



## **Residual Current Devices (RCD's) and the 17<sup>th</sup> Edition (BS 7671-2008)**

### Cables contained in walls or partitions

**It is extremely important that the requirements relating to the protection of cables in walls and partitions is fully understood.**

Damage to cables in walls or partitions can often occur, for example, where fixings are being made and drills, screws or nails penetrate the cables. The regulations outlining the requirements offer several options which must be considered carefully. In many cases where the installation is not intended to be under the supervision of a skilled or instructed person, concealed cables will require protection by means of an RCD having the characteristics specified in Regulation 415.1.1.

RCD's used in such circumstances should have a residual operating current of 30mA and an operating time not exceeding 40ms at a residual current of 150mA.

### RCD protection *is not* required

**Where a cable is concealed in a wall or partition deeper than 50mm from the surface of the wall or partition, no further protection is required (apart from the exemptions listed below).**

Where cables are run *less than 50mm* from the surface of a wall or partition **and** one of the following requirements are met, RCD protection is not required.

- The cable must incorporate an earthed metallic covering as specified in Regulation 522.6.6 (i), *or*
- The cable must be enclosed in earthed conduit satisfying the requirements for a protective conductor as specified in Regulation 522.6.6 (ii), *or*
- The cable must be enclosed in earthed trunking or ducting as specified in Regulation 522.6.6 (iii), *or*
- The cable must be mechanically protected against damage sufficient to provide protection against the penetration of nails, screws and the like as specified in Regulation 522.6.6 (iv)
- Where cables are installed in the zones specified in Regulation 522.6.6 (v) **and** the installation is intended to be under the supervision of a skilled or instructed person.

## RCD protection is required

Where the requirements for 'Cables buried over 50mm deep', earthed metallic covering ((i), (ii) or (iii) above) or mechanical protection ((iv) above) are **not** met, an RCD having the characteristics specified in Regulation 415.1.1 is required (apart from the \*exemption below).

The cable zones which were an important requirement of the 16<sup>th</sup> edition of BS 7671 now have less relevance. Cables still require RCD protection even where they are run in the specified zones, \*unless the installation is intended to be under the supervision of a skilled or instructed person.

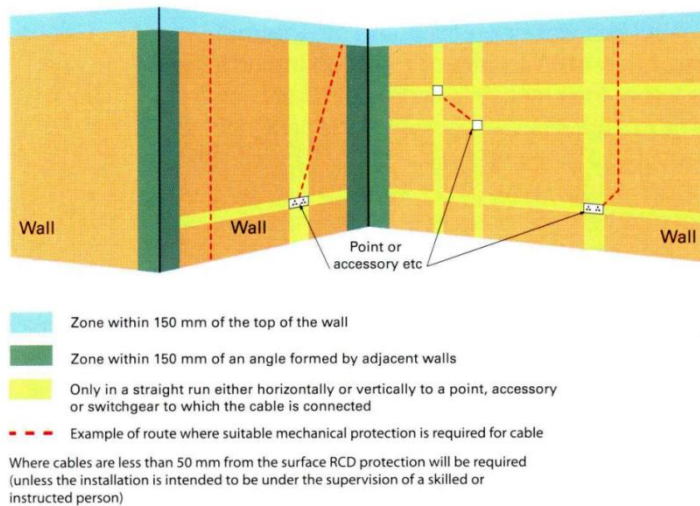


Fig 5.11 Zones for concealed cables in walls and partitions

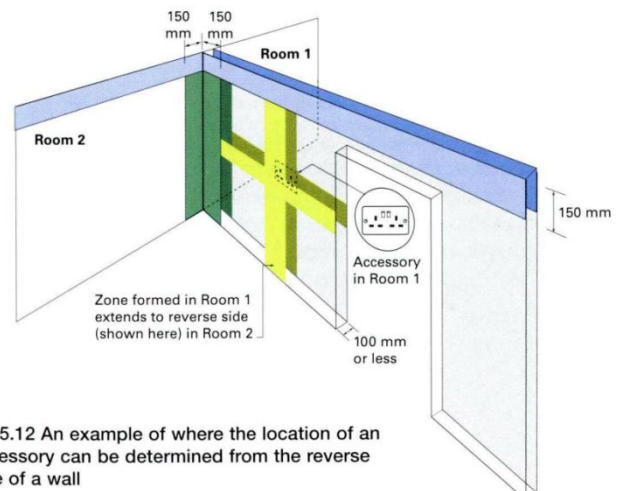


Fig 5.12 An example of where the location of an accessory can be determined from the reverse side of a wall

In addition to the above requirements for zones, where the location of the accessory, point or switchgear can be determined from the reverse side of the wall, a zone formed on one side of a wall or partition of 100mm thickness or less extends to the reverse side.

**RCD protection is also required where** cables are concealed in a wall or partition and the **internal construction of the walls or partition include metallic parts** (other than metallic fixings e.g. screws or nails). This requirement is irrespective of the depth of the cable from the surface of the wall or partition (Fig. 5.12 above).

Finally, any socket outlet that is not intended to be used under the supervision of a skilled or instructed person must also be RCD protected.

All RCD's mentioned above should have a residual operating current of 30mA and an operating time not exceeding 40ms at a residual current of 150mA.

*Passionate* about connections

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