(95) in LE/02/04 Pt. II

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March 17, 2003

All Registered Lift Contractors and Engineers

Dear Sirs,

Circular No. 5/2003
Code of Practice for
Lift Works and Escalator Works (2002 Edition)
Amendment **No. 1**

Pursuant to section 27G of the Lifts and Escalators (Safety) Ordinance, Cap. 327, the Code of Practice for Lift Works and Escalator Works (2002 Edition) (the Works Code) has been amended by incorporating requirements of measuring and recording the emergency braking distance of the empty car traveling in upward direction at rated speed during examination and testing of electric lifts.

The above changes have been included in the Amendment No. 1 of the Works Code, which is attached for your retention. It shall come into operation on April 1, 2003 and shall be applicable to lift works and escalator works carried out on or after that date.

Yours faithfully,

(LAW Yu-wing)
for Director of Electrical and Mechanical Services

Encl.

c.c. AD/BS
D of Housing (Attn.: TS/2)
D of Buildings (Attn.: CBS/Legislation)
D of Fire Services (Attn.: Fire Safety Command)
The Hong Kong General Union of Lift and Escalator Employees

G28/28 SF1

YWK/AYMK/LYW

Code of Practice for Lift Works and Escalator Works
(2002 Edition)

Amendment No. 1
Emergency Braking Distance of Empty Car Traveling in Upward Direction at Rated Speed
(Effective as from April 1, 2003 and applicable to lift and escalator works carried out on or after that date)

Item	Clause	Description
1	Section C Clause 3.4.2.1 (d)	Add " In addition, the emergency braking distance of the empty car traveling in upward direction at rated speed shall be measured and recorded in the test report" after the first paragraph.
2	Appendices	Repeal Appendix A and substitute the attached.
		Note : The amendment is
		(i) Add the following in section 12. Emergency Stopping Distance :
		" What was the stopping distance of the empty car traveling in up direction at rated speed under emergency stopping conditions? _____m"

Appendix A Test and Examination Report for Electric Passenger Lifts / Freight Lifts / Vehicle Lifts

TEST AND EXAMINATION REPORT FOR ELECTRIC PASSENGER LIFTS*/FREIGHT LIFTS*/ VEHICLE LIFTS*

1. Description of Installation

Location_____

Manufacturer_____ Plant No._____

Lift Identification No._____ Length of Travel_____m

Levels Served_____

Rated Load_____kg_____Person Rated Speed_____m/s

Power Supply at Time of Test_____Volt_____Phase_____Hz

Levelling tolerance ±_____mm Number of Starts_____/hr

Car Floor Area_____m^2

Machine Room Location: above lift well*/below lift well*/at side*/others_____

Is this a fireman's lift? Yes ☐ No ☐

Is this lift for persons with a disability? Yes ☐ No ☐

The model no. and manufacturer of the controller

_____

2. Static Examination - Mechanical

2.1 Suspension

(a) Suspension Ropes

Certificate No. & Date of Issue_____

(i) Number_____ (ii) Nominal Diameter_____mm

(b) Type of Anchorages: Car_____

Counterweight_____

Have the anchorages been examined and found in good working condition ? Yes ☐ No ☐

2.2 Safety Gear

Has the safety gear been certified in accordance with 5.11.1 of the Design Code, Part 1? Yes ☐ No ☐

Model No., _____

Certificate No. & Date of Issue _____

2.3 Energy Dissipation Buffers N.A.*/Fitted*

(a) Have the buffers been certified in accordance with 6.2.1of the Design Code, Part 1? Yes ☐ No ☐

(b) Model No., _____

Certificate No. & Date of Issue _____

(c) Is the buffer switch functioning properly? Yes ☐ No ☐

2.4 Energy Accumulation Buffers N.A.*/Fitted*

(a) Have the buffers been certified in accordance with 6.2.1 of the Design Code, Part 1? N.A. ☐ Yes ☐ No ☐

(b) Model No., _____

Certificate No. & Date of Issue _____

(c) Do the buffers comply with 6.2.2 of the Design Code, Part 1? Yes ☐ No ☐

2.5 Brake

Does the brake sustain the static car, in the lower part of its travel, with the rated load plus 25% (passenger/general freight lifts) or 50%(vehicle lifts/industrial truck loaded freight lifts)? Yes ☐ No ☐

2.6 Overspeed Governor

(a) Has the governor been certified in accordance with 5.12.1 of the Design Code, Part 1? Yes ☐ No ☐

(b) Model No., _____

Certificate No. & Date of Issue _____

(c) Is the data plate in accordance with 11.6 of the Design Code, Part 1? Yes ☐ No ☐

(d) Does the governor rope conform to 5.12.6 of the Design Code, Part 1? Yes ☐ No ☐

(e) Is the governor rope slack switch working properly? Yes ☐ No ☐

2.7 Landing Door Locking Device

Has the landing door locking device been certified in accordance with 3.7.3.1 of the Design Code, Part 1? Yes ☐ No ☐

Model No., _____

Certificate No. & Date of Issue _____

2.8 Ascending Car Overspeed Protection Means

Has the ascending car overspeed protection means been certified in accordance with 5.13.11 of the Design Code, Part 1? N.A. ☐ Yes ☐ No ☐

(a) Overspeed Governor

(i) Is the Overspeed Governor using the one as mentioned in item 2.6 ? Yes ☐ No ☐

(If 'Yes', skip the following and go to item 2.8 (b).)

