

# BS7671:2008 requirements for electrical installations – IEE wiring regulations 17th edition

This leaflet is intended to provide, for specifiers, installers and designers of electrical installations, a brief overview of the changes to BS7671:2001, Requirements for Electrical Installations, that will appear in the 17th Edition of the Wiring Regulations. It should not be used as an authoritative guide to BS7671:2008.

These Regulations are scheduled to be published January 1st 2008 and come into effect in July 2008. Installations designed before 1st July 2008 can be in accordance with the 16th Edition IEE Wiring Regulations and installed and certified as such after 1st July 2008. However, all design after 1st July 2008 is required to be to the 17th Edition IEE Wiring Regulations and installation and certification will have to reflect such.

## Introduction to the Changes

BS7671:2001 is the current national standard for all electrical work undertaken in the United Kingdom. The first edition of BS7671 was published in 1992 and has so far been amended six times. The 17th Edition is the result of a complete review of the 16th Edition and aims to standardise the UK standards with the Harmonised Documents (HD's) produced by the European Committee for Electrotechnical Standardisation (CENELEC).

## Changes

**Preface.** A new informative note in the preface advises that publication of the 2008 edition of BS7671 does not automatically mean that installations complying with previous editions are unsafe for continued use or need to be upgraded.

**Numbering.** The Regulation numbers are changed so as to be in line with International Electrotechnical Commission (IEC) Numbers. This enables users to readily relate UK regulations with European HDs and IEC regulations.

**Fundamental Principles.** Requirements are added for protection for persons and livestock against injury, and property against damage caused by voltage disturbances and electromagnetic influences.

### Protection against electric shock – chapter 41.

- The chapter has been rewritten. Many regulations are worded differently but the requirements are not significantly changed.
- The terms 'Direct Contact' and 'Indirect Contact' are no longer used. They are replaced with Basic Protection and Fault Protection. 'Basic protection' is protection against touching live parts. 'Fault protection' is protection against receiving a shock from conductive parts that have become live due to a breakdown of insulation or damage to equipment.

- Socket outlets rated not exceeding 20 A and intended for general use by ordinary persons must be protected with 30 mA RCDs. This means that general purpose sockets in domestic and similar properties must have RCD protection.
- External sockets rated not exceeding 32 A must also have 30 mA RCD protection.
- Maximum permitted earth loop impedance – Zs values have been adjusted, based on 230V nominal and this has slightly reduced these, for example for 32amp type 'B' MCB protection the maximum permitted is 1.44Ω and was previously 1.5Ω.

### Selection and erection of wiring systems – chapter 52.

- An important new regulation that particularly affects domestic and similar installations, requires cables that are buried less than 50mm into a wall or partition and are not enclosed in earthed metallic covering or have mechanical protection capable of resisting nails or screws to be protected by a 30 mA RCD as well as being installed in the 'safe zones' created by the position of accessories etc. as previously permitted.
- Similarly, irrespective of depth of cable, cables that are installed in metal framed walls require 30 mA RCD protection if not otherwise protected by earthed metallic covering.
- The above requirements do not apply to installations that are under the control of skilled or instructed persons, such as office buildings, large retail outlets and industrial premises.
- Maximum permitted volt drop where supplied directly from a public distribution system is now 3% for lighting and 5% for all other applications.

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## Luminaires and lighting – section 559

- This is a new section applicable to all general lighting installations as appropriate to particular locations and structures.
- Includes requirements for fixed outdoor lighting including highway power supplies and street furniture previously in Part 6, and extra low voltage (less than 50 volts a.c. and 120 volts d.c.) lighting systems.
- Applies to both individual luminaires and multiluminaire track lighting and similar systems.
- Special considerations for protection against fire.

## Inspection and testing – part 6

Minimum permitted insulation resistance values are now 0.5M $\Omega$  for SELV and PELV (250Vd.c. test voltage), 1.0M $\Omega$  for installations up to 500V (500Vd.c. test voltage) and 1.0M $\Omega$  for installations in excess of 500V (500Vd.c. test voltage).

## Special locations – part 7

Part 7 addresses the particular risks that occur in various special locations. There are several new sections in Part 7. Many of the existing sections have been modified in line with the European HD's.

## Modified sections

All of the following Sections have been modified to accommodate the regulations contained in the European HD's.

- 701 – Locations containing a bath or a shower particularly the changes from the 16th Edition are substantial:
- Zones 0, 1 & 2 as defined in the 16th Edition are retained. Zone 3 is being removed. New regulations require all circuits supplying equipment in the bathrooms to be protected by 30 mA RCDs.
  - Supplementary equipotential bonding is no longer required providing the main bonding of services within the property is in place.
  - SELV (separated extra low voltage) socket outlets and shaver socket outlets are permitted outside Zone 1. 230 V socket outlets are permitted provided they are more than 3 metres from Zone 1.

702 – Swimming pools

703 – Rooms and cabins containing sauna heaters

704 – Construction sites

705 – Agricultural and horticultural premises

706 – Conductive locations with restricted movement

707 – Previously 607 in the 16th edition is not used. The particular requirements are embodied in the General Earthing Requirements of Chapter 54.

708 – Caravan and Camping Parks Formerly Caravans, Motor Caravans and Caravan Parks in the 16th edition.

The section is now divided into Section 708 and Section 721 – Caravans and Motor Caravans.

Of particular note, each pitch socket outlet is to have separate 30 mA RCD protection.

## New sections

709 – Marinas and similar locations

711 – Exhibitions, shows and stands

712 – Solar photovoltaic (PV) power supply systems

717 – Mobile or transportable units

721 – Caravans and motor caravans

740 – Temporary electrical installations for structures, amusement devices and booths at fairgrounds, amusement parks and circuses

## Further information

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