How changes in the new wiring regs affect you

Bill Allan with an update on the 17th Edition proposals likely to become law

BS 7671:2008 Requirements for Electrical Installations – the 17th Edition of the IEE Wiring Regulations – is to be issued on January 1 2008 and is intended to come into effect on June 1 2008.

Installations which have been designed after June 1 2008 are to comply with the new regulations, based on IEC/CENELEC standards, which have been circulated as a draft for public comment. Although this document is still at the draft stage, the UK's ability to change it is limited and it is unlikely that there will be major alterations to it.

BS 7671:2008 contains many changes compared to the present BS 7671. As this important document is of considerable interest to NAPIT members, we have therefore included a brief summary of some of the main changes in BS 7671:2008. I begin with what is familiar to us all – the general outline and the numbering system.

General outline

Like its predecessor, BS 7671:2008 is divided into parts and chapters with appendices at the end. The contents page is very similar to that of BS 7671:2001. There are seven parts and each part has the same title as the current edition. The only difference is that Part 6 Special Installations or Locations (which has been greatly expanded) is now Part 7 and Part 7 Inspection and Testing becomes Part 6. The number of appendices has been increased to 14.

The numbering system

The numbering system follows the pattern of IEC 60364. The first digit indicates a part, the second digit signifies a chapter, the third digit refers to a section and the remaining digits are the regulation number. For example, Section 511 is made up as follows:

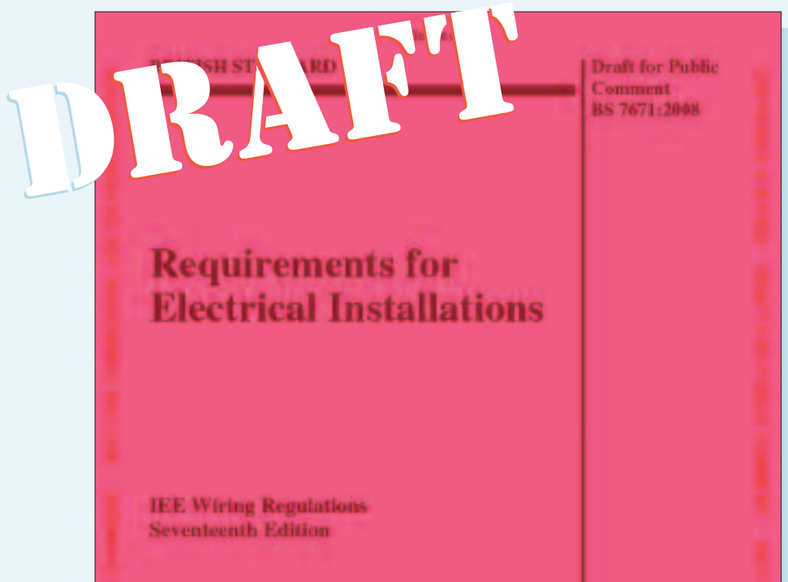
Part 5 – Selection and Erection of Equipment
Chapter 51 – Common Rules
Section 511 – Compliance With Standards

There are two regulations in Section 511, Regulation 511.1 and Regulation 511.1.2.

In Part 7 Special Installations or Locations, the number appearing after a Section number refers to the corresponding chapter, section or regulation within Parts 1 to 6. For example, Regulation 701.415.2 concerns supplementary equipotential bonding and is made up as follows:

Part 7 – Special Installations or Locations
Section 701 – Locations Containing a Bath or Shower
Regulation 415.2 – Additional Protection: Supplementary equipotential bonding.

This links in with the Section in Part 4 dealing with additional protection, Section 415. Regulation 415.2 in Section 415 contains the requirements for supplementary equipotential bonding. While this is a handy way of cross-referencing that we may grow to appreciate in time, it means that the numbering does not necessarily follow sequentially.



