



# Amendment 3 to BS 7671

## FACTSHEET



### Introduction to Amendment 3

IET/BSI published the latest version of the 17th Edition of BS 7671:2008 incorporating Amendment 3, on 1st January 2015 and installations designed after 30th June 2015 are to comply with this.

The one exception is regulation 421.1.201 which will come into effect from 1st January 2016.

This factsheet will give some of the main changes in Amendment 3.

### Numbering system

The definitions in Part 2 have been expanded, modified and new symbols have been included.

### Definition

A list of abbreviations used in the Regulations has been added.

The definition of the term, 'Competent person' has been removed and the following revised

**Revised: Instructed person (electrically)** – Person adequately advised or supervised by a skilled person (as defined) to enable that person to perceive risks and to avoid hazards which electricity can create.

NOTE: The term "(electrically)" is assumed to be present where the terms 'instructed person' is used throughout BS7671.

Regulation 16 of the Electricity at Work Regulations 1989 requires persons to be competent to prevent danger and injury. The HSE publication HSR 25 provides guidance on this.

**Revised: Skilled person (electrically)** – Person who possesses, as appropriate to the nature of the electrical work to be undertaken, adequate education, training or practical skills, and who is able to perceive risks and avoid hazards which electricity can create.'

NOTE: The term "(electrically)" is assumed to be present where the terms 'instructed person' is used throughout BS7671.

### Manufacturers' instructions

The wording of Regulation 134.1.1 requiring electrical equipment to be installed in accordance with the instructions provided by the manufacturer of the equipment has been changed. The requirement is now for installers of electrical equipment to take account of the manufacturers' instructions.

## Additional protection

Regulation 411.3.3 on additional protection has significant changes. It now reads:

'In a.c. systems, additional protection by means of an RCD in accordance with Regulation 415.1 shall be provided for:

- (i) socket-outlets with a rated current not exceeding 20A, and
- (ii) mobile equipment with a rated current not exceeding 32A for use outdoors.

An exception to (i) is permitted:

- (a) where, other than for an installation in a dwelling, a documented risk assessment determines that the RCD protection is not necessary, or
- (b) for a specific labelled or otherwise suitably identified socket-outlet provided for connection of a particular item of equipment'

Notice that the terms, 'ordinary persons' and 'skilled or instructed persons' have now been removed from this regulation. Exception (a) - the risk assessment method - is intended to be used in certain commercial and industrial premises but not in domestic premises.

No risk assessment certification is included in Amendment 3 but guidance on what must be included in such forms is available on the website of the Health and Safety Executive (HSE).

## Omission of RCD protection in dwellings

It is expected that all socket-outlets in dwellings will be have 30mA RCD protection.

However, under exemption (b), RCDs can be omitted for a specific labelled or otherwise suitably identified socket-outlet provided for the connection of a particular item of equipment, such as a medical equipment (This assumes that RCD protection is not required for other reasons.)

## Omission of RCD protection in industrial and commercial premises

A designer may use exception (a) to achieve a practical engineering solution where required. One example would be omitting RCD protection to socket-outlets supplying IT equipment in an office environment due to high protective conductor current issues.

## Maximum $Z_s$ values

The maximum earth fault loop impedance ( $Z_s$ ) values in Tables 41.2 to 41.6 have been reduced slightly. This is due to the inclusion of a minimum voltage factor,  $C_{min}$  in Regulation 411.4.5 as follows:

$$Z_s \times I_a \leq U_0 \times C_{min}$$

$C_{min}$  has been included, 'to take account of voltage variations depending on time and place, changing of transformer taps and other considerations' and it has been given the value 0.95 (see Note 1 to Regulation 411.4.5 and Note 2 to Tables 41.2 to 41.6).

Table 41.3(c) - the part of the table which concerns maximum  $Z_s$  values for Type D circuit-breakers - has been divided into two sections. One section gives maximum  $Z_s$  values ensuring disconnection within 0.4 seconds and the other section contains  $Z_s$  values ensuring disconnection within 5 seconds.

