tests or tests of ascending car

overspeed protection means) to be carried out;

- (c) direct observation of the lift machine or through display device(s), which give indication of :
  - (i) direction of movements of the car;
  - (ii) reaching of an unlocking zone; and
  - (iii) speed of the lift car.

(Replaced Section E: Part 1: Clause 3.4.1)

#### **3.4.1 Sills**

Landing door sills shall be provided in accordance with the Code of Practice for Building Works for Lifts and Escalators issued by the Building Authority.

(Replaced Section E: Part 1: Clause 4.7)

#### **4.7 Electrical Device for Proving the Car Door Closed**

It shall not be possible in normal operation to start the lift nor keep it in motion if a car door (or any of the panels in the case of a multi-panel door) is open. Operation of the lift with car door open is permitted under the conditions laid down in Clause 3.7.2.

Each car door shall be provided with an electrical safety device in conformity with Clause 10.2 for proving the closed position so that the conditions imposed above are satisfied.

(Replaced Section E: Part 1: Clause 4.9)

#### **4.9 Locking of the Car Door**

A car door locking device shall be protected against deliberate misuse. The design, operation and test of the car door locking device shall be equivalent to that of the landing door locking device, and shall be type tested to the requirements of Clause F.1 of EN 81: Part 1.

Every car door shall be mechanically locked by at least 7 mm such that it can only be opened in the unlocking zone of a landing.

The operation of the lift shall automatically depend on the locking of the car door except in the case covered by Clause 3.7.2..

This locking shall be proved by an electrical safety device in conformity with Clause 10.2

(Replaced Section E: Part 1: Clause 5.1.2 (c))

5.1.2 (c) the other characteristics (construction, extension, ovality, flexibility, tests....) shall correspond to those specified in **BS EN12385-1 and BS EN12385-5**, or ISO 4344, or other relevant international standards.

(Replaced Section E: Part 1: Clause 8.4.2.4)

#### 8.4.2.4 Manual Release

All machines shall be capable of having the brake released by hand and require a constant effort to keep the brake open so that the emergency operation specified in Clause 8.5.1 and other maintenance activities can be carried out. Operating instructions shall be provided in the machine room.

The brake can be released electrically with backup batteries if no manual release is provided. This operation shall be carried out safely by using maintenance access panel at the top landing **or inside the machine room**. Operation instructions shall be provided in the maintenance access panel.

(Replaced Section E: Part 1: Clause 8.5.1)

#### 8.5.1 Manual Operation

The machine, **except the machine room-less lift**, shall be provided with a manual means of emergency operation allowing the car to be moved to a landing with the aid of a smooth wheel, which can be the sheave, flywheel or other smooth and round handwinding device.

If the wheel is removable, it shall be located in an easily accessible place in the machine room, and shall be suitably marked if there is any risk of confusion as to the machine for which it is intended. Operating instructions shall be provided in the machine room.

For the machine room-less lift, the lift shall be provided with:-

- (a) one set of car lifting tools for emergency operation such as chain block, rope clasper, guide rail clasper, lever, shackle, etc.;
- (b) portable weight for placing to car or compensation chain when balanced load is occurred; and
- (c) an emergency electrical operation device and emergency electrical brake release switch (if no manual release is provided) according to 10.3.1.4, which are placed in the maintenance access panel located outside the lift well.

(Added Section E: Part 1: Clause 8.11)

#### 8.11 Normal Stopping of the Car at Landings and Levelling Accuracy

- (a) The stopping accuracy of the car shall be  $\pm 10$  mm; and
- (b) A levelling accuracy of  $\pm 20$  mm shall be maintained. If, during e.g. loading and unloading phases, the value of 20 mm is exceeded, it shall be

corrected.

(Replaced Section E: Part 1: Clause 9.5.1.3)

9.5.1.3 Ordinary flexible cables such as those listed in table 6 (H05RR-F) and table 16 (H05VV-F) of BS6500 (or the equivalent in IEC 245 or other relevant international standards) shall be routed through ducting, trucking, or fittings which provide equivalent protection.

Flexible cables with a thick sheath shall be considered to be rigid cables in the conditions specified in Clause 9.5.1.2.

