

Guide for safety at work

# SAFE USE OF ELECTRIC PLUGS



Occupational Safety and Health Branch  
Labour Department



OCCUPATIONAL SAFETY & HEALTH COUNCIL



Guide for safety at work

# **SAFE USE OF ELECTRIC PLUGS**

This guidebook is prepared by the  
Occupational Safety and Health Branch  
Labour Department

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*This edition*

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This guidebook is issued free of charge and can be obtained from the offices of the Occupational Safety and Health Branch of the Labour Department. It can also be downloaded from website of the Department at [https://www.labour.gov.hk/eng/public/content2\\_8d.htm](https://www.labour.gov.hk/eng/public/content2_8d.htm). For enquiries about addresses and telephone numbers of the offices, please visit the website of the Department at <https://www.labour.gov.hk/eng/tele/osh.htm> or call 2559 2297.

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## Introduction

Electric plugs are widely used for connecting portable electric tools, light industrial electrical equipment, office equipment, etc. to the electricity supply.

The structure and wiring of an electric plug appear to be simple. However, the electrical hazards associated with the unsafe use of electric plugs should not be overlooked. Occupational accidents, such as electric shocks, burns, fires and explosion, that result from the improper selection, wiring, handling, usage, repairing and maintenance of electric plugs are not uncommon. They can result in damage of equipment, lost of properties and production time, and the more important, casualties.

In view of the serious consequences of the accidents, it is essential to understand the safe use of electric plugs at work. In this guidebook, the common bad practices in using electric plugs, and the corresponding proper practices that should be followed instead, are discussed upon briefly. In case of doubts, please seek the advice and assistance of competent persons, such as qualified electrical engineers, electrical technicians, and registered electrical workers.

*Caution: For the sake of electrical safety, electric plugs should be wired and repaired by competent persons.*

## Select the proper electric plugs

1. Use acceptable plugs only. Those plugs should bear the relevant markings as follows:

Type of plug	Round pins (small)	Square pins	Round pins (large)
Current Rating (Ampere, A)	5	13	15
Markings	BS546 5 Amp ~250V	BS1363 13 Amp ~250V	BS546 15 Amp ~250V

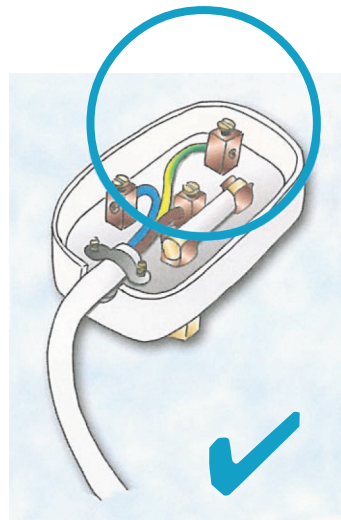
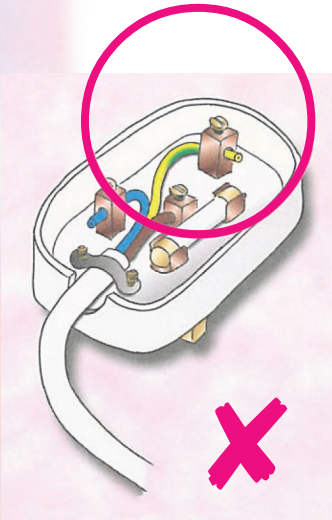
N.B.: For details, please refer to publications of the Electrical & Mechanical Services Department.



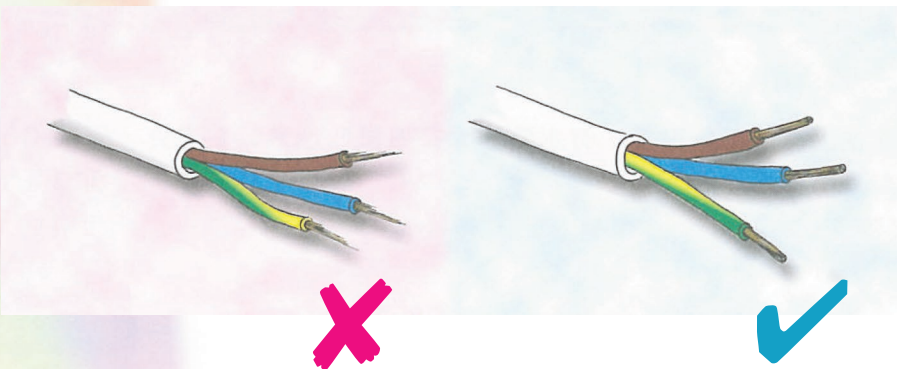
2. Choose waterproof type plugs for outdoor use or a wet working environment, or a workplace where there is water dripping or splashing.

