

電力快訊

ELECTRICITY NEWS

同心抗疫 Together,
We Fight the Virus!

EMSD Mobile Apps

Things to Note about Supplementary Bonding Conductors of
Fixed Electrical Installations

Review of the Code of Practice for the Electricity (Wiring) Regulations

Construction Industry Caring Campaign – Fight against Novel Coronavirus

Guidance Notes for the Electrical Products (Safety) Regulation (2019 Edition)

Responsibilities of Competent Persons

Safety Tips for Using R32 Domestic Air-conditioners



● www.emsd.gov.hk

《電力快訊》的中英文版本可於以上網頁瀏覽。

The English and Chinese versions of the Electricity News
may be viewed on the above website.

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Editor's Notes

Thanks to your continued support, Electricity News has come to its 32nd issue. We have much to offer in this issue, which will be introduced by Cool, the female lead appearing in recent TV commercials of the Electrical and Mechanical Services Department (EMSD). The feature articles cover EMSD mobile apps and things to note about supplementary bonding conductors of fixed electrical installations. As to the news-in-brief column, it features the Construction Industry Caring Campaign – Fight against Novel Coronavirus, new edition of Guidance Notes for the Electrical Products (Safety) Regulation, responsibilities of competent persons, and safety tips for using R32 domestic air-conditioners. And what's more, the Electrical Safety Quiz column challenges you to puzzle the answers out, in the hope of adding fun to your reading and enhancing your knowledge about electrical safety.

Feature Article 1 EMSD Mobile Apps

The EMSD launched mobile applications (apps) last December, which enable members of the public to access various electronic services and obtain latest updates from the EMSD anytime, anywhere with functions on their smart phones, bringing convenience to their life.

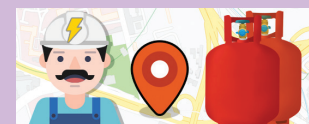
EMSD News



•**Energy Saver:** By capturing the image of the energy labels on the household electrical appliances with the camera on your mobile phone, coupled with the optical character recognition feature, the app can instantly show and compare the energy performance of different product models, and estimate the annual electricity charges, facilitating the selection of more energy-saving household electrical appliances by members of the public.



•**E&M Finder:** With current location or specified location on Google Map of smart phones, members of the public can instantly search for the contact information of registered electrical contractors and LPG cylinder distributors nearby so that they can call and request for on-site services.



•**E&M Trade App:** It is a mobile application designed for registered electrical workers, registered lift/escalator engineers and registered lift/escalator workers. The app provides such information as safety tips, codes of practice of the trade, updates of other relevant documents, training courses, etc. Users can sign up their mobile app accounts and save the information of their certificates of registration to enrol for relevant courses directly via the app, record the number of training hours and receive reminders on the expiry of certificates of registration.



Please scan the QR code, visit the EMSD website (www.emsd.gov.hk >> Menu >> About Us >> EMSD Mobile Apps) or download E&M Connect and E&M Trade App at App Store / Google Play. You are also welcome to view the promotional video of E&M Connect at the above website.

Feature Article 2

Things to Note about Supplementary Bonding Conductors of Fixed Electrical Installations

According to the Code of Practice for the Electricity (Wiring) Regulations (hereinafter referred to as the CoP), supplementary bonding is a type of protective conductor. The four types of protective conductors as specified in Code 11C include:

1. circuit protective conductors;
2. main equipotential bonding conductors;
3. supplementary bonding conductors; and
4. earthing conductors.

Note: 1. This figure is not intended to illustrate requirements for bonding and earthing, but merely to identify the functions of particular protective conductors.

2. Earthing for lightning protection installations should be installed in accordance with the relevant international standard.
3. Earthing for H.V. installations should be installed by their separate earthing means.
4. Main bonding conductors shown in the above figure is equivalent to main equipotential bonding conductors.