These flexible cables may also be used to connect to movable appliances except as travelling cables for connection to the car or if they are subject to vibration.

Travelling cables shall comply with **EN50214** or CENELEC Harmonisation Documents, or relevant international standards.

(Replaced Section E: Part 1: Clause 10.3.1.4)

10.3.1.4 Emergency Electrical Operation

For machines where the manual effort to raise the car with its rated load exceeds 400 N an emergency electrical operation device in conformity with Clause 10.2 shall be installed in the machine room. The machine shall be supplied from the normal mains supply or from the standby supply if there is one.

Operation of the emergency electrical operation device shall permit, from the machine room, the control of car movement by simultaneous constant pressure on two push-buttons protected against accidental operation. The direction of movement shall be clearly indicated on the device.

After operation of the emergency electrical operation device, all movement of the car except that controlled by this device shall be prevented. The effects of the emergency electrical operation shall be overridden by switching on the inspection operation.

The emergency electrical operation device shall render inoperative, by itself or through another electrical safety device, the following electrical safety devices :-

- (a) those mounted on the safety gear, according to Clause 5.11.8;
- (b) those required for the overspeed governor, according to Clauses 5.12.11 and 5.12.12;
- (c) those mounted on the buffers, according to Clause 6.2.4.4;
- (d) final limit switches, according to Clause 6.3; and
- (e) those mounted on the ascending car overspeed protection means, according to Clause 5.13.5.

The emergency electrical operation device and its push-buttons shall be so

placed that the machine can readily be observed when using them.

The car speed shall not exceed 0.63 m/s.

If the lift is also provided with an emergency electrical brake release switch, which is placed in the maintenance access panel located outside the lift well **or inside the machine room**, the following conditions shall be satisfied simultaneously:

- (i) operation of the emergency electrical operation brake release switch shall permit the brake release operation by switching the bi-stable switch to brake release mode and applying a constant pressure on one push-button, protected against accidental operation, when the main power supply to control cabinet is failed;
- (ii) the emergency electrical brake release switch and its push-button shall be so placed that the lift machine can be observed directly and there should be a display device(s) to monitor the status of the lift car; and
- (iii) the emergency electrical brake release switch shall be supplied from the essential supply or shall be backup by uninterruptible power supply (UPS) / batteries.

(Replaced Section E: Part 1: Clause 10.3.1.5)

#### 10.3.1.5 Home Landing Operation

Every lift shall be provided with a facility to bring the lift to the home landing in case of fire by manually operated switch installed at the home landing floor or Building Management Office. This switch shall only be operated when it is safe for the lift to return to home landing. In the case the lift is a fireman's lift, the home landing is the designated point of entry (see Section F of the Code).

When normal power fails, sufficient emergency power shall be available for the sequential returning of the lifts to the home landing while the fireman's lift(s) is/are in operation. The operation of the fireman's lift(s) shall not be affected in any case. The emergency power for home landing operation need not be provided, if no emergency **power supply, such as generator, dual power supply or alternative power supply from utility** is required for fire services installations at the building.

(Replaced Section E: Part 1: Clause 11.1)

#### 11.1 General Provisions

All labels, notices and operating instructions shall be legible and readily understandable (if necessary aided by signs or symbols). They shall be untearable, of durable material, placed in a conspicuous position, and written in English and Chinese language.

The minimum height of the characters used for the labels, notice and operating instruction shall be :

- (a) 10 mm for Chinese characters, capital letters and numbers;
- (b) 7 mm for small letters.
- (c) 35 mm for vehicle lift and industrial track-loaded freight lifts and 25 mm for general freight lifts.

(Replaced Section E: Part 1: Clause 11.2.4 (d))

- 11.2.4 for general freight lifts, the instructions that the lift is for such purpose, that it shall not be used as a passenger lift and that industrial trucks, or similar devices, are not allowed for loading and unloading goods; and instruction of the weight of any single piece of freight should not exceed a quarter of the rated load of the lift (shown as xx kg in the instruction).
- (d)

(Replaced Section E: Part 1: Clause 11.5)

### 11.5 On the Landings

Manually operated lift landing doors, if they can be confused with other adjacent doors, shall bear the inscription 'LIFT' ( 升降機 ).

