

Lift and Escalator Installations

Building Works Requirements

The design and construction of buildings and building works accommodating lift and escalator installations are governed by regulation 9A of the Building (Construction) Regulations which specifies performance requirements in broad terms. Detailed technical standards for meeting the aforesaid requirements are promulgated in the Code of Practice for the Design and Construction of Buildings and Building Works for the Installation and Safe Use of Lifts and Escalators 2011 (the 2011 Lift Code) issued by the Building Authority (BA).

2. Other standards may be accepted if proven to the satisfaction of the BA as being capable of achieving equivalent performance. If other standards are to be applied, it will speed up the processing of plans if the full background to such standards and their suitability for local conditions are clearly explained.

Adequacy of Fixing Details

3. Buildings with lift and escalator installations shall be designed and constructed so as to provide adequate structural strength for the safe operation, maintenance and inspection of the lifts and escalators. In this regard, Authorized Persons and Registered Structural Engineers are reminded to pay particular attention to the relevant fixing details, including their layout, specification of structural materials, anchor and load distribution; and to ensure that the machine and pulley rooms as well as liftwells are so constructed to withstand the loads and forces to which they will normally be subjected. Typical examples of such fixing details include those between the supporting building structure and the following components:

- (a) guide rail mounting bracket;
- (b) lift machine; and
- (c) deflector sheave (pulley) bracket.

Amendments to the 2011 Lift Code

4. To enhance the safe operation, maintenance and inspection of lifts, the following amendments to the 2011 Lift Code have been promulgated:

- (a) Appendix A – August 2015; and

/(b) ...

- (b) Appendix B – September 2019 (applicable to all new building plans or major revision of building plans for development proposals or alteration and addition works submitted to the BA for approval on or after 1 December 2019)

Electrical, Mechanical and Operational Requirements

5. Requirements for the electrical, mechanical and operational aspects of lifts and escalators are laid down in the Code of Practice on the Design and Construction of Lifts and Escalators and the Code of Practice for Lift Works and Escalator Works issued by the Director of Electrical and Mechanical Services (DEMS) under the Lifts and Escalators Ordinance (LEO) (Cap. 618).

Works required by the DEMS in connection with an Application for Permission to Put Lifts or Escalators into Service

6. Authorized Persons are reminded to ensure that all essential building and lift/escalators works as well as works associated with the lift or escalator installations collectively referred to as the associated works are completed before submitting application to the DEMS under the LEO for permission to put the lifts or escalators into service. A list of the associated works often found incomplete for a lift installation during compliance inspections is at Appendix C and that for an escalator installation is at Appendix D.

Information on Work Safety

7. A list of relevant codes of practice, guidance notes and guidelines is at Appendix E.

(CHEUNG Tin-cheung)
Building Authority

Ref. : BD GP/LEG/41
BD GP/BREG/L/4
BD GP/LEG/15 (XIV)

This PNAP is previously known as PNAP 84
First issue May 1982
Last revision August 2015
This revision September 2019 (AD/NB1) (Generally revamped)

Amendments to the Code of Practice for Building Works for Lifts and Escalators 2011

(August 2015¹)

Legends

 **Amended**

 **Deleted**

¹ Applicable to alteration works to existing liftwell inspection and emergency doors.

Item	2011 Version	Amendments
1. Paragraph 3.2.7	Inspection doors, emergency doors and inspection traps shall be provided with a key-operated lock, capable of being reclosed and relocked without a key.	Inspection traps shall be provided with a key-operated lock, capable of being reclosed and relocked without a key.
2. Paragraph 3.2.8	Inspection and emergency doors shall be capable of being opened from inside the well without a key even when locked.	<p>Inspection and emergency doors shall:</p> <ul style="list-style-type: none"> (a) be equipped with dual key-operated locks requiring the simultaneous operation of two designated keys for opening from the outside and capable of being reclosed and relocked without a key; (b) be capable of being opened from inside the well without a key even when locked; and (c) except for doors in the form of lift landing doors, bear on its outside face a prominent figure-type warning sign of size not less than 100 mm high and immediately above or next to the keyholes of such doors as shown below- <div> </div>

Item	2011 Version	Amendments
3. Paragraph 3.2		<p>To add paragraph 3.2.9 after paragraph 3.2.8</p> <p>3.29 Where the design and disposition of liftwell inspection and emergency doors can reduce the likelihood of inadvertent entry, paragraph 3.2.8(a) is not applicable and a single locking device operated by a designated key is acceptable. Typical examples are:</p> <ul style="list-style-type: none"> <li>(a) lift landing doors serving as the liftwell inspection and emergency doors; or <li>(b) liftwell inspection and emergency doors with their sills being 1 m or more above the adjoining floor.