(ii) Has the governor been certified in accordance with 5.12.1 of the Design Code, Part 1? Yes ☐ No ☐

(iii) Model No., _____

Certificate No. & Date of Issue _____

(iv) Is the data plate in accordance with 11.6 of the Design Code, Part 1? Yes ☐ No ☐

(v) Does the governor rope conform to 5.12.6 of the Design Code, Part 1? Yes ☐ No ☐

(vi) Is the governor rope slack switch working properly? Yes ☐ No ☐

(b) Speed Reducing Element

(i) Type: Car Safety Gear (acting upwards) ☐ Brake on Sheave ☐

Counterweight Safety Gear (acting downwards) ☐ Rope Gripper ☐

* Delete whichever not applicable

Others_____

(ii) Model No., _____

Certificate No. & Date of Issue _____

3. Static Examination - Electrical

3.1 Insulation Resistance to Earth

(a) Lift Motor_____MΩ

(b) MG Set (if fitted): Motor_____MΩ Generator_____MΩ

(c) Power System_____MΩ (d) Safety Circuits_____MΩ

3.2 Earthing

(a) Is the maximum continuity resistance to earth less than 0.5 Ω? Yes ☐ No ☐

(b) Is the car connected to controller earthing terminal by a separate conductor≥0.75mm^2? Yes ☐ No ☐

3.3 Protection of Conductors

Is the fixed wiring in conduit or trunking (or fittings which ensure equivalent protection) throughout? Yes ☐ No ☐

3.4 Phase Reversal and Phase Failure Devices

Do the phase reversal and phase failure devices operate correctly? Yes ☐ No ☐

4. Dynamic Tests

4.1 Safety Contacts/Circuits

(a) Have the contacts at each landing entrance been proved to ensure that when broken there is no movement of the car? Yes ☐ No ☐

(b) Have the mechanical locks at each landing entrance been proved for positive locking? Yes ☐ No ☐

(c) Have the car door/gate contacts been proved so that when broken there is no car movement? Yes ☐ No ☐

(d) If separate terminal stopping switches are fitted, do they operate satisfactorily? N.A. ☐ Yes ☐ No ☐

(e) Do the final limit switches remove the motor supply before the car or counterweight contact the buffers? Yes ☐ No ☐

(f) Have the stopping devices on the car top, in the pulley room and pit, been proved so that when broken no movement of the car occurs? Yes ☐ No ☐

(g) Have all other switches/contacts in the safety circuit been proved so that when broken no car movement occurs? Yes ☐ No ☐

(h) Does the earthing of the most remote contact (lock or push button) operate a fuse or trip a breaker without delay? Yes ☐ No ☐

(i) Are all other electromechanical interlocks working properly? Yes ☐ No ☐

4.2 Car Top Control Station

(a) Speed Up_____m/s (b) Speed Down_____m/s

(c) Does the design and operation of the car top station comply with 10.3.1.3 of the Design Code, Part 1? Yes ☐ No ☐

4.3 Clearances and Runbys

(a) With the counterweight on its fully compressed buffers, how much further can the lift car move upwards before it hits any obstruction? _____mm

(b) What is the distance between the car roof and the lowest parts of roof of the lift well, when the car levels with top floor? _____mm

(c) With the car resting on its fully compressed buffers, is there a sufficient space to accommodate a rectangular block as specified in 1.5.3(a) of the Design Code, Part 1 with at least 0.5m between the bottom of the pit and the lowest point of the car? Yes ☐ No ☐

(d) Distance of bottom runby of car _____mm

(e) Distance of bottom runby of counterweight _____mm

4.4 Door Tests

(a) Type of sliding doors Horizontal*/Vertical*/Collapsible*

(b) Form of operation of doors Manual*/Powered*

(c) Power supply to door control circuit _____V

(d) Maximum force at the mid-point of the travel _____N

(e) Does the construction & operation of the door re-opening device comply with 3.5.2.2 & 4.6.2.2*/ 3.5.2.3 & 4.6.2.3* of the Design Code, Part 1? N.A. ☐ Yes ☐ No ☐