For freight and vehicle lifts, each of the landing doors, or walls adjacent to the landing doors, shall display the rated load and the instructions required in Clause 11.2.4(b), (c), (d), (e); and for all lifts, the instructions required in Clause 11.2.4(f).

For industrial truck loaded freight lifts and vehicle lifts, a notice positioned at a height equivalent to the height of the car and a distance of 1 m in front of the car entrance shall be provided across each main landing to restrict the height of industrial trucks and vehicles entering the car.

Provisions shall be made at all landings for warning indication to be displayed to inform others that the lift is out of service for maintenance. The display of such indication or the illumination of such indicator shall be controlled by a manually operated switch and additionally may be switched on automatically. The indication shall bear the inscription "OUT OF SERVICE" (minimum height 8 mm) and “暫停” (minimum height 12 mm).

Instruction of the weight of any single piece of freight should not exceed a quarter of the rated load of the lift (shown as xx kg) shall be displayed.

Section E: Part 2: Clause 1.1.1 and 5.1.2 (c) are revised as follows:

(Replaced Section E: Part 2: Clause 1.1.1)

- 1.1.1 The car and counterweight of a lift shall be enclosed in a lift well.

When the lift well is required to contribute to the protection of the building against the spread of fire (e.g. observation lift passing through different compartments), it shall be totally enclosed and comply with the relevant provisions of Building (Planning) Regulations (Chapter 123), Building (Construction) Regulations (Chapter 123), the Code of Practice for Building Works for Lifts and Escalators and the **Code of Practice for Fire Safety in Buildings 2011** issued by the Building Authority.

When the lift well is not required to contribute to the protection of the building against the spread of fire, it does not need to be totally enclosed, provided:-

- (a) the enclosure at the landing door side of every floor shall either cover the full height of the floor or be of minimum height of 3.5 m;
- (b) the height of enclosure shall be of minimum 2.5 m above any points normally accessible to persons at other sides and with a minimum horizontal distance of 0.5 m to moving parts of the lift; and
- (c) the enclosure shall be imperforate.

The height of enclosure mentioned above in (b) may be reduced to 1.1 m provided:

- (i) the horizontal distance to moving parts exceeds 2 m;
- (ii) it can prevent persons from being endangered by moving parts of the lift and from interfering with the safe operation of the lift by reaching lift equipment; and
- (iii) access to the lift pit by simply climbing over the enclosure is not possible.

(Replaced Section E: Part 2: Clause 5.1.2 (c))

5.1.2 (c) the other characteristics (construction, extension, ovality, flexibility, tests....) shall correspond to those specified in **BS EN 12385-1 and BS EN12385-5**, or ISO 4344, or other relevant international standards.

Section E: Part 3: Clause 1.5.3.1, 3.4.1, 4.2.5, 5.1.2 and 5.5 are revised as follows:

(Replaced Section E: Part 3: Clause 1.5.3.1)

1.5.3.1 No lift pit is allowed except in the case where the lowest serving level is at or near floor level in accordance with the Code of Practice for Building Works for Lifts and Escalators issued by the Building Authority.

(Replaced Section E: Part 3: Clause 3.4.1)

3.4.1 Every landing entrance shall incorporate a sill of sufficient strength to withstand the passage of loads being introduced into the car, in accordance with the Code of Practice for Building Works for Lifts and Escalators issued by the Building Authority.

(Added Section E: Part 3: Clause 4.2.5)

4.2.5 Every service lift shall be provided with an overload device specified in Part 1 Clause 4.2.4. The operation of the overload device shall prevent the power operated doors from closing and the lift car from moving. In addition, it shall give audible and visual signals at the car entrance.

(Replaced Section E: Part 3: Clause 5.1.2)

5.1.2 Ropes shall comply with BS EN12385-1 and BS EN12385-5 or ISO 4344. They shall have a minimum diameter of:

- (a) 6mm for traction drive with rated load 25 kg and above; or
- (b) 5mm for drum drive and for traction drive below 25 kg rated load.

