



The 50plus



50plus technical support – 17th Edition information

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The 17th Edition.

Your questions answered.

Alterations and Additions in Domestic and Similar Properties

Q1 Do socket outlets added to an existing installation in domestic premises have to be RCD protected?

A Where socket outlets are added to an existing circuit that is not already RCD-protected, either the circuit will need to have RCD protection added, or the new socket-outlets must incorporate RCD protection. (Except for a socket outlet designated for a particular item of equipment, such as a freezer, but this would require the cables to be RCD protected if PVC insulated and sheathed cables are used and concealed in a wall less than 50mm deep).

Q2 When an electrical appliance, such as a boiler or electric towel rail, is to be installed in a bathroom where there is no supplementary bonding and the consumer unit has no RCD protection, how can the installer comply with the 17th Edition?

A If an existing circuit of a location containing a bath or shower is extended, at least the extended part of the existing circuit must be provided with RCD protection. Supplementary bonding in a bathroom or shower room must be provided unless all the requirements in the 17th Edition for the omission of supplementary bonding are met.

Q3 A socket outlet is to be added to an existing circuit that has no RCD protection. The new socket outlet is to be flush mounted 150mm horizontally from an existing socket outlet and connected with wiring concealed in the wall. What is reasonably expected of the installer to comply with the 17th Edition?

A A socket outlet that is added to an existing circuit will need to have RCD protection. (Except for a socket outlet designated for a particular item of equipment, such as a freezer). In addition, if the wiring that is used to extend the existing circuit is concealed in the wall less than 50mm deep, then at least the extended part of the existing circuit will need to be suitably protected by RCD or other means.

Q4 A 13 Amp switched fused connection unit is to be added to an existing circuit, (not within a bathroom), that has no RCD protection. The incoming services are bonded and the new switched fused connection unit is to be flush mounted 150mm horizontally from an existing socket and connected with wiring concealed in the wall. What is reasonably expected for the installer to do to comply with the 17th Edition?

A The connection unit does not require additional protection by RCD, though at least the extended part of the existing circuit will need to be suitably protected by RCD (or other means).

Q5 With the increased requirement for circuits in domestic premises to be RCD-protected, it may be necessary for the smoke detector to be connected to an RCD protected circuit. This may be deemed unacceptable by the client, specifier etc. How could this issue be addressed without surface wiring?

A Connection to an RCD protected circuit is permitted by BS5839 Part 6 and endorsed by Approved Document 'B' for smoke detection having an integral stand-by supply. (E.g. battery or capacitor).

Q6 When changing a consumer unit, do I need to provide RCD protection for all circuits required by the 17th Edition to have additional protection, such as socket-outlets, bathroom circuits and cable concealed in walls and partitions?

A Yes! There should be more than one RCD, and the circuits should be divided between them in order to minimize the consequences of tripping.

Q7 If an existing socket outlet not having additional protection by RCD needs to be replaced, does such additional protection need to be provided for the replacement socket?

A No! Such work would not be classified as an alteration or addition. (However the client should be made aware of the lack of RCD protection for the existing installation.)

Q8 If I replace an existing electric shower, do I now have to provide RCD protection for it?

A No, unless RCD protection is required by the manufacturer's installation instructions, or a new circuit is required (to provide for increased load, for example).

Q9 I need to replace a length of damaged cable in a circuit that is not RCD protected. The 17th Edition would require a new circuit following the same route to have additional protection by means of an RCD. Do I have to provide such protection for the repaired circuit?

A No! Such repair work would not be classified as an alteration or addition.

Q10 Can accessories and electrical equipment, such as socket outlets and under-cupboard lighting be fixed to kitchen units?

A Yes, provided they are securely fixed to rigid parts of the units that are not de-mountable or otherwise liable to be disturbed in normal service. However, care must be taken to comply with all the relevant requirements of BS7671, including accessibility for inspection, testing and maintenance. Also provision of adequate protection against damage, (by impact or water for example), for the accessories, equipment and associated wiring.

Periodic Inspection of Existing Domestic & Similar Installations

Q11 During periodic inspections of domestic electrical installations, I often find that cables that are concealed in walls at a depth of less than 50mm have no additional protection by means of an RCD, (as is now required for installations complying with the 17th Edition). What Recommendation Code should I give?

A Code 4. Although existing installations need to be assessed against the requirements of the 17th Edition, this does not necessarily mean that they require upgrading.

New or Rewired Domestic and Similar

Q12 Does the 17th Edition require all 13 Amp socket outlets in domestic premises to be RCD-protected?

A For new installations and rewires in domestic premises, all socket outlets need to have additional protection by RCD, except perhaps for those intended to supply particular items of equipment such as freezers (and even these if the wiring is PVC insulated and sheathed cabling is concealed less than 50mm deep). Any socket outlet not having RCD protection needs to be specifically labelled, or otherwise suitably identified to indicate its intended use, such as 'freezer only'.

