

With them, I trust
nothing but the best!

Live in peace with the most advanced
electrical protection!

Enhance the safety of your home with AFDDs: Arc Fault Detection Devices



pdl.co.nz/safety

Life Is 



by **Schneider** Electric

What's your electricity doing while you aren't looking?

Although it sounds highly unusual, the electricity in your home and a toddler are very similar in the way they have to be cared for.

Just the way a toddler needs constant supervision and care, the electricity around you too needs constant supervision.

Just like a toddler, without proper care and monitoring, the electricity in your home can become disorderly and expose you to risks.

When naughtiness goes awry

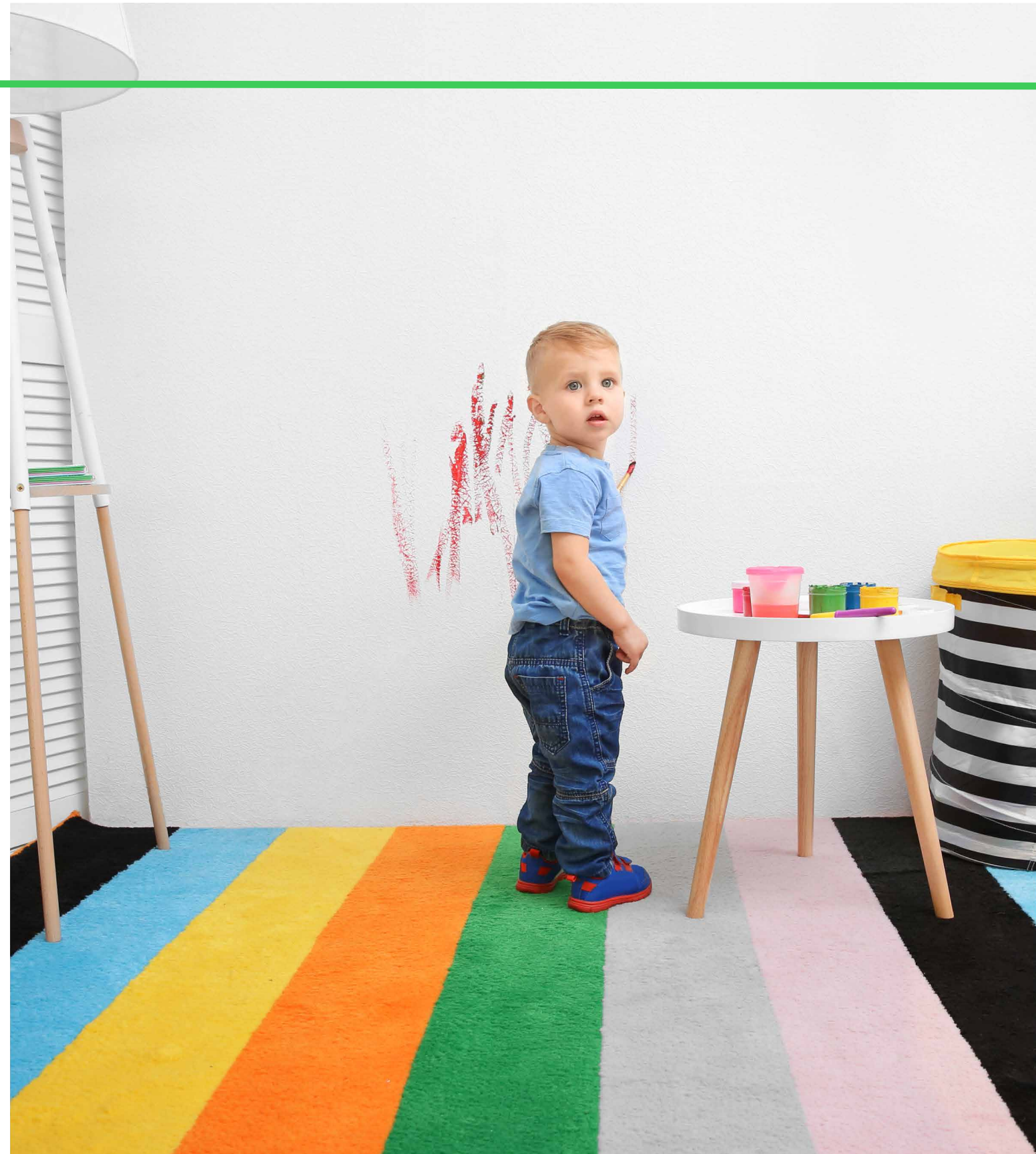
Small electrical faults, when undetected in time, can turn into serious hazards.

