

Requirements for Electrical Installations
BS 7671:2008(2011)

The IET Wiring Regulations
17th Edition

Presenter:

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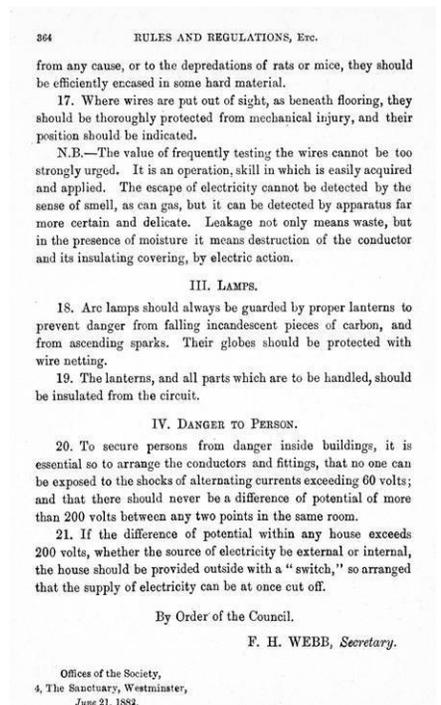
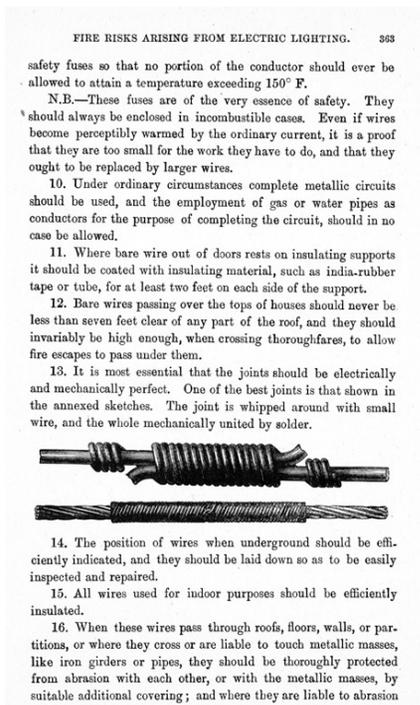
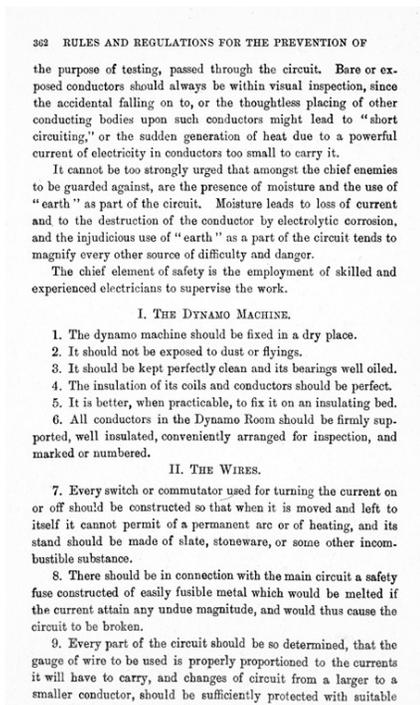
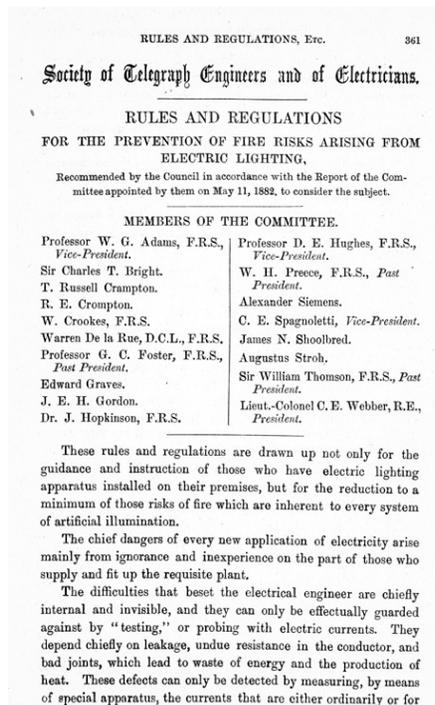
Topics:

