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# **Information Leaflet on Written Examination for Candidates Applying for Registration as Lift Engineers and/or Escalator Engineers under the Lifts and Escalators Ordinance**

by

**The Examination Board (Registration of Lift Engineers and Escalator Engineers)**

**November 2023**

## **Written Examination for Candidates Applying for Registration as Lift/Escalator Engineers under the Lifts and Escalators Ordinance**

### **1 Preface**

- 1.1 In 1998, the Lifts and Escalators Sub-division of the Electrical and Mechanical Services Department (“EMSD”) formed the Examination Committee (Registration of Lift Engineers and Escalator Engineers) (“Examination Committee”). Under the Examination Committee, the Examination Board (Registration of Lift Engineers and Escalator Engineers) (“Examination Board”) was formed. From 1998 onwards, the Examination Board has arranged written examinations for candidates applying for registration as lift engineers and escalator engineers (“the Examination”), to replace similar examinations which were organized by EMSD alone.
- 1.2 The Examination Committee is formed with representatives from the City University of Hong Kong, the Hong Kong Polytechnic University, the University of Hong Kong, the Lift and Escalator Contractors Association, the Registered Elevator and Escalator Contractors Association Limited, the International Association of Elevator Engineers (HK-China Branch), and EMSD.
- 1.3 The Examination Board is formed with representatives from the universities and EMSD.
- 1.4 The Institute of Professional Education And Knowledge (“PEAK”) of the Vocational Training Council (“VTC”) has been appointed by the Examination Committee as the examination body for the Examination for 2024. The PEAK Examination Centre (“PEAK Exam Centre”) will be responsible for providing administrative service for the Examination.

### **2 Objectives**

The Examination serves to assess the candidate’s abilities, statutory knowledge, theoretical knowledge and technical knowledge in design, installation, commissioning, testing and maintenance works on lifts/escalators (whichever is appropriate).

### **3 Recognition of the Examination**

Anyone who has passed the Examination may apply for registration as lift/escalator engineers (whichever is appropriate) if they satisfy other application requirements. They will only be registered as lift/escalator engineers if they also pass the interviews conducted by EMSD.

### **4 Structure**

Examination questions are of essay type. Candidates are allowed to bring relevant statutes, standards, Codes of Practice and circular letters into the examination venue. Any kind of “model answers” will NOT be allowed. The Examination will be divided into two parts - the lift part and the escalator part. Each candidate may select to take only the lift part or only the escalator part or both.

**Lift part:** This part consists of 7 questions, of which 4 are compulsory questions. Each question carries 20 marks. Each candidate has to attempt 5 questions. The duration of this part of the examination is 3 hours, and the passing mark is 50%.

**Escalator part:** This part consists of 6 questions, of which 3 are compulsory questions. Each question carries 25 marks. Each candidate has to attempt 4 questions. The duration of this part of the examination is 2 hours, and the passing mark is 50%.

## 5 **Syllabuses and Sample Questions**

Please refer to Appendices A & B for the syllabuses and sample questions for the Examination.

## 6 **Date of the Examination in 2024**

In 2024, the Examination will be held on **Saturday, 24 February 2024**. The morning session (10:00 a.m. to 1:00 p.m.) will be for the lift part, and the afternoon session (2:30 p.m. to 4:30 p.m.) will be for the escalator part.

## 7 **Examination Fee**

7.1 The examination fees are:

- Lift part: HK\$790
- Escalator part: HK\$790

7.2 All fees paid are not refundable and not transferable from one examination to another or from one candidate to another or for any other purposes.

## 8 **Entries**

8.1 **Entry Prerequisite** - There is no minimum entry prerequisite. However, the application must be supported by a proposer who should preferably be a Registered Lift / Escalator Engineer / Contractor, or the applicant's employer. Applicants must state on the application that they have already obtained the support of the proposer when they apply for the Examination.

8.2 Once the enrolment is accepted, any requests for re-scheduling and/or cancellation will not be entertained.

## 9 **Application Procedures**

9.1 **Application period** – 27 December 2023 (9:00 am) to 27 January 2024 (11:59 pm). Late applications will NOT be accepted.



9.2 **Application method** – All applications can only be made online via the Online Registration System of the PEAK Exam Centre ([www.vtc.edu.hk/cpdc/eonline/emsd](http://www.vtc.edu.hk/cpdc/eonline/emsd)).

