



Electrical safety in the home

70 million homes in Europe are electrically unsafe.
Is yours one of them?

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Life Is On

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Do you think your electricity consumer unit protects your family?

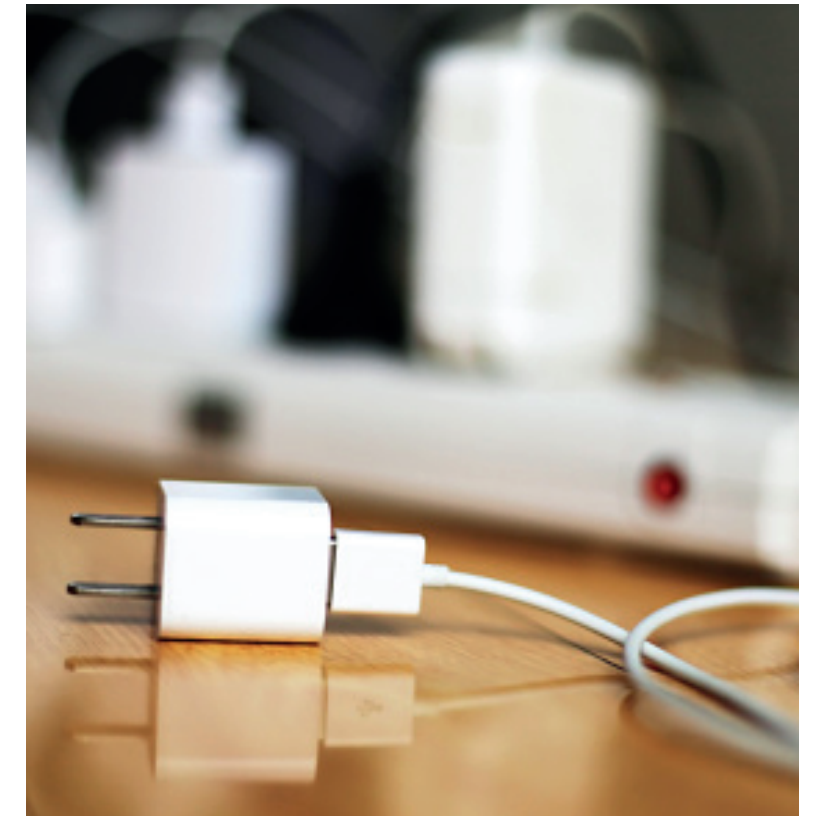
In units installed before 2000, the only safety devices are circuit-breakers (or fuses if the unit is older). They can prevent fires caused by short-circuits or cable overloads. But they don't prevent people from electric shocks.

Short circuits

These are caused when two exposed live wires touch. A circuit-breaker trips immediately and prevents a fire from breaking out.

Overload

This is when too much current runs through a wire. This can be because a device with too much power is plugged in or too many devices are plugged into a multi adaptor. When a wire overheats it can damage everything around it.

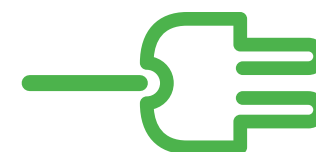


Where would we be without electricity?

Electricity helps us all day, every day but it can also be dangerous

From the time our alarm wakes us in the morning, to when we turn off the light at night, electricity has powered our entire day.

We all need to use it carefully and make sure our appliances are always safe and well maintained.



One accident is one too many. Most accidents can be prevented when safety is considered.

- In the UK someone dies **every week** in an electrical accident at home. Electrical Safety Council.
- In the US, electrocutions are the **fourth most common causes** of industrial fatalities. Oklahoma State University.
- 40% of fatalities in electrical accidents at home are **children under 9**. GRESEL (French voluntary body for research into electrical safety in the home).
- **4000 people get serious electric shocks** and 100 die every year in France. Ministry of Ecology, Sustainable Development, Transport and Housing.

Play safe – and stay safe



Power sockets

Sockets account for most electric shocks and electrocutions. That's why special safety features are now a legal requirement in all new buildings.

Damaged plugs and sockets

Wall sockets and plugs can suffer from wear and tear and can be very dangerous when damaged. Just brushing against a live pin or wire can create an electric shock.

The solution

Don't skimp on quality. Buy a recognised brand.

- Choose shuttered sockets
- Ensure sockets are securely screwed into flush boxes in to the wall
- Change the socket if it's old or loose.



Damage to flexes

Flexes plugged into wall sockets are found all over the house and are easily damaged.

- In the kitchen they may be exposed to heat, twisting, nicks etc.
- In the living room and bedrooms they may be flattened, knotted or gnawed by pets.

The solution

- Get rid of any faulty or damaged flex
- Ensure all your outlets are protected by Residual Current Devices (RCDs).



