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29 January 2016

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

Dear Sirs,

Circular No. 2/2016
Performance Assessment Scheme
Contractors' Performance Rating System

With a view to further enhancing the Performance Assessment Scheme (PAS) for the Contractors' Performance Rating (CPR) System, this Department recently completed the revision of the content of the PAS after consultation with the Lifts and Escalator Contractors Association (LECA) and the Registered Elevator and Escalator Contractors Association (REECAL). The revised PAS was agreed in the meeting of the Lift and Escalator Safety Advisory Committee (LESAC) held on 22 January 2016.

This Circular will supersede the Circular No. 3/2013 and the revised PAS will be effective starting from 1 February 2016. Please note that the revised PAS will not affect PM points which have been accorded to individual registered lift / escalator contractor and engineer.

Yours faithfully,

(CHEUNG Kim-ching)
for Director of Electrical and Mechanical Services

Encl.

- cc. The Director of the Architectural Services Department (Attn: CBSE/2)
The Director of Buildings
The Director of Housing (Attn: SM/QM)
The Lift and Escalator Contractor Association
The Registered Elevator and Escalator Contractors Association
The International Associated of Elevator Engineers
The Hong Kong General Union of Lift and Escalator Employees
The Building Services Operation and Maintenance Executives Society

Assessment of the Performance
of
Registered Lift/Escalator Contractors & Engineers

Effective Date: 1 February 2016
Electrical & Mechanical Services Department

Assessment of the Performance of Registered Lift/Escalator Contractors & Engineers

1. Introduction

Under the Lifts and Escalators Ordinance ("the Ordinance"), registered lift/escalator contractors/engineers (hereinafter called RC and RE for registered contractor and registered engineer respectively) are required to perform their specific duties as stipulated in sections 16 (for RCs) and 17 (for REs) of the Ordinance. The Director of Electrical and Mechanical Services ("the Director") makes reference to the quality of lift/escalator works observed during inspections and/or documentary evidences to gauge and monitor the performance of REs and RCs.

2. Performance Monitoring

(a) Performance monitoring ("PM") points are derived to facilitate assessment of the performance of RCs and REs. The quantified PM points represent the performance shortfalls of RCs and REs in carrying out lift/escalator works failing to comply with the requirements stipulated in the Ordinance, Codes of Practice and international standards as listed below:

- (i) The Lifts and Escalators Ordinance and the Lifts and Escalators (General) Regulation ("the Regulation");
- (ii) Code of Practice on the Design and Construction of Lifts and Escalators ("Design Code");
- (iii) Code of Practice for Lift Works and Escalator Works ("Works Code");
- (iv) Code of Practice on Building Works for Lifts and Escalators;
- (v) Code of Practice for the Electricity (Wiring) Regulations; and
- (vi) BS2655, BS5655, BS5656, EN81 and EN115, wherever applicable to lifts or escalators.

(b) The established non-compliant items, depending on their nature, are classified into 6 Categories, namely A, B, C, D, E & X. Category A belongs to critical safety items, which is accorded 15 PM points for each non-compliance while Categories B, C, D and E belong to maintenance items, which are accorded 6 PM points, 4 PM points, 3 PM points and 2 PM points respectively for each non-compliance. Category X includes any conviction by the Court for contravening the Ordinance or Regulation, and committed disciplinary offence established in the Disciplinary Board, which are accorded 20 PM points and 15 PM points respectively. Category X will not be accorded if the concerned irregularity has already been accorded in any of Categories A, B, C, D and E before the conviction by the Court or Disciplinary Board. For calculation of the average score of PM points over a period, every allocation of PM points by an item under Category X will increase the number of units inspected by one.