(8/2015)

Amendments to the Code of Practice for Building Works for Lifts and Escalators 2011

(September 2019)

Legends

 **Amended**

 **Deleted**

Item	2011 Version	Amendments
1. Paragraph 3.2.3(b)	bear on its outside face a notice in English and Chinese in letters and characters not less than 25mm high as follows-	bear on its outside face a notice in English and Chinese incised or embossed, made of durable materials , in letters and characters not less than 25mm high as follows-
2. Paragraph 3.3.2	Openings shall be made at the top of a well, with a minimum area of 1% of the area of the horizontal cross section of the well, ventilating to the open air either directly or via ducting or the machine or pulley rooms, provided that in no case the ventilation openings shall be less than 0.15m ² net free area.	Openings shall be made at the top of a well, with a minimum area of 1% of the area of the horizontal cross section of the well, ventilating to the open air either directly or via ducting or the machine or pulley room, provided that in no case the ventilation openings shall be less than 0.3m² net free area for each well . When a common well is accommodating four, five or six lifts, minimum vent areas of 0.4m², 0.5m² or 0.6m² shall respectively be provided. To prevent objects from falling through the ventilation openings situated over the well, ferrules which project at least 50mm above the slab or finished floor shall be provided.
3. Paragraph 3.7	<p>3.7.1 In the lower part of a well there shall be a partition between the moving parts (car or counterweight) of different lifts or services lifts. This partition shall extend at least from the floor of the pit to a height of 2.5m above the floor of the pit, and across the whole depth of the well.</p> <p>3.7.2 If the horizontal distance between the edge of a car roof and a moving part (car or counterweight) of an adjacent lift or service lift is less than 300mm, the partition required in paragraph 3.7.1 shall be extended through the full height of the well</p>	<p>To amend paragraph 3.7.1 and delete 3.7.2</p> <p>In a lift well, there shall be a suitable partition of adequate strength (e.g. solid block wall, wire mesh screen, etc.) between the moving parts (car or counterweight) of different lifts or services lifts to prevent trapping hazards. This partition shall extend from the floor of the lift pit through the full height of the well, and across the whole depth of the well. If the partition is so provided to separate each lift by wall, ventilation openings shall be provided for each well in accordance with paragraph 3.3.2.</p>
4. Paragraph 3.8.2	An access door shall be provided to the pit if the pit depth exceeds 1.6m and if the layout of the building so permits.	An access door leading to a stair in accordance with paragraph 3.12.4 shall be provided to the pit if the pit depth exceeds 2m . It shall be imperforate and shall not open towards the interior of the liftwell. It shall be provided

Item	2011 Version	Amendments
		with a key-operated lock, capable of being reclosed or relocked without a key, and opened from inside of the liftwell without a key even when locked. Where the pit depth exceeds 1.6m but not more than 2m, such access door shall also be provided ■ if the layout of the building so permits.
5. Paragraph 3.8.3(b)	bear on its outside face a notice in English and Chinese in letters and characters not less than 25mm high as follows-	bear on its outside face a notice in English and Chinese incised or embossed, made of durable materials , in letters and characters not less than 25mm high as follows-
6. Paragraph 3.8		<p>To add paragraph 3.8.5 after paragraph 3.8.4</p> <p>3.8.5 One or more permanent anchorages shall be provided adjacent to the lift landing door at the lowest landing floor for anchoring of the fall arresting devices by each worker before going down to the lift pit. To limit the distance of any fall, the anchorage points shall be located at a height between 1.5 and 1.8m above floor finished level of the landing floor and a position which is readily accessible by the worker. Subject to the provision of lift pit access door meeting the requirements under paragraph 3.8.3, these anchorages are not required.</p>
7. Paragraph 3.10.3	On the outside of a well at each landing level, as near as practical to the landing door or, where there are two or more adjoining lifts, the landing door of one in every two lifts, there shall be displayed a notice in English and Chinese in letters and characters not less than 15mm high as follows-	On the outside of a well at each landing level, as near as practical to the landing door or, where there are two or more adjoining lifts, the landing door of one in every two lifts, there shall be displayed a notice in English and Chinese incised or embossed, made of durable materials , in letters and characters not less than 15mm high as follows-
8. Paragraph 3.12.2	Access for persons to machine or pulley rooms shall be effected entirely by way of stairs if the difference in levels so requires. If it is impractical to install stairs, then ladders may be used provided that the following conditions are satisfied –	Access for persons to and egress from machine or pulley rooms shall be provided by way of stairs if the difference in levels is greater than 0.6m . ■ If the level difference does not exceed 0.6m , then ladders may be used provided that the following conditions are satisfied –

