



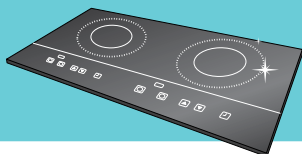
Proper Arrangements for

Home Renovation or
Maintenance

Involving Electrical
Works



Third Phase of
Mandatory Energy
Efficiency Labelling Scheme
(MEELS)



Selection and Siting of

Gas Water Heaters



Guidelines for Modernising Existing Escalators

Guidelines for
Modernising
Existing Escalators

機電工程署
EMSD



From the Editor

Thanks to your continuous support, E&M Safety Newsletter has come to its 27th issue with a rich variety of content to offer, including introduction of proper arrangements for home renovation or maintenance involving electrical works, third phase of the Mandatory Energy Efficiency Labelling Scheme (MEELS), Guidelines for Modernising Existing Escalators, and the selection and siting of gas water heaters. With coming of new year, we wish you a safe and happy holiday!



Proper Arrangements for

Home Renovation or Maintenance Involving Electrical Works



Chuen Chuen's uncle came visit him one day. As his uncle is an engineer with the Electricity Legislation Division of the Electrical and Mechanical Services Department (EMSD), Chuen Chuen took the opportunity to ask him questions about electricity safety: "Uncle, lately I have added quite a few electrical products to my room, such as an electric heater, a computer, an electric guitar amplifier and so on. With the new installations, the existing socket outlet has reached its capacity and trips frequently. Do I need to find someone to install an additional socket outlet and inspect these electrical installations for me?"

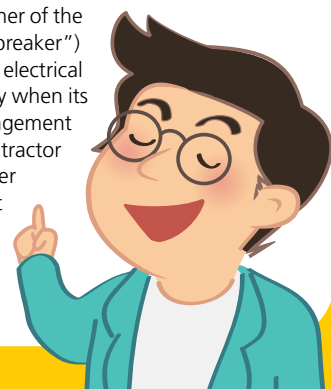
In response, Chuen Chuen's uncle said: "The Electricity Ordinance stipulates that no person shall employ a person other than a registered electrical contractor to carry out electrical works. If installation or alteration of electrical installations is involved in the renovation of a flat or any addition, alteration or maintenance works, the person should, irrespective of the portion of electrical works in the overall renovation, either employ a decoration company with electrical contractor registration to carry out the renovation, or employ a registered electrical contractor to directly carry out the electrical works."



Chuen Chuen asked further, "In that case, what qualifications must the individuals who actually carry out the electrical works possess? How do members of the public know if the electrical work is complete?"

"A registered electrical contractor should arrange for registered electrical workers (i.e. registered electricians) of appropriate grades to carry out the electrical works," uncle responded. "More importantly, once the electrical works are complete and before the electrical installation is energised for use, the registered electrical worker should inspect and test the electrical installation, and then issue a Work Completion Certificate (i.e. Form WR1) to certify that the electrical installation has met the requirements of the Electricity Ordinance. The registered electrical contractor should, after endorsement, provide the owner with the original or copy of the certificate and keep the certificate and all relevant records for at least five years."

Uncle added, "On the problem of tripping, it is stipulated in the Electricity (Wiring) Regulations that the owner of the installation must press the button of the residual current device (commonly known as "earth leakage circuit breaker") at least quarterly to ensure its normal operation. Moreover, in case of doubt about the safety of a household electrical installation, as evidenced by frequent tripping, detection of the residual current device not functioning properly when its button is pressed for periodic testing, or the electrical installation being affected by ingress of water, etc., arrangement should be made as early as possible to have the installation inspected and repaired by a registered electrical contractor and a registered electrical worker so as to ensure household electricity safety and avoid accidents. On the other hand, although regular inspection according to the requirements of the Electricity (Wiring) Regulations is not necessary for a number of fixed electrical installations with approved loading not exceeding 100A, for the sake of electricity safety, arrangement should be made by owners of the relevant installations for them to be regularly inspected and tested by a registered electrical contractor and a registered electrical worker."