- (c) Inspection of a lift/escalator may be conducted by the Director's representative in the presence of the RC/RE or his representatives, or investigation of documentary evidences will be undertaken to establish the basis of the non-compliances. PM points will be recorded according to each identified non-compliant item. Every allocation of PM points based on investigation of documentary evidences will increase the number of units inspected by one. The lift/escalator inspections and/or review of documentary evidences may normally be conducted, but are not limited to, the following occasions:
- (i) Upon receiving a test certificate issued by a RC and a RE for a new lift or a new escalator;
 - (ii) Upon receiving a test certificate issued by a RC and a RE for a lift or an escalator after major alterations;
 - (iii) Upon receiving a test certificate issued by a RC and/or a RE for an existing lift or escalator;
 - (iv) Upon receiving complaints from the public;
 - (v) Upon notification of an incident related to a lift/escalator;
 - (vi) Upon notification of taking over of maintenance of a lift/escalator;
 - (vii) Random inspections of existing lifts or escalators.
- (d) PM points recorded will be kept under the account of each RC or RE or both of them depending on the nature of the identified non-compliant items. Normally, the PM points arisen from non-compliant items of maintenance works will be recorded in the RC's account and PM points arisen from non-compliant items identified from inspections following receipt of certificates will be accorded to the RC and the RE who last examined or tested the installation.
- (e) PM points will be recorded following the decision of the Courts/Disciplinary Boards or conclusion of investigation in which the RC or RE has been convicted, found guilty or liable for the incident subject to the fact that no PM points have been accorded before upon discovery of the concerned non-compliant items/misconduct/negligence.
- (f) The RC or RE will be notified in writing in case any non-compliant items are identified and the related PM points are recorded in his account. He may appeal in writing with full justifications to the Director within two weeks of the notification date. For exceptionally complicated cases where the RC or RE requires more time to prepare appeal justifications, the RC or RE may furnish reasons and apply to the Director in writing within one week of the notification for extension of time for submission of full appeal justifications. The Director will advise the time limit, where applicable, for the RC or RE to prepare for the appeal. The Director's decision on granting extension of time and on the appeal shall be final.
- (g) PM points incurred for the non-compliant items identified will be kept in the RC's or RE's account for 12 successive calendar months, commencing from the month when the non-compliant items are recorded, or when the PM points are recorded following the decision of the Court/Disciplinary Boards or conclusion of investigation as mentioned in

- (e) above, whichever is later, for calculation of the moving average in i(iii) below.
- (h) When the total PM Points of each RC/RE's account accumulate up to the critical points or for such critical situations where the non-compliance may lead to serious safety consequence, the Director may take one or more of the following actions:
- (i) Issue a warning letter to the RC or RE and also notify other relevant enforcing authorities;
 - (ii) Initiate disciplinary proceedings by bringing the matter(s) to the notice of the Secretary for Development for appointment of a Disciplinary Board pursuant to Part 5 of the Ordinance;
 - (iii) Institute prosecution actions against the RC or RE.
- (i) For the purpose of paragraph (h), the following critical points and situations are established:
- (i) For any Category A non-compliant item (15 PM points item) in a single unit inspection, a warning letter will be served to the RC and/or RE. Prosecution/Disciplinary actions may also be instituted.
 - (ii) In case of an aggregated total of 12 PM points or more for maintenance non-compliant items, excluding Category A and Category X items, are accorded in a single unit inspection, a warning letter will be issued to the RC and/or RE.
 - (iii) When the moving average of the accumulated PM points of the non-compliant items found is above 4 PM points in any rolling 12-month period within which the number of units inspected is not less than 10, a warning letter will be served to the RC and/or RE. The said moving average is calculated by dividing the total number of PM points (excluding non-compliant items already covered by a warning letter following the inspection) scored for 12 successive calendar months by total number of units inspected during the 12 successive calendar months. This excludes Category A and Category X items and the aggregated total of PM points under item (ii) above for which a warning letter has been issued. The inspected units giving rise to the Category A item(s), Category X item(s), or an aggregated total of 12 PM points or more in a single unit inspection are to be excluded for the calculation of moving average figure. The accumulated PM points will be reset to zero upon issuance of a warning letter due to triggering of the moving average critical point and the number of units inspected will also be reset to zero. Further moving average assessment will be made for the ensuing period when the number of units inspected reaches 10 again.
 - (iv) A warning letter will be served to the RC/RE in case of any conviction by the Court for offence(s) in relation to contravention of the provisions of the Ordinance or Regulation or any misconduct or negligence in carrying out lift/escalator works decided by the Disciplinary Board.

- (v) The non-compliance was due to grave negligence or misconduct of the RC and/or RE.
- (vi) If the performance of the RC or RE is persistently unsatisfactory, i.e. 3 warning letters have been issued to the RC or RE within a 12 months' period, disciplinary and/or prosecution actions against the RC or RE may be instituted.
- (j) A demarcation prefix "P" has been added to all the non-compliant items under this assessment scheme.
- (k) A sample calculation illustrating the arrangements mentioned in (g) and (i) is shown in the **Appendix**.
- (l) The aforementioned performance monitoring and sanction mechanism shall not derogate the power of the Director in taking any action or imposing any penalty in relation to any disciplinary matter or any offence stipulated in the Ordinance.

