

Design to 17th Edition Wiring Regulations

How to ensure that wiring meets new edition regulations

Now that BS 7671:2008 — the 17th Edition is fully operational electricians are having to pay careful attention to ensure that work complies with new regulations. Here we provide a summary of the most important things to consider in domestic jobs.

- All socket–outlet circuits must have additional protection, for a domestic job this means a 30mA RCD. And this means *all* socket–outlets, not just those used for outdoor portable equipment. This regulation applies to socket–outlets of less than 20A and which are used by an “ordinary person” — a person who is not skilled, i.e. who has enough technical knowledge or experience to avoid danger that electricity may create; and who is not instructed, i.e. sufficiently advised or supervised by skilled persons so that they may avoid any danger that electricity may create.
- Socket–outlets do not need an RCD if they are under supervision of skilled or instructed persons, for example in a commercial or industrial location.
- Socket–outlets used and specifically labelled or identified for use with a particular piece of equipment do not need RCDs, for example with a domestic appliance such as a freezer, which may be prone to frequent RCD tripping.
- Cables hidden in walls or partitions less than 500mm beneath their surface must be impact protected. This can be achieved by: using a cable complying with regulations relating to impact protection; by running the cable in earthed sheath conduit, or trunking or ducting; or by providing mechanical protection against penetration, for example by nails. Cables which are not mechanically protected, or are not installed under the supervision of a skilled or instructed person, must be RCD protected and run in “safe zones” — horizontally or vertically to the outlet point.
- Cables installed, at any depth, without mechanical protection in a partition which is internally constructed of metallic parts must be 30mA RCD protected.
- Lighting circuits must be RCD protected, but nuisance tripping of multiple lights can be avoided by running lighting circuits on separate RCDs.

In a recent article, Bill Allan of N.A.P.I.T. looked at three possible consumer arrangements using a fire alarm as an example:

1. A consumer unit with two 30mA RCDs and a 30mA RCBO supplying 10 circuits. The fire alarm circuit is protected by the 30mA RCBO. The other four circuits on the left side are protected against overcurrent by four MCBs with additional protection being provided by means of a 30mA RCD. The remaining five

circuits are protected against overcurrent by five MCBs and additional protection is provided by the other 30mA RCD. This type of arrangement will 'minimise inconvenience in the event of a fault' as required by Regulation 314.1(i). I've split the circuits as seems reasonable. For example, the downstairs lights are on the same RCD as the upstairs sockets — but not the downstairs sockets. The reason for this is that, if the RCD trips and the downstairs lights go off, the downstairs sockets are still live and you can plug a table lamp into one of them.

2. The fire alarm circuit is protected against overcurrent by an MCB and has additional protection via the adjacent 30mA RCD, which is shared with four other circuits.
3. A dual 30 mA RCD consumer unit, but this time, the fire detection and alarm system is not shown because it is not mains-operated. A Grade F system comprising battery-powered smoke alarms has been used. Where existing dwellings are rewired, it is acceptable in the majority of all single-family dwellings to have a minimum system of Grade F (again, Table 1 of BS 5836-6 must be consulted for the full details).

If you require any further assistance in regard to the above regulations please do not hesitate to contact us at anytime. We will be pleased to design your systems to full compliance or indeed review any existing installations that may need to be upgraded.

Please call us on 01582 402455

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