(Replaced Section E: Part 3: Clause 5.5)

#### 5.5 **Rope Traction on Traction Drive Lifts**

Rope traction shall be such that it shall not be possible to raise the empty car when the counterweight is resting on the buffers, and the lift machine is driven in the 'up' direction.

Section E: Part 4: Clause 1.1.3.7, 1.1.3.8, 1.2.4, 1.2.5, 7.3.1 and Fig. 8 are revised as follows:

(Added Section E: Part 4: Clause 1.1.3.7)

1.1.3.7 Inspection covers and floor plates shall be securely fixed on their associated supporting structures through proper fixing means e.g. fasteners, screws, except for those satisfying at least one of the following conditions:

- a) Inspection covers or floor plates are mechanical linked or interlocked in such a way that removal or any one floor plate or inspection cover will actuate a safety device to stop the escalator automatically and maintain it in a stationary condition.
- b) Each floor plate or inspection cover shall be provided with a safety device in

such a way that when a floor plate or inspection cover is removed, at least one safety device will be triggered to stop the escalator automatically and maintain it in a stationary condition.

- c) Effective protective guard is provided to such extent that the rotating parts in the driving stations and return stations will not be exposed to introduce trapping hazards to passengers even if any one of these floor plates or inspection covers is removed.

(Added Section E: Part 4: Clause 1.1.3.8)

**1.1.3.8** Inspection covers and floor plates shall be imperforate. The construction materials and mechanical strength of inspection covers and floor plates shall support the rated load of 5 000 N/m<sup>2</sup> without any permanent deformation.

(Replaced Section E: Part 4: Clause 1.2.4)

**1.2.4 Clearances between Balustrade Exterior Panelling and Adjacent Guard Rail/Wall**

The maximum clearance between the balustrade exterior panelling and any guard rail/wall erected adjacent to the escalator shall not be more than 75 mm to prevent children from falling into void through this clearance.

(Replaced Section E: Part 4: Clause 1.2.5)

**1.2.5 Distance between the Outer Edge of the Handrail and Adjacent Wall/Building Obstacles/Escalators**

The horizontal distance b<sub>10</sub> (see Fig. 2) between the outer edge of the handrail and walls, adjacent criss-cross escalators or other building obstacles shall not be less than 200 mm and shall be maintained to a height of at least 2.10 m above the steps, pallets or belt of the escalator. The distance may be reduced to 80 mm:

- (a) for any guard rail/wall (of not more than 1.10 m high) erected adjacent to the escalator at the landing (see Clause 1.2.4), or
- (b) in the situation where a smooth continuous wall of at least 2.10 m high above the steps, pallets or belt is formed extending alongside the escalator for at least the distance between its newels to avoid injuries caused by collision.

For escalators arranged in parallel or criss-cross to one another the distance between the edges of the handrails may be reduced to 160 mm.

Appropriate measures shall be taken to discourage people from climbing over the outer edge of the balustrade if there is a danger of people falling from:-

- a) the escalator and the rise of escalator is greater than 15 m; or
- b) the escalator to the next lower floor level with vertical difference greater than 15 m.

Shelter walls at both sides of the escalator shall be installed with a height of at least 1800 mm from newel to newel, except the portions where there is no danger of people falling from the escalator.

(Replaced Section E: Part 4: Clause 7.3.1)

7.3.1 The mesh depth  $h_8$  of the combs into the grooves of the tread (see Fig. 1, detail X) shall be at least 4 mm.

(Replaced Section E: Part 4: Fig. 8)

Section E  
Part 4

Fig.8 Notices for Use



Colouring

- Blue colour on white background
- The indication signs X and ⓧ in the pictograph in red color

Section E: Part 5: Clause 5.2 and 6.3.1 are revised as follows:

(Replaced Section E: Part 5: Clause 5.2)

5.2 For chair carriage (see Clause 7.3) or standing platform (see Clause 7.4) stairlift, which is designed for a capacity of one person, the rated load shall be not less than 115 kg.