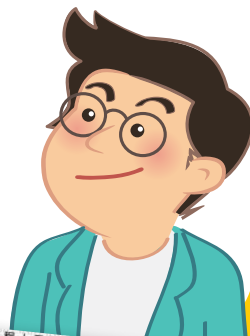




Curious, Chuen Chuen questioned, "Where can I find the information of registered electrical contractors and registered electrical workers? How do I know if the workers who come to carry out the electrical works are registered electrical workers?"

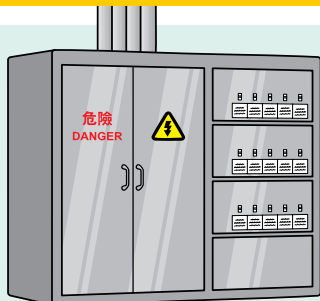
"What a good question, Chuen Chuen!" uncle said. "In fact, you may visit EMSD's website at www.emsd.gov.hk (Electricity Safety → Registers → Registered Electrical Contractors or Registered Electrical Workers) to search for a suitable registered electrical contractor and check whether the worker is a registered electrical worker."

Uncle further added, "Registered electrical workers must ensure that they engage in electrical work of the registered grade only, including issuing a Work Completion Certificate (Form WR1) or a Periodic Test Certificate (Form WR2). Registered electrical contractors are also obliged to ensure that the registered electrical workers they employ will not engage in electrical work that they are not entitled to carry out. Anyone who breaches the above regulations commits an offence and is liable to a maximum penalty of a fine of \$100,000 and imprisonment for six months. Besides, registered electrical workers must always carry with them the Certificate of Registration of Electrical Worker in the course of work and present it to the client when asked."



A registered electrical worker himself, uncle showed Chuen Chuen his own Certificate of Registration.

"Uncle is so awesome! I wish to become an engineer and a registered electrical worker like uncle when I grow up," Chuen Chuen said with excitement.



Responsibilities of Owners of Electrical Installations Inspection and Maintenance of Fixed Electrical Installations

Chuen Chuen came up with another question: "Uncle, I recently came across this building whose communal electrical installations were worn out with loosened earth wires and exposed wire conductors. Would these pose a danger to the residents of the building?"

"Of course!" uncle answered. "Worn-out electrical installations do not only affect the stability of power supply, but also leave the residents and users of the building vulnerable to the dangers of fire and electric shock. According to the law, owners of fixed electrical installations, including flat owners, tenants and residents, owners' corporations, and property management companies, etc., must have their electrical installation immediately rectified if they notice its condition is likely to cause an electrical accident. Failure to do so is an offence."

Chuen Chuen continued, "Maintenance work of the electrical installations of a building will affect its residents. What should be done about it?"

"Owners of the electrical installations should arrange for a registered electrical contractor to carry out comprehensive inspection and maintenance in order to enhance electricity safety," uncle responded. "Before carrying out the work, owners of these installations should discuss and reach a consensus with the electrical contractor and the management company on the power suspension arrangement and the corresponding provisional measures that meet the operational needs of the building, so as to ensure the safety of the electrical workers and minimise the impact of the inspection work on building users. Moreover, to enhance public understanding of the inspection and maintenance for fixed electrical installations, EMSD has uploaded a series of related briefing materials and updated information to its web page (http://www.emsd.gov.hk/emsd/eng/pps/electricity_feipt.shtml) for viewing by the public. They may also browse the following web page to look for a suitable registered electrical contractor to carry out electrical works: http://www.emsd.gov.hk/en/electricity_safety_registers/registered_electrical_contractors/index.html."

Chuen Chuen raised another question: "What can be done if the owners or the owners' corporation of the building have financial problems which leave them unable to arrange electrical installation improvement works?"

Uncle responded, "Various forms of assistance to facilitate building owners, including owners of fixed electrical installations, to arrange and complete electrical installation improvement and inspection works are currently provided by several government departments. For instance, District Offices offer flat owners assistance in setting up owners' corporations. Owners may visit the web page of the Home Affairs Department for details: <http://www.had.gov.hk> (Public Services → Building Management → Formation of Owners' Corporations). Additionally, the Hong Kong Housing Society, the Urban Renewal Authority and the Buildings Department also provide financial support through building maintenance assistance schemes. Owners may visit the web page of the Hong Kong Housing Society for details: <http://www.hkhs.com> (Our Business → Building Maintenance → Integrated Building Maintenance Assistance Scheme). For enquiries, they may contact EMSD at 1823."