## Proper wiring of electric plugs

1. When wiring the cord of electrical equipment to a plug, it should first remove suitable length of outer insulation sheath of the cord and insulation cover of the inner cable cores. Do not screw the inner cable cores onto the plug terminals direct without removing the insulation cover of the cores.

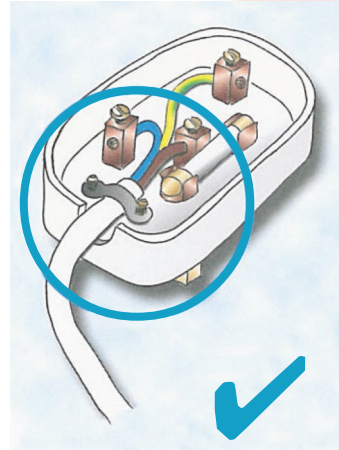
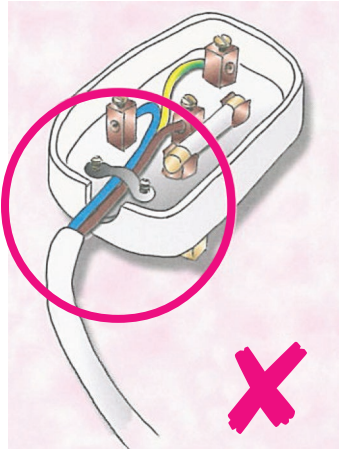


2. The insulation cover of the cord/cores should be removed with care to avoid cutting the strands of copper wires, or other damages.



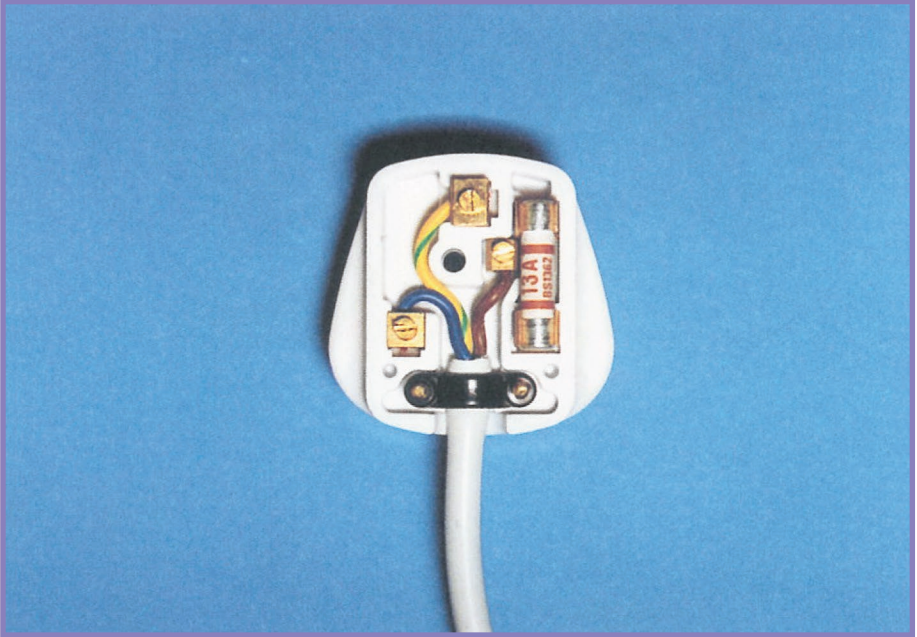


3. Fasten the cord to the plug firmly using the cord grip on the plug. Fix on the outer insulation sheath of the cord instead of the inner cores.