(f) Do the car doors fulfil the requirements of 4.10 of the Design Code, Part 1? Yes ☐ No ☐

5. Measurements of the Electrical System

(a) Particulars of Lift Motor (as stated on data plate)
Maker_____ Drive System_____
Serial No._____ Speed_____rpm Frequency_____Hz
Power rating_____kW Rated Voltage_____V Current Rating_____A

(b) Particulars of MG Set Drive Motor*/Convertor* (as stated on data plate)
Maker_____ Serial No._____

* Delete whichever not applicable

Power Rating_____kVA Voltage_____V
Current Rating_____A Speed_____rpm Frequency _____Hz
(Note: Speed and frequency not applicable for convertor)

(c) Current and Speed Tests (at mid-point of travel)

	Lift Motor Speed	Lift Speed	Lift Motor Input		System Input MG Set*/Convertor*	
No Load Down	rpm	m/s	V	A	V	A
Full Load Up	rpm	m/s	V	A	V	A

(d) Overcurrent protection devices

	Lift Motor	MG Set Drive Motor	Convertor
Type			
Settings			

6. Overspeed Governor Tests

6.1 Car Governor
Governor Type_____ Serial No._____

		Electrical	Mechanical
Device Tripping Speed	Marked	m/s	m/s
	Measured	m/s	m/s

State how the governor was tested on the installation:
Simulation*/Free Fall*/Actual Overspeed*/Others*_____

6.2 Counterweight Governor (if fitted)
Governor Type_____ Serial No._____

		Electrical	Mechanical
Device Tripping Speed	Marked	m/s	m/s
	Measured	m/s	m/s

State how the governor was tested on the installation:
Simulation*/Free Fall*/Actual Overspeed*/Others*_____

7. Car Safety Gear Tests
Note: The following tests should be conducted with the car descending, with the brake open and the machine continuing to run till the ropes slip or become slack.

(a) Progressive Type N.A.*/Fitted*
(i) Does the safety gear operate correctly when engaging at rated speed with the rated load uniformly distributed in the lift car? N.A.☐ Yes ☐ No ☐
OR
(ii) Does the safety gear operate correctly when engaging at levelling or inspection speed with 125%*/150%* of the rated load uniformly distributed in the lift car? N.A.☐ Yes ☐ No ☐
State the speed _____m/s
(b) Instantaneous Type N.A.*/Fitted*
Does the safety gear operate correctly when engaging at rated speed with the rated load uniformly distributed? Yes ☐ No ☐
(c) What was the stopping distance in the test? _____m
(d) After the lift car was brought to a halt in the above test was the floor horizontal, or sloping less than 5% from the horizontal? Yes ☐ No ☐

8. Counterweight Safety Gear Tests
Note: The following tests should be conducted with the counterweight descending, with the brake open and the machine continuing to run till the ropes slip or become slack.
(a) Progressive Type N.A.*/Fitted*
(i) Does the safety gear operate correctly when engaging at rated speed with the car empty? N.A.☐ Yes ☐ No ☐
OR
(ii) Does the safety gear operate correctly when engaging at levelling or inspection speed with the car empty? N.A.☐ Yes ☐ No ☐
(b) Instantaneous Type N.A.*/Fitted*
Does the safety gear operate correctly when engaging at rated speed with the car empty? Yes ☐ No ☐

9. Ascending Car Overspeed Protection Means Tests
9.1. Overspeed Governor Tests

(a) Car Governor
Governor Type_____ Serial No._____

* Delete whichever not applicable

		Electrical	Mechanical
Device Tripping Speed (upward)	Marked	m/s	m/s
	Measured	m/s	m/s

State how the governor was tested on the installation:
Simulation*/ /Actual Overspeed*/Others*_____

(b) Counterweight Governor (if fitted)
Governor Type_____ Serial No._____

		Electrical	Mechanical
Device Tripping Speed (downward)	Marked	m/s	m/s
	Measured	m/s	m/s

State how the governor was tested on the installation:
Simulation*/Actual Overspeed*/Others*_____

9.2. Speed Reducing Element Tests

(a) Car Safety Gear (if fitted)
The test should be conducted with the car ascending and the brake open.

(i) Does the safety gear operate correctly when engaging at preset speed with the car empty? Yes ☐ No ☐
State the measured speed _____m/s

(ii) What was the stopping distance in the test? _____m

(iii) What was the deceleration in the test? _____m/s^2

(b) Counterweight Safety Gear (if fitted)
The test should be conducted with the car ascending and the brake open.

(i) Does the safety gear operate correctly when engaging at preset speed with the car empty? Yes ☐ No ☐
State the measured speed _____m/s

(ii) What was the stopping distance in the test? _____m

(ii) What was the deceleration in the test? _____m/s^2

(c) Rope Gripper (if fitted)
The test should be conducted with the car ascending and the brake open.