"Thank you for explaining this to me, uncle. You must be hungry by now. Let's have dinner!" Chuen Chuen said.



Third Phase of Mandatory Energy Efficiency Labelling Scheme

(MEELS)

To encourage members of the public to use more energy-efficient products so as to save energy and reduce the emissions of greenhouse gas and other air pollutants during the generation of electricity, the Government introduced the Mandatory Energy Efficiency Labelling Scheme (MEELS) in accordance with the Energy Efficiency (Labelling of Products) Ordinance (Cap. 598) in 2008. Under MEELS, energy labels are required to be shown on all prescribed products for supply in Hong Kong to inform consumers of their energy efficiency performance.

The first and second phases of MEELS were fully implemented in 2009 and 2011 respectively, covering a total of five types of prescribed products, namely room air conditioners, refrigerating appliances, compact fluorescent lamps, washing machines with a washing capacity at or under 7 kg, and dehumidifiers. Among these prescribed products, room air conditioners, refrigerating appliances and washing machines had their energy efficiency grading standards upgraded in November

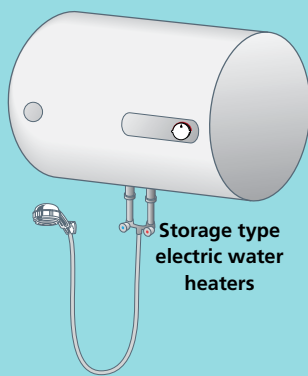
2015 so as to encourage importers and suppliers to make available more energy-efficient products.

In order to capture further energy saving potential, a review of the scope of MEELS has been conducted by EMSD with a view to expanding the coverage of the scheme. A three-month consultation was conducted in the second quarter of 2015 to gauge views from the Consumer Council, trade associations, professional and education institutions, power companies, as well as product manufacturers and suppliers. The Energy Efficiency and Conservation Sub-committee under the Energy Advisory Committee was also consulted in March and November 2015. In general, all parties are supportive of expanding the coverage. Having considered the comments collected and other factors, such as overseas practices, availability of test standards and testing laboratories, as well as energy consumption and energy saving potential of the products, EMSD recommended that the third phase of MEELS be introduced to cover the following products:

Proposed new prescribed products



Televisions



Storage type electric water heaters



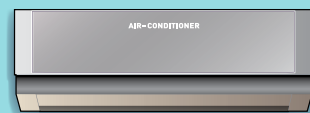
Induction cookers



Proposed extension of coverage of existing prescribed products



Washing machines
Extend existing coverage of washing capacity from not exceeding 7 kg to not exceeding 10 kg



Room air conditioners
Extend existing coverage to room air conditioners with heating function



The above products proposed for inclusion into the third phase of MEELS are estimated to account for about 15% of the annual electricity consumption in the residential sector. It is estimated that the potential annual energy saving arising from the third phase of MEELS is around 150 million kWh, which will translate into an annual reduction of carbon dioxide emissions of 105 000 tonnes.

At present, the Government has submitted the relevant legislative amendments to the Legislative Council. Once the proposal is passed by the Legislative Council, importers and local manufacturers are required to submit the information regarding the products under the third phase, including test reports, to EMSD within the 18-month transitional period for assignment of reference number and to affix energy labels in the prescribed format on these products before supplying them to the local market.

Selection and Siting of Gas Water Heaters

Choosing Room-sealed Water Heaters

Room-sealed water heater is a type of gas water heaters which is modern and safe. The fresh air intake and flue terminal of this type of heater are on the exterior wall of the flat, so fresh air for combustion is drawn from outside and combustion products are discharged outside the building as well. The heater does not consume or contaminate the air in the room. Therefore, it is safer and more reliable than gas water heater which draws air for combustion from the room. There are various types of room-sealed water heaters available on the market for you to choose from, such as fanned draught and natural draught models. If you are still using other types of gas water heaters, you are recommended to seriously consider switching to room-sealed water heaters for the safety of your own and your family.

According to the Gas Safety Ordinance, starting from 1 January 2003, all models of domestic gas water heaters to be manufactured in Hong Kong or supplied or sold for use in Hong Kong shall have the written approval of the Gas Authority (i.e. the Director of Electrical and Mechanical Services). For safety sake, members of the public should only purchase domestic gas water heaters with a GU mark.