- Candidates should select the examination part(s) and provide personal particulars in the Online Registration System. The personal particulars provided should be accurate and the same as those printed on the Hong Kong Identity Cards or Passports.
- Candidates should pay the examination fee by Visa, Master or UnionPay Card in the Online Registration System. Receipt will be sent to the email address provided by the candidates after completion of the enrolment. If candidates do not receive the receipt because of incorrect / invalid email address information, it will be regarded as loss of receipt. Candidates may request a re-issued copy of the receipt in writing or in person providing their contact telephone number, a copy of the Hong Kong Identity Card or Passport, information on re-issued receipt, and postal address if to be returned by mail. The charge is HK\$10 per receipt.
- Online registration procedures should be completed within 20 minutes. Otherwise, the session(s) will be released and the registration procedures have to be started all over again.
- For the operations of the Online Registration System, please refer to the instructions at [www.vtc.edu.hk/cpdc/eonline/emsd](http://www.vtc.edu.hk/cpdc/eonline/emsd).

- 9.3 In case of unforeseeable circumstances, the PEAK Exam Centre reserves the right to change application period and application method mentioned above.

## **10 Admission Form**

- 10.1 Admission Form and Examination Regulations will normally be sent to the email address provided by the candidates 2 weeks before the examination. All candidates must take the examination on the date, time and venue specified on the Admission Form.
- 10.2 Candidates who do not receive the Admission Form 1 week before the examination or in case of loss should immediately contact the PEAK Exam Centre for replacement.
- 10.3 If any discrepancies are found in the particulars of the Admission Form, please inform the PEAK Exam Centre in writing for correction. If the discrepancies are related to candidate's Chinese or English name, and/or Hong Kong Identity Card/Passport number, a copy of the identification document must be submitted (email: [cpdc@vtc.edu.hk](mailto:cpdc@vtc.edu.hk)).

## **11 Examination Regulations**

- 11.1 Candidates should read carefully the Examination Regulations (and Supplementary Guidelines thereto, if any). Candidates who fail to observe any of these regulations will receive mark penalties or even the scores in the examination may be forfeited.
- 11.2 Any candidates who deliberately attempt to, or intend to destroy/tamper with the facilities are required to indemnify the PEAK Exam Centre for the losses. The PEAK Exam Centre would also report the incident to the Hong Kong Police Force, and/or any law enforcement bodies, if necessary.
- 11.3 The PEAK Exam Centre will report to the Examination Board any irregularity cases in respect of the examination.

## **12 Release of Examination Results**

- 12.1 The date of release of examination results will normally be announced on the PEAK Exam Centre website ([www.vtc.edu.hk/cpdc](http://www.vtc.edu.hk/cpdc)) 7 weeks after the examination. The examination results will normally be posted on the website within 8 weeks after the examination.
- 12.2 Candidates can download and print the Result Notice in the “Exam Result Checking” system on the website for 3 months from the release of examination result day.
- 12.3 The examination result is in the form of “a pass” or “a fail”, with no marks or grades. Hard copy of the Result Notice will not be provided.
- 12.4 Candidates who do not agree to having their results and Result Notices available in the “Exam Result Checking” system must inform the PEAK Exam Centre in writing by email to [cpdc@vtc.edu.hk](mailto:cpdc@vtc.edu.hk) at least 3 full working days before the date of examination. Candidates should provide their name, Hong Kong Identity Card or Passport number, examination date, examination part, contact telephone number and local postal address in the email. Late notifications will not be entertained. Their Result Notices will then be sent to the candidates' local postal addresses by surface post within 7 full working days after the day of release of examination result. If the Result Notice was lost in the post, candidates are required to apply for re-issuance.



- 12.5 Three months after the day of release of examination result, candidates may request a re-issued copy of the Result Notice in writing together with their contact telephone number and a copy of the Hong Kong Identity Card or Passport to the PEAK Exam Centre by post or in person within 6 months from the examination. The application for the re-issuance of a copy is free of charge. The PEAK Exam Centre will contact the candidates by phone 7 working days after receipt of the application (excluding the application date) to collect the Result Notice in person. The uncollected re-issued copy of the Result Notice will be disposed of 1 month after the application date.
- 12.6 By virtue of confidentiality, the examination results will not be disclosed by phone, facsimile or email.