## Consumer units and similar switchgear assemblies

A new 'UK-only' Regulation 421.1.201 has been added as a response to concerns over the rising number of fires associated with consumer units in domestic premises. This Regulation requires that consumer units and similar switchgear assemblies in domestic premises must comply with BS EN 61439-3\* and either have their enclosure manufactured from non-combustible material

such as steel or be enclosed in a cabinet or enclosure constructed of non-combustible material and accessible in accordance with Regulation 132.12. The implementation date for this regulation is 1st. January 2016 although this does not preclude compliance before this date.

\* BS EN 61439-3:2012 is the British Standard for distribution boards.

'Low-voltage switchgear and controlgear assemblies. Distribution boards intended to be operated by ordinary persons (DBO)'.

### **Compliance with standards**

Regulation Group 511, Compliance with standards, concerns;

- equipment complying with a foreign national standard based on an IEC standard, and
- equipment which is not covered by a British or Harmonized Standard or is used outside the scope of its standard

If either of these situations applies, this fact must now be noted and attached to the appropriate documentation specified in Part 6.

### **Compatibility**

Regulation 512.1.5 has an extra sentence requiring that the designer of the fixed installation ensures that the installed fixed equipment, where relevant, complies with the Electromagnetic Compatibility (EMC) Directive 2004/108\* and that the required documentation as specified by that Directive is to be provided upon request by the person responsible for the fixed installation. The responsible person referred to in this Regulation is as defined in the EMC Directive 2004/108.

\* The UK implementation of EMC Directive 2004/108 is the Electromagnetic Compatibility Regulations 2006.

### **Wiring systems in escape routes**

An ever present danger in a fire situation is that supports for wiring systems will melt and cables will collapse, causing firefighters and/or building occupants to become entangled or impeded. In recent years, a number of fatalities have been caused by such incidents and at least two coroners have made recommendations calling for fire-resistant cable supports to be made a requirement. As a result of these and other recommendations, a new Regulation (521.11.201) requiring the use of fire-resistant cable supports in escape routes has been included. This precludes the use of non-metallic cable clips, cable ties or trunking, where they are the sole means of support.

### **Impact protection**

The regulations 522.6.201-204, concerning the impact protection of concealed cables have been redrafted. Reference to, 'under the supervision of a skilled or instructed person' has been removed. Cables concealed within a wall or partition at a depth of less than 50mm must be provided with 30mA RCD protection if some form of mechanical protection, such as an earthed metallic covering, is not used. This also applies where the construction includes metallic parts, other than fixings, irrespective of the depth of the cable. However, cables which pass through a joist within a floor or ceiling or through a ceiling support (eg. under floorboards) do not require 30mA RCD protection (at least not for impact protection) if they are placed at least 50mm vertically from the top or bottom of the joist. There is still an exception for cables forming part of a SELV or PELV circuit.

### **Locations containing a bath or shower**

In Section 701 concerning locations containing a bath or shower, Regulation 701.411.3.3 has been modified and now requires that additional protection by the use of one or more 30mA RCDs be provided for low voltage circuits:

- serving the location
- passing through zones 1 and/or 2 not serving the location.

### **Outdoor lighting installations**

The regulations concerning outdoor lighting installations have been moved from Regulation Group 559.10 to Section 714.

### **Extra-low voltage lighting installations**

The regulations concerning extra-low voltage lighting installations have been moved from Regulation Group 559.11 to Section 715.

### **Appendix 6, Model forms for certification and reporting**

There are only minor changes to Part 6, Inspection and testing and to the model forms in Appendix 6. However, the Schedule of Inspections for new installation work in domestic and similar premises which accompanies the Electrical Installation Certificate (EIC) has been revised.

### **Conclusion**

These are some of the main changes in Amendment 3. There are numerous other changes with varying degrees of importance. In addition, there are two other sections which, although they were issued prior to Amendment 3, will appear in the new publication for the first time with the rest of BS 7671:

#### **Medical locations**

Section 710, Medical locations was issued as a 'Corrigendum' in June 2013.

Electric vehicle charging installations

#### **Electric vehicle charging installations**

Section 722, Electric vehicle charging installations was issued as Amendment 2:2013 to BS 7671:2008 in July 2013.



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