For wheelchair platform (see Clause 7.5) stairlift, which is designed for a capacity of one person in a wheelchair, the minimum rated load shall be as follows:

Public use (see Clause 7.5.1)	Private use	
All kinds of wheelchair	Power-driven wheelchair	Manual wheelchair
260 kg	260 kg	Net platform area > 0.84 m <sup>2</sup>
		Net platform area ≤ 0.84 m <sup>2</sup>
		205 kg
		150 kg

(Replaced Section E: Part 5: Clause 6.3.1)

6.3.1 All suspension ropes shall conform to **BS EN12385-1 and BS EN12385-5, or ISO 4344** as appropriate, or other relevant international standards. The safety factor of the ropes shall be not less than 12. The safety factor shall be the ratio between the minimum breaking load of any rope and the continuous load imposed in raising the fully loaded carriage. Test certificates for the ropes shall be provided.

The ends of the ropes shall be fixed to the carriage, counterweight or suspension points by such methods as metal or resin-filled sockets, selftightening wedge-type sockets, heart thimbles with at least three rope grips or hand-spliced ferrule-secured eyes. The strength of the rope anchorages shall be not less than 80% of the strength of the ropes.

Section E: Part 6: Clause 1.1.1, 1.1.5, 1.5.1.1, 3.2.2, 3.3.2, 3.6.2, 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.2.1, 4.2.3, 4.3.3, 4.3.4, 5.1.2 and 10.3.3 are revised as follows:

(Replaced Section E: Part 6: Clause 1.1.1)

1.1.1 The platform, ram, leadscrew, guides and suspension of a powered vertical lifting platform shall be installed in a lift well.

When the lift well is required to contribute to the protection of the building

against the spread of fire, it shall be totally enclosed and comply with the relevant provisions of Building (Planning) Regulations (Chapter 123), Building (Construction) Regulations (Chapter 123), the Code of Practice for Building Works for Lifts and Escalators and Code of Practice for Fire Safety in Buildings 2011 issued by the Building Authority.

When the lift well is not required to contribute to the protection of the building against the spread of fire, it does not need to be totally enclosed. The walls of the lift well may be formed from non-fire rated panels which have a mechanical strength such that when a force of 300 N being evenly distributed over an area of 500 mm<sup>2</sup> in round or square section, is applied at right angles to the wall, at any point, from the inside of the lift well towards the outside, the wall shall :

- (a) resist without any permanent deformation; and
- (b) resist without elastic deformation greater than 10 mm.

The enclosure of the vertical lifting platform shall be imperforate.

If the travel of the lifting platform exceeds 1.98 m, the lift well shall be made up of four side walls and a floor. The height of enclosure shall be of minimum 2.5 m above the upper landing or with full height to the ceiling. In no cases moveable parts other than the landing door of the lifting platform shall be reachable by a person standing outside the enclosure with the landing door fully closed.

(Replaced Section E: Part 6: Clause 1.1.5)

- 1.1.5 The vertical travel of a powered lifting platform shall in no circumstances exceed 7.0 m.

(Replaced Section E: Part 6: Clause 1.5.1.1)

**1.5.1.1 Platform Overhead Runby**

When the platform is in its fully ascended position, achieved by means of ram stroke limitation according to Clause 8.6.6 for a hydraulic powered lifting platform, or the final limit switch/stopper of a leadscrew and nut drive system or other drive systems, the following conditions shall be satisfied at the same time.

- (a) The platform guide lengths shall be such as would accommodate a further guided travel of at least 0.1 m;
- (b) The free vertical distance above the platform floor shall be not less than 2 m; and
- (c) The free vertical distance between the lowest part of the roof of the well and the highest piece of equipment attached to the lifting platform shall be at least 0.3 m.

(Replaced Section E: Part 6: Clause 3.2.2)

### **3.2.2 Mechanical Strength**

Doors, with their locks, shall possess mechanical strength such that when they are in the locked position, a force of 300 N being evenly distributed over an area of 5 cm<sup>2</sup> in round or square section, is applied at right angle to the doors at any point on either face, the doors shall:

- (a) resist without permanent deformation;
- (b) resist without elastic deformation greater than 10 mm; and
- (c) operate satisfactorily after such a test.

Door panels made of glass shall comply with Clause 9.1.1.3.6 of ISO 9386-1 or Clause 5.6.5 of EN 81-41:2010.

