CUSTOMER SEMINARS AUTUMN 2018

BS 7671: 2018 18TH EDITION – IMPACT ON DUTY HOLDERS

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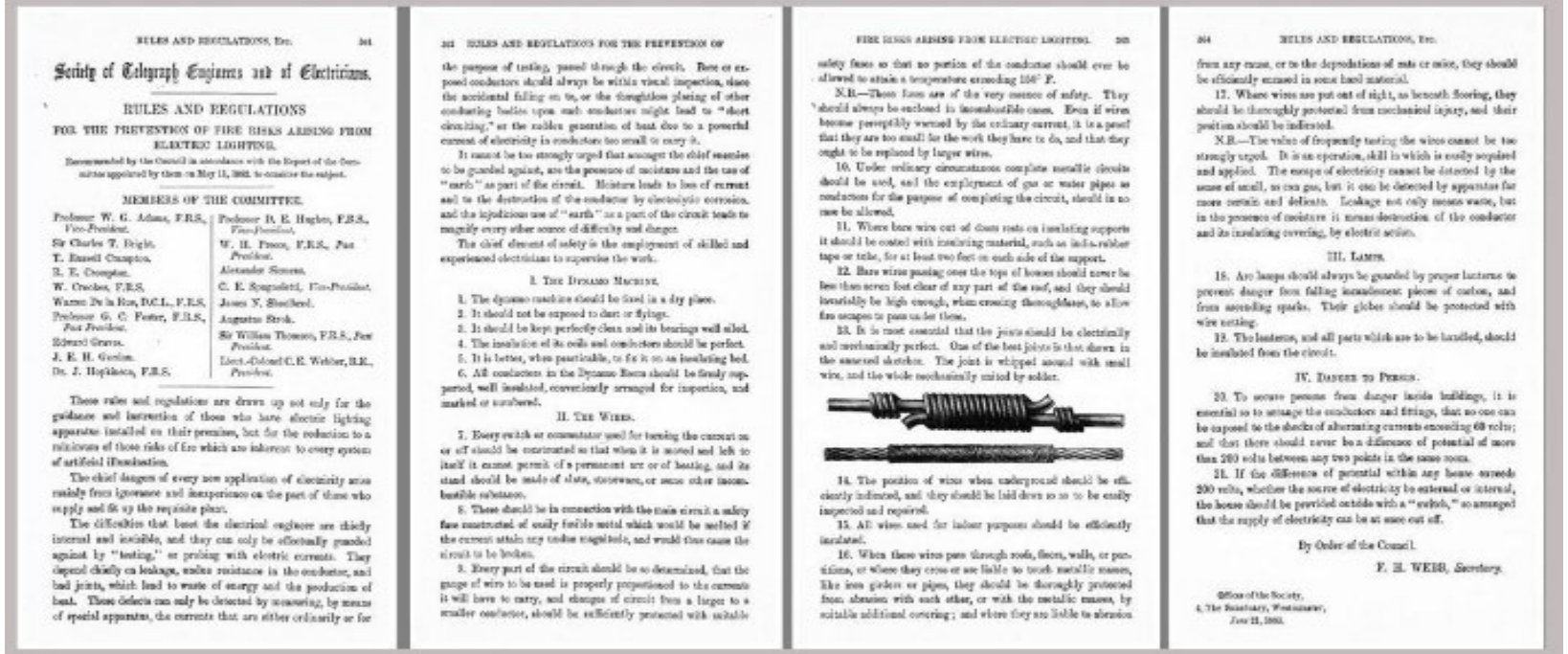
BS 7671 1ST EDITION

1882



RULES AND REGULATIONS, &c. 261

Society of Telegraph Engineers and of Electricians.

RULES AND REGULATIONS

FOR THE PREVENTION OF FIRE RISKS ARISING FROM ELECTRIC LIGHTING.

Recommended by the Council in accordance with the Report of the Committee appointed by them on May 11, 1882, to consider the subject.

MEMBERS OF THE COMMITTEE.

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Sir Charles T. Bright.
T. Russell Crampton.
R. E. Crompton.
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Sir William Thomson, F.R.S., *Past President.*
Lieut.-Colonel C. E. Webber, R.E., *President.*

These rules and regulations are drawn up not only for the guidance and instruction of those who have electric lighting apparatus installed on their premises, but for the reduction to a minimum of those risks of fire which are inherent to every system of artificial illumination.

The chief dangers of every new application of electricity arise mainly from ignorance and inexperience on the part of those who supply and fit up the requisite plant.

The difficulties that beset the electrical engineer are chiefly internal and invisible, and they can only be effectually guarded against by "testing," or probing with electric currents. They depend chiefly on leakage, undue resistance in the conductor, and bad joints, which lead to waste of energy and the production of heat. These defects can only be detected by measuring, by means of special apparatus, the currents that are either ordinarily or for

262 RULES AND REGULATIONS FOR THE PREVENTION OF

the purpose of testing, passed through the circuit. Bare or exposed conductors should always be within visual inspection, since the accidental falling on to, or the thoughtless placing of other conducting bodies upon such conductors might lead to "short circuiting," or the sudden generation of heat due to a powerful current of electricity in conductors too small to carry it.

It cannot be too strongly urged that amongst the chief enemies to be guarded against, are the presence of moisture and the use of "earth" as part of the circuit. Moisture leads to loss of current and to the destruction of the conductor by electrolytic corrosion, and the injudicious use of "earth" as a part of the circuit tends to magnify every other source of difficulty and danger.

The chief element of safety is the employment of skilled and experienced electricians to supervise the work.

I. THE DYNAMO MACHINE.

1. The dynamo machine should be fixed in a dry place.
2. It should not be exposed to dust or flyings.
3. It should be kept perfectly clean and its bearings well oiled.
4. The insulation of its coils and conductors should be perfect.
5. It is better, when practicable, to fix it so as insulating bed.
6. All conductors in the Dynamo Room should be firmly supported, well insulated, conveniently arranged for inspection, and marked or numbered.