- the history the Regulations
- an Overview of BS 7671:2008(2011)
- statutory requirements
- planned Amendments
- guidance publications and where they sit
- Q&A

History of BS 7671

The history of BS 7671

The Wiring Regulations were first issued in 1882 by the **Society of Telegraph Engineers and of Electricians**, consisting of four pages and 21 Regulations:



The First Edition of The Regulations had requirements for:

Isolation – Regulation 7:

7. Every switch or commutator used for turning the current on or off should be constructed so that when it is moved and left to itself it cannot permit of a permanent arc or of heating, and its stand should be made of slate, stoneware, or some other incombustible substance.

Mechanical protection and labelling – Regulation 17:

17. Where wires are put out of sight, as beneath flooring, they should be thoroughly protected from mechanical injury, and their position should be indicated.

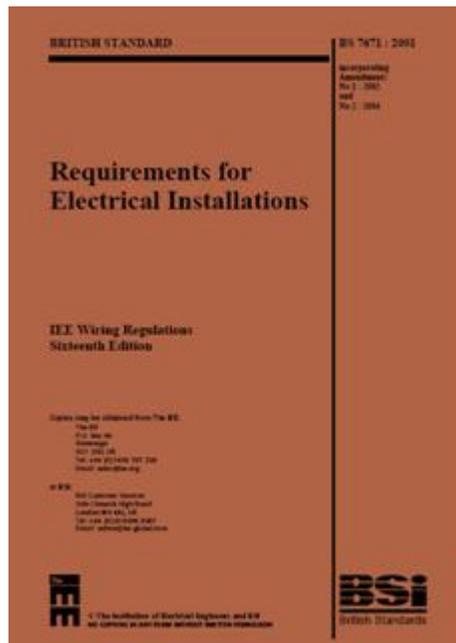
Periodic Inspection and Testing:

N.B.—The value of frequently testing the wires cannot be too strongly urged. It is an operation, skill in which is easily acquired and applied. The escape of electricity cannot be detected by the sense of smell, as can gas, but it can be detected by apparatus far more certain and delicate. Leakage not only means waste, but in the presence of moisture it means destruction of the conductor and its insulating covering, by electric action.

16th Edition

In 1991, the Sixteenth Edition of the IEE Wiring Regulations was issued.

In 1992, the Sixteenth Edition became a British Standard – BS 7671:1992.

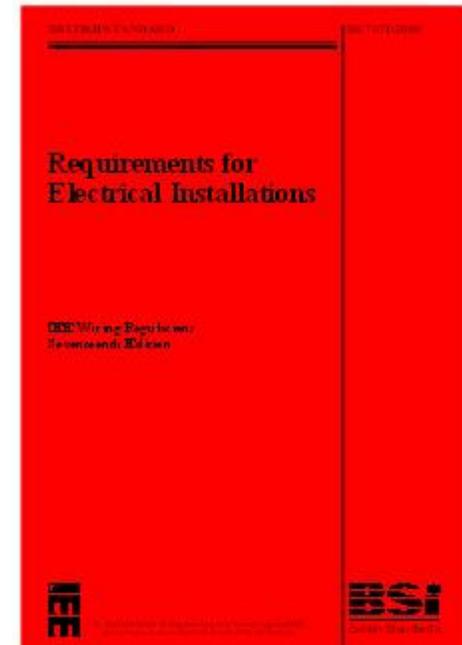
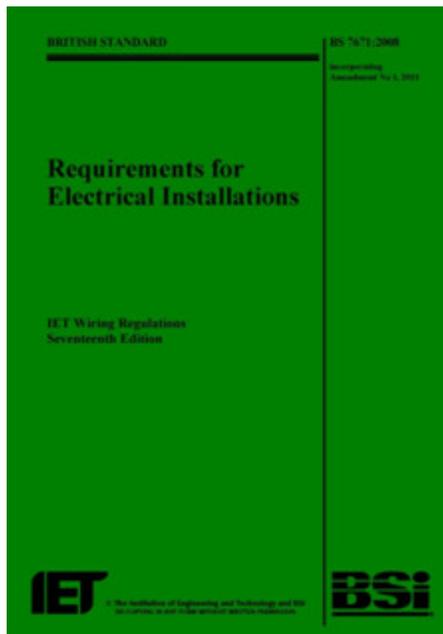


The final issue of the Sixteenth Edition was BS 7671:2001(2004).