Q13 The 17th Edition requires most, if not all circuits, in domestic premises to be RCD-protected. There are a number of ways as to how this can be done to comply with the Regulations, for example, could a main switch with two RCD's protecting separate DIN rails be a suitable configuration?

A Yes! If careful consideration is given as to what each bar will control in the way of upstairs and downstairs lighting and power circuits so as to minimize the consequences of unwanted tripping. Separate RCD protection is not necessarily required for each circuit of an installation but, in order to minimize the consequences of tripping, a single 'front end' RCD should not be used to protect all the circuits.

Q14 I have just installed an extract fan in a kitchen/bathroom, what size of protective device should I use?

A BS7671 17th Edition requires you to comply with manufacturer's instructions, which normally for domestic fans require a 3 Amp fuse.

Q15 The 17th Edition does not now define 'Zone 3' in a bathroom or shower room. What electrical equipment and accessories can be installed in the area between 0.6m and 3.0m from the edge of the bath or shower basin? Moreover, what minimum degree of IP protection are manufacturers likely to recommend?

A There is no change from the 16th Edition requirements, which means that 230V accessories and equipment other than BS1363 socket outlets can be located outside of the perimeter of 'Zone 2'. There is no requirement for the minimum ingress protection to be IPX4, but manufacturers' installation instructions must always be followed. A BS1363 socket outlet can be installed within a bathroom at least 3m from the bath and the proviso is that all circuits in the bathroom be provided with additional protection by means of RCD's.

Q16 Do 'meter tails' concealed in walls or partitions need to be provided with protection against nail penetration and other mechanical damage?

A Yes, they should be treated no differently from other circuits. However, protection by use of an 'up front' RCD would not satisfy the requirement to consider the effect of the disruption in the event of the operation of a single protective device. Unlike the 16th Edition, reliance on cables being in "Designated Zones" is not acceptable if concealed less than 50mm deep. Also if the wall or partition is of metallic construction, irrespective of depth, the cables must be protected by either additional protection by means of an RCD, or be otherwise protected against nail penetration or other mechanical damage.

Q17 Does boiler pipework need to have additional equipotential bonding for electrical safety reasons?

A There is no specific requirement in the Regulations for boiler pipework to be supplementary bonded. However, such bonding may be called for in the boiler manufacturer's instructions, in which case BS7671 requires those instructions to be followed. Any stated requirement for additional bonding that is considered to be unnecessary should be queried with the manufacturer concerned, and amended installation instructions requested.

Q18 Is there a dispensation that allows supplementary bonding to be omitted in a bathroom and does this apply to TT systems of earthing?

A Supplementary bonding can be omitted provided that:
– All circuits comply with regard to automatic disconnection of supply
– All circuits in the location have additional protection by means of RCD(s)
– All extraneous conductive parts are effectively connected to the protective equipotential bonding
This does apply to a TT system of earthing.

Q19 If the mains supply cable to a fixed appliance, such as a flat screen TV, is concealed in a wall or partition at a depth of less than 50mm, does the 17th Edition require the lead to be RCD protected, even though it's connected by means of a plug and socket?

A Yes! The risk of penetration by a nail or screw is the same as for other concealed cable. Also, if the wall or partition has internal metallic parts, (except nails and screws etc), RCD protection is required irrespective of the depth of the cable from the surfaces.

Q20 To overcome thermal insulation issues, is it permissible to design a ring final circuit using 2.5mm² cable protected by a 20 Amp protective device?

A Yes, if the effective current carrying capacity of the cable is at least 12.5 Amp (20 Amp × 20/32), so as to effectively have the same 'deemed to comply status' as the Regulations give to 30 Amp and 32 Amp ring final circuits.

Places of Work – New Installations

Q21 Which 13 Amp socket outlets in commercial and industrial premises are required to have additional protection by RCD?

A Socket outlets in commercial and industrial premises must have additional protection by means of an RCD if they are rated at 20 Amp or less, and are for general use without the supervision of a skilled or instructed person. An exception is made for a specifically labelled/identified socket outlet for a particular item of equipment. The decision as to which socket outlets are provided with RCD protection in accordance with these criteria should be made in consultation with the client's 'Duty Holder' under the Electricity at Work Regulations 1989. As a general principle, it may be considered that socket outlets in commercial and industrial premises need to have additional protection by means of an RCD include the following:
Those in common, circulation and public areas, those in self-catering areas, those intended for use by cleaners, and those that may reasonably be used to supply mobile equipment for use outdoors.

Q22 Which socket outlets in commercial and industrial premises are NOT required to have additional protection by RCD?

A As a general principle, it may be considered that socket outlets in commercial and industrial premises NOT needing to have additional protection by means of an RCD include the following:
A socket outlet labelled for the connection of a specific item of equipment; socket outlets not intended for general use, (such as those in floor service boxes intended for the connection of workstations and other IT equipment); socket outlets for use under the supervision of skilled or instructed persons so as to minimize the possibility of careless use.