If the height and/or width of the glass panel are greater than those referred to in Clause 9.1.1.3.6 of ISO 9386-1, the glass panel shall be type tested withstand the pendulum shock tests as described in Annex J of EN 81-1 or similar international standard.

The fixing of the glass in doors shall ensure that the glass cannot slip out of the fixings, even when sinking. The glass panels shall have markings giving the name of the supplier/trade mark, type of glass and thickness/configuration.

All glass door panels shall have visual markings at level between 1400 mm and 1600 mm above the floor.

Where automatic power operated horizontally sliding doors are made up of glass panels having dimensions greater than those stated in Clause 3.6.2, means for minimizing the risk of dragging children's hands into the gaps between the glass panels and uprights shall be provided.

(Replaced Section E: Part 6: Clause 3.3.2)

### **3.3.2 Width**

The clear width of the entrance of a lifting platform shall be not less than 900 mm if the lifting platform is installed in a location with public access.

If the lifting platform is provided only for domestic or private use, the clear width of the entrance may be reduced to not less than 800 mm.

(Replaced Section E: Part 6: Clause 3.6.2)

**3.6.2** In case of landing doors with manual opening, the user must be able to know, before opening the door, whether the lifting platform is there or not. To this effect, for landing doors having a height greater than 1.1 m there shall be

installed one or more transparent vision panels conforming to the following conditions:-

- (1) mechanical strength as specified in Clause 3.2.2;
- (2) the size and shape of the vision panel shall be such that it will not permit the passage of a sphere having a diameter of 100 mm, have a minimum glazed area per landing door of 0.015 m<sup>2</sup> with a minimum of 0.01 m<sup>2</sup> per vision panel of a width of at least 60 mm;
- (3) minimum thickness of 6 mm;
- (4) the bottom edge of the vision panel shall be located between 300 mm and 900 mm above the floor level of the landing;
- (5) the vision panel shall be made of safety glass of a tempered or laminated type, or similar compatible material; and
- (6) if such door is a sliding door, the vision panel shall be flush with the surface of the door closest to the landing (floor side).

(Replaced Section E: Part 6: Clause 4.1.1)

4.1.1 If the travel of the lifting platforms is less than 0.6 m, the lifting platform carriage comprising a solid floor panel, kicker plates, toe guards, a ramp on the lower landing entrance side of the platform and a control station shall also be acceptable. The height of the toe guards and ramp shall be not less than 75 mm and 100 mm respectively. Operating devices including control buttons, emergency alarm and call button (where provided) shall be grouped to form the control station the top of which shall be at 900 ± 25 mm above the platform floor and fixed on a rigid stand. A handhold shall be available at the control station to enable standing users to gain stability during operation of the lifting platform.

(Replaced Section E: Part 6: Clause 4.1.2)

4.1.2 Where the travel of the lifting platforms exceeds 0.6 m but does not exceed 1.1 m, lifting platform carriages shall be comprise of a solid floor panel, kicker plates, toe guards, a ramp on the lower landing entrance side of the platform and a control station as stated in Clause 4.1.1. Within the carriage there shall be an easy grip hand rail in compliance with Clause 4.18.2. Lifting platform carriage furnished with guard rails instead of solid side panels shall also be acceptable. Clearance between the guard rails and the lift well or enclosure shall be not less than 80 mm.

(Replaced Section E: Part 6: Clause 4.1.3)

4.1.3 If the travel of the lifting platforms exceeds 1.1 m but does not exceed 1.98 m, the lifting platform carriage shall comprise a solid floor panel, kicker plates, toe guards and solid side panels. Within the carriage there shall be an easy grip hand rail in compliance with Clause 4.18.2 and necessary lighting.

(Replaced Section E: Part 6: Clause 4.1.4)

4.1.4 Where the travel of the lifting platforms exceeds 1.98 m, apart from facilities as mentioned in Clause 4.1.3, consideration may be made to provide the lifting platform with a ceiling panel having a mechanical strength similar to that of side panels as stipulated in Clause 4.18.3. The ceiling panel shall be erected in such a way that it will not be used as a load bearing structure. In addition, the ceiling panel shall be removable to facilitate inspection and maintenance of equipment situated in the upper part of the lift way.

