

## What are the potential changes in BS7671: 2008?

The 17<sup>th</sup> Edition of the Wiring Regulations is published on 1st January 2008 and expected to come into full effect after a six month transition period. NICEIC technical expert Steve Hesketh examines the likely changes.

Some electrical contractors may ask why we need another Edition of the Wiring Regulations. This is a fair question, considering the amount of reprints and amendments over the years. You might think that, to date, there have only been three editions of the Wiring Regulations since the 14<sup>th</sup> Edition was published in 1966.

However, consider this: Although the 14<sup>th</sup> Edition was issued in 1966, it was reprinted in 1968, 1969, 1970, 1972, 1973, 1974 and 1976. The 15<sup>th</sup> Edition was issued in 1981 but reprinted in 1983, 1984, 1986, 1987 and 1988. Finally, the 16<sup>th</sup> Edition was issued in 1991, but reprinted in 1992, 1994, 1997 and 2004 too!

A combination of new technologies, products and continuing harmonization mean that the Wiring Regulations have to incorporate changes such as these; and we can expect no let up in this progress as time goes by.

The following information outlines some of the more significant changes expected, based on the draft issued for public comment. It may be worth having a copy of the 16<sup>th</sup> Edition handy when reading this, so you can see clearly aspects of the proposed changes.

This revised standard will include the changes necessary to maintain technical alignment with European Harmonization Documents. It's important to note that all of the regulations have been renumbered to align with the International Electrotechnical Commission's (IEC) numbering system. This has also involved partial restructuring of the standard with Part 6 becoming Part 7 and vice-versa.

But let's start at Part 1; additional regulations relate to the requirements to protect against voltage disturbances and to implement measures against electromagnetic influences. Part 2, 'Definitions', includes a number of significant new and amended definitions. New requirements relating to safety services and continuity of service considered necessary during the intended life of the installation are addressed in Part 3.

There are several significant changes to Part 4, 'Protection for safety'. Whilst the fundamental principles of shock protection remain the same, the changes to definitions such as *basic protection* for direct contact and *fault protection* for indirect contact, along with a partial restructuring of Part 4 (such as Part 41 now includes parts of Chapter 47) means that those readers familiar with the 16th Edition will need to spend time getting familiar with the revised Part 4. The provision of supplementary protection by RCD now comes under the heading *additional protection* and the requirements to provide RCDs have been extended.

The Tables in Chapter 41 for earth fault loop impedances are based on a nominal voltage of 230 V (not 240 V), hence the values are slightly changed. The Chapter also includes a new Table 41.5 giving maximum values of earth fault loop impedance for RCDs.

Chapter 42, Protection against thermal effects now includes the requirements for where particular risks of fire exist (previously in Section 482). Chapter 43, Protection against overcurrent now includes the requirements previously given in Section 473.

Protection against voltage disturbances (Chapter 44) has now been expanded including a new Section 442, 'Protection of low voltage installations against temporary overvoltages due to earth faults in the high voltage system and due to faults in the low voltage system'.

In Part 5, 'Selection and erection of wiring systems' will now include requirements for busbar trunking systems and powertrack systems. The requirements relating to cables concealed in a wall or partition have been altered so that protection by a 30mA RCD is an **additional** requirement for 'unprotected' cables (e.g. twin and earth cables installed in a chase less than 50mm deep); it must be emphasised that such cables must still be installed in 'safe' zones. Previously, the requirements for protection, isolation, switching, control and monitoring were covered in several different sections of BS 7671. In the 17<sup>th</sup> Edition, Chapter 53 now includes all the requirements relating to these issues. 'Earthing arrangements and protective conductors', Chapter 54, now incorporates the requirements applicable to equipment with high protective conductor currents which were previously given in Section 607.

Chapter 55, 'Other equipment', includes additional requirements to ensure the safe connection of low voltage generating sets, including small scale embedded generators. 'Luminaires and lighting installations', Section 559, gives a new set of requirements for fixed outdoor lighting installations, extra-low voltage lighting installations, lighting for display stands and highway power supplies and street furniture (previously in Section 611).

In 'Inspection and testing', Part 6, the requirements are generally similar to those in BS 7671: 2001. The minimum values of insulation resistance have been increased. In Part 7, 'Special installations or locations', there are significant changes and additions; Section 607 and Section 611 have been moved into the main body of the regulations (as Sections 543 and 559 respectively).

Perhaps the area causing much speculation prior to the launch of the 17<sup>th</sup> Edition is Section 701, relating to Locations containing a bath tub or shower basin. An important change is that 30mA RCD-protected socket-outlets are permitted beyond a distance of 3m horizontally from the boundary of zone 1. They are prohibited within 3m of zone 1. Zone 3 is no longer defined and supplementary bonding is no longer required, providing the installation has main bonding in accordance with Part 41. Every circuit in the special location, including lighting circuits, must have 30 mA RCD protection.

In Section 704, 'Construction and demolition site installations' and Section 705 'Agricultural and horticultural premises,' reduced disconnection times and the 25V equation are no longer included. The requirements relating to caravan parks can now be found in Section 708 and include the requirement that each socket-outlet must be provided individually with overcurrent and RCD protection. The requirements for electrical installations in caravans and motor caravans are now in Section 721.

Part 7 also includes the following new Sections:

- Section 709 Marinas and similar locations
- 
- Section 711 Exhibitions shows and stands
- Section 712 Solar photovoltaic (pv) power supply systems
- Section 717 Mobile and transportable units
- Section 740 Temporary electrical installations for structures, amusement devices and booths at fairgrounds, amusement parks and circuses

- Section 753 Floor and ceiling heating systems.

Appropriate changes have been made to Appendices 1 to 7, in particular the methods and tables used in Appendix 4 and there are also several new Appendices.

If you would like to find out more about the 17<sup>th</sup> edition and the cost-effective services the NICEIC has to offer please visit our website [www.niceic.com](http://www.niceic.com). Alternatively contact our advisors via

Telephone: 0870 013 0389

Email: [traininginfo@niceic.com](mailto:traininginfo@niceic.com)

Fax: 01582 539090/ 556 010