

Cables of SELV or PELV circuits in walls

With the publication of BS 7671:2008(2011), a slight revision of Regulations 522.6.100, 522.6.101 and 522.6.101 has taken place with the inclusion of a reference to SELV or PELV circuits.

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Note that these three Regulations have been renumbered, previously being 522.6.5, 522.6.6 and 522.6.8 in BS 7671:2008.

Examples of SELV or PELV circuits are:

- SELV lighting circuits
- A/V installations – TV and hifi distribution
- CCTV
- home and building electronic systems linked using twisted pair (TP) to control lighting and temperature

Regulation 522.6.101 is reproduced here; the revision is shown in bold (Regulations 522.6.100 and 522.6.103 have a similar inclusion):

522.6.101 A cable concealed in a wall or partition at a depth of less than 50 mm from a surface of the wall or partition shall:

- i. incorporate an earthed metallic covering which complies with the requirements of these Regulations for a protective conductor of the circuit concerned, the cable complying with BS 5467, BS 6724, BS 7846, BS EN 60702-1 or BS 8436, or

- ii. be enclosed in earthed conduit complying with BS EN 61386-21 and satisfying the requirements of these Regulations for a protective conductor, or

- iii. be enclosed in earthed trunking or ducting complying with BS EN 50085-2-1 and satisfying the requirements of these Regulations for a protective conductor, or

- iv. be mechanically protected against damage sufficient to prevent penetration of the cable by nails, screws and the like, or

- v. be installed in a zone within 150 mm from the top of the wall or partition or within 150 mm of an angle formed by two adjoining walls or partitions. Where the cable is connected to a point, accessory or switchgear on



any surface of the wall or partition, the cable may be installed in a zone either horizontally or vertically, to the point, accessory or switchgear. Where the location of the accessory, point or switchgear can be determined from the reverse side, a zone formed on one side of a wall of 100 mm thickness or less or partition of 100 mm thickness or less extends to the reverse side, or

vi. form part of a SELV or PELV circuit meeting the requirements of Regulation 414.4.

The requirement for RCD protection

It is particularly important to understand the requirements of Regulation 522.6.102 where the installation is not intended to be under the supervision of skilled or instructed persons. In such circumstances, where a cable is concealed in a wall or partition at a depth of less than 50mm from a surface, RCD(s) with a rated

residual operating current not exceeding 30 mA would need to be provided for those cables without earthed metallic coverings or not installed within earthed metallic containment and where the circuit is not SELV or PELV.

Therefore, SELV or PELV circuits do not require RCD protection. It is, nevertheless, a fundamental requirement to sufficiently protect all circuits at all times; Regulation 522.6.1 describes:

522.6.1 Wiring systems shall be selected and erected so as to minimise the damage arising from mechanical stress, e.g. by impact, abrasion, penetration, tension or compression during installation, use or maintenance. ■

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