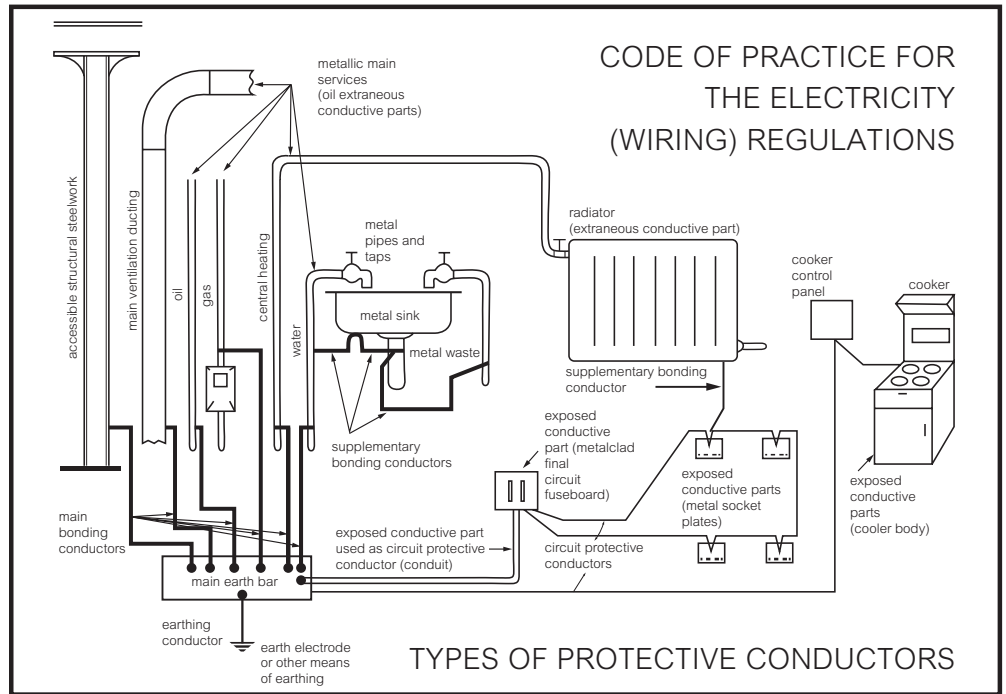


Figure 11(1)

Figure 11(1) of the CoP shows the application of the above four types of protective conductors and their interrelationships.

Before we go into the detailed requirements of supplementary bonding conductors, we should first learn about the main equipotential bonding conductors. Main equipotential bonding conductors are connected to the main earthing terminal chiefly through the main water pipes, gas installation pipes, other service pipes and ducting, risers and ducting of central heating and air-conditioning systems and exposed metallic parts of structural framework to create an equipotential zone. This is to ensure that zero electrical potential difference for the extraneous conductive parts in these equipotential zones is maintained at all times, so as to reduce the risk of electric shock. The main function of supplementary bonding conductors, which can be considered as extensions of the main equipotential bonding conductors, is to extend the equipotential zone.

According to Code 11F(a), within the zone formed by the main equipotential bonding, local supplementary bonding connections should be made to metal parts to maintain the equipotential zone, where those parts are:

1. extraneous conductive parts;
2. simultaneously accessible with exposed conductive parts or other extraneous conductive parts (Note 1); and
3. not electrically connected to the main equipotential bonding by permanent and reliable metal-to-metal joints of negligible impedance.

Simply put, supplementary bonding connects extraneous conductive parts and their nearby exposed conductive parts or other extraneous conductive parts which are at a separation of not more than 2m in order to prevent a hazardous potential difference from occurring between them.

According to Code 11F(b), to determine whether conductive parts such as metallic bathroom accessories, metallic windows or metallic door handles are extraneous conductive parts, a measurement should be carried out to measure the insulation resistance between the conductive part and the main earthing terminal. For a typical single-phase supply system with a nominal supply voltage of 220V, if the measured resistance could be maintained at not less than 45 000 Ohm (Note 2) even under the worst conditions (e.g. high moisture), the metallic part could be considered as a non-extraneous conductive part. Therefore, registered electrical contractors and registered electrical workers may determine in accordance with the above-mentioned Code whether supplementary bonding is required for metallic bathroom accessories, metallic windows or metallic door handles.

Note 1: A separation of not more than 2m is generally considered to be simultaneously accessible.

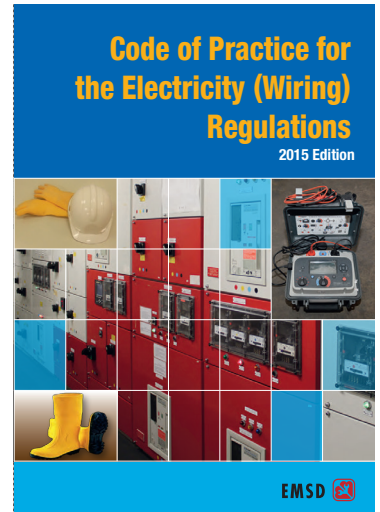
Note 2: This value is approximated based on IEC 60479-1:2005.