3. List of Common Non-compliance – Lifts

(Note: Any device/equipment/component newly installed during major alteration shall comply with the latest requirements of the Ordinance and the Code of Practice on the Design and Construction of Lifts and Escalators and shall be effective.)

Category A (15 points)

- PLA1 The car door electrical interlock device is not provided or is ineffective or is defeated such that the lift is still operational with a car door not fully closed (this applies to lifts installed with the tendering date on or after 17 December 2012, and, lifts installed with the tendering date before 17 December 2012 and provided with car door electrical interlock device).
- PLA2 The landing door interlock device is not provided or is ineffective or is defeated such that the landing door is insecure or can be opened without using the unlocking key when the car is not in the unlocking zone, or when the lift can be operated with a landing door not fully closed or locked (for lifts installed on or after 31 May 1984, the landing door is considered "locked" only when the engagement of locking elements is not less than 7 mm).
- PLA3 The safety gear or the ascending car overspeed protection means or the overspeed governor is not provided or failed to perform its intended function when the car reaches the designated tripping speed of the overspeed governor such that:-
 - (i) the car (and/or counterweight where applicable) cannot be stopped and maintained stationary, in the case of safety gear.
 - (ii) the car cannot be stopped or slowed down to a speed for which the counterweight buffer is designed, in the case of ascending car overspeed protection means (this applies to the lifts installed with the tendering date

on or after 1 January 2001).

- PLA4 The machine brake is ineffective such that a downward travelling car with up to 125% rated load (150% rated load for industrial truck loaded freight lifts and vehicle lifts; 110% rated load for passenger lifts designed & constructed prior to BS 5655:Pt. 1) cannot be stopped and maintained stationary in case the power supplies or control signals to either the motor or the brake are interrupted.
- PLA5 The buffer is ineffective due to either improper installation or maintenance.
- PLA6 For hydraulic lifts only: Protection devices against free fall or descent with excessive speed is not provided or failed to perform its intended function. Reference should be made to Table 1 or Clause 5.8.2 in Section E Part 2 of the Design Code for requirements of protection devices.
- PLA7 The electrical interlock device for the inspection or emergency door or inspection trap to the lift well or for the access door to the lift pit is not provided or is ineffective or is defeated such that the lift can be operated when any of these doors or trap doors is not in the closed position.
- PLA8 One or more of the hoisting ropes/chains is/are broken or missing or insecure in the termination(s) due to inadequate or inferior maintenance / installation / workmanship / material quality (where material quality of the hoisting ropes/chains is in issue, no points will be recorded if the material quality of the hoisting ropes/chains is outside the control and awareness of the RC or RE).
- PLA9 The unintended car movement protection device is not provided or is ineffective or is defeated such that the lift moved from the landing with the landing door not in the locked position and the car door not in the closed position, or the lift car cannot stop within the operation range as specified in the Design Code (this applies to the lifts installed with the tendering date on or after 1 September 2007).
- PLA10 The unintended car movement occurred due to any failure or ineffectiveness of lift machine or brake system or drive control system, or any equipment deviated from manufacturers' configuration (except failure of suspension ropes or chains and the traction sheave or drum or sprockets of the machine) such that the lift moved from the landing with the landing door not in the locked position and the car door not in the closed position, and the lift car cannot be stopped within a distance specified in Clause 5.14.1, 5.14.2.1 or 5.14.2.2, Section E, Part 1 of the Design Code.
- PLA11 The machine brake is ineffective such that a travelling car at upward travelling direction at rated speed cannot be stopped and maintained stationary in case the power supplies or control signals to either the motor or the brake are interrupted.

