

# Using electricity **safely** while abroad

A guide for safe use of electricity in countries outside of the UK



# What are the **dangers** of using electricity abroad?



**This guide is to help you understand the possible dangers of using electricity abroad and how to keep safe.**

Electrical installation safety standards in the UK are relatively high compared to some other countries in the world so it would be a mistake to assume you are as protected abroad as you are at home. Apart from some of the obvious differences, such as the plugs and sockets, there are other aspects of the electrical systems used abroad that are important to be aware of. For example, electricity supplies worldwide can vary from anything between 100 volts and 240 volts and it may not always be safe to use an electrical appliance that is rated at a voltage different from the supply. The normal voltage and frequency of the electricity supply to homes in the UK is 230 v 50 Hz.

## **Keeping yourself safe is not difficult if you follow a few simple rules:**

1. Never touch electrical equipment with wet hands.
2. Never touch light switches if they are cracked or show signs of damage.
3. Never plug equipment into a socket which looks damaged/cracked or has part or all of the cover missing.
4. Never use mains powered electrical appliances in a bathroom.
5. Always check that cables are securely attached to electrical equipment and are not cut, nicked or damaged in anyway. There should be no joints in the cable and certainly no repairs with insulating tape. Cables should also be checked for signs of overheating, such as discoloration.
6. Always check that the travel adaptor you are using is the correct type for the country in which you are travelling and never force it into a socket if it does not easily fit.



## **Reporting electrical dangers**

Electrical dangers should be reported to the person responsible for example your tour operator or the hotel manager. If the danger is not removed immediately, insist on being moved.

## Before you go:



- Find out about the type of sockets and the voltage used in the country you are visiting.
- Think about the appliances you intend to take and whether you will need to use travel adaptors/voltage converters and their power rating.
- Consider buying travel adaptors and voltage converters from the UK as not all products available abroad will meet British safety standards.
- On cruise ships, the voltage and type of sockets provided in cabins can vary (even with the same cruise operator) and may not be the same as that used in the country the ship departs from. Check with the cruise operator or your travel agent.

## On Arrival, a few visual checks:



### **Hotel rooms** - check that:

- there are no bare wires that can be touched where electrical accessories have been removed or damaged
- sockets and light switches are not damaged or have their covers missing
- light bulbs are properly inserted into all light fittings and are not broken or cracked
- there are no trailing extension leads or overloaded sockets and never ignore the warning signs of burning smells, sounds of arcing (buzzing and crackling), fuses blowing or scorch marks on plugs and sockets.



### **Bathrooms** - check that:

- electrical accessories cannot be touched whilst in the bath or shower.



### **By the pool** - check that:

- electrical appliances are kept away from the water.



### **On camp sites** - check that:

- there is Residual Current Device (RCD) protection or a similar device that will cut off the supply if there is an electrical problem
- flexible cables are positioned appropriately to prevent them being damaged
- electrical appliances are stored in a dry place.

# Using electrical appliances – Your questions answered...

## **Can I use UK electrical appliances safely abroad?**

Yes, but you must consider the type of socket, the voltage and the frequency of the electricity supply used in the country you are visiting. In most cases a travel adaptor will be needed to allow an appliance to be plugged into the socket of another country.

Where the supply voltage is different you may need to use a voltage transformer or converter unless the electrical appliance or its power supply is dual voltage rated. If the frequency is different, the normal operation of an electrical appliance may also be affected. For example, a 50Hz clock may run faster on a 60Hz electricity supply.

For travellers to Europe only the socket type needs to be considered as the voltage and frequency are the same as the UK.

## **What are travel adaptors?**

A travel adaptor is a device that simply allows you to plug any UK electrical appliance into a foreign electrical socket. It is important to note that it does not convert the voltage or frequency.

## **Which ones should I use?**

Different countries use different electrical sockets. Before you travel you need to know the type of socket used in the country you are visiting so that you can take the correct adaptor with you. As there are over a dozen different styles of plugs and sockets used throughout the world, there are travel adaptors available that are designed for use in more than one country.

Some travel adaptors are not suitable for appliances that require an earth connection and should only be used with double insulated equipment.

Double insulated appliances will be marked with a  symbol.

Before plugging an appliance into an adaptor check that it does not exceed the maximum power rating shown in AMPS or WATTS on the adaptor.

For safety, all modern travel adaptors must meet BS 5733.

