Building and Construction Authority

An MND Statutory Board

Our Ref: APPBMSMA-2022-04 Electrical and Mechanical Engineering Group

1 August 2022

See Distribution List

Dear Sir/Madam

**STATUTORY DUTIES RELATING TO:**

**(A) REPORTING OF INCIDENTS AND PRESERVATION OF INCIDENT SITE**
**(B) OPERATION AND MAINTENANCE OF LIFTS AND ESCALATORS**
**(C) REPORTING OF UNSAFE OPERATING CONDITIONS**

**Objective**

This circular seeks to remind Lift and Escalator ("L&E") owners and service contractors of their statutory duties relating to:

a) reporting of L&E incidents, and preservation of site;

b) operation and maintenance of L&E; and

c) reporting of L&E that are unsafe for operation.

2. As our daily routine returns to normalcy, the usage of L&E has increased significantly. The Building and Construction Authority ("BCA") would thus like to remind all L&E owners and appointed service contractors of their statutory duties under the Building Maintenance and Strata Management (Lift, Escalator and Building Maintenance) Regulations 2016 ("Regulations").

**Enforcement Actions taken against Failure to Report Lift or Escalator Related Incidents**

3. Since 2016, BCA has taken enforcement actions against L&E owners and their service contractors which had failed to report L&E incidents in a timely manner. BCA would like to remind all L&E owners (including Management Corporations Strata Titles (MCSTs)) and their service contractors to notify the Commissioner of Buildings ("COB") of a reportable incident as soon as practicable after becoming aware of the incident.

4. The reporting of incidents may be done via the BCA incident reporting hotlines (9088 7289 or 9782 7296). In addition, within the time stipulated by the COB , an incident report must be submitted to BCA using the form found at https://form.gov.sg/61f0b52138bcc90013f7a02c or on BCA's corporate website located at https://www1.bca.gov.sg/regulatory-info/lifts-escalators/lifts-and-escalators-legislation/incident-notification. A reportable incident includes the occurrence of any, or a combination, of the situations prescribed in **Annex A**.

**Preservation of Incident Site**

5. Furthermore, the L&E owner of the incident equipment must take all reasonable measures to preserve the incident site, failing which the L&E owner would have committed an offence. It is also an offence for any person who, without the consent of the COB, alters, replaces, removes or adds to any machinery, equipment or article which may have contributed to the cause of the incident or modify the scene of the incident.

**Duties of L&E Owners Relating to the Safe Operation and Maintenance of L&E**

6. To ensure users' safety, L&E owners are required to ensure that the L&E are kept in a good working condition at all times and are periodically maintained. The periodic maintenance frequencies for L&E can be found in **Annex B.**

7. Should the L&E equipment be in such a situation that is likely to be dangerous, or likely to cause injury to the users, the L&E owners must immediately stop the operation of the L&E. Such situations include (but not exhaustive) the conditions found in **Annex C**. To resume the operation of the L&E, the owner must ensure that proper repair works have been carried out, and that the L&E have been tested to ensure that they are safe for operation.

**Duties of L&E Service Contractors to report L&E that are Unsafe for Operation**

8. Separately, L&E service contractors that are engaged to carry out periodic maintenance work on the L&E must immediately notify the COB when they find the L&E to be unsafe for operation. This includes any of the following situations:

a. L&E that are operating without valid Permits-to-Operate;
b. L&E that are installed without approval from the Commissioner of Building Control ("CBC"). For example, the installation of a lift that is not reflected in a building plan and/or structural plan approved by the CBC.
c. L&E that are not in compliance with prevailing design and installation standards. For example, a vertical platform lift that is operated in automatic (instead of hold-to-run) mode without prior approval from COB.
d. L&E that are operating in an unsafe condition (including L&E with conditions as described in **Annex C**). In such circumstances, the L&E service contractor should inform the L&E owner of the unsafe condition and advise the L&E owner to immediately stop the operation of the L&E; and if the L&E continues to be operating

in the unsafe condition, the service contractor must immediately report the matter to the COB.