Siting of Gas Water Heaters

According to the Gas Safety Ordinance, where suitable provision (irrespective of any locations), normally refers to an aperture provided during construction, has been made for the installation of a room-sealed gas water heater to serve a bathroom in any premises, the room-sealed gas water heater shall be installed by using that suitable provision.

The location of the suitable provision has been determined taking into consideration the design of all aspects of the building, and is in compliance with the relevant ordinances, regulations and guidelines. Hence, unauthorised modification of the location of a gas water heater flue aperture may contravene the law and may lead to the return of the gas water heater's exhaust fumes to the room or other parts of the premises, posing potential hazard to gas safety. Therefore, when installing gas water heaters, the ordinance stated above should be complied with and registered gas installers of appropriate classes employed by registered gas contractors should be engaged to carry out installation in order to ensure gas safety.

If the building is completed on or before 20 May 1983 with no provision of an aperture during construction, reference should be made to installation locations outlined in Appendix B of the Code of Practice GU 03: Installation Requirements for Domestic Gas Water Heaters prepared by EMSD. For contents of the Code of Practice, please visit EMSD's web page at http://www.emsd.gov.hk/filemanager/en/content_286/gu03.pdf.

New Construction Workers Registration Card Serves More Than One Purpose

Starting from late November 2017, the Construction Workers Registration Cards (CWR Cards) issued by the Construction Industry Council (CIC) will, according to cardholder's preference, show other registration qualifications that are related to construction industry. For ordinances under the regulatory purview of the Electrical and Mechanical Services Department (EMSD), the following registration qualifications may be shown on the new CWR Cards:

1. Registered Gas Installers as stipulated in the Gas Safety Ordinance (Cap. 51);
2. Registered Electrical Workers as stipulated in the Electricity Ordinance (Cap. 406); and
3. Registered lift workers/registered escalator workers as stipulated in the Lifts and Escalators Ordinance (Cap. 618).

Under the new arrangement, new CWR Cards with registration information of EMSD are equivalent to the certificates currently issued by EMSD in accordance with the above-mentioned ordinances.

Members of the public may access or verify the information on a CWR Card by the following means:

1. Access the webpage of CIC's database by scanning the QR code



The design layout of the new CWR Card

on the CWR Card;

2. Browse the website of CIC as shown on the CWR Card and then key in the registration number of the cardholder to search for the relevant information; or
3. Call the government hotline 1823 for information on registration qualifications under the regulatory purview of EMSD.

Cardholders of the new CWR cards are responsible for explaining to the public the new arrangement and the above-mentioned means of accessing or verifying information. If requested by the public to produce certificates currently issued by EMSD in accordance with the above-mentioned ordinances, cardholders are advised to produce the relevant certificates so as to start the works as soon as possible.



Guidelines for Modernising Existing Escalators

The Electrical and Mechanical Services Department (EMSD) issued a Circular No. 12/2016 in September 2016 to recommend eight escalator modernisation items and requested that registered escalator contractors conduct assessments on the escalators under their maintenance in order to propose feasible modernisation solutions to Responsible Persons (RPs) for the escalators. Besides, EMSD issued the Guidelines for Modernising Existing Escalators in December 2016, which have been uploaded to the following web page of EMSD Responsible Persons' Corner for reference by RPs:

[http://www.emsd.gov.hk/filemanager/en/content_826/Guidelines%20for%20Modernising%20Existing%20Escalators%20\(E\).pdf](http://www.emsd.gov.hk/filemanager/en/content_826/Guidelines%20for%20Modernising%20Existing%20Escalators%20(E).pdf)



Why Modernising Existing Escalators?