### **13 Appeals**

- 13.1 If a candidate is dissatisfied with the examination result, he/she may lodge an appeal to the Examination Board within 14 days from the day of release of examination result. Such an appeal must be made in writing to the Examination Board via the PEAK Exam Centre and a supplementary fee (at an amount of \$700, including an administrative fee of \$400 and an appeal fee of \$300) for each paper applied would be charged. Candidates making the appeal will have to enclose a crossed cheque or cashier's order payable to "Vocational Training Council".
- 13.2 Each appeal will be handled directly and carefully by the Examination Board and then the Board will inform the candidate concerned about the result of the appeal, i.e. either "the original result stands" or "the original result does not stand". Neither details of the appeal procedure nor the marks of the candidate will be released to the candidate. The decision of the Examination Board will be final. The administrative fee is non-transferable and non-refundable. However, the appeal fee will be refunded if the "the original result does not stand".

## 14 Enquiries

Enquiries can be made at:

### PEAK Exam Centre:

Address: 1/F, VTC Tower, 27 Wood Road, Wanchai, Hong Kong

Office Hour: 9:00 a.m. – 8:00 p.m. (Monday to Friday)

9:00 a.m. – 12:00 noon (Saturday)

*Note: The office hour may subject to change on the working day immediately before a public holiday or under special work arrangement. The PEAK Exam Centre will publish and post the related information on the website and in the PEAK Exam Centre.*

Hotline: 2919 1467 / 2919 1468 / 2919 1478

Enquiry Hotline Hour: 9:00 a.m. – 5:15 p.m. (Monday to Friday)

9:00 a.m. – 12:00 noon (Saturday)

Fax: 2574 0213

Email: [cpdc@vtc.edu.hk](mailto:cpdc@vtc.edu.hk)

Website: [www.vtc.edu.hk/cpdc](http://www.vtc.edu.hk/cpdc)



Online Registration System: [www.vtc.edu.hk/cpdc/eonline/emsd](http://www.vtc.edu.hk/cpdc/eonline/emsd)



### Electrical and Mechanical Services Department (General Legislation Division 1)

Address: 3 Kai Shing Street, Kowloon Bay

Tel. No: 2808 3623

Email: [lesd@emsd.gov.hk](mailto:lesd@emsd.gov.hk)

## **15 Notice on Personal Data (Privacy) Ordinance**

15.1 Personal data of candidates are used by the PEAK Exam Centre and the Examination Board for delivery of examination and assessment services. If candidates fail to provide all the data, or if any of the data are inaccurate or incomplete, the PEAK Exam Centre and the Examination Board may not be able to accept their entry or provide all or part of the examination and assessment services.

15.2 The personal data submitted may be used for the following purposes:

- (a) administering the examination;
- (b) maintaining a candidate record;
- (c) releasing of examination results to candidates concerned;
- (d) posting of examination result on the PEAK Exam Centre website for the candidates' own checking and downloading, unless expressly requested not to do so by the respective candidate in writing;
- (e) transferring candidates' personal data and examination results to the Examination Board;
- (f) reporting cases of examination irregularities to the Examination Board;
- (g) conducting research or statistical analysis;
- (h) assisting tertiary institutions and other government/public organizations in their admission processes;
- (i) assisting tertiary institutions and other government/public organizations in respect of their requests for information in granting scholarships;
- (j) assisting tertiary institutions and other government/public organizations to confirm the candidates' eligibility for financial assistance or other forms of subsidization, in which case, the necessary personal data of the candidates may have to be disclosed to the concerned organizations for verification;
- (k) processing any refund or payment in relation to the examination;
- (l) transferring candidates' personal data to the venue provider(s) for record of visits; and
- (m) marketing the services and products of the Examination Board (including examination services, courses, events, publications, and other examination materials or resources) subject to the consent of the candidates\*.

*\*If candidates have given consent but wish to withdraw their consent for personal data to be used for this purpose, please send a letter of request directly to the PEAK Exam Centre.*

15.3 The PEAK Exam Centre and the Examination Board may also transfer the personal data of candidates to third parties for use for the above purposes or other directly related purposes, including government/public organizations, schools and educational institutions, banks (for processing refund or payment), and service providers providing various administrative or technical services to facilitate the delivery of the examination and assessment services including but not limited to data punching, registration process, dispatch of examination documents, and the capture, disposal or other processing of data.

- 15.4 In compliance with the Personal Data (Privacy) Ordinance, access to all personal data will be made available, on payment of a fee, to anyone who can establish his/her right to be informed of such data as are retained by the PEAK Exam Centre. Please also note that candidates' personal data/correspondence/other information received by the PEAK Exam Centre may be transferred to the Examination Board concerned for delivery of examination and assessment services and for any of the above-mentioned purposes or other directly related purposes. In general, upon completion of an examination or examination series and all the connecting examination services, the PEAK Exam Centre will transfer all such data to the Examination Board who will then assume full control of such data. By then, candidates should approach the Examination Board direct for their personal data/information handling policies if necessary.