(Replaced Section E: Part 6: Clause 4.2.1)

4.2.1 Vertical lifting platforms are provided for users with impaired mobility, in particular wheelchair users, to make short distance vertical travel within the premises. To provide sufficient space for a lone standing user or wheelchair user with an accompanying person, taking into account the need to cope with the orientations of the entrance/exit and configuration of landing doors/gates of the vertical lifting platform, the requirements in relation to the minimum dimensions and capacities of platforms in **Table 1** shall be observed.

**Table 1** – Minimum dimensions and capacities of lifting platforms in relation to entrance/exit arrangements

Principal User	Entrance/Exit Arrangement	Utilization	Min. Platform Dimensions		Min. Rated Load
			Width (mm)	Depth (mm)	(kg)
Lone standing user or user in a wheelchair	Straight through or on same side	Private use	800	1250	250
		Public access	900	1400	315
	90° turn	Private use / Public access	1100	1400	385

(Replaced Section E: Part 6: Clause 4.2.3)

4.2.3 Notwithstanding the dimensions of the lifting platform mentioned in **Table 1**, the rated loads of vertical lift platforms shall not be more than 800 kg and the maximum floor area not exceeding 2 m<sup>2</sup>.

(Added Section E: Part 6: Clause 4.3.3)

4.3.3 Mechanical strength of the platform shall be such that foreseeable misuse (e.g.: too many persons) is taken into consideration. Therefore the platform and its associated suspension attachments, shall be designed to support the maximum static load as determined in **Table 1A** + 25 % i.e. giving a static test coefficient

of 1.25.

Table 1A – Maximum static load

Maximum static load, mass kg	Maximum available platform area m <sup>2</sup>	Maximum static load mass kg	Maximum available platform area m <sup>2</sup>
100	0,37	525	1,45
180	0,58	600	1,60
225	0,70	630	1,66
300	0,90	675	1,75
375	1,10	750	1,90
400	1,17	800	2,00
450	1,30		

For intermediate loads the area is determined by linear interpolation

(Added Section E: Part 6: Clause 4.3.4)

4.3.4 Every vertical lifting platform shall be provided with an overload device specified in Part 1 Clause 4.2.4. The operation of the overload device shall prevent the power operated doors from closing and the platform from moving when the rated load is exceeded by 75 kg or 25% of the rated load, whichever is lower. In addition, it shall give audible and visual signals at the platform entrance.

(Replaced Section E: Part 6: Clause 5.1.2)

5.1.2 Where the suspension of a lifting platform is achieved by wire ropes, the ropes shall have a nominal diameter of at least 5 mm. The other characteristics of the ropes (construction, extension, ovality, flexibility, tests, etc.) shall at least correspond to those specified in BS EN12385-1 and BS EN12385-5, or ISO 4344, or other relevant international standards.

(Replaced Section E: Part 6: Clause 10.3.3)

### 10.3.3 Emergency Alarm Device

Requirements under Part 1 Clause 10.3.3 shall apply.

Section F: Clause 1 and 2.2 are revised as follows:

(Replaced Section F: Clause 1)

- 1 Reference shall be made, in ensuring compliance, to the Building (Planning) Regulations (Chapter 123) and the **Code of Practice for Fire Safety in Buildings 2011** issued by the Building Authority.

(Replaced Section F: Clause 2.2)

## **2.2 Lift Doors and Landing Controls**

- (i) The lift shall be provided with automatic power operated horizontally sliding doors.
- (ii) Failure of the landing call controls, such as short circuiting, whilst the lift is in the fireman's lift operating mode shall not affect operation of the fireman's lift.
- (iii) The lift shall be provided with a sensitive door re-opening device which is not of light, flame, heat or smoke sensitive type and remains effective when the lift is under fireman's lift operating mode. Additional door reopening devices of light, flame, heat or smoke sensitive type may be installed but shall be rendered inoperative once the Fireman's Switch is operated.
- (iv) **Means for minimizing the risk of dragging children's hands into the gaps between the car door panels and uprights shall be rendered inoperative once the Fireman's Switch is operated.**

- END -