II. THE WIRES.

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.

8. There should be in connection with the main circuit a safety fuse constructed of easily fusible metal which would be melted if the current attain any undue magnitude, and would thus cause the circuit to be broken.

9. Every part of the circuit should be so determined, that the gauge of wire to be used is properly proportioned to the currents it will have to carry, and changes of circuit from a larger to a smaller conductor, should be sufficiently protected with suitable

FIRE RISKS ARISING FROM ELECTRIC LIGHTING. 263

safety fuses so that no portion of the conductor should ever be allowed to attain a temperature exceeding 150° F.

N.B.—These fuses are of the very essence of safety. They should always be enclosed in incombustible cases. Even if wires become perceptibly warmed by the ordinary current, it is a proof that they are too small for the work they have to do, and that they ought to be replaced by larger wires.

10. Under ordinary circumstances complete metallic circuits should be used, and the employment of gas or water pipes as conductors for the purpose of completing the circuit, should in no case be allowed.

11. Where bare wire out of doors rests on insulating supports it should be coated with insulating material, such as India-rubber tape or tube, for at least two feet on each side of the support.

12. Bare wires passing over the tops of houses should never be less than seven feet clear of any part of the roof, and they should invariably be high enough, when crossing thoroughfares, to allow fire escapes to pass under them.

13. It is most essential that the joints should be electrically and mechanically perfect. One of the best joints is that shown in the annexed sketches. The joint is whipped round with small wire, and the whole mechanically united by solder.

14. The position of wires when underground should be efficiently indicated, and they should be laid down so as to be easily inspected and repaired.

15. All wires used for indoor purposes should be efficiently insulated.

16. When these wires pass through roofs, floors, walls, or partitions, or where they cross or are liable to touch metallic masses, like iron girders or pipes, they should be thoroughly protected from abrasion with each other, or with the metallic masses, by suitable additional covering; and where they are liable to abrasion

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from any cause, or to the depredations of rats or mice, they should be efficiently encased in some hard material.

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.

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.

III. LAMPS.

18. Arc lamps should always be guarded by proper lanterns to prevent danger from falling incandescent pieces of carbon, and from ascending sparks. Their globes should be protected with wire netting.

19. The lanterns, and all parts which are to be handled, should be insulated from the circuit.

IV. DANGER TO PERSONS.

20. To secure persons from danger inside buildings, it is essential so to arrange the conductors and fittings, that no one can be exposed to the shocks of alternating currents exceeding 60 volts; and that there should never be a difference of potential of more than 200 volts between any two points in the same room.

21. If the difference of potential within any house exceeds 200 volts, whether the source of electricity be external or internal, the house should be provided outside with a "switch," so arranged that the supply of electricity can be at once cut off.

By Order of the Council.

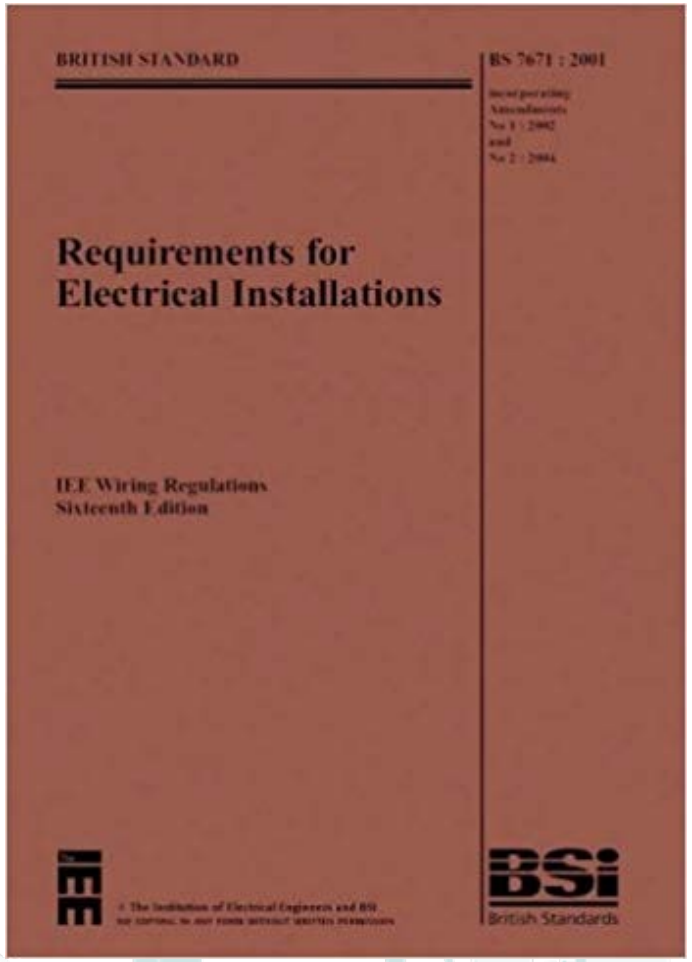
F. H. WEBB, *Secretary.*

Office of the Society,
4, The Sanctuary, Westminster,
June 21, 1882.