Category B (6 points)

- PLB1 Incorrect setting of the car overload device or the car overload device is not of a fail-safe design such that the lift can close its doors and operate when the load in the car exceeds 110% of the rated load (for lifts installed on or after 3 May 1969).
- PLB2 The upper and/or lower final limit switches of an electric lift, or upper final limit switch of a hydraulic lift is not provided or is ineffective.
- PLB3 Terminations of compensation ropes or governor ropes improperly installed in that the fixing or termination of the ropes is insecure or metal/resin filled sockets not adequately filled with metal/resin or rope grips not provided or missing.
- PLB4 The buffer switch is not provided or is ineffective for the energy dissipation type buffers (for lifts installed on or after 31 May 1984).
- PLB5 The governor slack rope switch is not provided or is ineffective or is defeated (for lifts installed on or after 31 May 1984).
- PLB6 The compensation rope tension switch is not provided or is ineffective.
- PLB7 The emergency stop switch at the machine room (for lifts installed on or after 18 March 1994), the pit or the car top is not provided or is ineffective.
- PLB8 Speed setting of the overspeed governor is incorrect.
- PLB9 The stopping distance in a safety gear test does not comply with the sliding distance limitation stated in BS5655: Part 10 or BS2655: Part 1 (for lifts installed before 18 March 1994).
- PLB10 Phase failure/reversal protection is not provided or is ineffective.
- PLB11 Insufficient traction such that the requirements stated in BS5655: Part 10 are not satisfied (for lifts installed on or after 31 May 1984).
- PLB12 The car door mechanical lock is not provided or is ineffective (for lifts installed on or after 31 May 1984) such that the car door is insecure or can be opened by bare hands inside the lift car when the car is not in the unlocking zone, or when the lift can be operated with the car door not locked (for lifts installed on or after 10 October 2000, the car door is considered "*locked*" only when the engagement of the locking elements is not less than 7 mm).
- PLB13 The car/counterweight obstruction safety device is ineffective or not correctly adjusted (for lifts installed on or after 31 May 1984).
- PLB14 The interlocking device for the car top/side emergency exit is not provided or is ineffective such that the lift can be operated when the exit is not closed and locked.
- PLB15 The fireman's lift fails to perform the required fireman's lift operating mode.

- PLB16 The home landing operation is not provided or is ineffective such that the lift car cannot be brought back to home landing in case of fire emergency (for lifts installed on or after 18 March 1994).
- PLB17 The electrical interlock device for the fire/security gate installed in front of the lift entrance is not provided or is ineffective. (Points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months.)
- PLB18 The landing door bridging control station is not provided or is ineffective (for lifts installed on or after 18 March 1994).
- PLB19 The tape switch is ineffective (for the lift with reduced stroke buffer and using tape to transmit car position).
- PLB20 Electrical checking on operation of the car safety gear is not provided or is ineffective (for lifts installed on or after 31 May 1984).
- PLB21 The protective screen is not provided at the pit for the counterweight or between liftways for common shaft installation.
- PLB22 Exposed/extraneous conductive parts of the lift system are not electrically earthed in accordance with the Code of Practice for the Electricity (Wiring) Regulations or the earthing is ineffective.
(PM points will be recorded under the following conditions:
The parts concerned are provided by the RC; or
The parts concerned are not provided by the RC and the RC or RE has not advised the responsible person of this defect in writing for rectification.)
- PLB23 For hydraulic lifts only: The anti-creep system is not provided as required or is ineffective.
- PLB24 For hydraulic lifts only: The pressure relief valve is not provided or is ineffective.
- PLB25 Security gate is installed in front of the lift entrance of a fireman's lift. (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months.)
- PLB26 Sufficient overhead runby or bottom clearance in the pit according to the Design Code is not provided.
- PLB27 With the car stopped and the supply to the door operator (if any) disconnected (for lifts installed on or after 31 May 1984), Clause 4.10 in Section E Part 1 or Part 2 of the Design Code is not complied with, i.e.:
- (i) it is unable to open or partly open the car door by hand from the landing; or
 - (ii) it is unable to open or partly open the car door together with the landing

door linked to it if they are coupled, by hand from within the car if the car is stopped within the unlocking zone.