17th Edition

In 2008 the Seventeenth Edition, BS 7671:2008 is published.

Consisting of 389 pages and 1108 Regulations



In 2011 the First Amendment to BS 7671:2008 is published.

Consisting of 463 pages and 1274 Regulations

Standardisation

The UK National Committee responsible for BS 7671 is **JPEL/64**

J Joint IET/BSI Committee
P Power
EL Electrical
64 IEC designation for Committees dealing with low voltage electrical installations

This is a joint committee between BSI and the IET.

The constitution of JPEL/64 is shown on page 8 of the Regulations.

Joint IET/BSI Technical Committee JPEL/64
CONSTITUTION
as at June 2011

Standardisation

Due to the treaty of Rome, the UK are obliged to incorporate the technical intent of Standards developed at the European CENELEC level, i.e. HD – Harmonized Documents.



BS 7671 is largely based on the requirements of the CENELEC HD 60364 series of standards.

HD 60364 is available as a series of standards.

www.cenelec.org

Standardisation

To keep track of future changes:

CENELEC

www.cenelec.eu

Search HD 60364



IEC

www.iec.ch

Search IEC 60364



Overview of BS 7671:2008(2011)

Structure of the standard

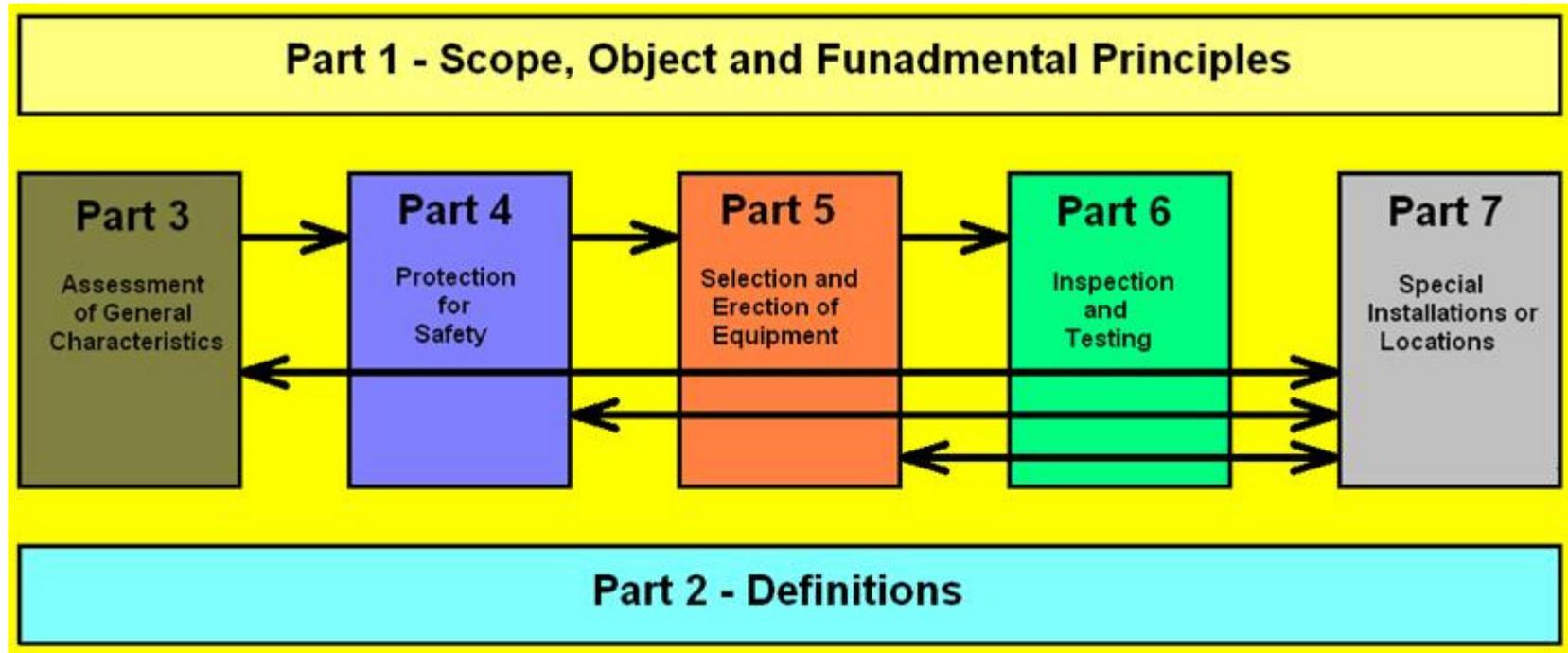
Part	Title
1.	Scope, Object and Fundamental Principles
2.	Definitions
3.	Assessment of General Characteristics
4.	Protection for Safety
5.	Selection and Erection of Equipment
6.	Inspection and Testing
7.	Special Installations and Locations

