RCDS FOR HIDDEN CABLES AND SPECIAL LOCATIONS

DOES A CABLE BURIED IN A WALL NEED AN RCD?

ADDITIONAL PROTECTION: CABLES HIDDEN IN WALLS

30 mA additional protection also has to be installed **when the circuit is installed to 522.6.202 or 522.6.203**, **unless** one of the alternatives in **522.6.204** has been used instead.

522.6.202: CABLES IN WALLS AND PARTITIONS

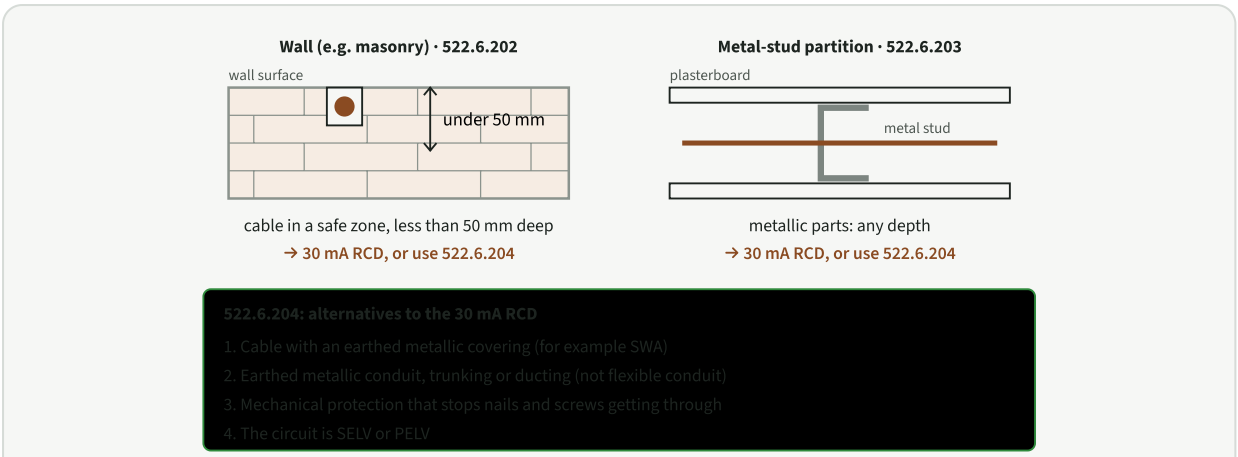
This is for cables concealed in a **wall or partition**: a masonry wall (brick or block) or a stud wall. If the cable is **less than 50 mm deep** from the surface, and it's run in the **safe zones** as it should be, it must have **30 mA RCD protection** unless you use 522.6.204 instead.

This is very common. When you chase a wall, you're unlikely to go deeper than 50 mm. So once you've chased it in the safe zones, the question is: do you put it on a 30 mA RCD? That's the easiest answer. If you don't want to, 522.6.204 gives you alternatives.

522.6.203: CABLES IN PARTITION WALLS

A **partition wall** is a stud wall (metal or wood) with plasterboard on both sides. Sometimes it's thermally insulated and sometimes it isn't. It's a quick way to put walls up, and you'll see it inside most modern buildings.

This regulation **only applies if the wall or partition has metallic parts**, such as metal studs, and it applies **whatever the depth** of the cable. Wooden studs don't bring in 522.6.203, but a cable less than 50 mm deep in a wooden-stud wall still falls under 522.6.202. Most studs now are **metal**, so you'll usually be following 522.6.203. Again, 522.6.204 can be used instead of the RCD.



The two "hidden cable" regulations and the four alternatives that let you avoid the RCD. Wooden-stud partitions don't fall under 522.6.203.

522.6.204: THE ALTERNATIVES

- **A cable with an earthed metallic covering**, such as SWA. The regulation lists the British Standards the cable must meet.
- **Earthed metallic conduit, trunking or ducting** slid over the cable. This must be **rigid**. People often ask whether flexible metal conduit counts. It **doesn't**. There's a regulation in **Chapter 54** that says flexible conduit can't be used for this.
- **Suitable mechanical protection** that stops nails and screws getting through, for example a suitable metal plate with the right impact rating.
- The circuit is part of a **SELV or PELV** circuit.

BS 7671 · Reg **522.6.202** · cables in walls or partitions, less than 50 mm deep · **p.152**

BS 7671 · Reg **522.6.203** · cables in walls or partitions with metallic parts, any depth

BS 7671 · Reg **522.6.204** · alternatives to the RCD · **p.152**

BS 7671 · **Chapter 54** · flexible metal conduit not accepted

CHAPTER 54 LISTS FLEXIBLE METAL CONDUIT AMONG THE THINGS THAT CAN'T BE USED AS A PROTECTIVE CONDUCTOR.

> **Joining this up with Mrs Smith**
>
> An RCD socket or RCD FCU only protects what's **downstream** of it. The new cable from the old board to Mrs Smith's RCD socket is **upstream**, so the socket doesn't protect it. If that cable is buried less than 50 mm deep in a wall or partition, or runs in a metal-stud partition at any depth, it needs one of the 522.6.204 methods, or it has to be run on the surface. This is most likely the "other regulation" mentioned earlier.

ADDITIONAL PROTECTION: PART 7 LOCATIONS

The last time you need additional protection is **whenever Part 7 asks for it**. Part 7 covers the special installations and locations that BS 7671 recognises. If Part 7 says you need 30 mA RCD protection, you fit it. No question.

Habit to build

Always ask yourself: **am I in a Part 7 location or installation?** If you are, check whether it needs 30 mA RCD protection.

BS 7671 · **Part 7** · special installations or locations (Sections 701 to 753)

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