News-in-brief 1

Review of the Code of Practice for the Electricity (Wiring) Regulations

The EMSD published the first edition of the Code of Practice for the Electricity (Wiring) Regulations (hereinafter referred to as the CoP) in 1992 to provide the electrical trade with technical guidelines on how the requirements of the Electricity (Wiring) Regulations can be met. The EMSD reviews and revises the CoP regularly to ensure that its safety and technical requirements are up-to-date.

The EMSD has established a working group whose members include representatives from academic institutions, professional bodies, power companies, consultants' associations, trade contractors' associations, trade unions and relevant government departments to conduct a new round of revisions to the 2015 Edition of the CoP. The working group will discuss proposed revisions according to the latest international standards (including BS 7671:2018, which is equivalent to the 18th Edition of the Institution of Engineering and Technology Wiring Regulations) and feedback from the trade.



News-in-brief 2

Construction Industry Caring Campaign – Fight against Novel Coronavirus

The “Construction Industry Caring Campaign – Fight against Novel Coronavirus” launched by Construction Industry Council has been extended the beneficiary coverage to registered electrical workers, registered lift workers, registered escalator workers and registered gas installers under the relevant ordinances enforced by this Department. For application details and a donation form of this Campaign, please visit the relevant website: http://www.cic.hk/eng/main/caring_campaign/ or contact the Construction Industry Council (Tel. 2100 9000 / Email: enquiry@cic.hk).

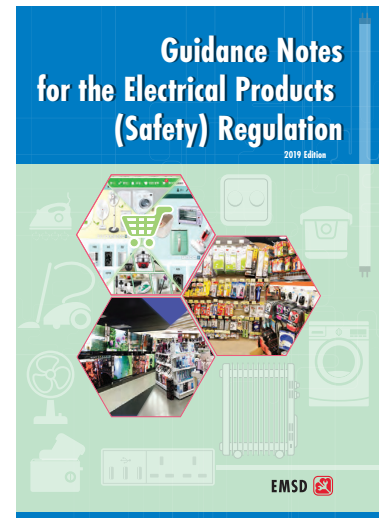
We appeal you all to proactively consider making donations to support the above-mentioned Campaign so that workers and their families affected by the epidemic could receive appropriate support.



News-in-brief 3

Guidance Notes for the Electrical Products (Safety) Regulation (2019 Edition)

The Electrical Products (Safety) Regulation (the Regulation) regulates all electrical products which are designed for household use and supplied in Hong Kong. The EMSD has published guidance notes on the Regulation to facilitate suppliers of electrical products in understanding the detailed requirements of the Regulation. To keep pace with the times and keep abreast of the latest developments in technology, safety requirements and trade practices, the EMSD has published the 2019 Edition of the Guidance Notes for the Electrical Products (Safety) Regulation (the Notes).



Review process

In order to broadly solicit and collect the views of the trade and members of the public, the EMSD conducted consultation in December 2018 to February 2019. Subsequently, a working group was set up in May 2019, whose members include representatives from trade associations, professional bodies, tertiary institutions, public utility companies, government departments and the public sector. After a number of discussions at the working group meetings, and having regard to the views received during the consultation, major revisions have been incorporated into the new edition of the Notes accordingly.

Major revisions

1. New chapter of "Quick Summary"

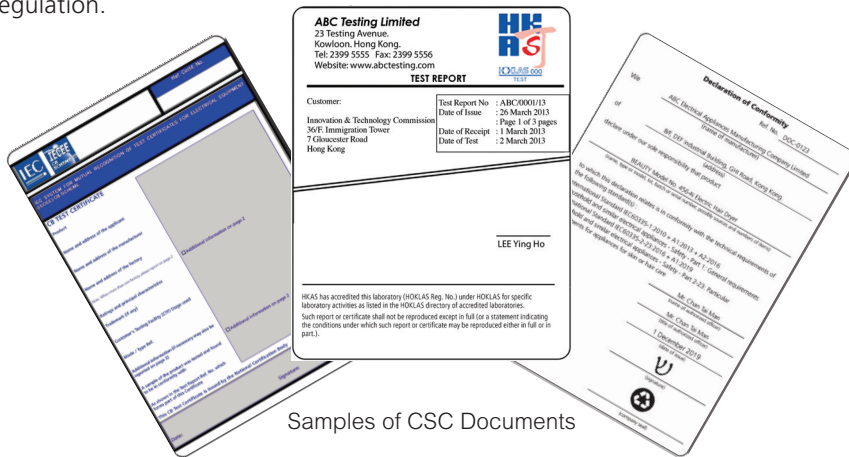
To provide a quick and easy reference for readers to grasp the important contents of the Notes, a "Quick Summary" chapter has been added to the new edition of the Notes to offer a simplified overview of the major requirements of the Regulation, such as giving a brief description of who may be considered as the supplier of an electrical product and how to check to ensure the availability of the certificate of safety compliance (CSC), providing samples of CSC for reference, and illustrating the safety requirements for plugs with graphics, etc. In addition, concise checklists have been added to the new chapter to facilitate suppliers in conducting a preliminary check on whether their electrical products comply with the requirements of the Regulation.