The first ever regulations book - a one page A4 document with 21 Rules and Regulations

BS7671:16TH EDITION

- **Issued in 1991**
- **321 pages**
- **1200 regulations**
- **Amended 1994, 1997, 2000, 2002 & 2004**

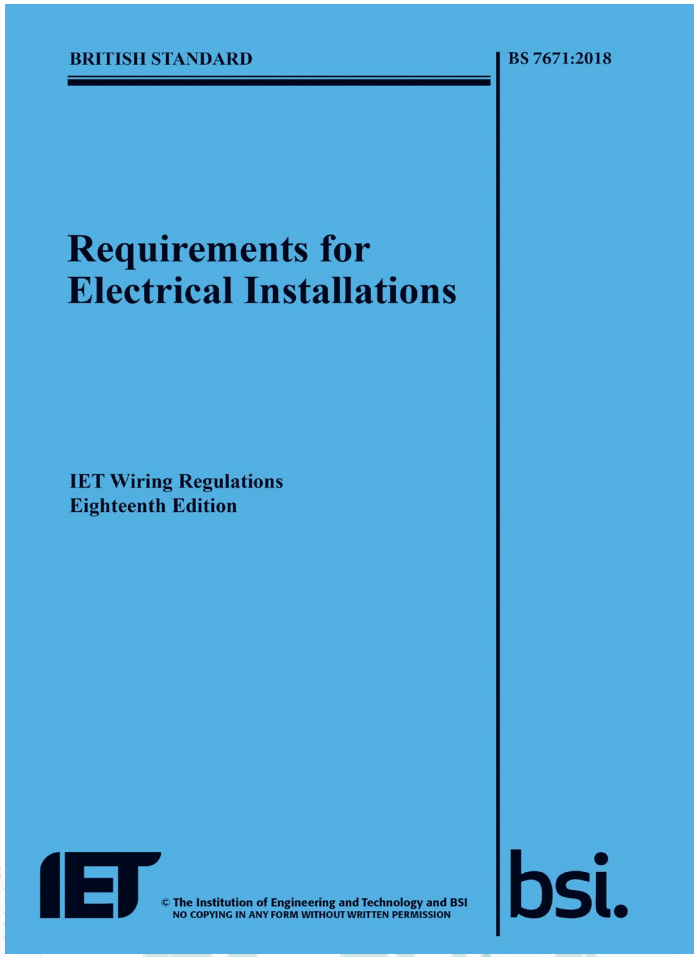


BS7671:17TH EDITION AMENDMENTS 1,2 AND 3

- **Issued 2008**
- **380-496 pages**
- **1200-1280 regulations**
- **Amended 2011, 2013, & 2015**

BS7671:2018

- **Issued 2018**
- **560 pages**
- **Now contains over 1300 regulations**
- **When will it be amended ?**



INTRODUCTION

- **What** is BS 7671
- **How** is BS 7671 applied
- **Why** does it need to be changed
- **When** does it need to be changed

BACKGROUND AND RATIONALE

The route to standardisation

IEC

CENELEC

bsi.

BACKGROUND AND RATIONALE

The route to standardisation

BACKGROUND AND RATIONALE

The route to standardisation – Post Brexit

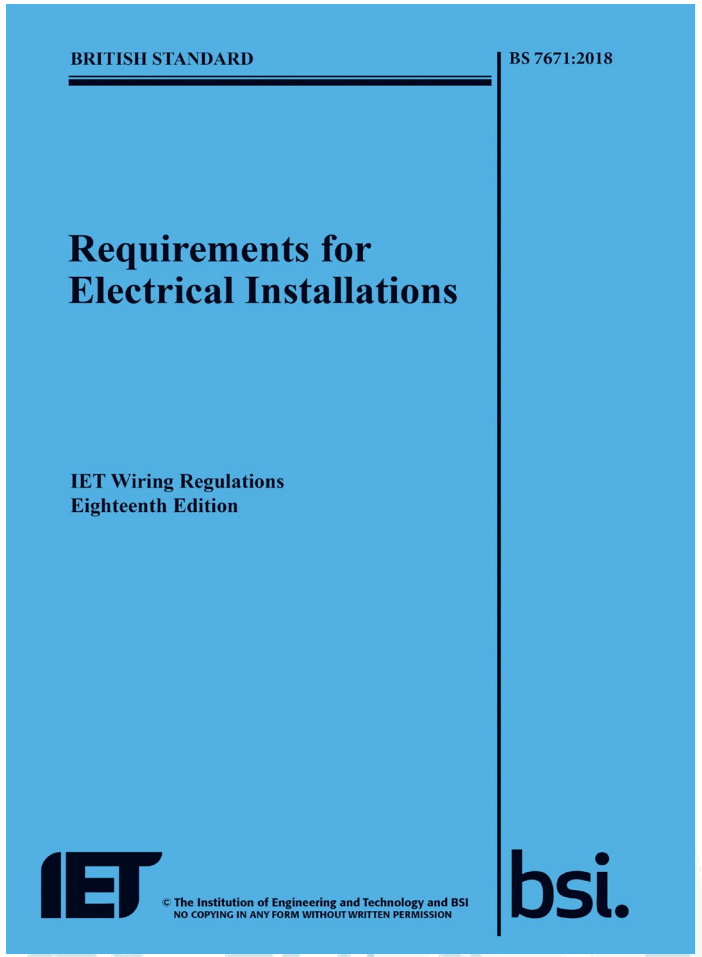
IEC

CENELEC

bsi.

IMPORTANT DATES

- **BS 7671 new edition available for purchase 1st July 2018**
- **PHSC embarking on full 18th Edition training programme for all technical personnel**
- **Full implementation by the 1st January 2019**



SCOPE (WHAT'S INCLUDED)

(i) residential premises

(ii) commercial premises

(iii) public premises

(iv) industrial premises

(v) prefabricated buildings

(vi) low voltage generating sets

(vii) highway equipment and street furniture

(viii) locations containing a bath or shower

(ix) swimming pools and other basins

(x) rooms and cabins containing sauna heaters

SCOPE (WHAT'S INCLUDED CONTINUED)

(xi) construction and demolition sites

(xii) agricultural and horticultural premises

(xiii) conducting locations with restricted movement

(xiv) caravan / camping parks and similar locations

(xv) marinas and similar locations

(xvi) medical locations

(xvii) exhibitions, shows and stands

(xviii) solar photovoltaic (PV) power supply systems

(xix) outdoor lighting

(xx) extra-low voltage lighting

SCOPE (WHAT'S INCLUDED CONTINUED)

(xxi) mobile or transportable units

(xxii) caravans and motor caravans

(xxiii) electric vehicle charging

(xxv) temporary installations for structures, amusement devices and booths at fairgrounds, amusement parks and circuses including professional stage and broadcast applications

(xxvi) floor and ceiling heating systems

(xxvii) onshore units of electrical shore connections for inland navigation vessels.