- PLB28 Hoisting ropes are not maintained in good working conditions in that the diameter of a hoisting rope has worn down by more than 10% of its nominal diameter or the number of wire breaks is excessive or there is severe rusting (i.e. obvious rouging exists for more than a cumulated rope length of 1 m within a hoisting rope for an installation with a travel not more than 30 m or a cumulated rope length of 3 m within a hoisting rope for an installation with travel exceeding 30 m) or excessive grease/scum deposited on the hoisting rope (i.e. valley between rope strands is not visible for more than a continuous rope length of 1 m within a hoisting rope for an installation with travel not more than 30 m or for a cumulated rope length of 5% of a hoisting rope).
- PLB29 Fire or smoke incident involving the equipment or ancillary machinery of a lift installation, which is found to be induced or caused due to inferior workmanship in the installation or lack of maintenance of the lift, e.g. short-circuiting, excessive dust/dirt, foreign materials, ageing cables, etc.
- PLB30 Failure to carry out lift works by two or more lift workers in accordance with the Code of Practice for Lift Works and Escalator Works, Part 4, Clause 4.11.
- PLB31 Any incident¹ / property damage caused by equipment failure or defeated components², e.g. failure of levelling devices, electrical or mechanical component, etc., or caused when carrying out lift works with inadequate safety precautions.
- PLB32 Emergency alarm devices such as car push button with buzzer or intercom system are not provided or are ineffective.
- PLB33 The car emergency lighting is not provided or is ineffective (for lifts installed on or after 3 May 1969).
- PLB34 The brake monitoring device, which positively monitors to prevent further operation of the lift machine when any one set of the braking mechanism is not functioning properly, is not provided or is ineffective or is defeated (for lifts tendered on or after 1 September 2007).
- PLB35 For machine-room-less lifts only: the maintenance access panel does not provide emergency operation devices together with an intercom system.

¹ Incident means any of the lift incident specified in Schedule 7, Part 1 of the Ordinance.

² Equipment failure or defeated components related to Category A items will be accorded under PLA items.

- PLB36 For machine-room-less lifts only: If the machine room-less lift is provided with an emergency electrical brake release switch, which is placed in the maintenance access panel located outside the lift well, any of the following conditions is not satisfied:
- (i) operation of the emergency electrical 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 (for lifts tendered on or after 17 December 2012) ;
 - (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 (for lifts tendered on or after 17 December 2012) ; 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 (for lifts tendered on or after 17 December 2012).

Category C (4 points)

- PLC1 The automatic closing function of the landing door is ineffective (for lifts installed on or after 31 May 1984). This excludes cases where the dysfunction is caused by foreign materials such as debris or sand particles in door sills.
- PLC2 For lifts installed on or after 20 September 1997, CCTV system, indication light, reset function or indication light for acknowledgement in lift car for the disabled is ineffective. PM points will be recorded if:
- (i) the part(s) concerned is(are) maintained by the RC or its sub-contractor; or
 - (ii) the part(s) concerned is(are) not maintained by the RC or its sub-contractor and the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months.
- PLC3 More than 10% of the total number of landing/car doors inspected in accordance with Clause 3.2.2 of the Design Code have excessive clearance between door panels, or between door panels and uprights, lintels or sills. (PM points will be recorded for cases of excessive clearance due to unsatisfactory building works if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).
- PLC4 Corrosion or damage or rusting of car cages, car doors or landing doors which

affects the safety of passengers (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).

- PLC5 The normal/inspection switch of the car top control station is ineffective.
- PLC6 Display of the floor indication panel does not tally with the actual position of the lift car (no points will be recorded if this non-compliance is due to the responsible person's arrangement without notifying the RC).
- PLC7 The compensating rope/chain is broken.
- PLC8 The empty car can be raised by the lift machine rotating in the "*up*" direction when the counterweight is resting on the buffer (for lifts installed on or after 31 May 1984).
- PLC9 The car ventilation fan is inoperative or ineffective such that a capacity of 10 air changes per hour in the lift car with the car doors closed cannot be maintained.

Category D (3 points)

- PLD1 The landing door emergency unlocking function is ineffective.
- PLD2 Door sensitive protective devices are ineffective such that car/landing doors continue to close even when the device has been triggered. (It does not include the case when the sensitive protective device is made inoperative for the forced closing system.)
- PLD3 Door closing force of automatic power operated horizontally sliding doors is excessive, i.e. exceed 150N, measured after the first third of the travel of the door.
- PLD4 Filler weights of the counterweight are insecure such that emergency stopping or vibration during normal operation can cause the filler weights to dislodge from the counterweight frame or to displace horizontally by more than 20 mm or to displace to a position such that the clearance between lift car (and its associated equipment) and the filler weights is less than 50 mm (the 50 mm clearance is applicable to lifts installed on or after 31 May 1984 only), or to jump and hit the adjacent filler weight or counterweight frame. During the PAS inspections, the filler weights may be pushed by hand without using any tool in order to check whether the filler weights are securely fixed.
- PLD5 The car apron is not installed or properly fixed.
- PLD6 The landing door apron under the threshold is not installed or properly fixed (for lifts installed on or after 31 May 1984).
- PLD7 Guide rails/Guide rail brackets/ Guide rollers/ Guide shoes are not properly fixed / spaced / lubricated or are damaged.