Quick Summary

This section is prepared for quick and easy reference of readers, summarizing some important content of the "Guidance Notes for the Electrical Products (Safety) Regulation" (hereinafter referred to as "the Notes"). For details of the requirements, readers should refer to the relevant sections in the Notes.

1 Introduction

- (1) The safety of household electrical products supplied in Hong Kong is under the statutory control of the Electrical Products (Safety) Regulation (CAP. 406G) (hereinafter referred to as "the Regulation").
- (2) Who may be considered as the "Supplier" of an electrical product?
 - (A) Manufacturers;
 - (B) Importers;
 - (C) Wholesalers;
 - (D) Retailers (e.g. physical/online shops); and
 - (E) Any person supplying the household electrical products (e.g. small shops like stationery stores, gift shops and pop-up stores are also included).
- (3) Which electrical product does the Regulation apply to?
 - (A) Designed for household use;
 - (B) Supplied in Hong Kong; and
 - (C) Using a voltage exceeding 50V alternating current (a.c.) or 120V direct current (d.c.).
- (4) According to the Regulation, the supplier of an electrical product shall ensure that a certificate of safety compliance has been issued for the electrical product before its supply and the electrical product complies with the applicable safety requirements.



Samples of CSC Documents



Plugs of Electrical Products

2. Improved layout design and addition of supplementary information

Supplementary information has been added to the Notes as appropriate to explain the requirements of the Regulation in a more lively and comprehensible manner, such as adding the icons of electrical products in the technical guidance so that readers can search for the requirements for relevant types of electrical products in the Notes, illustrating the requirements for the markings of electrical products with graphics, etc. Besides, the layout design of the new Notes has been improved for better presentation.

Manufacturer's name or trade mark

Model or type reference number

Rated voltage

Rated frequency

Rated input power or input current

SAFE

Model No.: ABC123

Rated Voltage: 220V

Rated Frequency: 50Hz

Rated Input Power: 1200W (Input Current) (6.5A)

Sample of Product Markings

3. Safety requirements for new electrical products

With technological advancement, the safety requirements for some new electrical products (such as LED products, socket-outlets with USB ports, etc.) have been added to the new Notes. What's more, the new Notes have also included the photobiological safety requirements for lighting equipment and related standards of USB port requirements for socket-outlets.

4. Update of safety standards

The new Notes have updated the safety standards of electrical products after the review.

More about the Notes

The new Notes can be downloaded for free at the EMSD website (www.emsd.gov.hk) or purchased from the Publications Sales Unit of the Information Services Department at Room 626, 6/F, North Point Government Offices, 333 Java Road, North Point.

Electrical Products	Standards
 Electric fans	IEC 60335-2-80 : Particular requirements for fans
 Electric hair dryers	IEC 60335-2-23 : Particular requirements for appliances for skin or hair care
 Electric ironers (with padded surface for pressing)	IEC 60335-2-44 : Particular requirements for ironers
 Electric kitchen machines	IEC 60335-2-14 : Particular requirements for kitchen machines
 Electric pumps for liquids	IEC 60335-2-41 : Particular requirements for pumps.
 Electric sauna heating appliances	IEC 60335-2-53 : Particular requirements for sauna heating appliances and infrared cabins
 Electric steam irons	IEC 60335-2-3 : Particular requirements for electric irons

