

Electrical safety at home: key principles

Electrical safety in the home depends on a **range of devices and best practices that work together to protect both people and equipment**. Although many of these elements go unnoticed, understanding their function helps identify potential risks and keep an installation in good condition.

How to identify the electrical panel

The **electrical panel (consumer unit) is the central point of a home's installation**. It houses the main protection and control devices.

1 ICP (Power control switch)

Limits the maximum contracted power to prevent overloads in the installation.

2 RCD (Residual current device)

Detects current leakage and protects against indirect contact.

3 Circuit breaker

Protects the installation against overloads and short circuits by cutting off the current when a safety limit is exceeded.

4 SPD (Surge protection device)

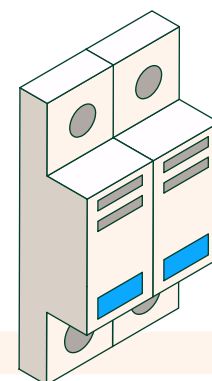
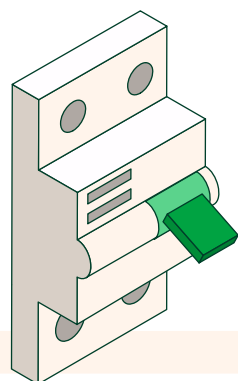
Protects against voltage spikes that may damage electrical equipment.

Residual current device (RCD)

Surge protection device (SPD)

The residual current device is one of **the most important safety components in an electrical installation**.

El protector de sobretensiones es un **dispositivo diseñado para proteger la instalación** y los equipos eléctricos frente a picos de tensión.



How is it tested?

It includes a **"TEST" button that simulates a leak**. When pressed, the device should trip immediately. It is recommended to carry out this check periodically to ensure proper operation.

When is it mandatory?

Its installation is mandatory in **many new and refurbished homes**, especially in areas at risk of surges or in installations with sensitive electronic equipment.

What is its function?

To **detect current leakage and automatically cut off the electricity** when there is a risk to people.

What is its function?

To **divert or limit sudden increases in voltage** that may occur due to electrical storms, network faults or switching operations.

How does it work?

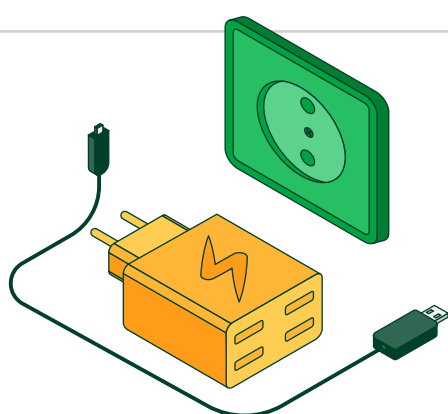
It **compares the current entering and leaving the circuit**. If it detects a difference, it interprets this as a leak (for example, towards the human body or a metal casing) and trips.

Why is it important?

It **helps prevent damage** to household appliances, climate control systems, computers or home automation equipment.

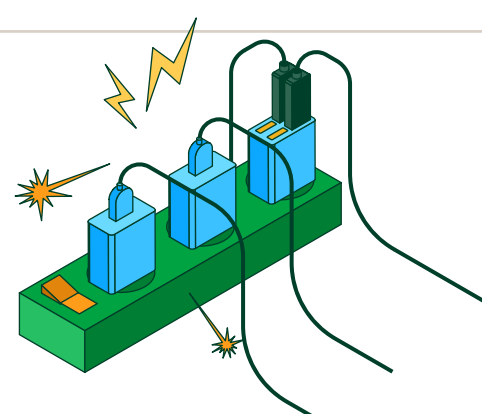
Most common electrical risks in the home

Although modern installations are designed to be safe, **there are common situations that can increase electrical risk at home**.



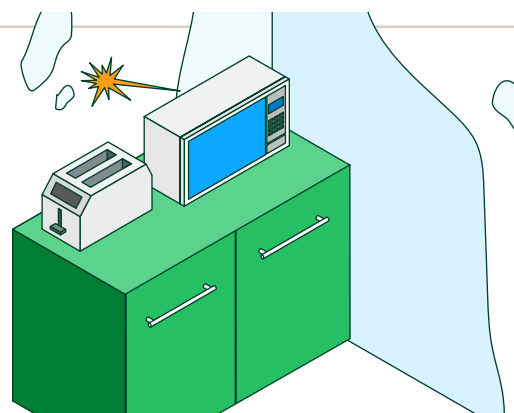
Sockets without an earthing system

They reduce protection against current leakage and increase the risk of electric shock.



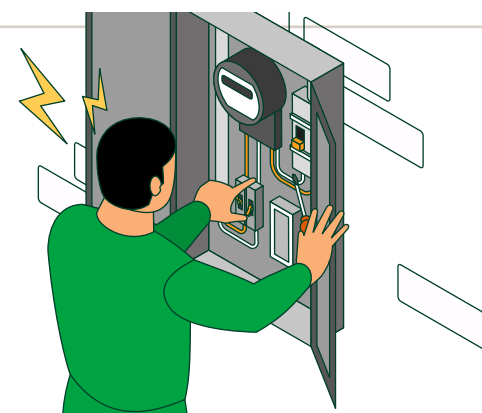
Overloaded power strips

Connecting too many devices can cause overheating and faults in the installation.



Moisture in electrical areas

Water conducts electricity, so its presence increases the risk of accidents.



DIY electrical work without knowledge

Handling installations without proper training can lead to serious faults or dangerous situations.

Earthing system: the foundation of electrical safety

The earthing system is the element that **allows leakage currents to be diverted into the ground, preventing them from passing through people or damaging equipment**. Although it is not always visible, it acts as the silent foundation of the home's electrical protection system.

When to check the installation

It is advisable to carry out an inspection of the electrical installation in certain situations to ensure it is working correctly:

- Older homes that may not comply with current regulations.
- Frequent tripping of the residual current device without an apparent cause.
- Renovations or significant changes to the electrical installation.
- Installation of new high-power equipment or home automation systems.

Regular inspection by a professional helps keep the installation safe and adapted to the needs of the modern home.