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Bathrooms

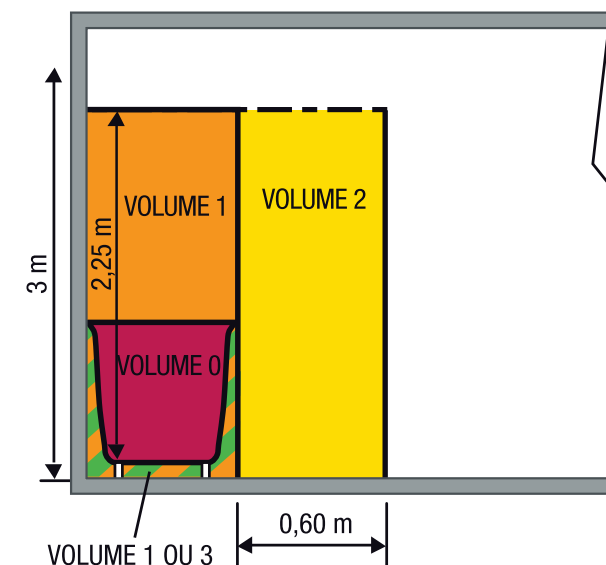
- Water conducts electricity very easily and this can be dangerous.
- Light fittings should be encased and electrical equipment or outlets should not be within reach of the shower or bath tub.
- Never use electrical appliances whilst in the bath or shower. If a device falls into water, unplug it before picking it up.

The solution

Your electrical equipment must comply with IEC 60 364. All metal parts must be connected to the green-yellow part of the electrical network.

Complying with distances makes it impossible to come into contact with any electrical parts when in the bath or shower.

In a room containing a bath or a shower, a 30mA RCD must ensure protection of all electrical circuit.



Volume 0:

- No electrical part at all

Volume 1:

- at reach from the bath or shower with arms up
- Only 12V isolated fittings (SELV* supply)

Volume 2:

- maximum reach from the bath or shower
- Transformer isolated sockets ("razor" type)
- Class II insulated lighting and heaters.





RCDs for failsafe protection against electrocution

Because you can't always see damaged insulation or loose wires, new regulations require homes to be fitted with Residual Current Devices (RCDs). RCDs are highly sensitive devices that trip immediately when an electric shock situation is detected.

If anyone gets an electric shock it stops the electricity flow. It would be particularly effective in old buildings with ageing installations, where modern regulations don't apply.

Compulsory standard

RCDs are compulsory on all circuits supplying:

- power sockets
- all devices in bathroom and wet locations
- lighting circuit

Lighting: minor repair, major risk

Changing light bulbs, fixing loose wires and repairing lamps can be dangerous.

The solution

Always turn off the circuit in the electricity control unit before attempting any repairs.



If wall or ceiling-mounted lights have metal parts, make sure their earth pin is connected to the green-yellow wire.

RCD-protected lighting circuits will, however, be your surest safety guarantee.



Word of warning: A socket isn't safe just because it has a ground pin. Ask your electrician to check all your sockets and all the metal parts in your bathroom are properly grounded.

Machines and domestic appliances

Any appliance with a metal housing can be dangerous if an internal wire is loose or is not properly insulated.

The solution

Any appliance with a metal housing must be grounded by:

- Green-yellow wires all connected together
- Ground pins in plugs and sockets.

Grounding ensures that a protective device trips as soon as a live electrical part touches a metal housing.

Make sure:

- All your socket outlets are equipped with an earth pin
- All directly connected appliances are firmly connected to the green-yellow wire of your electrical network.

Does your electrical installation have a residual current device?

1

Does your consumer unit have devices with a white pushbutton?

No

You're not protected against electrocution. Contact an electrician for an upgrade.

Yes

Press the white button. The RCD will trip immediately.

3

Flick up the switch on the RCD to turn the power back on.

2

When the RCD has tripped, check the protected parts of your home:

- Take a light and plug it into each power socket of your home. If none works, you're RCD-protected. If any socket still works, you're still not fully protected from electric shocks.
- Be careful to check all the sockets, lights and appliances in your bathroom. Nothing should work.
- If any tested circuit still works, you're not fully protected from electric shocks. Ask your electrician to upgrade your installation in line with current safety regulations.



1



3

Trust your electrician to make your home safe

Safety is serious business – and it can be very technical, too. Only qualified electricians can make your home safe and protect your family from the risk of electrocution. So, whether your home is a modern building or – in fact, especially – if it's an old one, call an approved electrical contractor.

Schneider Electric: the guarantee of a world leader's expertise

How can you be sure the safety devices in your consumer unit will do their job at critical time? Schneider Electric, world leader in electricity management, brings you:

- nearly a century of experience in electrical protection,
- global, unanimously acknowledged quality in all types of buildings.

Schneider Electric works constantly and closely with electricians. We train electricity professionals and keep them up-to-date with new products and regulations. That's because Schneider Electric's business is to make your home safe, comfortable, and energy efficient.

Electricians: their expertise means your safety

Because electricians are electricity professionals they are also safety professionals. They know rules and practices inside out. Need to check your electrical installation? Rewire or replace faulty and ageing parts? Upgrade your safety system so that it complies with current standards? Trust your qualified electrical contractor.



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