Appendices 1-16

Structure of the standard - Appendices

1. British Standards to which reference is made in the Regulations
2. Statutory regulations and associated memoranda
3. Time/current characteristics of overcurrent protective devices
4. Current carrying capacity and voltage drop for cables ~~and flexible cords~~
5. Classification of external influences
6. Model forms for certification and reporting
7. Harmonized cable core colours
8. Current-carrying capacity and voltage drop for busbar trunking and powertrack systems
9. Definitions – multiple source, d.c. and other systems
10. Protection of conductors in parallel against overcurrent
11. ~~Harmonic currents in three phase systems~~
12. ~~Voltage drop in consumers' installations~~
13. Methods for measuring insulation resistance of floors and walls
14. Measurement of fault loop impedance: increase of resistance of conductors with temperature
15. Radial and ring circuit arrangements
16. Devices for protection against overvoltage **NEW**

Plan of the 17th Edition



Part 2

Definitions

The definitions used in Part 2 are extracted from the IEC International Electrotechnical Vocabulary (IEV), Part 826 – IEC 60050.

Where UK only terms are used in BS 7671, the definitions have been developed by JPEL/64.

223 terms are defined in the 17th Edition, whilst 151 were defined in the 16th!



The cover of the IEC Multilingual Dictionary features the IEC logo at the top left, followed by the text: "Commission Electrotechnique Internationale", "International Electrotechnical Commission", and "Международная Электротехническая Комиссия". Below this is a stylized graphic of a CD-ROM with the text "MULTILINGUAL DICTIONARY" in large, bold, pink letters. The CD-ROM itself has "IEC" and "INTERNATIONAL ELECTROTECHNICAL VOCABULARY" printed on it.

The Multilingual Dictionary includes all terminological entities covered by the International Electrotechnical Vocabulary (IEC 60050).

The Dictionary also includes consolidated indexes in [English](#), [French](#), [German](#) and [Spanish](#).

A global search facility across the consolidated indexes is available by using the Search tool provided by Acrobat®.

Visit our web site at www.iec.ch

Part 5

Section 534

Devices for protection against overvoltage

New Section

Section 534 deals with the installation of surge protective devices (SPD) where required by:

- Section 443 of BS 7671

Section 534 applies to a.c. power circuits only.

This Section does not cover surge protective components incorporated in appliances



Part 5

Section 534

Devices for protection against overvoltage

A surge protective device (SPD) is a device that is intended to limit transient overvoltages and divert surge currents.