**Published by**  
**The Examination Board (Registration of Lift Engineers and Escalator Engineers)**  
**November 2023**



## **Appendix A: Syllabuses of the Written Examinations**

The syllabuses cover the following areas:-

- 1) Comprehension of relevant statutes, International Standards and codes of practice:
  - a) Lifts and Escalators Ordinance (Chapter 618);
  - b) Code of Practice on the Design and Construction of Lifts and Escalators;
  - c) Code of Practice for Lift Works and Escalator Works;
  - d) Relevant International Standards (e.g. EN81 / EN115);
  - e) Factories and Industrial Undertakings (Goods Lifts) Regulations (Chapter 590) and Code of Practice for Safety at Work (Lift and Escalator) issued by the Labour Department;
  - f) Code of Practice on Building Works for Lifts and Escalators, relevant parts of Code of Practice for Fire Safety in Buildings and Design Manual – Barrier Free Access issued by the Building Authority; and
  - g) Guidelines on Safety of Lift Shaft Works issued by Construction Industry Council.
- 2) Knowledge of:
  - a) Lift/escalator theories –  
these include, but not limited to:
    - Mechanics of lifts and escalators ;
    - Calculations and formula derivation for clearance distances required for lift car and counterweight under various situations;
    - Calculations and formula derivation for braking load required;
    - Calculations and formula derivation for gravity stopping distance;
    - Calculations and formula derivation for coefficient of friction and wrapping angle on traction sheaves required;
    - Calculations and formula derivation for type tests of various critical components of lift and escalator systems as required in EN81,EN115;
    - Calculations on capacity of lift and escalator systems;
    - Calculations on dead weight loading on supporting structure & deflection values of escalator systems; and
    - Other lift and escalator knowledge ;
  - b) Circular letters from EMSD related to Lifts and Escalators.
- 3) Practical experience in connection with the installation, commissioning, testing, maintenance and operation of machinery and safety equipment/components of lifts/escalators.

## **Appendix B: Sample Questions of the Written Examinations**

### ***Lift part:***

- Q.1(a) For a traction drive lift of 1.5 m/s rated speed, determine the required minimum clearance above the roof of the car enclosure when the counterweight rests on a fully compressed buffer. Your answer should be accompanied with appropriate sketches.
- Q.1(b) Explain the meaning of “gravity stopping distance at 115% of rated speed” and clarify its importance.
- Q.1(c) In case reduced stroke buffers are used for a high speed lift (for example, rated speed faster than 4 m/s), does the calculation of top clearances have still to follow that of part (a) above, or it can be reduced? If it can be reduced, explain why and how.
- Q.2 Please explain and describe the complete procedure in the periodic examination and testing of an existing lift. Your answer shall include, but not limited to the following points:
- \* Tests and examinations required and their appropriate timing.
  - \* Components and devices to be examined or tested.
  - \* The expected outcome of these tests and examinations under normal situations.
  - \* Certificates and reports involved.
  - \* The process in handling unsatisfied circumstances.

### ***Escalator part:***

- Q.1(a) Suppose you are now to put up an escalator of 10 meters rise which is used to connect a street (outdoor situation) and a shopping mall, state and explain the constraints on the choice of speed, the angle of inclination and any other additional appropriate requirements.
- Q.1(b) For some events stipulated in the Clause 5.12.2.7 in the Part 4 of Section E of the Code of Practice on the Design and Construction of Lifts and Escalators, some electrical safety devices of escalators should operate, which may cut off the supply to contactors or relay contactors. Describe and explain:
- \* The construction requirements of such a safety contacts.
  - \* The resulting action on the escalator equipment after the operation of any such devices.
- Q.2 State ‘True’ or ‘False’ with your justifications for each of the following statements. No mark will be given for answers without justifications.
- (i) The safety factor for any part of the driving machine constructed of cast iron, based on the static load, shall be not less than 10.
  - (ii) The radius of curvature of a passenger conveyor in the upper transition from incline to horizontal shall be at least 1 m for rated speed at or below 0.5 m/s and at least 1.5 m for rated speed exceeding 0.5 m/s.
  - (iii) .....
  - (iv) .....