**Penalties for Non-Compliance**

9. Any L&E owner or service contractor found guilty of an offence under the Regulations shall, for each offence, be liable to a fine not exceeding $20,000 or to imprisonment for a term not exceeding 12 months, or to both, on conviction.

**Feedback and Clarification**

10. For further information, feedback or clarification, please submit your enquiry through BCA's Online Feedback Form at https://www.bca.gov.sg/feedbackform or call us at (65)1800-342 5222 (1800-DIAL BCA).

Yours faithfully

TEO ORH HAI
GROUP DIRECTOR
ELECTRICAL AND MECHANICAL ENGINEERING GROUP
BUILDING AND CONSTRUCTION AUTHORITY
for COMMISSIONER OF BUILDINGS

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**Annex A**

**Lift incidents that are required to be reported to BCA:**

(*a*) a person dies or is injured, and the death or injury of a person involving a lift, or any associated equipment or machinery of a lift;
(*b*) the main drive system of a lift fails due to a reason other than the failure of the main power system of the lift;
(*c*) a suspension rope of a lift breaks;
(*d*) a brake, overload device, safety component or safety equipment of a lift fails;
(*e*) an interlocking device for any door of the lift-way of a lift fails due to a reason other than the safety contacts not making electrical contact;
(*f*) an interlocking device for any door of a lift car fails due to a reason other than the safety contacts not making electrical contact.

**Escalator incidents that are required to be reported to BCA:**

(*a*) a person dies or is injured, and the death or injury involves an escalator, or any associated equipment or machinery of an escalator;
(*b*) the main drive system of an escalator fails due to a reason other than the failure of the main power system of the escalator; or
(*c*) a brake, overload device, safety component or safety equipment of an escalator fails.

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**Annex B**

## Prescribed maintenance frequencies for L&E

| Type of L&E | Periodic Maintenance Frequency |
|---|---|
| Home Lifts | 1) Frequency recommended in the manufacturers' recommendations for periodic maintenance; or<br>2) Once every three months,<br><br>whichever is more frequent |
| Vertical Platform Lifts | |
| Stairlifts | |
| All lifts other than home lifts, vertical platform lifts and stairlifts[1] | 1) Frequency recommended in the manufacturers' recommendations for periodic maintenance; or<br>2) Once every month,<br><br>whichever is more frequent |
| All escalators | Once every month |

[1] *For lifts with Remote Monitoring & Diagnostics (RM&D) solutions installed, please refer to the maintenance frequencies as set out in BCA's circular - Remote Monitoring and Diagnostics Solutions for Lifts – Amendments to the Building Maintenance and Strata Management (Lift, Escalator and Building Maintenance) Regulations, dated 29 July 2022.*

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**Annex C**

## Examples of lift conditions that require immediate suspension of lift

| S/N | Aspects of lift | Lift conditions that require immediate suspension of lift |
|---|---|---|
| 1 | Door open control and door protective devices | • For a lift system which contains safety door edges and light curtains (2D or 3D sensor):<br>  ○ Car door open button, safety door edges and light curtains are not functional at the same time.<br>• For lift system which contains only safety door edges as a door protective device:<br>  ○ Both car door open button and safety door edges are not functional at the same time<br>• For lift system which contains only light curtains (2D or 3D sensor) as a door protective device:<br>  ○ Both car door open button and light curtains are not functional at the same time. |
| 2 | Lift car doors and lift landing doors | • Lift car movement occurs when there is a gap of more than 50mm (due to obstruction or any reason) between the car doors or car door and return panel along the doorway. |
| 3 | Movement of lift car | • Any abnormal sounds or vibration during lift car movement.<br><br>**The cause for abnormal sounds or vibration shall be investigated by the service contractor. Should the cause be the result of failure to maintain safety critical items, the lift would require the immediate suspension of operation* |
| 4 | Brakes of lift machine and drive | • The performance of brake drum and/or brake pad is affected due to contamination of oil or grease.<br>• The brake plunger movement is restricted or stuck.<br>• The additional brake for UCMP (Unintended Car Movement Protection) is not working or operational.<br>• The brake system has been electrically or mechanically tampered with. |