- PLD8 The car 'door open' button is ineffective.
- PLD9 Protective guards not provided or cannot offer the protection as required such that moving parts including rotating parts can inadvertently be accessed (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).

Category E (2 points)

- PLE1 Ventilation slots are blocked up (not applicable for lifts installed before 31 May 1984) (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).
- PLE2 Car lighting is not properly installed or is inoperative such that all lamps fail to turn on.
- PLE3 The brake releasing device or the handpump or the manual lowering device is malfunction, or the correct or updated emergency operation instruction is not provided.
- PLE4 Oil leakage from machinery resulting in insufficient lubrication or oily floor with prominent safety hazard.
- PLE5 Notice or operating instruction for freight lift or industrial truck loaded freight lift or vehicle lift is not provided (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).
- PLE6 Failure to update log-book in accordance with the Code of Practice for Lift Works and Escalator Works. (PM points will be recorded per unit of installation.)
- PLE7 The lift well lighting, when fitted, are not properly spaced (not applicable for lift well lighting installed before 31 May 1984).
- PLE8 Load plate is not provided inside the lift car or the required information is not correctly shown (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).
- PLE9 Machine room door or pulley room door or emergency/inspection door to the lift well, or access door to the lift pit is not opening outwards, or is not provided with self-closing device (not applicable to trap doors), or permanent warning notice or locking device of the type that can be opened without a key from inside the room or lift well or lift pit is not provided (for lifts tendered on or after 1 July 1993) (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).

- PLE10 Failure to notify the Director for any of the following in accordance with the requirements and within the time limit specified in the Ordinance or Regulation:
- (i) undertaking of lift works (Section 3 of the Regulation);
 - (ii) subcontracting of lift works (Section 4 of the Regulation);
 - (iii) unable or unwilling to continue to undertake lift works (Section 9 of the Regulation);
 - (iv) incident investigation report (Section 40(2) of the Ordinance);
 - (v) failure of emergency devices (Section 8 of the Regulation); and
 - (vi) report of lift not in safe working order (Sections 24 and 25 of the Ordinance).
- PLE11 For machine-room-less lifts only: the maintenance access panel does not provide any of the following:-
- (i) 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;
 - (ii) direct observation of the lift machine together with display device giving indication of : (a) direction of movements of the car; and (b) speed of the lift car (for lifts tendered on or after 17 December 2012) ; and
 - (iii) direct observation of the lift machine or by display device(s) giving indication of reaching an unlocking zone (for lifts tendered on or after 17 December 2012).
- PLE12 For machine-room-less lifts only: the lift fails to provide a manual means of emergency operation for allowing the car to be moved to a landing with the aid of following equipment:-
- (i) one set of car lifting tools for emergency operation such as chain block, rope clamber, guide rail clamber, lever, shackle, etc.;
 - (ii) portable weight for placing to car or compensation chain when balanced load occurs; and
 - (iii) an emergency electrical operation device and emergency electrical brake release switch (if no manual release is provided) according to the Design Code, which are placed in the maintenance access panel located outside the lift well (for lifts tendered on or after 17 December 2012).

Category X (PM points to be specified for individual item)

(PM points specified for the individual items will be allocated subject to the fact that no PM points have been allocated upon discovery of the non-compliant items/misconduct/negligence.)

- PLX1 Conviction by the Court for offence(s) in relation to contravention of the provisions of the Ordinance or Regulation (20 PM points)
- PLX2 Guilty by the Disciplinary Board for such misconduct or negligence in carrying out lift works (15 PM points)

4. List of Common Non-compliance – Escalators

(Note: Any device/equipment/component newly installed during major alteration shall comply with the latest requirements of the Ordinance and the Code of Practice on the Design and Construction of Lifts and Escalators and shall be effective.)

Category A (15 points)

- PEA1 The escalator machine brake or the auxiliary brake or the broken drive chain safety device is ineffective or is defeated such that the escalator steps cannot be stopped and maintained stationary.
- PEA2 The step chain, drive chain or the shaft of the drive machine is broken due to inadequate or inferior maintenance / workmanship / material quality (where material quality of the step chain, drive chain or the shaft of the drive machine is in issue, no points will be recorded if the material quality of the component is outside the control and awareness of the RC or RE).