SCOPE (WHAT'S EXCLUDED)

(i) Systems for the distribution of electricity to the public (ESQCR)

(ii) Railway traction equipment, rolling stock and signalling equipment

(iii) Equipment of motor vehicles, except those to which the requirements of the Regulations concerning caravans or mobile units are applicable

(iv) Equipment on board ships covered by BS 8450, BS EN 60092-507, BS EN ISO 13297 or BS EN ISO 10133

(v) Equipment of mobile and fixed offshore installations

(vi) Equipment of aircraft

(vii) Those aspects of mines specifically covered by Statutory Regulations

SCOPE (WHAT'S EXCLUDED CONTINUED)

(viii) Radio interference suppression equipment, except so far as it affects safety of the electrical installation

(ix) Lightning protection systems for buildings and structures covered by BS EN 62305

(x) Those aspects of lift installations covered by relevant parts of BS 5655 and BS EN 81 and those aspects of escalator or moving walk installations covered by relevant parts of BS 5656 and BS EN 115

(xi) Electrical equipment of machines covered by BS EN 60204

(xii) Electric fences covered by BS EN 60335-2-76

(xiii) The DC side of cathodic protection systems complying with the relevant part(s) of BS EN ISO 12696,BS EN 12954, BS EN ISO 13174, BS EN 13636 and BS EN 14505.

PART 2 - DEFINITIONS

- Competent Person has been deleted (Am3)
  - “A person who possesses sufficient technical knowledge, relevant practical skills and experience for the nature of the electrical work undertaken and is able at all times to prevent danger and, where appropriate, injury to him/herself and others.”

- Instructed Person (electrically) has been amended (Am3)
  - “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.”

PART 2 - DEFINITIONS

- Skilled Person (electrically) has been amended (Am3)
  - “Person who possesses, as appropriate to the nature of the electrical work to be undertaken, adequate education, training and practical skills, and who is able to perceive risks and avoid hazards which electricity can create.”

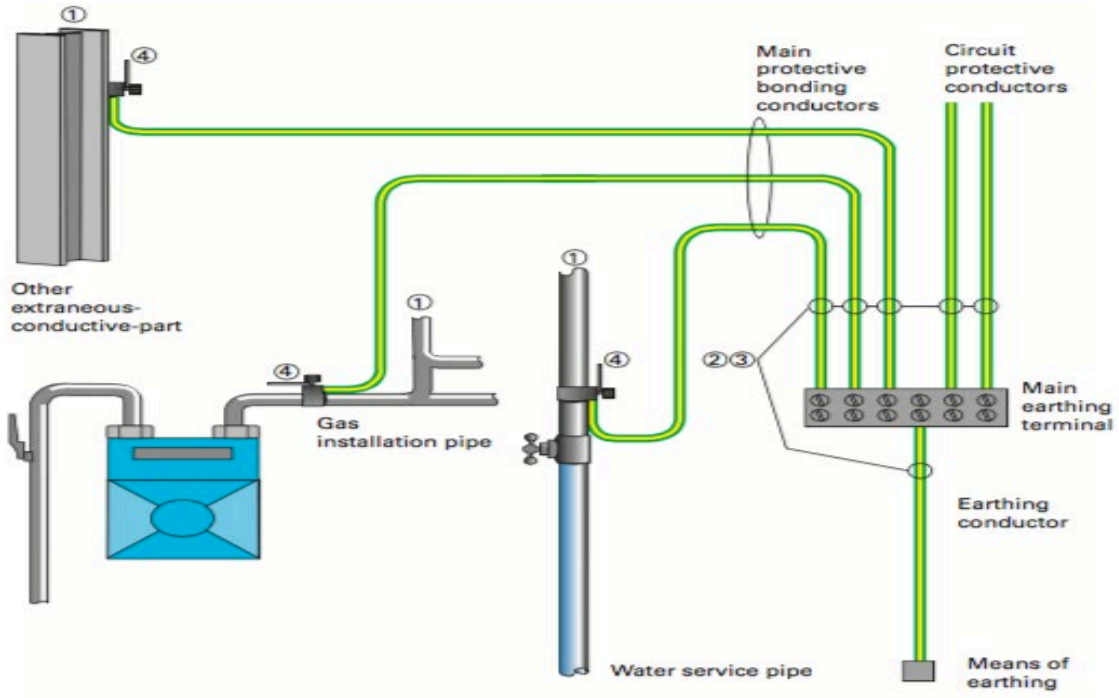
- Ordinary Person – no change
  - “Person who is neither a skilled person nor an instructed person.”

CHAPTER 41 – PROTECTION AGAINST ELECTRIC SHOCK

Protective equipotential bonding

Protective equipotential bonding now states that: “metallic pipes entering the building having an insulating section at their point of entry need not be connected to the protective equipotential bonding.”

Reduction in installation work and testing as these connections are no longer required.



An example of main equipotential bonding

CHAPTER 41 – PROTECTION AGAINST ELECTRIC SHOCK

Automatic disconnection in case of a fault

Regulation **411.3.2.2** previously stated that 230V AC final circuits with a rating not exceeding 32 A must disconnect within **0.4s.** This will now be increased to **63 A** (provided the circuit contains one or more socket outlets) and **32 A** where the circuit supplies only fixed connected current equipment.