Two types of overvoltage – transient and temporary

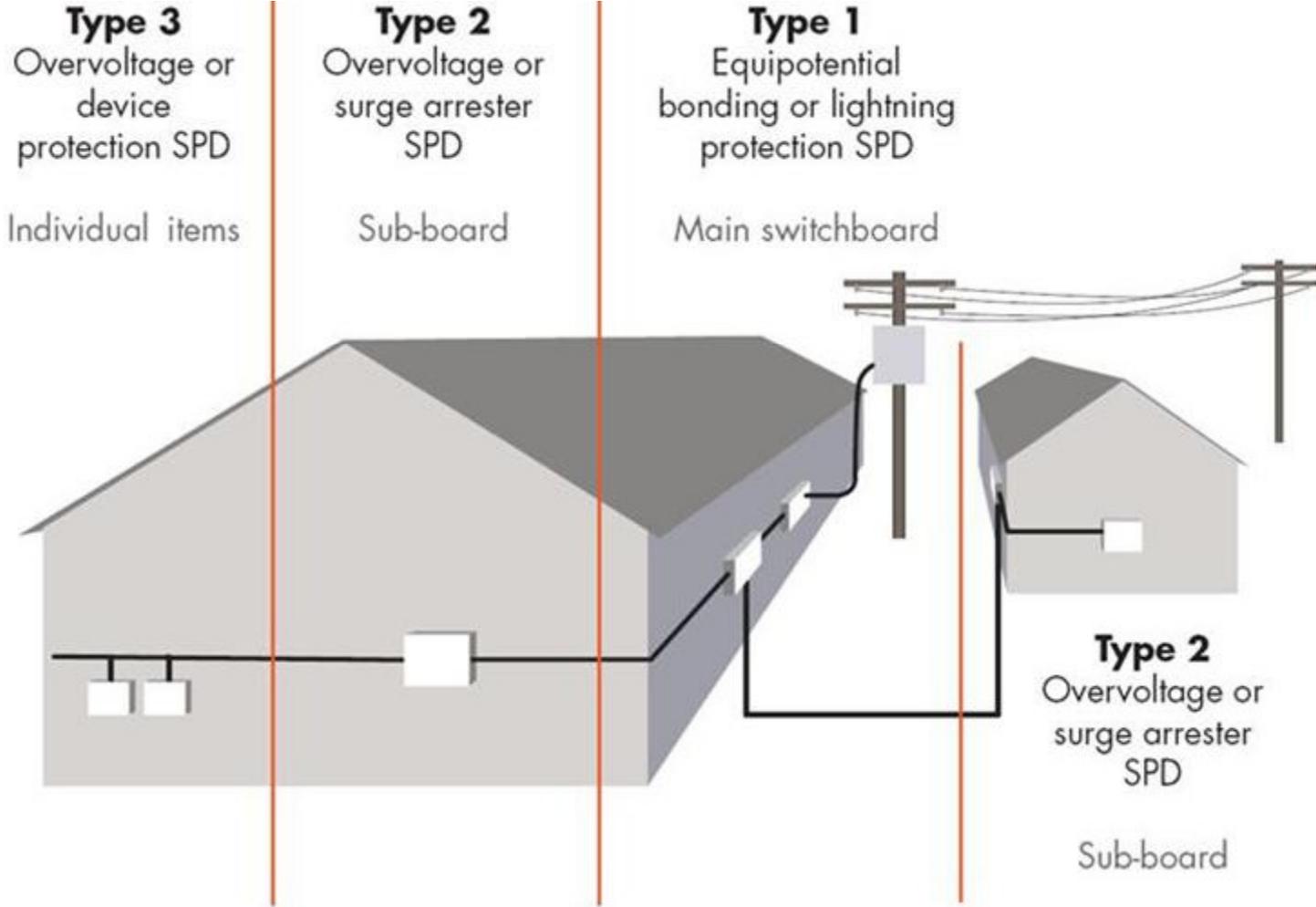
Transient overvoltage

- caused by lightning strikes
distribution network HV switching
switching of inductive loads
- duration short - μs
- size $\leq 6000 \text{ V}$

Part 5

Section 534

Coordination



Part 7

Section 710

Medical locations

New Section

Section 710 applies to:

- hospitals
- private clinics
- medical and dental practices
- healthcare centres
- dedicated medical rooms in the work place
- veterinary clinics