4. Secure the cores firmly to the respective plug pins / terminals in accordance with the following schedule:

Pins of the plug / cores of the cord	Markings on the plug	Colour of the cores	
		New type	Old type
Line	L	Brown	Red
Neutral	N	Blue	Black
Earth	E (⊕)	Yellow / Green	Green



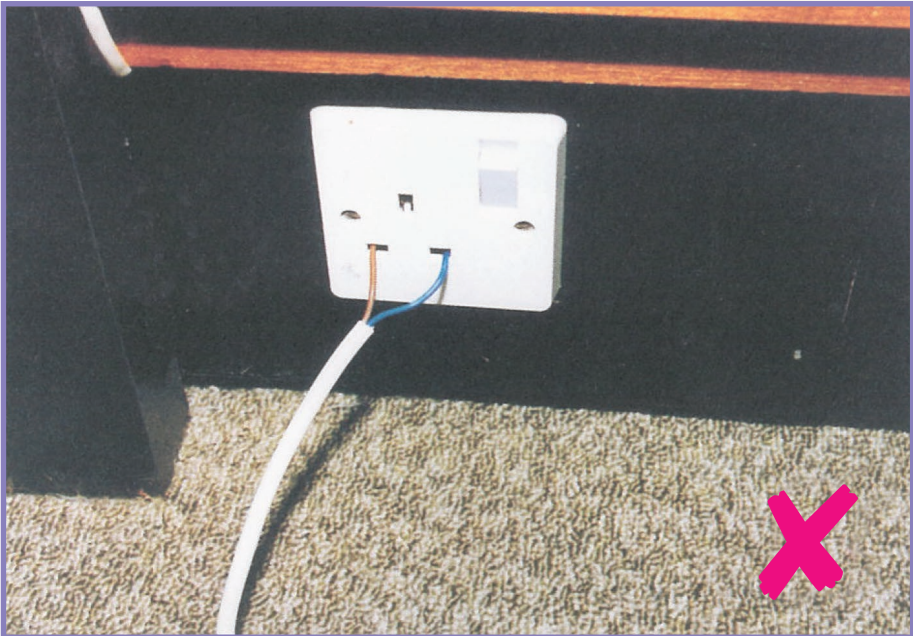
*Warnings: Do not reverse the line (L) and the neutral (N) cores. Do not leave the earth core unconnected.*

Note 1: Sometimes the electrical equipment would still operate even if the line and the neutral cores are reversed, or the earth core is not connected. However, such conditions are dangerous and are liable to cause electric shock. Therefore, do not commit the above mistakes.

Note 2: There would not be an earth core for electrical equipment of the double insulation type. Such a type of equipment should bear the "□" mark.

## Proper use of electric plugs

1. Never insert electric cable cores direct into a socket outlet or an adaptor to get power. Use a plug or other suitable devices for proper connection to the power source.

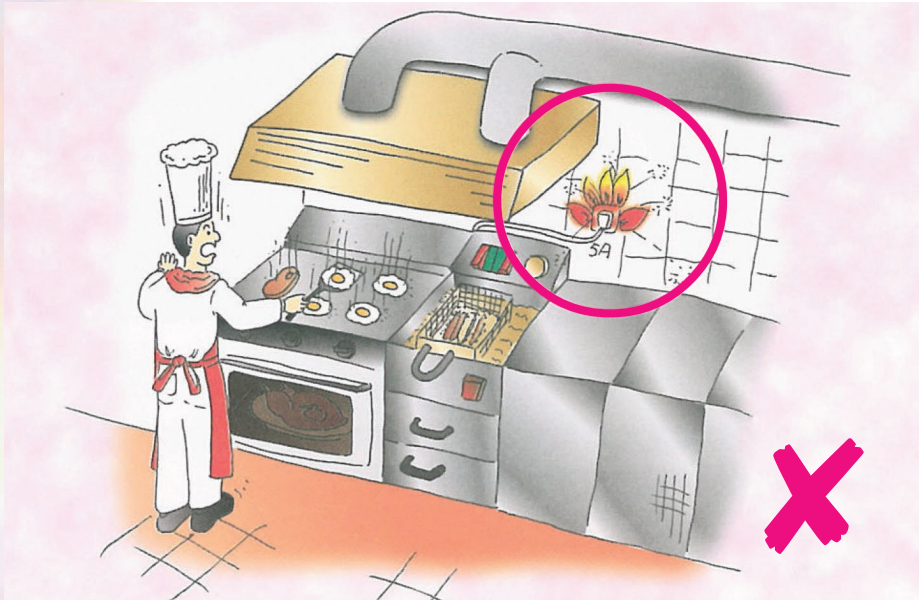


2. A plug should match with the socket outlet or the adaptor to be connected to. Do not tamper the plug or the socket to make the matching, or insert the plug to the socket by force if they are of the different types.