Final circuits rated up to **63 Amps** will now have to disconnect in **0.4 seconds** instead of the previous **5 seconds.**

CHAPTER 41 – PROTECTION AGAINST ELECTRIC SHOCK

Additional requirements for socket-outlets and for the supply of mobile equipment for use outdoors

Regulation 411.3.3 will now be referred to as **Additional Requirements** and not **Additional Protection** as previously recorded

There is now a requirement that, in AC systems, all socket-outlets with a current rating not exceeding **32 A (previously 20 A),** and **mobile equipment** with a rating not exceeding 32 A **for use outdoors**, must be provided with additional protection by means of an RCD, with a rated residual operating current not exceeding 30 mA.

CHAPTER 41 – PROTECTION AGAINST ELECTRIC SHOCK

Regulation 411.3.3 (continued)

Additional requirements for socket-outlets and for the supply of mobile equipment for use outdoors

The exemption referring to the omission of Additional Protection by the use of an RCD where socket-outlets have been specifically labelled, states that RCD protection is not necessary, has now been deleted.

The increase in the maximum rating for the sockets system from 20A to 32 A, An Exception is permitted where A Risk Assessment is performed, this should involve an appropriately electrically skilled person, labelling of the socket outlet has been removed.

PART 5 – SELECTION & ERECTION OF EQUIPMENT

514.12.2 – The RCD notice now needs to be fixed in a prominent position at or near each RCD in the installation. Furthermore, the wording has changed to reflect six-monthly testing of the device.

> This installation, or part of it, is protected by a device which automatically switches off the supply if an earth fault develops. Test six-monthly by pressing the button marked 'T' or 'Test'. The device should switch off the supply and should then be switched on to restore the supply. If the device does not switch off the supply when the button is pressed, seek expert advice.

CHAPTER 41 – PROTECTION AGAINST ELECTRIC SHOCK

Additional requirements for circuits with luminaires

A new regulation (411.3.4) requires all AC final circuits supplying luminaires within domestic premises to be provided with Additional Protection by means of an RCD with a rating not exceeding 30 mA.

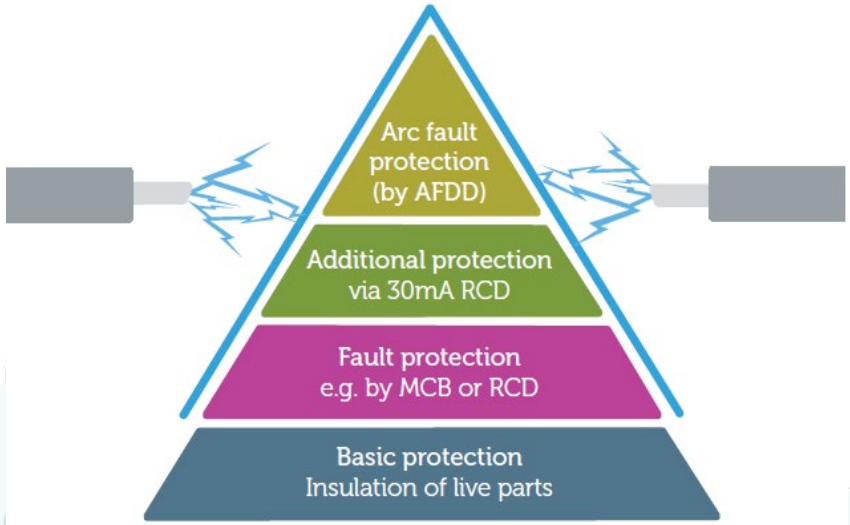
Increased cost as all lighting circuits within domestic properties will need to be RCD protected.

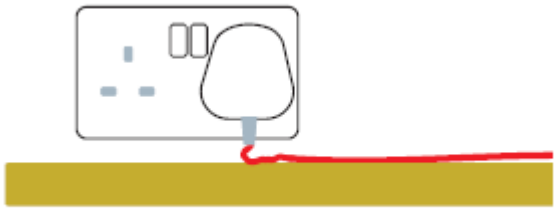
This may lead to nuisance tripping if the luminaires have incandescent lamps installed and an earth fault occurs

CHAPTER 42 – PROTECTION AGAINST THERMAL EFFECTS

Regulation 421.1.7 has been introduced recommending the installation of arc fault detection devices (AFDD) in AC final circuits to mitigate the risk of fire in final circuits of a fixed installation due to the effect of arc fault currents.

An AFDD unit will take-up more space and therefore a bigger or additional enclosure **MAY** be required to be installed.





CHAPTER 42 – PROTECTION AGAINST THERMAL EFFECTS CONTINUED

Examples of where such devices can be used include:

- Premises with sleeping accommodation
- Locations with a risk of fire due to the nature of materials
- Woodworking shops, stores of combustible materials
- Locations with combustible constructional materials
- Fire propagating structures, i.e. CB2 locations
- Locations with endangering of irreplaceable goods

CHAPTER 44 – PROTECTION AGAINST VOLTAGE DISTURBANCE AND ELECTROMAGNETIC DISTURBANCES

Protection against transient overvoltage of atmospheric origin or due to switching