Category B (6 points)

- PEB1 The phase failure/reversal protection device is not provided or is ineffective.
- PEB2 The escalator brake is not properly adjusted such that the stopping distance does not comply with the limitations specified in the corresponding design requirements as stipulated according to the tender/modification date of the escalator.
- PEB3 The emergency stop switch is not provided or is ineffective.
- PEB4 The broken step chain safety device is not provided or is ineffective.
- PEB5 The step sagging safety device is not provided or is ineffective (for escalators installed on or after 31 October 1987).
- PEB6 The non-reversal device is not provided or is ineffective.
- PEB7 The broken handrail safety device is not provided or is ineffective (for public service escalators installed on or after 31 October 1987).
- PEB8 The handrail entry safety device is not provided or is ineffective (for escalators installed on or after 31 October 1987).

- PEB9 The comb plate safety device is not provided or is ineffective (for escalators installed on or after 31 October 1987).
- PEB10 The speed governor or speed control is not provided or not complying with the requirements specified in Clause 8.5.1 in Section E, Part 4 of the Design Code.
- PEB11 The skirt panel switch is not provided, missing or ineffective such that the escalator does not stop even if a foreign object is jammed between the skirt panel and the pallet (for escalators installed on or after 18 March 1994).
- PEB12 The electrical interlocking device of the escalator in connection with the adjacent shutter gate is not provided or is ineffective. (PM points will be recorded if the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).
- PEB13 Exposed/extraneous conductive parts of the escalator system are not electrically earthed in accordance with the Code of Practice for the Electricity (Wiring) Regulations or the earthing is ineffective.
(Points will be recorded under the following conditions:
The parts concerned are maintained by the RC; or
The parts concerned are not maintained by the RC and the RC or RE has not advised the responsible person of this non-compliant item in writing for rectification within the last three months).
- PEB14 The interlocking device for successive escalators without intermediate exit is not provided or is ineffective such that the escalator will not stop automatically upon stopping of its succeeding escalator.
- PEB15 Fire or smoke incident involving the equipment or ancillary machinery of an escalator installation, which is found to be induced or caused due to inferior workmanship in the installation or lack of maintenance of the escalator or poor housekeeping of the escalator machine room, e.g. short-circuiting, excessive dust/dirt, foreign materials, ageing cables, etc.
- PEB16 Any incident³/property damage caused by equipment failure⁴ e.g. failure of electrical or mechanical component, loosen of handrails, ineffective sensors etc., or caused when carrying out escalator works with inadequate safety precautions.
- PEB17 The missing step/pallet device is not provided or is ineffective or is defeated (for escalators tendered on or after 1 January 2012).

³ Incident means any of the escalator incident specified in Schedule 7, Part 2 of the Ordinance.

⁴ Equipment failure or defeated components related to Category A items will be accorded under PEA items.

Category C (4 points)

- PEC1 The clearance between the skirt panel and the step of an escalator exceeds 4mm.
- PEC2 The clearance h_6 (see Figure 1, detail X in Section E, Part 4 of the Design Code) between the comb and the step exceeds 4 mm, or the horizontal clearance between the teeth of the comb and the web of the step exceeds 4 mm or the clearance between steps exceeds 6 mm.
- PEC3 The enclosure of escalator (cladding) is not properly installed such that machinery, moving parts or electrical parts are exposed and accessible by unauthorized persons.
- PEC4 The safety device for the inspection door or the trap door next to the adjacent escalator treadway is not provided or is ineffective such that the adjacent escalator can still operate when this inspection door or trap door is open.
- PEC5 The clearance b_6' or b_6'' (see Figure 2, detail W in Section E, Part 4 of the Design Code) between the handrail profile and guide or cover profile exceeds 8 mm.

Category D (3 points)

- PED1 Failure of the RC or RE to advise the responsible person of the missing guards or the guards are installed incorrectly at intersection between escalator and floor, between escalator and adjacent obstructions, or between criss-cross escalators.
- PED2 Protective guards for accessible moving parts including rotating parts are not provided or they fail to offer the protection as required.
- PED3 Deviation of the speed of the handrail from the speed of the steps is outside the limits of 0 to +2% (for escalator installed on or after 31 October 1987).
- PED4 The skirt deflector is not provided or the installation is ineffective (for escalators installed on or after 18 March 1994).