In New Zealand, we have instances of significant loss of lives and assets due to electrical fires, every year.

 **4000+**
fires each year
in New Zealand

 **1/5**
residential fires originate from electrical
faults are of electrical origin

*Based on data available from various fire authorities in New Zealand.



How can your power cause trouble?



Short circuits

A short circuit is an unwanted connection between two parts of an electrical circuit resulting in the flow of excessive electrical current, typically the result of circuit wires or connections that have been exposed or damaged.



Overloads

Occur when too many appliances are plugged into a single outlet.



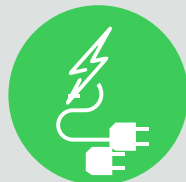
Overvoltages

An overvoltage is when the voltage temporarily rises above the normal limit, depending on its size and duration hazardous situations can result or sensitive equipment can be damaged.



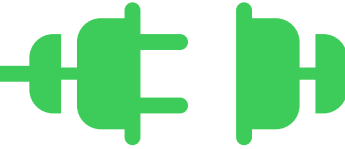
Earth Leakages

Occur when electrical insulation is damaged or due to the presence of moisture or corrosion, which can lead to a fire, shock or electrocution.



Dangerous Arc Faults

Occur either when a wire or cable is damaged or an electrical connection becomes loose or corroded, creating carbon deposits which over time generate enough heat to ignite any surrounding flammable material.



The common solution to common issues

A modern home will have MCBs and RCCBs (or their variations) for protection against common electrical faults such as short-circuits, overvoltages and electrocution/earth leakage currents.

However, a typically mischievous Electrical Arc Fault often goes undetected.

To deal with an Electrical Arc Fault, you must evolve your electrical protection and opt for specialized devices that detect these faults.



Prevention is always the best way!

These are the common causes of Electrical Arc Faults:



When people carelessly plug and unplug.



When cords are damaged or twisted.



Heat, cold, moisture, UV rays, rodents, etc.



An unprofessional installation.

At the same time, your power also needs constant supervision by an intelligent device.

AFDDs - An evolved protection system

An Arc Fault Detection Device (AFDD) is a solution developed over years of rigorous scientific research. This intelligent product has integrated electronics that continuously monitor the electric circuit. The device immediately trips as soon as it detects a potentially dangerous arc.

It complies to [IEC 61009-1](#) standards as well.





Electrical Arc Fault: What's happening here?

There are times when a child's innocent tantrum evolves into a rebellious streak of behaviour.

Similarly, an electrical arc fault occurs when there is damage in the insulation of a wire due to gradual wear & tear. Electrical arcs get formed through these damaged surfaces which spread gradually, damaging the insulation even further, resulting in fire eventually.



A damaged wire becomes unnaturally hot



The insulation burns & conducts electricity



One day, the burnt insulation catches fire



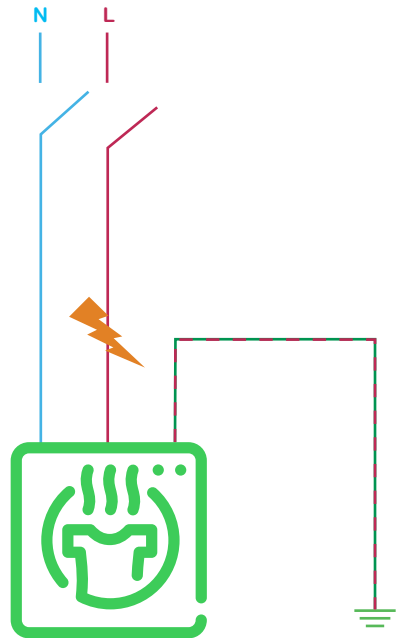
The burnt insulation spreads

The different types of Electrical Arc Faults

Electrical Arc Faults also have different types just like how rebelliousness can take different forms.

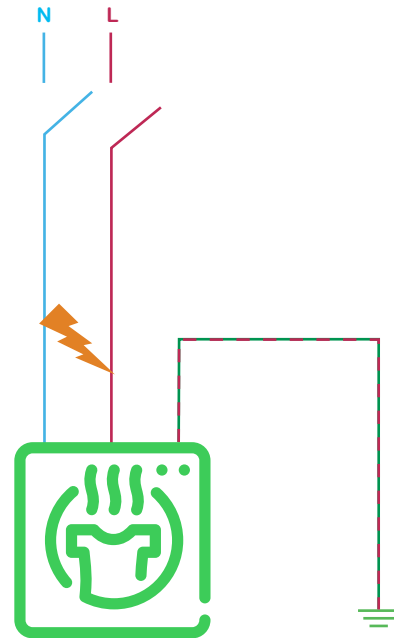
1. Series Arc Fault

Occurs between two parts of the same conductor or a loose connection, when the conductor is damaged. A hotspot forms and carbonizes the insulation.