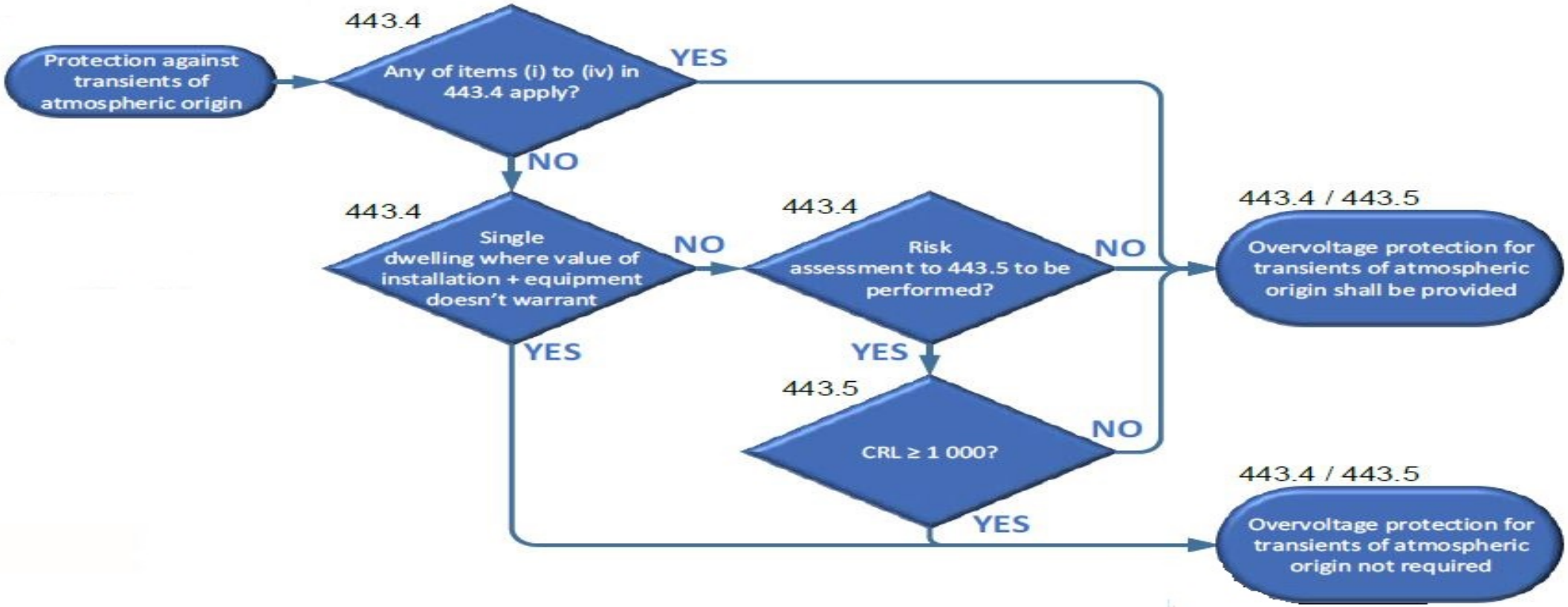
Section 443

The AQ criteria (conditions of external influence for lightning) for determining if protection against transient overvoltage's is needed are no longer included in BS 7671.

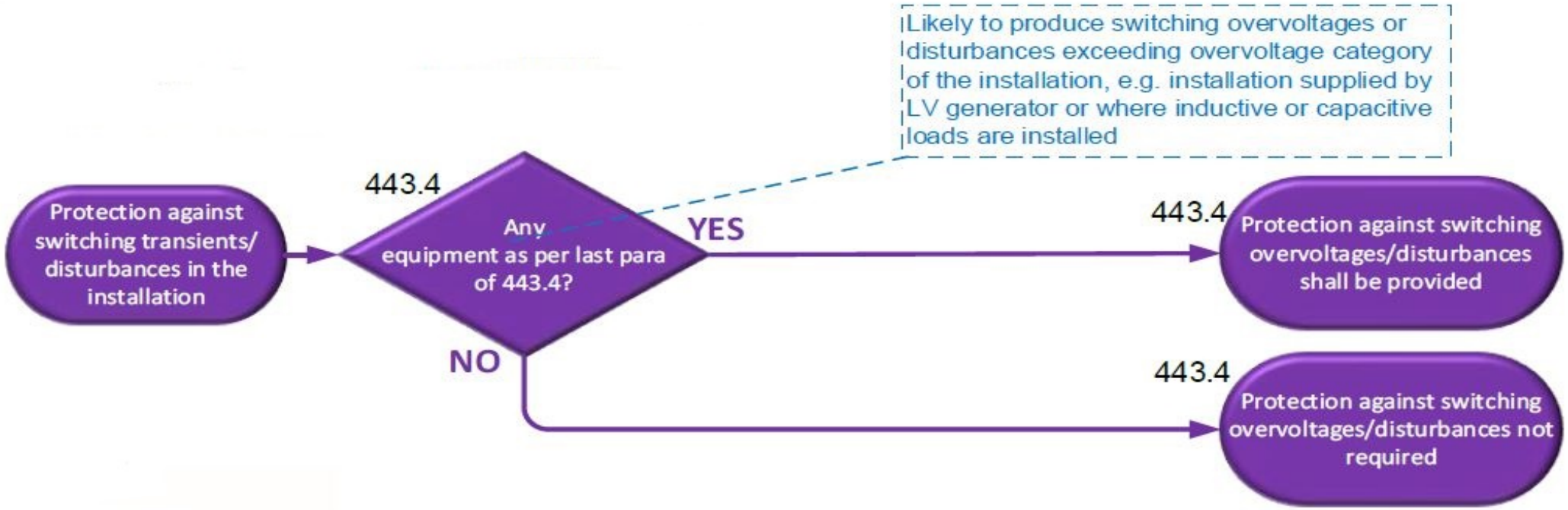
Instead, protection against transient overvoltage has to be provided where the consequence caused by overvoltage affects human life, public services and cultural heritage, and commercial or industrial activity.

443.5 now states Risk assessments will be needed to determine if protection against transient overvoltage is required.

DO I NEED SURGE PROTECTION DEVICES FOR LIGHTNING?



DO I NEED SURGE PROTECTION DEVICES FOR SWITCHING AND SIMILAR TRANSIENTS?