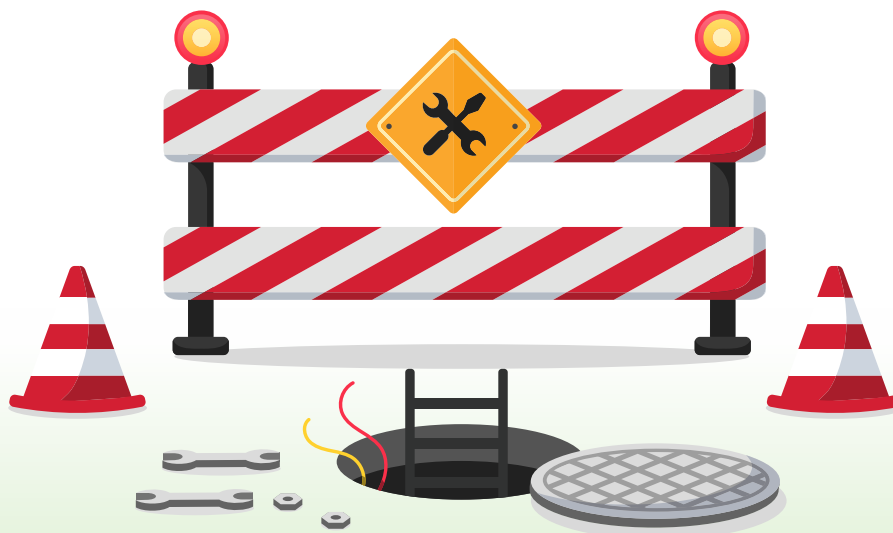
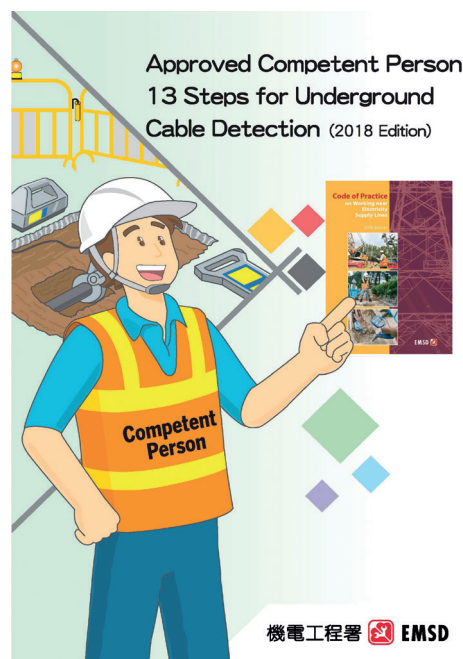
Safety Standards of Electrical Products

News-in-brief 4 Responsibilities of Competent Persons

According to the Electricity Supply Lines (Protection) Regulation and the requirements of its code of practice, before commencement of works in the vicinity of an underground electricity cable (U/G cable), all reasonable steps should be taken to ascertain the existence of any such U/G cable within the proposed works site and its vicinity as shown in the cable plan from the electricity supplier. Prior to commencement of works, the working party shall obtain a cable plan from the electricity supplier. If the cable plan indicates the existence of any U/G cable within the proposed works site or within a specified distance from the works site, the working party shall appoint a competent person to carry out the cable detection work.

The appointed competent person shall refer to the cable plan from the electricity supplier and undertake an investigation to ascertain the existence of any U/G cable within the proposed works site and its vicinity, and determine its alignment and depth. He or she shall provide the working party with a written report of his or her findings from the investigation and give a briefing on it as required by the working party. The competent person shall undertake the investigation and supervise the excavation of trial holes in person, and shall not delegate the function and duty of the investigation to another person. Assistance from the electricity supplier shall be sought if difficulty is encountered in locating the U/G cables.

A competent person who undertakes an investigation to ascertain the existence, alignment and depth of U/G cables shall carry out the investigation in a manner that does not cause damage to, or impair the operation of, the U/G cables. If a competent person fails to comply with the above requirements, his or her approval as a competent person may be suspended.



News-in-brief 5 Safety Tips for Using R32 Domestic Air-conditioners

At present, several manufacturers in the market have launched domestic air-conditioners using R32 refrigerant (the chemical name of R32 is difluoromethane, which is mildly flammable). When buying air-conditioners, we can find out the type of refrigerant used on the energy label (see Figure 1).

We should pay attention to the following safety tips during the installation and maintenance of R32 domestic air-conditioners:

- The body of the air-conditioner should bear the “flame” label (see Figure 2);
- The installation, inspection or maintenance of such products should be carried out by suppliers or experienced personnel who have completed relevant training;
- The requirements on minimum room area and minimum installation height as specified by the manufacturer must be complied with;
- The place of installation should not be close to a fire source or an electrical heating device;
- Do not weld or cut pipework that contains R32 refrigerant;
- As R32 refrigerant is heavier than air, appropriate leakage detectors and refrigerant recovery equipment should be used; the recovered R32 refrigerant shall be handled by a licensed contractor and shall not be disposed of illegally; and
- Do not store or transport R32 refrigerant illegally as it belongs to Class 2 dangerous goods under the Dangerous Goods Ordinance.