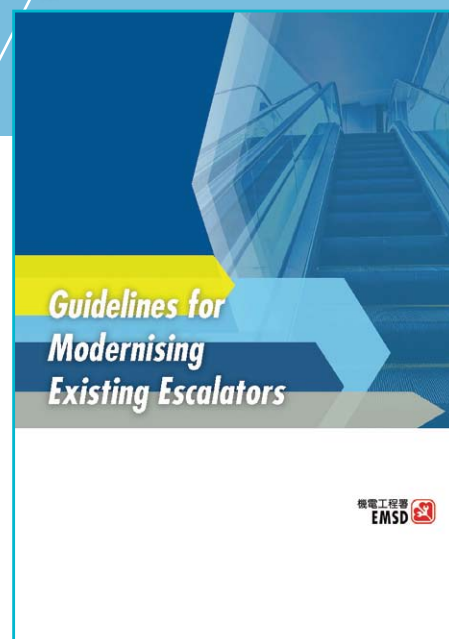
Escalator is an important and daily mode of transport commonly found in building complexes, shopping malls, railway stations, airports and hotels, etc. Owing to heavy utilisation, wear and tear of the parts is inevitable. It is required by the Lifts and Escalators Ordinance (Cap. 618) that RPs (including escalator owners and those who have the management or control of escalators) should ensure their escalators are properly maintained. The escalators in Hong Kong are installed in different decades. Although they adopted the level of technology appropriate at the time of installation, there is room for improvement to make them safer, more reliable and comfortable with the rapid technology advancement in recent years. Having said that, with proper maintenance and periodic examination, the existing escalators are safe for use.

Purpose of Guidelines

The Guidelines for Modernising Existing Escalators aim to help RPs for escalators implement enhancement and modernisation measures to enhance the safety standards of existing escalators so as to make them safer, more reliable and comfortable. RPs for escalators are recommended to adopt the enhancement solutions set out in the Guidelines. Should RPs decide to implement the enhancement solutions in the Guidelines, they may liaise with their engineering consultants or registered escalator contractors to review the technical feasibility of modernising the escalators. Before carrying out the enhancement works, RPs should consider factors such as space availability, technical feasibility and budget, and decide whether to replace major components of existing escalators or install new safety equipment. They may also consider total replacement of existing escalators to bring the escalators up to the prevalent safety standards.

Duties of Responsible Persons for Escalators

According to the Lifts and Escalators Ordinance (Cap. 618), RPs for escalators shall ensure that the escalators are kept in a proper state of repair and in safe working order. For maintenance works, RPs shall employ a registered escalator contractor to carry out periodic



maintenance for the escalators at intervals not exceeding one month, and arrange for a registered escalator engineer to examine the escalators thoroughly at intervals not exceeding six months. Where major alteration or modernisation works are necessary, RPs shall employ a registered escalator contractor to carry out the works for their escalators. Upon completion of major alteration or modernisation works, RPs shall arrange for a registered escalator engineer to examine the escalators before they resume normal use and operation.

Eight Solutions for Enhancing the Safety of Existing Escalators

Eight solutions have been identified with the greatest potential benefit for safety enhancement in existing escalators and they are elaborated as follows:

Solution 1: Install Skirt Panel Safety Devices

To prevent serious injury due to trapping between skirting and steps, skirt panel safety devices are recommended to be installed to stop the escalator automatically and maintain it stationary if any trapping of objects between skirting and steps is detected. Apart from installing skirt panel safety devices at the points of upper and lower transition from incline to horizontal, additional skirt panel safety devices should also be installed along the inclined section of the escalator.