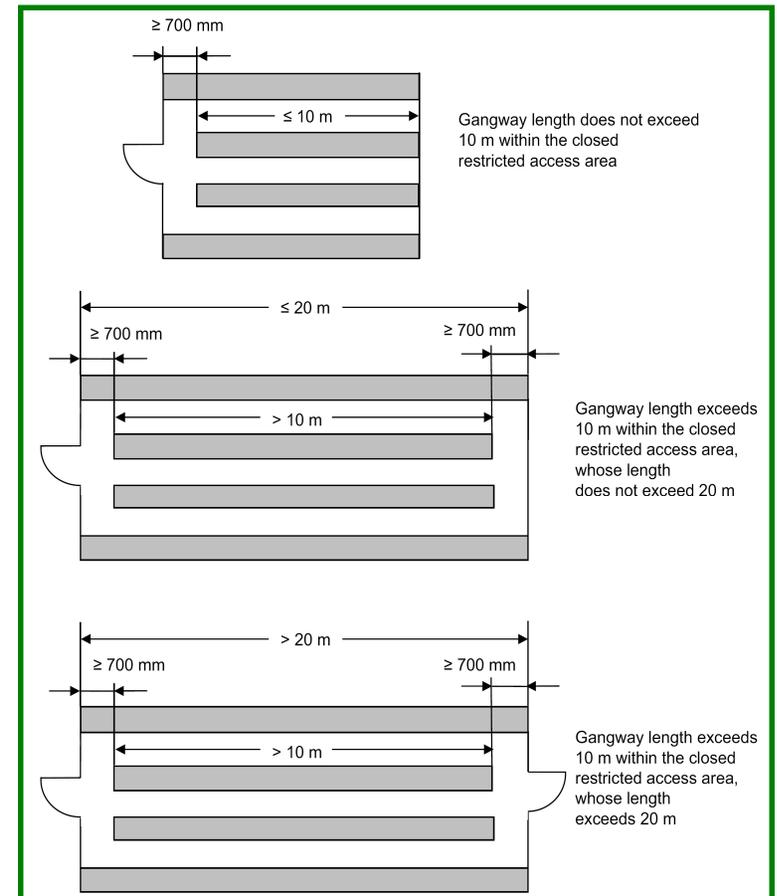
Part 7

Section 729

Operating and maintenance gangways

Includes requirements for:

- gives examples of positioning doors in long closed restricted access areas



Appendix 6

Model forms

Electrical Installation Condition Report

EICR is divided into two areas:

- domestic and similar installations up to 100A
- larger installations > 100A



Appendix 6

Model forms

Electrical Installation Condition Report

New codes and definitions have been developed with the intention of being clearer –

“If it's recorded, it's an issue that should be dealt with”

The new codes are:

- C1. Danger present. Risk of injury. Immediate remedial action required.
- C2. Potentially dangerous - urgent remedial action required.
- C3. Improvement recommended.

The recording of either a C1 or C2 observation would result in an unsatisfactory outcome.

Overview of the planned Amendments BS 7671:2008(2011)

BS 7671:2008 – Amendment No.2 2013



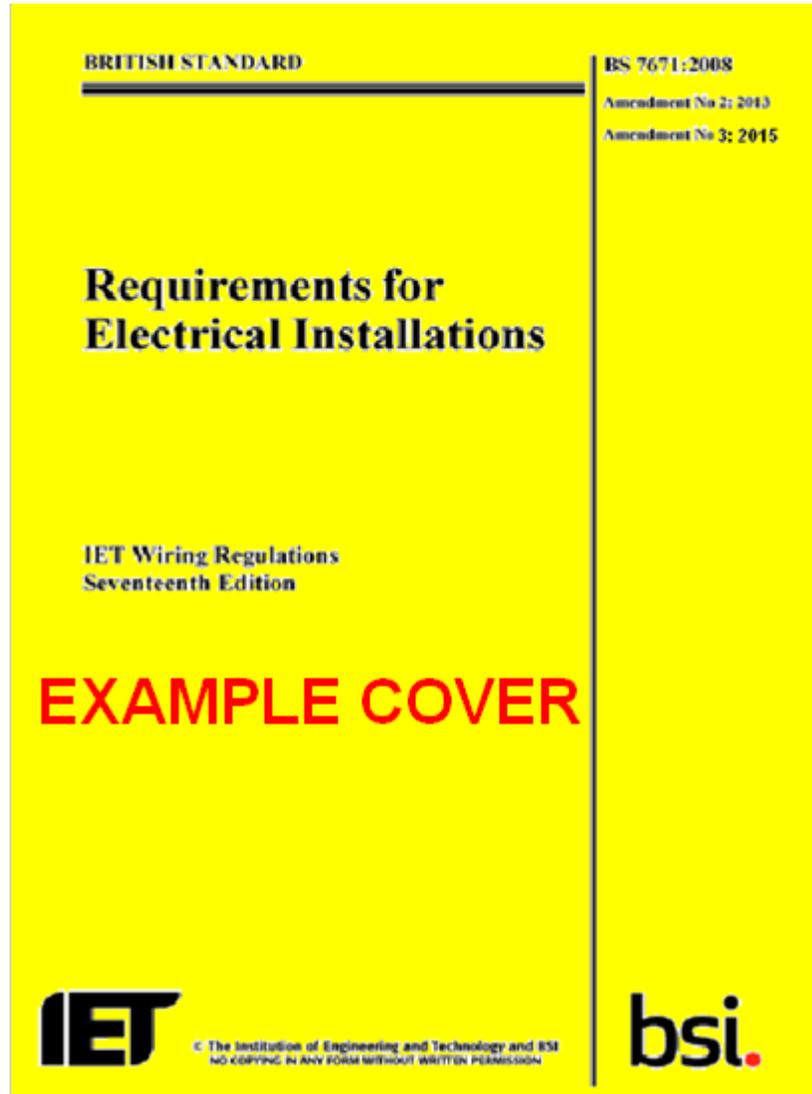
One Section only:

Section 722 – Supplies to
Electric Vehicles

**Likely to be issued –
July 2013**

Stand alone document –
not consolidated

BS 7671:2008 – Amendment No.3 2015



Many changes expected due to changes at IEC and CENELEC level

Likely to be issued – January 2015

BS 7671:2008 – Amendment No.3 2015

Possible areas of change:

- 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
- Section 444 - Measures against electromagnetic disturbances
- Chapter 51 - Selection and erection of electrical equipment - Common rules
- Section 557 - Auxiliary circuits
- Section 559 - Luminaires
- Chapter 56 - Selection and erection of electrical equipment - Safety services
- Section 708 - Caravan parks

Statutory requirements

Statutory requirements

The primary piece of legislation is the Electricity at Work Regulations 1989

The screenshot shows the legislation.gov.uk website interface. At the top left is the Royal Coat of Arms and the text "legislation.gov.uk". To the right, it says "delivered by The National Archives" with links for "Help", "Site Map", "Accessibility", and "Contact Us". Below this is a navigation bar with tabs for "Home", "About Us", "Browse Legislation", "New Legislation", "Changes to Legislation", and "Search Legislation". A search bar is present with fields for "Title:", "Year:", "Number:", and "Type:" (set to "All Legislation (excluding draft)"), and a "Search" button. Below the search bar is a link for "Advanced Search".

The main content area displays the title "The Electricity at Work Regulations 1989" and the reference "1989 No. 635". It includes a "Table of Contents" tab and a "Content" tab. There are buttons for "Plain View" and "Print Options".

On the left side, there are sections for "What Version" (with options for "Latest available (Revised)" and "Original (As made)") and "Opening Options". The main content area shows a "Status" message and a table of contents with expandable sections:

- Introductory Text
- PART I Introduction
- PART II General
- PART III Regulations Applying to Mines Only
- PART IV Miscellaneous and General

Statutory requirements

Memorandum of guidance on the Electricity at Work Regulations 1989. Guidance on Regulations



Date of publication: 2007

ISBN: 9780717662289

Series code: hsr25

Price: £11.95

[Buy or download free](#)

Part P of the Building Regulations of England

Why of England?

Scotland has its own requirements

Northern Ireland is yet to implement electrical requirements

Wales decided to develop its own Building Regulations from 1 Jan 2012 but will continue to use the Building Regulations of England until it develops its own Building Regulations.