| S/N | Aspects of lift | Lift conditions that require immediate suspension of lift |
|---|---|---|
| 5 | Overspeed governor | • The movement of the parts in the governor are restricted, e.g., the pawl is not able to engage the ratchet wheel.<br>• The electrical switch of the overspeed governor is misaligned, bypassed, missing or tampered with,<br>• The overspeed governor did not function as intended.<br>• The overspeed governor was not able to activate the safety gear during inspection or operation. |
| 6 | Main rope and compensation rope | • There are broken or dislodged wire rope(s) from the machine, pulley, counterweight or rope termination.<br>• The compensation rope is broken or missing.<br>• The compensation chain is broken or missing. |
| 7 | Buffer | • The car buffer is missing or inoperable.<br>• The counterweight buffer is missing or inoperable. |
| 8 | Controller and electrical system | • Any safety switches found to be missing, damaged, bypassed or tampered with and likely to lead to unsafe conditions<br>• Failure of controller to initiate immediate stopping of lift car and prevent lift movement upon the activation of any safety switches<br>• Failure of controller, electronic and electrical systems, wirings and circuit boards (including printed circuit boards containing any contact or electronic component) to function as intended when lift is in operation |
| 9 | Guide shoes or rollers of lift car and counterweight | • For lift using guide shoes, more than 1 of the guide shoes for the lift car or counterweight are missing.<br>• For lift using rollers, more than 1 of the rollers for the lift car or counterweight are missing. |
| 10 | Safety gear | • The safety gear is not maintained or inoperable (e.g., missing safety wedges, linkages or springs).<br>• The safety gear, when activated, did not stop and hold the lift car or counterweight within the allowance distance of the prescribed standards. |
| 11 | Stopping or level accuracy | • The stopping accuracy of the lift car floor is more than ±25mm |

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## Examples of escalator conditions that require immediate suspension of escalator

| S/N | Aspects of escalator | Escalator conditions that require immediate suspension of escalator |
|---|---|---|
| 1 | Signage and indicator | • Missing or damaged demarcation plates resulting in a gap of width exceeding 10mm between the steps OR a gap of width exceeding 10mm between the step and the skirt panel. |
| 2 | Emergency stop switch | • Failure of the emergency stop switch to stop escalator movement upon activation.<br>• Any bypass of the emergency stop switch. |
| 3 | Handrail system | • No movement of handrail when the escalator steps are moving. |
| 4 | Driving machine, brakes, sprocket and auxiliary brake | • Failure of auxiliary brake to function as intended.<br>• The brake plunger movement is restricted or stuck.<br>• Brake system and safety switches have been electrically or mechanically tampered with. |
| 5 | Safety switches and sensors | • Failure of any of the safety switch (skirt panel switch, escalator comb switch, step sag switch, step up thrust switch, missing step detection device, floor plate or access cover detection switch, drive chain tension and step chain tension monitoring switch) to stop escalator movement upon activation.<br>• Safety switches and sensors have been electrically or mechanically tampered with |
| 6 | Excessive speed and unintentional reversal protection | • Escalator does not stop upon the immediate reversal of an up-riding escalator<br>• Escalator does not stop upon the overspeed of more than 20% of a down-riding escalator |
| 7 | Operational clearance | • Clearance between skirt panel and escalator step is more than 10mm on either side |
| 8 | All the escalator parts | • Chains that are worn off or loosened<br>• Chain elements that are deformed or missing (e.g., handrail, step chain, main drive chain). |

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| S/N | Aspects of escalator | Escalator conditions that require immediate suspension of escalator |
|---|---|---|
| 9 | Controller and electrical system | • Any safety switches found to be missing, damaged, bypassed or tampered with and likely to lead to unsafe conditions<br>• Failure of controller to initiate immediate stopping of escalator and prevent escalator movement upon the activation of any safety switches<br>• Failure of controller, electronic and electrical systems, wirings and circuit boards (including printed circuit boards containing any contact or electronic component) to function as intended when escalator is in operation |

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