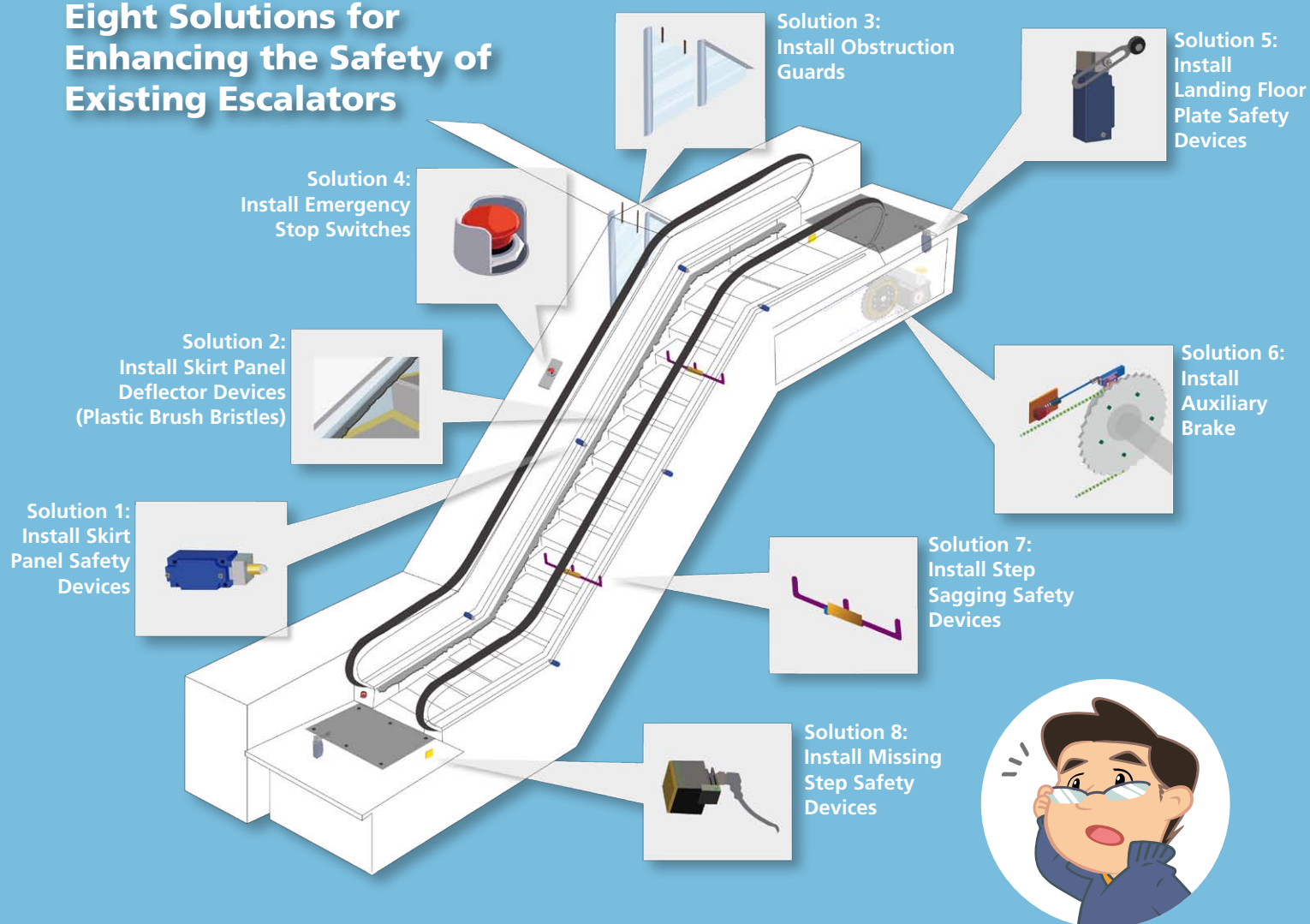
Solution 2: Install Skirt Panel Deflector Devices (Plastic Brush Bristles)

To reduce the risk of passengers being trapped between skirting and steps, deflector devices in the form of plastic brush bristles suitably fixed along the skirting are recommended to be installed to protect passengers' feet and prevent loose clothing and foreign objects from possible trapping in the gap between skirting and steps.

Solution 3: Install Obstruction Guards

To reduce the risk of passengers' heads or upper limbs being trapped, obstruction guards are recommended to be installed at floor

Eight Solutions for Enhancing the Safety of Existing Escalators



intersections, building obstacles and suitable locations along criss-cross escalators. In particular, a set of fixed guards and suspended guards should be placed at floor intersections and on criss-cross escalators. For vertical building obstacles, fixed guards should be installed. The positions of the obstruction guards should effectively prevent injuries to passengers.

Solution 4: Install Emergency Stop Switches

To stop the escalator automatically and maintain it stationary in case of emergency, emergency stop switches are recommended to be installed. Apart from placing emergency stop switches in conspicuous and easily accessible positions at or near to the upper and lower landings of the escalator, additional emergency stop switches should also be installed for escalators with a rise above 12 m.

Solution 5: Install Landing Floor Plate Safety Devices

To reduce the risk of passengers getting injured from falling into the machinery space under the landing floor plate due to dislocation of the plate, safety devices are recommended to be installed under the landing floor plates at the upper and lower landings of the escalator to stop the escalator if dislocation of any landing floor plate is detected.