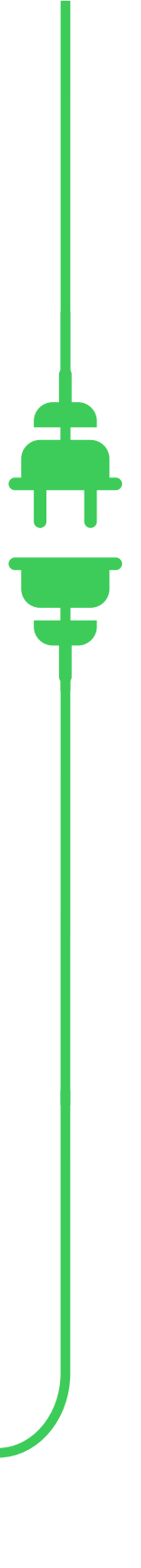
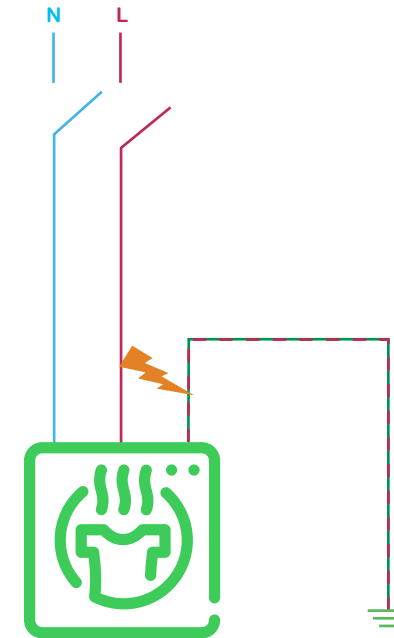
2. Parallel Arc Fault

Almost like a short circuit, a Parallel Arc Fault occurs between 2 live conductors (The phase and neutral) when the insulations between both are damaged and electricity passes through the shortest path. The current flow increases dramatically and a hotspot quickly forms.



3. Earth Arc Fault

A different type of Parallel Arc Fault, these occur between a live conductor and the ground path.



Keep a keen eye!

There are some signs of danger that a homeowner should keep a vigilant eye for like:



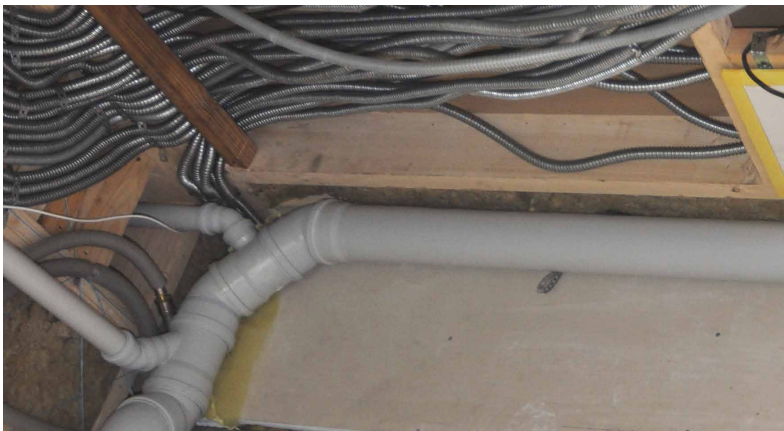
Unsecured outlets



Exposed wires



Pests



Tight corners



Pinching

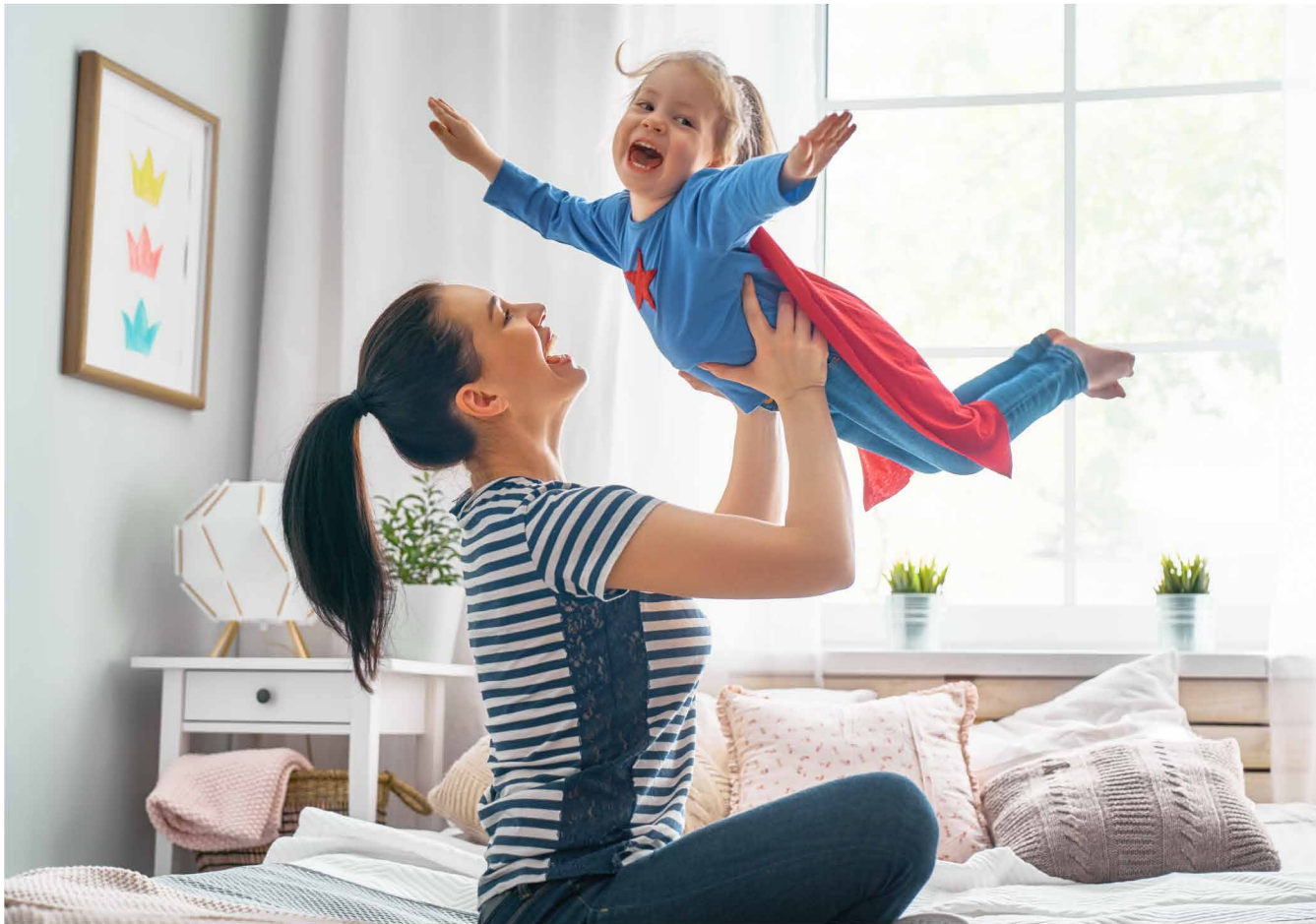


Crushing



Meet Acti9 AFDDs!

At PDL by Schneider Electric, we are on a mission to make power safe and accessible for everyone, everywhere. This led us to create Acti9 AFDDs, a solution that offers advanced detection and protection for any home!



VISI-TRIP window
■ Fault tripping is indicated by a red mechanical indicator on the front face

Multi-function button
■ For tripping diagnosis
■ For device test

Diagnosis LED
■ Tripping faults diagnosis by orange LED blinking



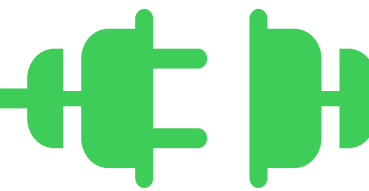
What should you do if an AFDD trips?

In case of an AFDD trip (Both VISI-Trip indicators are red), call an electrician immediately.

Getting an AFDD is simpler than you might think

Now that you know how to detect Electrical Arc Faults, having an AFDD installed is even simpler. You just need to call a registered electrician. They will do an assessment of your home, and will be able to install the AFDD either into your existing switchboard or can install a new switchboard with AFDDs. And just like that, your naughty power is under a watchful eye.





Life Is On



by **Schneider** Electric

Protect your home with the most evolved protection
against electrical fires today!

pdl.co.nz/safety

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