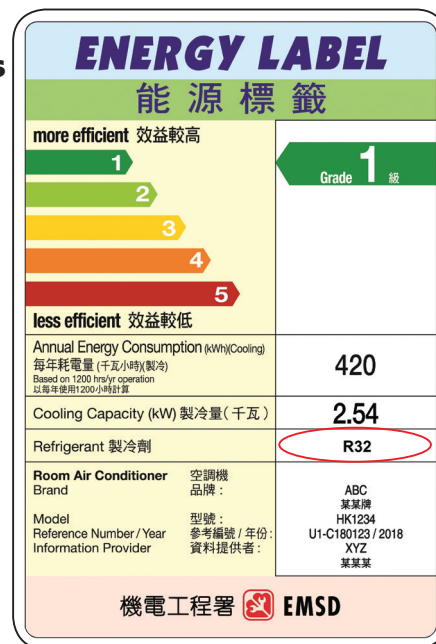


Figure 1



Figure 2

Electrical Safety Quiz

Q1

According to Code 11C of the Code of Practice for the Electricity (Wiring) Regulations, which of the following is a type of protective conductor?

- a) Main equipotential bonding conductor
- b) Supplementary bonding conductor
- c) Earthing conductor
- d) All of the above

Q2

The working group on the review of the Code of Practice for the Electricity (Wiring) Regulations comprises members from

- a) Government departments and power companies
- b) Trade unions, trade contractors’ associations and consultants’ associations
- c) Academic institutions and professional bodies
- d) All of the above

Q3

According to the Guidance Notes for the Electrical Products (Safety) Regulation (2019 Edition), which of the following is included in the chapter of “Quick Summary”?

- a) Persons who may be considered as the supplier of an electrical product
- b) Safety requirements for plugs
- c) How to ensure the availability of CSC of an electrical product
- d) All of the above

Q4

Which of the following is the duty of a competent person when carrying out the cable detection work?

- a) Undertake the investigation and supervise the excavation of trial holes in person
- b) Provide a written report of his or her findings from the investigation
- c) Give a briefing on the written report as required by the working party
- d) All of the above

Please turn over for the answers

Q5

Who should carry out the installation, inspection or maintenance of R32 domestic air-conditioners?

- a) Any person
- b) Personnel who have yet to complete relevant training
- c) Porters
- d) Suppliers or experienced personnel who have completed relevant training

Q6

Which of the following should we pay attention to during the installation of R32 domestic air-conditioners?

- a) The place of installation should not be close to a fire source or an electrical heating device
- b) The requirements on minimum room area and minimum installation height as specified by the manufacturer must be complied with
- c) Do not weld or cut pipework that contains R32 refrigerant
- d) All of the above

Answers: 1d, 2d, 3d, 4d, 5d, 6d

Readers' Feedback and Update



We look forward to receiving your valuable feedback for continuous improvement so that the contents of Electricity News and the services of the EMSD can better meet your needs. Please complete the form below and return it to the Electricity Legislation Division of the EMSD by post, fax or e-mail (contact details at the bottom of this page) on or before 21 July 2020. Thank you.

To: Electricity Legislation Division, EMSD

Overall, I have the following comments on Issue 32 of Electricity News (please put a "✓" in the appropriate box):

	Strongly Agree	Agree	Average	Disagree	Strongly Disagree
• Interesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Beneficial to my present or future work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• At an appropriate level of complexity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Enriches my knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I hope the following subjects will be included in the next issue:

	Strongly Agree	Agree	Average	Disagree	Strongly Disagree
• Satisfied with the services of EMSD's Electricity Legislation Division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other comments^[1] :

In support of environmental protection, Electricity News will be sent to the registered e-mail addresses^[2] of all registered electrical workers and registered electrical contractors.



Personal Particulars^[3] :

Name: _____ (Mr./Ms.) Registration No.: _____

Address: _____ (□new)

Tel. No: _____ (□new) E-mail Address: _____ (□new)

Note: [1] Please use a separate sheet if the space provided is insufficient. [2] If you change your e-mail address or wish to receive the printed version of Electricity News in the future, please notify us by post, fax or e-mail. [3] The personal particulars provided in this form will only be used for opinion surveys of Electricity News and the updating of registration information. All data will be kept confidential and dealt with by authorised persons. You have the right to apply in writing for access to and correction of your personal information. Please put "✓" in the boxes if there are changes to your particulars.