## **What are voltage converters/transformers?**

In countries where the voltage is 100 - 127 v and the appliance, or its power supply, is not dual voltage rated, you will need to use a voltage transformer or converter to allow the appliance to work safely and properly.

Both voltage converters and transformers increase the voltage, but some 'electronic' appliances such as CD players, TV's, radios, computers, etc are not suitable for use with converters. If unsure, check with the manufacturer. Also, converters should only be used for short periods of time (1 – 2 hours) where most transformers can be used continuously. Most voltage converters and transformers come supplied with plug adaptors so you may not need to buy a separate travel adaptor.

All converters and transformers will have a maximum power rating (AMPS or WATTS) so make sure that any appliance you intend to use does not exceed this rating.

The diagram on the next page shows the different voltages and frequencies used worldwide.

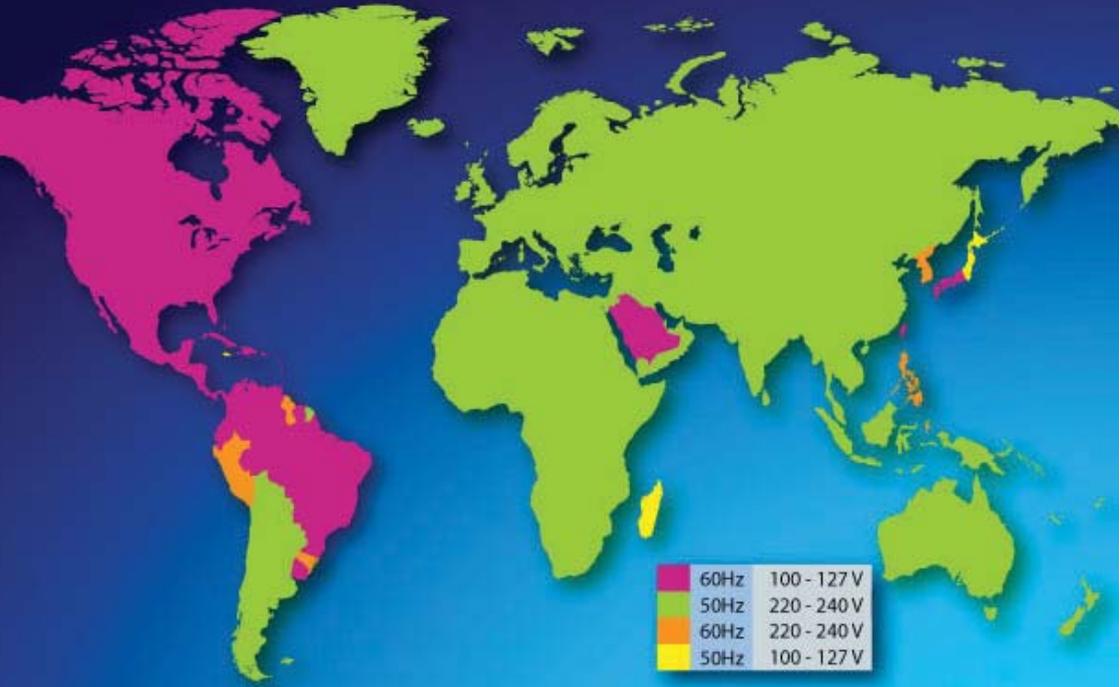
## **How can I tell if an appliance is dual voltage rated?**

The appliance rating plate should show if the appliance, or its power supply, is dual voltage rated. It will say INPUT: 100 – 240V ~. Whilst some dual voltage appliances automatically adjust to the input voltage, some have a switch to manually select the correct voltage. If you are unsure about your appliance, always check with the manufacturer.

## **Can I buy electrical appliances abroad and use them safely back in the UK?**

Due to the differences already explained in this guide, we would not recommend buying electrical appliances abroad for use back in the UK.

## Map of the world by **voltage** and **frequency**



A full list showing voltage and frequency for each country is available on our website: [www.esc.org.uk](http://www.esc.org.uk)

The information contained within this map is correct to the best of our knowledge at the time of publication and is only to be used as a guide.

## Who are the Electrical Safety Council?

We are an independent non-profit-making organisation, registered as a charity, set up to protect the safety of consumers. Supported by all sectors of the electrical industry as well as local and central government, we deal with all electrical safety matters on behalf of consumers. We are a driving force in the field of electrical safety for the protection of consumers, working with other organisations to improve standards and promote best practice.

For more advice on electrical safety, visit our website at [www.esc.org.uk](http://www.esc.org.uk)



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