You can join the forum on the new NAPIT website to discuss the draft of the new regulations. www.napit.org.uk

SOME IMPORTANT CHANGES

Chapter 41, Protection Against Electric Shock

- Protection against direct contact is now referred to as basic protection, that is, protection under normal conditions.
- Protection against indirect contact is now termed fault protection, that is, protection under fault conditions.
- The maximum earth fault loop impedance (Z_S) Tables 41B1, 41B2 and 41D are replaced by Tables 41.2, 41.3 and 41.4 respectively. These values are different as they have been calculated at 230 volts. They are still calculated at the normal operating temperature of the cable and therefore still need to be adjusted for temperature if they are at a different temperature when tested.
- A new table of maximum Z_S values, Table 41.5, is introduced to ensure operation of residual current devices (RCDs) to BS EN 61008 and BS EN 61009 in TT systems. This table is similar to Table 2.3 in IEE Guidance Note 3, Inspection and Testing.
- It is suggested that the resistance of earth electrodes should not exceed 100 ohms and a reminder is given that resistances exceeding 200 ohms may be unstable.
- Reduced low voltage systems, which are presently in Section 471-15, are now included in Chapter 41 as Regulation 411.8. The maximum Z_S Table 471A has now become Table 41.6 The alternative method, presently in Table 41C, has been omitted.
- Table 41C, the alternative method, has been omitted.
- RCDs are recognised as giving additional protection (this term is used instead of supplementary protection) against electric shock in a.c. systems. To be recognised as providing such additional protection, RCDs must have a rated residual operating current ($I_{\Delta n}$) not exceeding 30 mA and an operating time not exceeding 40 ms at a residual current of 5 $I_{\Delta n}$.
- RCDs having the above characteristics must be used to provide additional protection for mobile (this word is used instead of portable) equipment with a current rating not exceeding 32A for use outdoors.
- Such RCDs as described above must provide additional protection for socket-outlets with a rated current not exceeding 20A that are for use by ordinary persons and are intended for general use. The term, ordinary person is defined in Part 2 as "a person who is neither a skilled person nor an instructed person". An example would be a householder who is not electrically skilled and who is not supervised by someone who is. This means that all socket-outlets in a house, upstairs and downstairs, must be protected by a 30 mA RCD.

Chapter 61, Initial Verification

Some changes have been made to the minimum values of insulation resistance in Table 61 (formerly Table 71A). When testing SELV and PELV circuits at 250 V, the minimum value of insulation resistance is now 0.5 MΩ. The minimum value of insulation resistance for systems up to and including 500 V, with a test voltage of 500 V, has been raised to 1 MΩ, and the minimum value for systems above 500 V, with a test voltage of 1000 V, is also 1 MΩ.

On the topic of inspection and testing, the model forms are located in Appendix 5 and there will be widespread relief at the fact that they are essentially unchanged.

Section 701, Locations Containing a Bath or Shower

The changes in Section 701 may well cause more discussion that any of the other changes. Some of the changes are as follows:

- Zone 3 has been removed. Zones 0, 1 and 2 have the same dimensions as before.
- In the normal situation where the building has main equipotential bonding, local supplementary equipotential bonding is not required in the bathroom or shower room provided that each circuit supplying electrical equipment in the location is protected by a 30 mA RCD.

Otherwise, supplementary bonding is required as before. It is still necessary to connect the terminals of the protective conductor of each circuit supplying Class 1 and Class 2 equipment in zones 1 or 2 together with accessible (this word has been added) extraneous-conductive-parts in these zones.

13 amp socket-outlets to BS 1363 can be installed provided that they are located at a horizontal distance of at least three metres from the boundary of zone 1. Therefore, in practice, socket-outlets will still be prohibited from all but the largest bathrooms or shower rooms.

Conclusion

That's all we can cover in this issue. I hope it has been helpful. I will continue to update you on BS 7671:2008 as and when necessary. On the positive side, there doesn't appear to be much to fear in these changes. On the negative side, we'll all need to buy ourselves a copy of the new regulations, the new On Site Guide, and the new Guidance Note 3, etc., etc. Some things never change.