Item	2011 Version	Amendments
	<p>(a) the ladder shall be permanently fixed;</p> <p>(b) if greater than 2m in height the ladder shall be fitted with safety hoops or other suitable fall arrest system; and</p> <p>(c) adjacent to the top end of the ladder, there shall be a platform with railings and one or more hand holds within easy reach.</p>	<p>(a) the ladder shall be permanently fixed; and</p> <p>(b) adjacent to the top end of the ladder, there shall be a platform with railings and one or more hand holds within easy reach.</p>
9. Paragraph 3.12		<p>To add paragraph 3.12.4 after paragraph 3.12.3</p> <p>3.12.4 For the purpose of paragraph 3.12.2, the stairs shall –</p> <p>(a) have a width of not less than 900mm;</p> <p>(b) be constructed with treads (with anti-slippery surface) not less than 225mm in width and with risers not exceeding 175mm in height;</p> <p>(c) have not more than 16 steps in any flight without the introduction of a landing;</p> <p>(d) be provided on both sides with properly fixed handrails; and</p> <p>(e) be provided at the outer edges with protective barriers of not less than 1.1m in height.</p>
10. Paragraph 3.15.3(b)	bear on its outside face a notice in English and Chinese in letters and characters not less than 25mm high as follows:	bear on its outside face a notice in English and Chinese incised or embossed, made of durable materials , in letters and characters not less than 25mm high as follows:

Item	2011 Version	Amendments
11. Paragraph 3.17	<p>Handling of equipment in machine rooms</p> <p>One or more metal supports or hooks with safe working load notice, as appropriate, shall be provided in a machine room ceiling or on beams, conveniently positioned to permit hoisting of heavy equipment during erection and, if need be, its replacement.</p>	<p>To amend the heading and change paragraph 3.17 to paragraphs 3.17.1 and add paragraph 3.17.2)</p> <p>Handling of equipment in machine rooms and liftwells</p> <p>3.17.1 One or more metal supports or hooks with safe working load notice, as appropriate, shall be provided in a machine room ceiling or on beams, conveniently positioned to permit hoisting of heavy equipment during erection and, if need be, its replacement.</p> <p>3.17.2 One or more metal supports or hooks with safe working load notice, as appropriate, shall also be provided at the ceiling soffit of liftwells, conveniently positioned to permit hoisting of heavy equipment during erection and, if need be, replacement of lift car or suspension rope/device.</p>
12. Paragraph 4.10.2	<p>On the outside of a well as near as practical to every landing door, there shall be displayed a notice in English and Chinese in letters and characters not less than 25mm high as follows-</p>	<p>On the outside of a well as near as practical to every landing door, there shall be displayed a notice in English and Chinese incised or embossed, made of durable materials, in letters and characters not less than 25mm high as follows-</p>
13. Paragraph 4.11.7(e)	<p>bear on its outside face a notice in English and Chinese in letters and characters not less than 25mm high as follows-</p>	<p>bear on its outside face a notice in English and Chinese incised or embossed, made of durable materials, in letters and characters not less than 25mm high as follows-</p>
14. Paragraph 5.1.5	<p>Access doors or inspection traps to separate machine rooms or separate driving and return stations shall bear on their outside face a notice in Chinese and English in letters and characters not less than 25mm as follows-</p>	<p>Access doors or inspection traps to separate machine rooms or separate driving and return stations shall bear on their outside face a notice in Chinese and English incised or embossed, made of durable materials, in letters and characters not less than 25mm as follows-</p>

(9/2019)

**List of Associated Works Often Found Incomplete by DEMS
for a Lift Installation
Upon an Application for Permission to Put the Lift into Service Was Submitted
(the list is not exhaustive)**