Solution 6: Install Auxiliary Brake

To prevent passengers from losing balance due to sudden

acceleration or reversal movement of the escalator, an auxiliary brake is recommended to be installed to stop the escalator when the following abnormal situations are detected:

- before the speed exceeds 1.4 times the rated speed;
- when the steps change from the preset direction of motion;
- or
- if failure of the coupling of the operational brake and the driving wheels of the steps occurs.

For detecting such abnormalities mentioned above, unintended reversal monitoring switches, overspeed governors, broken step chain safety devices and broken drive chain safety devices should also be installed.

Solution 7: Install Step Sagging Safety Devices

To reduce the risk of passengers being trapped due to step sagging, a safety device is recommended to be installed underneath the running steps to stop the escalator if sagging of any step is detected.

Solution 8: Install Missing Step Safety Devices

To prevent any serious trapping hazard to passengers that may be caused by missing steps, a safety device is recommended to be installed at each driving and return station to stop the escalator if any missing step is detected so as to prevent the missing step from emerging from the comb plate.

E & M Safety Quiz

Please fill in the reply slip below with **the most appropriate answer** for each question and send it by post or by fax to the Editor, E&M Safety Newsletter (contact information is shown at the bottom of this page). The first 500^[1] of the quiz participants answering all questions correctly will receive a souvenir (on a first-come-first-served basis).

- How often should the owner of an electrical installation press the button of the residual current device (commonly known as "earth leakage circuit breaker") to ensure its normal operation?**
 - Every three months
 - Every six months
 - Every year
 - Every five years
- What electrical products will be covered in the third phase of the Mandatory Energy Efficiency Labelling Scheme (MEELS)?**
 - Televisions
 - Storage type electric water heaters
 - Induction cookers
 - All of the above
- Which of the following should be considered when purchasing and installing gas water heaters?**
 - Purchasing domestic gas water heaters with a GU mark
 - Using suitable provision to install room-sealed gas water heaters
 - Installing gas water heaters personally by registered gas installers of appropriate classes employed by registered gas contractors
 - All of the above
- Which of the followings are the proper means for members of the public to access or verify the information on a CWR Card?**
 - Access the webpage of CIC's database by scanning the QR code on the CWR Card;
 - Browse the website of CIC as shown on the CWR Card and then key in the registration number of the cardholder to search for the relevant information;
 - Call the government hotline 1823 for information on registration qualifications under the regulatory purview of EMSD.
 - 1
 - 1 & 2
 - 2 & 3
 - All of the above
- Which of the following is a solution for enhancing the safety of existing escalators as recommended by the Guidelines for Modernising Existing Escalators?**
 - Install skirt panel safety devices
 - Install skirt panel deflector devices (plastic brush bristles)
 - Install obstruction guards
 - All of the above

REPLY SLIP ^[2]				
Name:			Tel.:	
Hong Kong Address:				
Answers:				
Q1	Q2	Q3	Q4	Q5
Where did you get this E&M Safety Newsletter?				
Residential estate	School	District Office	Community centre	
Others (please specify):				

[1] Only the first 500 of the quiz participants sending in the Reply Slip with all answers correct will be notified.

[2] The personal data provided in the Reply Slip will only be used for the E & M Safety Quiz purpose. It will be kept confidential and will not be disclosed to any third party. You have the right to request in writing to check whether EMSD is keeping your personal data, to access or correct it, and to enquire about our policy and procedures in the use of such data as well as the types of personal data we are keeping. The above terms do not affect your rights as set out in the Personal Data (Privacy) Ordinance.

Answers to last issue's quiz: 1.D 2.B 3.B 4.B 5.B 6.C

Feedback

Your comments and suggestions, whether on editorial style or contents, are most welcome. Tell us how we can improve and make the E & M Safety Newsletter a truly informative and interesting publication for you. Please contact us if you have any comments or enquiries, or need a printed copy. Both the English and Chinese versions of the E&M Safety Newsletter are available on our website at <http://www.emsd.gov.hk>.

The Editor, E&M Safety Newsletter
Electrical and Mechanical Services Department
3 Kai Shing Street, Kowloon Bay

Tel. 電話: 1823 (電話中心 Call Centre)
Fax 傳真: 2895 4929
Email 電郵: info@emsd.gov.hk

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