(i) Does the rope gripper operate correctly when engaging at preset speed with the car empty? Yes ☐ No ☐
State the measured speed _____m/s

(ii) What was the stopping distance in the test? _____m

(iii) What was the deceleration in the test? _____m/s^2

(d) Brake on Sheave (if fitted)
The test should be conducted with the car ascending.

(i) Does the brake on sheave operate correctly when engaging at preset speed with the car empty? Yes ☐ No ☐
State the measured speed _____m/s

(ii) What was the stopping distance in the test? _____m

(iii) What was the deceleration in the test? _____m/s^2

10. Buffer Tests
(a) For Car Buffers
(i) When the car was brought into contact with the buffers at rated load at rated speed, or at a speed for which the stroke of the buffers has been calculated, was the operation satisfactory? Yes ☐ No ☐
(ii) Do the buffers recover automatically after operation? Yes ☐ No ☐
(b) For Counterweight Buffers
When the counterweight was brought into contact with the buffers with the car empty at rated speed, or a speed for which the stroke of the buffers has been calculated, was the operation satisfactory? Yes ☐ No ☐

11. Traction Checks
(a) Does the car stop under emergency conditions
(i) with the car empty when travelling upwards at rated speed? Yes ☐ No ☐
(ii) with the rated load plus 25% when travelling downwards in the lower part of the lift well at rated speed? Yes ☐ No ☐

* Delete whichever not applicable

(b) With the counterweight resting on its fully compressed buffers, is it impossible for the empty car to be raised under power? Yes ☐ No ☐

12. Emergency Stopping Distance
What was the stopping distance of the car travelling in down direction at rated speed and carrying 125% of the rated load under emergency stopping conditions? _____m
What was the stopping distance of the empty car traveling in up direction at rated speed under emergency stopping conditions? _____m

13. Duty Cycle Test
Does the lift operate satisfactorily for a period of at least 0.5 hour when running with rated load, full travel and intermediate stops at a rate of starts equal to the number of starts per hour recommended in Item 1? Yes ☐ No ☐

14. General (Lift Work)
(a) Is the maximum load indicated in the car and does it comply with 11.2.1 of the Design Code, Part 1? Yes ☐ No ☐
(b) Does the fireman's lift operation function correctly? N.A.☐ Yes ☐ No ☐
(c) Are the emergency instructions displayed in the machine room? Yes ☐ No ☐
(d) Does the emergency operation system function correctly in accordance with 8.5 of the Design Code, Part 1? Yes ☐ No ☐
(e) Does the emergency lighting of the car comply with 4.16.3 of the Design Code, Part 1? Yes ☐ No ☐
(f) What are the emergency alarm devices?

	Mangt office	M/C room	Lift car	Main lobby/Pit
Alarm bell*	☐	☐	☐	☐
Intercom*	☐	☐	☐	
Indication light*	☐	☐		
Indication light for acknowledgement & the notice*			☐	

(g) Does the overload device operate satisfactorily? Yes ☐ No ☐

15. General (Other works)
(a) Is the machine room artificial lighting adequate for maintenance purposes? Yes ☐ No ☐
(b) Does the artificial lighting in the lift well comply with 1.7(b) of the Design Code, Part 1? Yes ☐ No ☐
(c) Are the machine room conditions satisfactory? Yes ☐ No ☐
(d) Are the provisions for ventilating the machine room adequate? Yes ☐ No ☐
(e) Are the machine room doors or trap doors fitted with a suitable lock to comply with 3.15.3 and 3.15.4 of COP on Building Works for Lifts and Escalators? Yes ☐ No ☐
(f) Are the safety means of access to all items of equipment in accordance with the Design Code, Part 1 and COP on Building Works for Lifts and Escalators? Yes ☐ No ☐
If no, state details_____
(g) Are the hoistway emergency doors (if fitted), in compliance with 3.2 of COP on Building Works for Lifts and Escalators? N.A.☐ Yes ☐ No ☐
(h) Documents (copy only) in respect of exemptions (if any) shall be provided for reference. N.A.☐ Yes ☐ No ☐
(i) Are CCTV camera provided in lift car and CCTV monitors provided in management office*and machine room*? N.A.☐ Yes ☐ No ☐

16. Declaration

I certify that on _____the equipment was thoroughly examined and found to be free from obvious defects, and to comply with Part 1 of the Design Code, COP for Lift Works and Escalator Works and COP on Building Works for Lifts and Escalators with the exception of the following items and that the foregoing is an accurate record of the test and examination carried out.

Exceptions:

_____ _____
Name & Registration No. of Registered Lift Engineer | Signature of Registered Lift Engineer

_____ _____
Name of Registered Lift Contractor | Date

Remarks: COP means Code of Practice

* Delete whichever not applicable