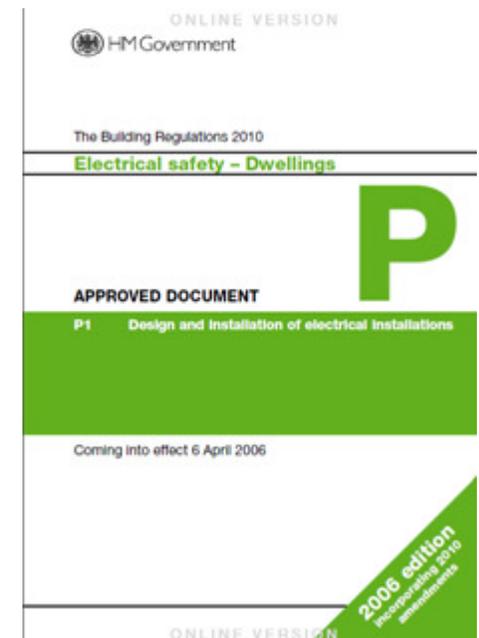
Part P of the Building Regulations of England

What does Part P require?

Part P requires that:

“Reasonable provision shall be made in the design and installation of electrical installations in order to protect persons operating, maintaining or altering the installations from fire or injury.”

Part P applies to dwellings (flats, houses) or whole buildings where the electrical supply is shared (e.g. flat above a shop).



Part P of the Building Regulations of England

How does this affect the electrical installer?

The electrical installer is required to notify Building Control of any electrical installation work in the following areas:

- complete rewire
- replacement of consumer unit
- new circuits from the consumer unit
- kitchen
- bathroom
- external to the property
- special locations, e.g. swimming pool.



Part P of the Building Regulations of England

How does the installer notify the work?

The installer must either be:

- registered on a Competent Persons Scheme, e.g. NICEIC, ELECSA, NAPIT, or
- inform Building Control of their intention before starting work and a Building Control inspector will need to see the work “first fix” stage, at completion when an Electrical Installation Certificate must be provided.



Part P of the Building Regulations of England

What are the planned changes to Part P?

Change to notifiable work:

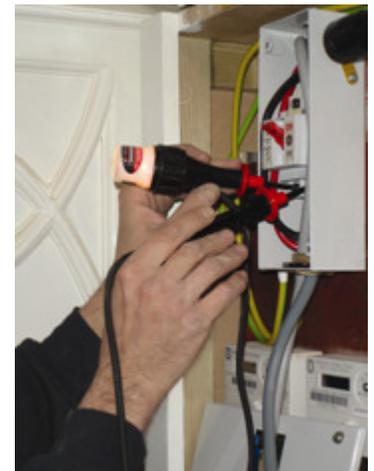
- the installation of a new circuit
- work to, or replacement of, the consumer unit
- alteration work in a special location.

Part P of the Building Regulations of England

Who can do the work?

Building Control will recognise work done by the following categories:

- self-certification by a registered competent person
- third-party certification by a registered third-party certifier
- certification by a building control body.



Guidance BS 7671:2008(2011)

IET Guidance

Guidance Notes Suite



IET Guidance

Guidance publications



<http://electrical.theiet.org/books/index.cfm>

IET Guidance

Wiring Regulations Digital

The screenshot shows the IET website's 'Wiring Regulations Digital' page. At the top left is the IET logo with the tagline 'Setting standards for electrical installation' and 'Electrical excellence'. A search bar is located to the right of the logo. Below the logo is a navigation menu with links for Home, Wiring Regulations, Books, Courses, Wiring Matters, Building Regulations, and Forum. The main content area features a heading 'Wiring Regulations Digital' with a sub-heading 'e-book versions of the IET Wiring Regulations and associated guidance downloadable to your PC, laptop, smartphone or tablet.' Below this are three columns: 'Wiring Regulations' with links for 'Wiring Regs Digital', 'Model Forms', 'Technical help', and 'Updates'; 'IET Wiring Regulations - available in e-book format' featuring an image of a laptop, tablet, and smartphone displaying e-books, with a 'Free trial' button; and 'Downloads' with links for 'Benefits for contractors and consultants (348 k)', 'Benefits for lecturers and students (505 k)', and 'How to update your Bookshelf library (92 k)', plus a 'Watch product demo' link. At the bottom of the e-book section, it states: 'Wiring Regulations Digital offers e-book versions of BS 7671, the On-Site Guide, Guidance Notes and other IET titles associated with BS 7671.'

Thank you for listening

**Any
questions?**