1.	Permanent doors to machine and pulley room opening outwards, fitted with self-closing devices and proper locking devices. Permanent warning notices on the outside face of the door.
2.	Clear and safe access to machine and pulley rooms.
3.	Adequate railings of suitable height to machine platforms. Appropriate steps or stairways where there was a level difference.
4.	Liftwells, and machine and pulley rooms completely enclosed and all unnecessary holes sealed up.
5.	Permanent and adequate lighting for liftwells, machine and/or pulley rooms and/or machine platforms.
6.	Protective guards to ventilating fans. Cross-ventilation through the machine room. Wind guards to ventilation louvers, or ventilation louvers designed with equivalent function as wind guards.
7.	Provision of adequate electricity supply by permanent cables.
8.	Proper isolation switch with permanent identification label for each lift, easily accessible from an entrance of the machine room.
9.	MCB and proper isolation switches with permanent identification labels for lighting and/or socket outlets of lift cars, wells or pits, machine and/or pulley rooms.
10.	Unnecessary holes in lift wells, machine and pulley rooms filled up.
11.	Surplus/protruded iron bars inside liftwells all removed.
12.	Inspection doors, emergency doors and inspection traps, where required, with proper locking devices and clear and safe access.
13.	Required partition between lift ways in common liftwells.
14.	Lift pits completely enclosed and waterproofed.

15.	Cat ladders with suitable hand holds for access to pits.
16.	Supporting frames and reinforced wire mesh provided to the liftwell top vents
17.	Permanent and adequate lighting installations in lift lobbies. (If decoration, false ceilings, etc are to be installed in the lift lobby after permission to use the lift has been granted, such decoration/false ceiling shall not affect or obstruct the permanent illumination of the lift lobby.)
18.	Ventilation of liftwells directed to open air either directly or via ducting/the machine/pulley room.
19.	Permanent and adequate lighting in liftwells and lift pits.
20.	Debris and unrelated materials in liftwells, machine and pulley rooms cleared.
21.	Earth bonding for metallic parts in machine rooms.
22.	Associated works (except those purely for decoration purposes) surrounding the landing entrances.
23.	All necessary instructions and notices in both Chinese and English in the lift cars and on the landings.
24.	The maximum permissible load in both Chinese and English indicated on the lifting beams or hooks.

(Rev. 9/2019)

**List of Associated Works Often Found Incomplete by DEMS
for an Escalator Installation
Upon an Application for Permission to Put the Escalator into Service Was Submitted
(the list is not exhaustive)**

1.	Permanent machine room doors fitted with self-closing devices, with permanent warning notices and proper locking devices.
2.	Clear and safe access to machine rooms.
3.	Unnecessary holes in machine rooms filled up.
4.	Provision of adequate electricity supply by permanent cables.
5.	MCB and proper isolation switches with permanent identification labels for lighting and socket outlets for each escalator.
6.	Proper protective guards where the clearance between the balustrade exterior paneling and any adjacent guard rail/wall at each landing exceeds 100 mm.
7.	Permanent obstruction guards properly installed at floor intersections, building obstacles and on criss-cross escalators.
8.	Adequate clearance between the outer edges of the handrails and the adjacent walls, criss-cross escalators or other building obstacles.
9.	Clear height above the steps and the required unrestricted area of not less than 2.3 m.
10.	The required unrestricted area for accommodating passengers at both landings.
11.	Permanent and adequate lighting around the escalator including both landings. (If decoration, false ceilings, etc are to be installed around the escalator after permission to use the escalator has been granted, such decoration/false ceiling shall not affect or obstruct the permanent illumination around the escalator including both landings.)
12.	The part of wellway, building obstacles or external wall of adjacent criss-cross escalator facing handrail forming a smooth continuous vertical surface.
13.	The underside of false ceiling at floor intersections or bottom deck of adjacent criss-cross escalator forming a smooth continuous flat surface.

(12/2011)

Reference on Work Safety related to Lifts and Escalators

- (a) Code of Practice for Safety at Work (Lift and Escalator)
(<http://www.labour.gov.hk/eng/public/os/B/lift.pdf>);
- (b) Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems
(<http://www.labour.gov.hk/eng/public/os/C/belt.pdf>);
- (c) Guidelines on Safety of Lift Shaft Works: Volume 2 – During Lift Installation Stage until Issue of Occupation Permit and Handing Over to Developer
(http://cic.hk/cic_data/pdf/about_cic/publications/eng/V10_6_e_V00_2012_0106_.pdf)
- (d) Guidelines on Safety of Lift Shaft Works: Volume 3 – Throughout the Occupation Stage of Building
(http://www.cic.hk/cic_data/pdf/about_cic/publications/eng/Guidelines_LiftShaftWorks_Volume3_e.pdf)