Arc Fault Detection Devices (AFDDs) might be new to the UK wiring regs, but that doesn’t mean they’re not of crucial importance. In a recent survey on the technology, the majority of respondents agreed that AFDDs can help to prevent electrical fires.

Here’s everything that you need to know before your next installation.

### What is an arc fault?
A fault in the electrical installation that produces sustained arcing (in or between conductors). This could be caused by damaged cables, defective electrical connections or faulty electrical appliances. Arc faults cause overheating and igniting flammable materials.

### Are AFDDs proven?
AFDDs detect and disconnect dangerous arc faults, which would otherwise go unnoticed by older technologies, such as circuit breakers and RCDs. They fit into consumer units or distribution boards, just like MCBs. Using AFDDs reassures you that your installation is fully compliant, (but to a higher standard than before the 18th Edition became effective).

### What are the benefits of using AFDDs?
- **AFDDs protect** against arc faults that can cause fires.
- **AFDD technology to protect against arc faults** that can cause fires (in or between conductors). This could be caused by damaged cables, defective electrical connections or faulty electrical appliances. Arc faults cause overheating and igniting flammable materials.
- **AFDDs work on ring circuits?** Yes, AFDDs detect dangerous arcing faults on ring circuits, spurs, radials and leads whatever the mode of connection. However, if a ring circuit is broken, the ring becomes two radial circuits that are at the same electrical potential. The power flows both ways and there is no arc. No arc means no arc fault, which means no trip.
- **Do AFDDs work?** Yes, AFDDs detect dangerous arcing faults on ring circuits, spurs, radials and leads whatever the mode of connection. However, if a ring circuit is broken, the ring becomes two radial circuits that are at the same electrical potential. The power flows both ways and there is no arc. No arc means no arc fault, which means no trip.
- **How do I test an AFDD?** Wylex AFDDs carry out a self-test function when initially powered up, and the AFDD repeats this self-test function regularly. They also have a test button (just like an RCD or RCB0), which you can use during the initial verification or EICR. Model certificates now include AFDDs among the devices listed, with space for test results.
- **How easy is it to find a fault?** The process is broadly the same as for an RCD or MCB. There are also colours on the indicator to diagnose the type of fault that has occurred.
- **Will I need to install a larger consumer unit?** No, a larger consumer unit is not necessary. In fact, you can sometimes use a smaller consumer unit because there is no need for RCDs.
- **What do the guidelines say?** The 18th Edition of the wiring regulations outlines the need to protect against the dangers of high temperatures, arcing, burning and ignition of fires. We’ve outlined the key information you need to know.

### Chapter 13 (Fundamental Principles):
The requirements of this chapter are intended to provide for the safety of persons, livestock, and property against the dangers and damage which may arise in the reasonable use of electrical installations.

**Regulations 131.1 lists several risks. The following applies:**

In electrical installations risk of injury may result from:
- Shock currents
- Excessive temperatures likely to cause burns, fires and other injurious effects
- Arcing or burning, likely to cause blinding effects, excessive pressure and or toxic gasses

**In addition, Regulations 131.3.1 states:**

The electrical installation shall be so arranged that the risk of ignition of flammable materials due to high temperature or electric arc is minimised.

**421.1.1 deals with protection against fire caused by electrical equipment:**
Persons, livestock and property shall be protected against the harmful effects of heat or fire which may be generated or propagated in electrical installations.

**Important:** The term ‘recommended’ means there is scope for choice whether or not to comply. If a decision is made not to follow the recommendations, that decision should be justified by the user of the standard.

To find out more, visit: wylexreasons.co.uk

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**What is an AFDD RCBO?**

Wylex AFDD RCBO devices are the same size as an MCB yet they include three integral technologies:
1. **MCB technology to protect against overcurrent and short circuit**
2. **RCD technology to protect against electric shock**
3. **AFDD technology to protect against arc faults that can cause fires**

This means they cater for all of the circuit protection requirements and the additional fire protection recommendations of the 18th Edition.

**Can AFDDs be retrofitted to existing installations?**

Yes, Wylex AFDDs can be retrofitted in the majority of cases. However, if the Wylex balcony-style busbar is used, in some cases, the interior of the consumer unit will need to be changed.

**The Wylex Single Module AFDD is half the size of its predecessor and combines the benefits of AFDD, MCB and RCD technology in one.** Talk to a Wylex engineer before your next installation.