SECTION 534 - DEVICES FOR PROTECTION AGAINST OVERVOLTAGE

Devices for protection against overvoltage

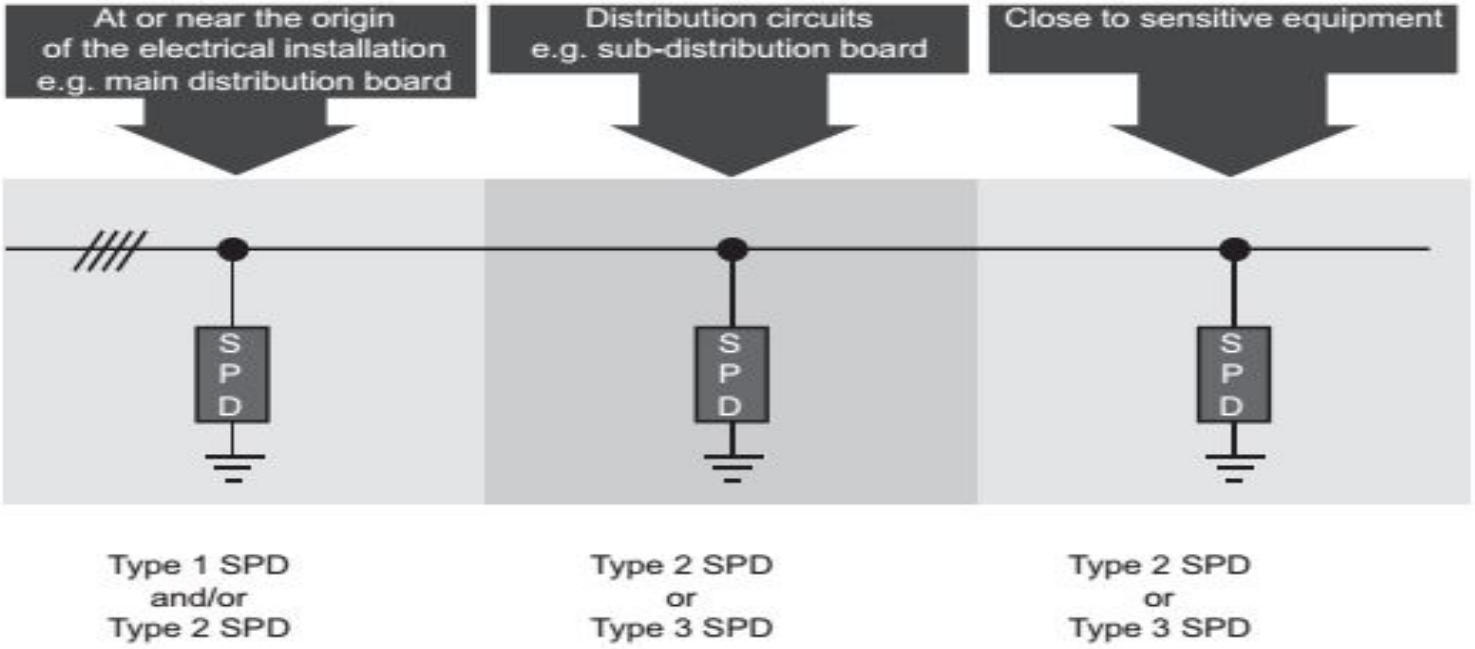
This Section focuses mainly on the requirements for the selection and erection of Surge Protection Devices (SPDs) for protection against transient overvoltage's where required by Section 443, the BS EN 62305 series, or as otherwise stated.

Section 534 has been completely revised. The most significant technical change refers to the selection requirements for the voltage protection level.

SECTION 534 - DEVICES FOR PROTECTION AGAINST OVERVOLTAGE

534.4.1 – Type & Location of SPDs

Fig 534.2 – Example of installation of Type 1, Type 2 and Type 3 SPDs



WIRING IN ESCAPE ROUTES

Cable and trunking entanglement is a serious hazard when fighting fires and has caused 8 Firefighter deaths to date:

- 2005: 2 Firefighter deaths in Stevenage – the Coroner stated that cabling & trunking contributed to the deaths (Rule 43)
- 2007: 4 Firefighter deaths in Warwickshire – “trunking was a factor”
- 2009: 2 Firefighter deaths in Southampton – Coroner reiterates Rule 43 from 2005

CHAPTER 52- SELECTION AND ERECTION OF WIRING SYSTEMS

Installation of cables

Regulation **521.10.202**. will replace 521.11.201

The requirement now is that wiring systems should be supported so that they will not be subject to premature collapse in the event of a fire. This requirement now applies to the **whole of the installation** not just the escape routes.

An additional note has been included recommending the use of steel or copper clips, saddles or ties that will meet the requirements of this regulation.

No change for PHS compliance with regard to how this is reported on an EICR

PART 6 : INSPECTION AND TESTING

Part 6 has been completely restructured including renumbering to align with the CENELEC standard.

Location	Title	What happened?
CHAPTER 61	NOT USED	Content moved to Section 641
CHAPTER 62	NOT USED	Content moved to Chapter 65
CHAPTER 63	NOT USED	Content moved to Section 644
CHAPTER 64	INITIAL VERIFICATION	Was Chapter 61
Section 641	GENERAL	Was Section 610
Section 642	INSPECTION	Was Section 611
Section 643	TESTING	Was Section 612
Section 644	CERTIFICATION FOR INITIAL VERIFICATION	Was Section 632
CHAPTER 65	PERIODIC INSPECTION AND TESTING	Was Chapter 62
Section 651	GENERAL	Was Section 621
Section 652	FREQUENCY OF PERIODIC INSPECTION AND TESTING	Was Section 622
Section 653	REPORTING FOR PERIODIC INSPECTION AND TESTING	Was Chapter 63

PART 7 SPECIAL LOCATIONS

701 Locations containing a bath or shower
702 Swimming pools and other basins
703 Rooms and cabins containing sauna heaters
704 Construction and demolition site installations (A number of small changes)
705 Agricultural and horticultural premises
706 Conducting locations with restricted movement
708 Electrical installations in caravan/camping parks and similar locations (A number of changes)
709 Marinas and similar locations
710 Medical locations (A number of small changes)
711 Exhibitions, shows and stands

PART 7 SPECIAL LOCATIONS

712 Solar photovoltaic (PV) power supply systems
714 Outdoor lighting installations
715 Extra-low voltage lighting installations (Minor changes)
717 Mobile or transportable units
721 Electrical installations in caravans and motor caravans (A number of changes)
722 Electric vehicle charging installations (This contains significant changes)
729 Operating and maintenance gangways
730 Onshore units of electrical shore connections for inland navigation vessels (New section)
740 Temporary electrical installations for structures
753 Heating cables and embedded heating systems (Completely revised)

PART 7 : ELECTRIC VEHICLE CHARGING INSTALLATIONS

Section 722

- This section contains significant changes to Regulation 722.411.4.1 concerning the use of a PME supply.
- The exception concerning reasonably practicable has been deleted.
- Changes have also been made to requirements for external influences, RCDs, socket outlets and connectors.