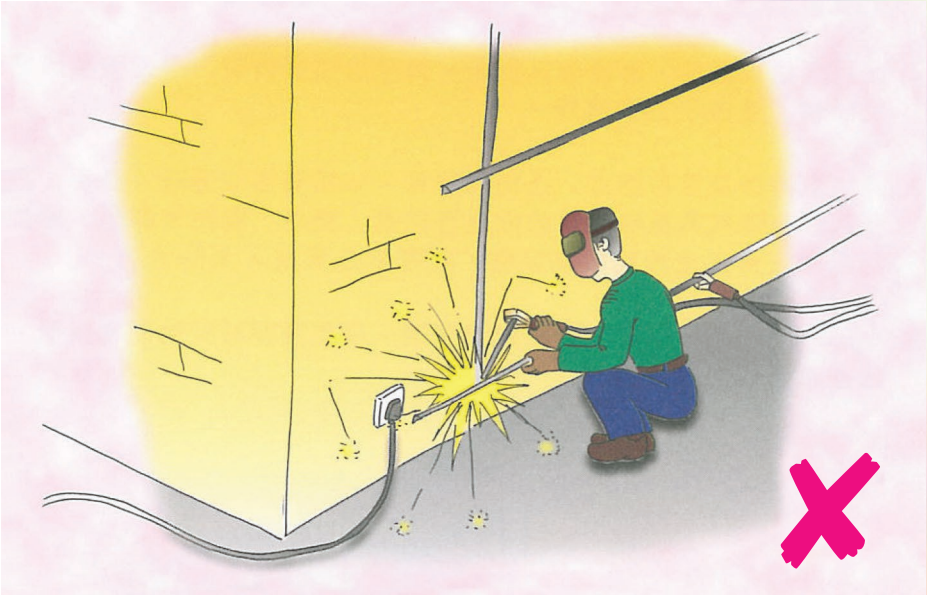
**SAFE USE OF ELECTRIC PLUGS**

- Do not overload the plugs. The plug connecting an electrical equipment should match with the power / current rating of the equipment. The maximum allowable power of electrical equipment connected for the different types of plug should be as follows:-

Type of plug	Round pins (small)	Square pins	Round pins (large)
Current Rating (Ampere, A)	5	13	15
Maximum power of equipment connected (Watt, W)	1,000	2,600	3,000