Category E (2 points)

- PEE1 The brake release or manual release instruction is not provided.
- PEE2 The notice or pictograph is not provided.
- PEE3 Failure to update log-book in accordance with the Code of Practice for Lift Works and Escalator Works. (PM points will be counted and recorded per unit of installation.)
- PEE4 The clearance between the balustrade exterior paneling and the guard wall/rail erected adjacent to the escalator at the landing exceeds 100 mm or the guard rail/wall is not securely fixed (PM points will be recorded if the RC or RE has not

advised the responsible person of this non-compliant item in writing for rectification within the last three months).

- PEE5 Failure to notify the Director for any of the following in accordance with the requirements and within the time limit specified in the Ordinance or Regulation:
- (i) undertaking of escalator works (Section 18 of the Regulation);
 - (ii) subcontracting of escalator works (Section 19 of the Regulation);
 - (iii) unable or unwilling to continue to undertake escalator works (Section 23 of the Regulation);
 - (iv) incident investigation report (Section 70(2) of the Ordinance); and
 - (v) report of escalator not in safe working order (Sections 54 and 55 of the Ordinance).

Category X (PM point specified for individual item)

(PM points specified for the individual items will be allocated subject to the fact that no PM points have been allocated upon discovery of the non-compliant items/misconduct/negligence.)

- PEX1 Conviction by the Court for offence(s) in relation to contravention of the provisions of the Ordinance or Regulation (20 PM points)
- PEX2 Guilty by the Disciplinary Board for such misconduct or negligence in carrying out escalator works (15 PM points)

Appendix - Sample calculation of moving averages

<u>For a particular RC/RE, assessment started in Nov 2013</u>																		
	2013		2014												2015			
A. Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
B. No. of units inspected in the month excluding those with which warning has been issued following the inspection	8	3	4	4	6	7	5	1	3	6	7	4	8	3	4	4	4	4
C. Total no. of units inspected for 12 successive calendar months	8	11	15	19	25	7 ⁽⁵⁾	12	13	16	22	29	33	41	44	48	52	56	53 ⁽⁶⁾
D. Total no. of PM points (Categories A and X items) scored in the month	0	15 ⁽²⁾	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0
E. Total no. of PM points (12 PM points or more in a single unit inspection) scored in the month	0	0	0	14 ⁽³⁾	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F. Total no. of PM points (excluding non-compliant items already covered by a warning following the inspection) scored in the months	16	4	28	24	36	20	15	0	2	2	0	2	4	6	4	2	0	2
G. Total no. of PM points (excluding non-compliant items already covered by a warning following the inspection) scored for 12 successive calendar months	16	20	48	72	108	20 ⁽⁵⁾	35	35	37	39	39	41	45	51	55	57	57	39 ⁽⁷⁾
H. Moving average PM points (excluding non-compliant items already covered by a warning following the inspection) scored for 12 successive calendar months (H= G/C)	(N/A) ⁽¹⁾	1.8	3.2	3.8	4.3 ⁽⁴⁾	(N/A) ⁽¹⁾	2.9	2.7	2.3	1.8	1.3	1.2	1.1	1.2	1.1	1.1	1.0	0.7

Notes:

- (1) As number of units inspected is less than 10, moving average is not calculated.
- (2) In **December 2013**, 15 PM points from a Category A item were accorded from a single unit inspection. Action is taken against the RC/RE, but such PM points are not used to calculate moving average.
- (3) In **Feb 2014**, 14 PM points (excluding Category A item) were accorded from a single unit inspection. Action is taken against the RC/RE, but such PM points are not used to calculate moving average.
- (4) In **March 2014**, the moving average PM points (excluding items under Categories A and X and aggregated total of PM points reaches 12 or more from a single unit inspection) has reached 4.3 and number of units inspected is accumulated to 25. Action is taken against the RC/RE.
- (5) The number of units inspected and the total no. of PM points for the preceding months is reset to zero following triggering the moving average critical PM points.
- (6) The number of units inspected in April 2014 is excluded for the calculation of the total number of units inspected as at the end of **April 2015** over 12 successive calendar months.
- (7) Total PM points (excluding non-compliant items already covered by a warning following the inspection) scored in April 2014 is excluded for the calculation of the total PM points scored as at the end of **April 2015** over 12 successive calendar months.