

Protection of electric cables within walls or flat and sloping ceilings

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Question

When is protection required to electrical cables installed within a wall or sloping ceiling?

Considerations

- Electrical cables that are installed close to the finished surface of a wall or ceiling should be protected against penetration from fixings.
- Electrical Safety First 'Wiring Regulations Advisory Group' have considered this matter and have given their interpretation of BS 7671 'Requirements for electrical installations' in their frequently asked questions and answers on their website.

Answer

The electrical regulations include requirements for protection against damage to cables within walls, ceilings and floors from fixings installed during construction or once a property is occupied.

For cables* within walls protection can be provided by ensuring the cables are at a depth of not less than 50mm from the finished surface of a wall of either solid or framed construction.

Alternatively, cables may be closer to the surface if they run within a zone 150mm from the top of the wall or 150mm of a corner of a wall, or within a horizontal or vertical zone to and from an accessory, point or switchgear. These zones can be applied to the reverse side of a wall where the location of the accessory, point or switchgear can be easily determined from the reverse side and the thickness of the wall is 100mm or less.

For cables* within a ceiling protection can be provided by ensuring the cables passing through a ceiling support are at least 50mm from the top, or bottom as appropriate, of the ceiling support (e.g. joist or batten).

Where cables run behind a sloping surface that could be either a wall or a ceiling then protection against damage to cables* from fixings should follow the requirements described for cables in walls and ceilings.

* the minimum depth requirement and zones for cables do not apply to cables that incorporate an earthed metallic covering, earthed conduits, earthed trunking or ducting or cables that are protected with mechanical protection against penetration by nails, screws and the like.