4. Plugs should be kept away from naked flame or heat sources.

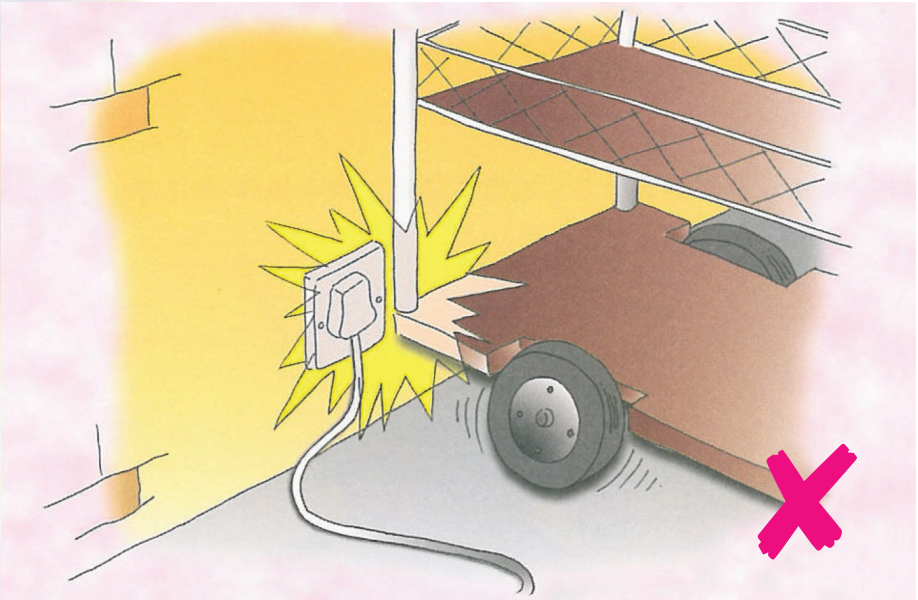


5. Avoid dripping and splashing of water or other liquids on the electric plug and the adaptor.



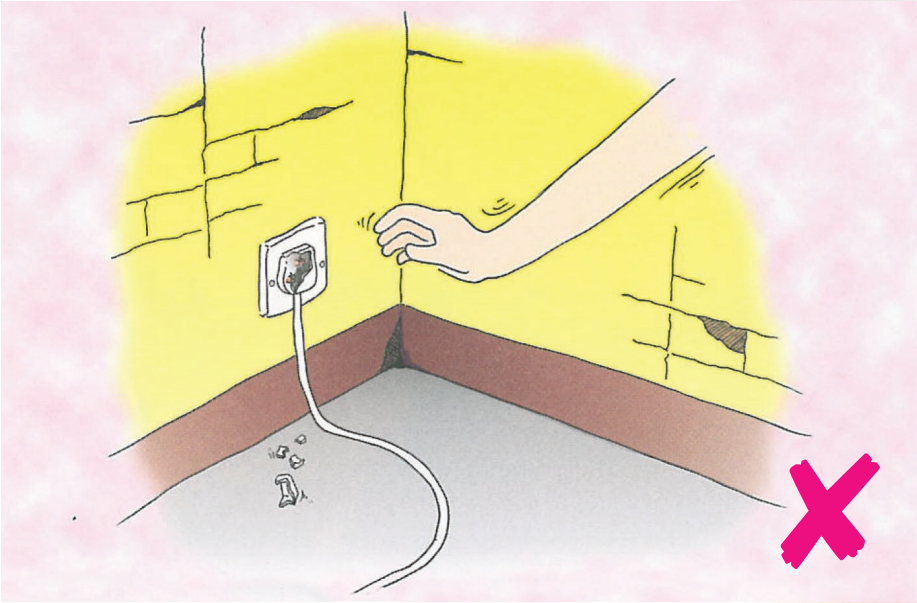
## Points to note when handling electric plugs

1. Check the plug before using an electrical equipment. Do not use an electrical equipment having a broken plug. Replace the plug as soon as possible.
2. Notice the symptoms of overloading / heating of a plug such as feeling warm/hot, having burning smell, charring, discolouring or distortion of the plug casing. In case there are such symptoms, switch off and stop using the electrical equipment immediately and seek the assistance of competent persons.
3. Handle plugs with care to avoid breaking them accidentally. Avoid crashing them with hard objects, rolling over by heavy objects, etc.

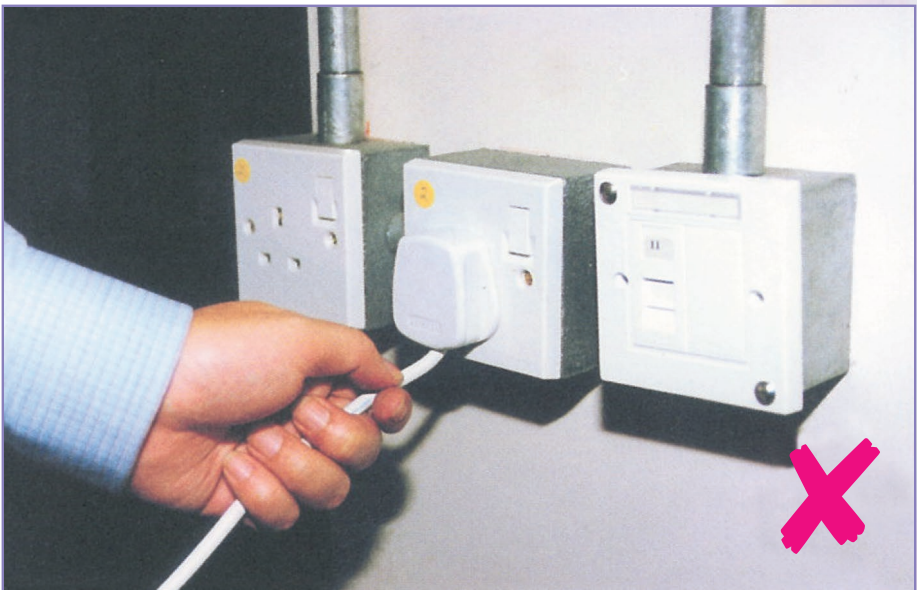


4. If the plug is broken accidentally while using an electrical equipment, immediately switch off the equipment and the power source. Seek the assistance of competent persons.

*Warning: Never try to remove a broken plug from a live socket or a live adaptor.*

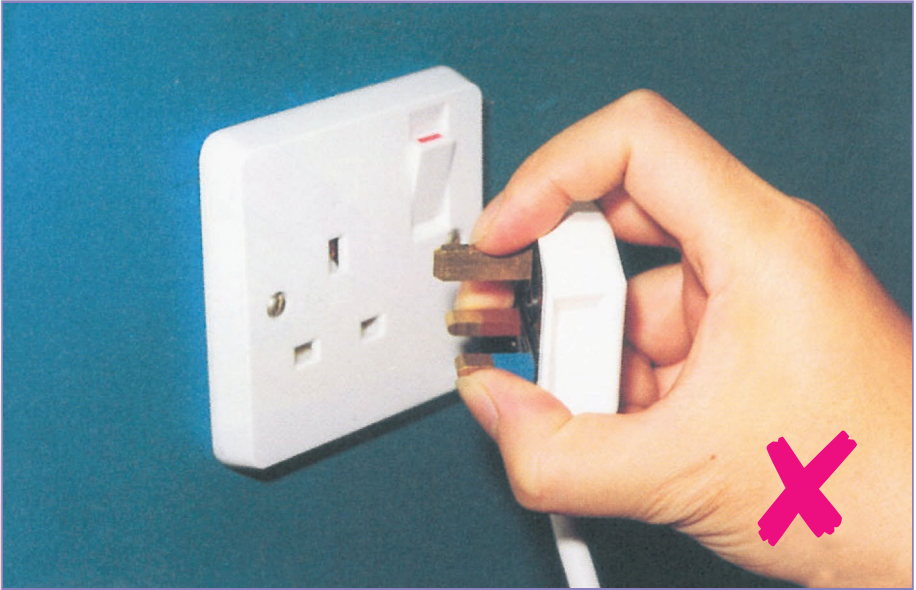


5. Unplug by pulling the plug instead of the cord.

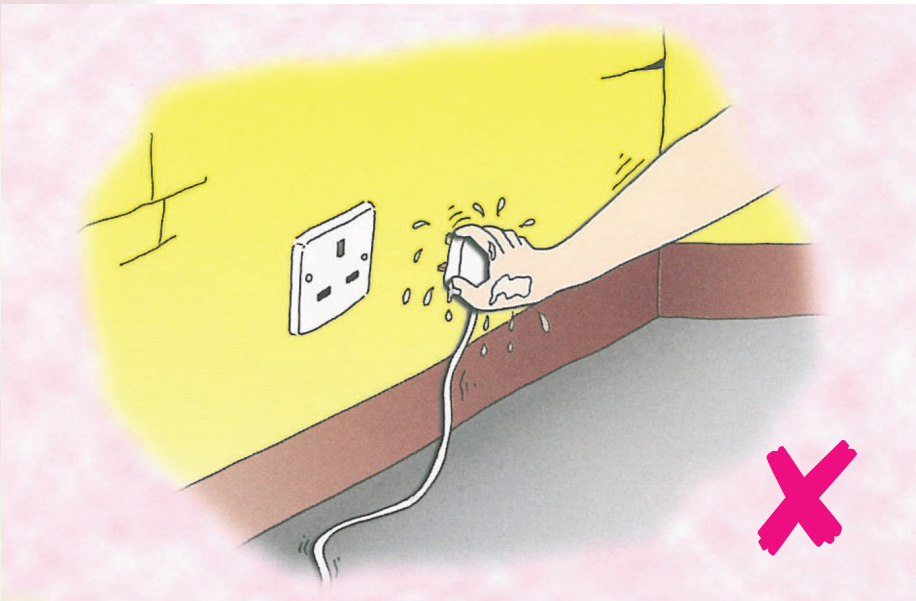


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- 6. Beware not to touch the metallic plug pins with your fingers while plugging or unplugging a plug.



- 7. Keep your hands dry while plugging or unplugging a plug.





## Proper maintenance of electric plugs

1. Plugs in use should be regularly inspected. In case of any defects found, the plug should be repaired or replaced as appropriate.
2. Plugs should always be kept clean, away from dust, oil, grease, or other dirt.



## Enquiries

If you wish to enquire about this guidebook or require advice on occupational safety and health, you can contact the Occupational Safety and Health Branch of the Labour Department through:

Telephone number : 2559 2297 (auto-recording after office hours)  
Fax : 2915 1410  
E-mail : [enquiry@labour.gov.hk](mailto:enquiry@labour.gov.hk)

Information on the services offered by the Labour Department and on major labour legislation can also be found by visiting our Home Page on the Internet. Address of our Home Page is <https://www.labour.gov.hk>.

Information on the services provided by the Occupational Safety and Health Council can be obtained through its hotline 2739 9000.

## Complaints

If you have any complaints about unsafe workplaces and practices, please call the Labour Department's occupational safety and health complaint hotline on 2542 2172. All complaints will be treated in the strictest confidence.





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