SECTION 730 – ONSHORE UNITS OF ELECTRICAL SHORE CONNECTIONS FOR INLAND NAVIGATION VESSELS

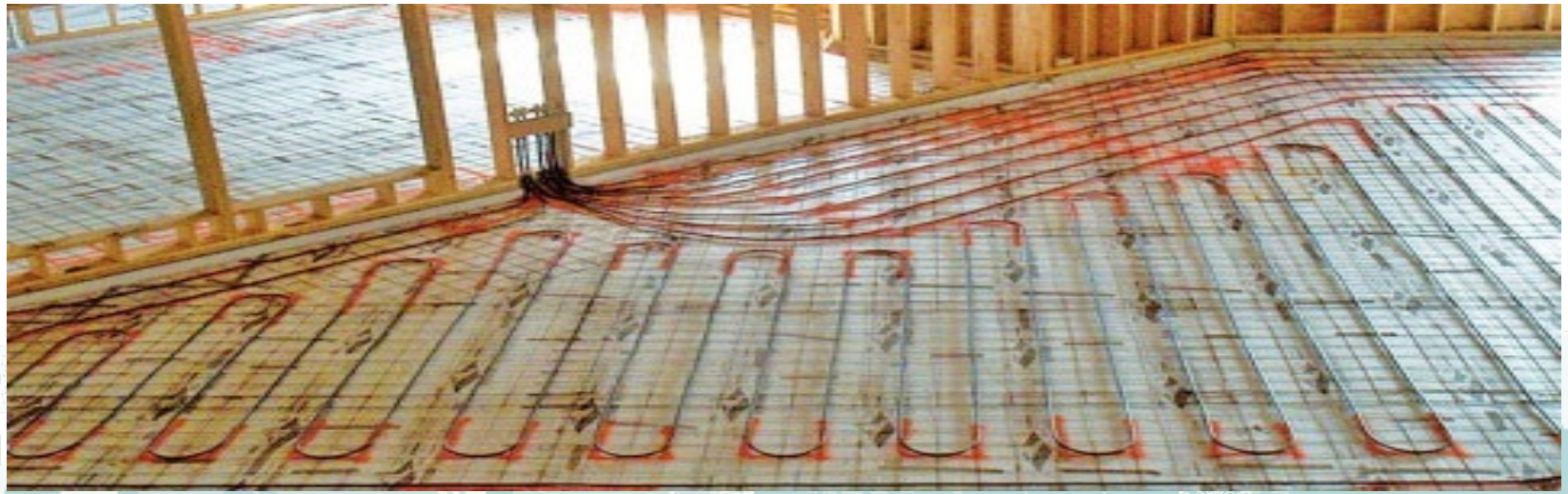
730.1 - The particular requirements of this section apply to onshore installations dedicated to the supply of inland navigation vessels for commercial and administrative purposes, berthed in ports and berths.

New section (18th).
There are many similarities with Section 709 Marinas however, there are differences because of the lower power rating of vessels.

SECTION 753 – HEATING CABLES & EMBEDDED HEATING SYSTEMS

753.1 - This section applies to embedded electric heating systems for surface heating. It also applies to electric heating systems for de-icing, frost prevention and similar applications. Both indoor and outdoor systems are covered.

Heating systems for industrial and commercial applications complying with relevant parts of BS EN 60519, BS EN 62395 and BS EN 60079 are not covered.
Time-delayed RCDs are no longer to be used (753.415.1)



APPENDIX 6 - MODEL FORMS ELECTRICAL INSTALLATION CERTIFICATE

ELECTRICAL INSTALLATION CERTIFICATE

(REQUIREMENTS FOR ELECTRICAL INSTALLATIONS - BS 7671 [IET WIRING REGULATIONS])

Main Switch / Switch-Fuse / Circuit-Breaker / RCD		
Location	Current rating ..... A	**If RCD main switch**
.....	Fuse / device rating or setting ..... A	Rated residual operating current ($I_{\Delta n}$) .....mA
BS(EN)	Voltage rating V	Rated time delay .....ms
No of poles		Measured operating time .....ms

Main Switch / Switch-Fuse / Circuit-Breaker / RCD		
Location	Current rating ..... A	**If RCD main switch**
.....	Fuse / device rating or setting ..... A	Rated residual operating current ($I_{\Delta n}$) .....mA
BS(EN)	Voltage rating V	Rated time delay .....ms
No of poles		Measured operating time (at $I_{\Delta n}$) .....ms

BS 7671:2008+A3:2015

APPENDIX 6 - MODEL FORMS MINOR WORKS CERTIFICATE

MINOR ELECTRICAL INSTALLATION WORKS CERTIFICATE

(REQUIREMENTS FOR ELECTRICAL INSTALLATIONS - BS 7671 [IET WIRING REGULATIONS])

To be used only for minor electrical work which does not include the provision of a new circuit

PART 4: Test results for the circuit altered or extended (where relevant and practicable)

Protective conductor continuity: $R_1 + R_2$ ..... Ω or R_2 ..... Ω

Continuity of ring final circuit conductors: L/L ..... Ω N/N ..... Ω cpc/cpc ..... Ω

Insulation resistance: Live - Live ..... MΩ Live - Earth ..... MΩ

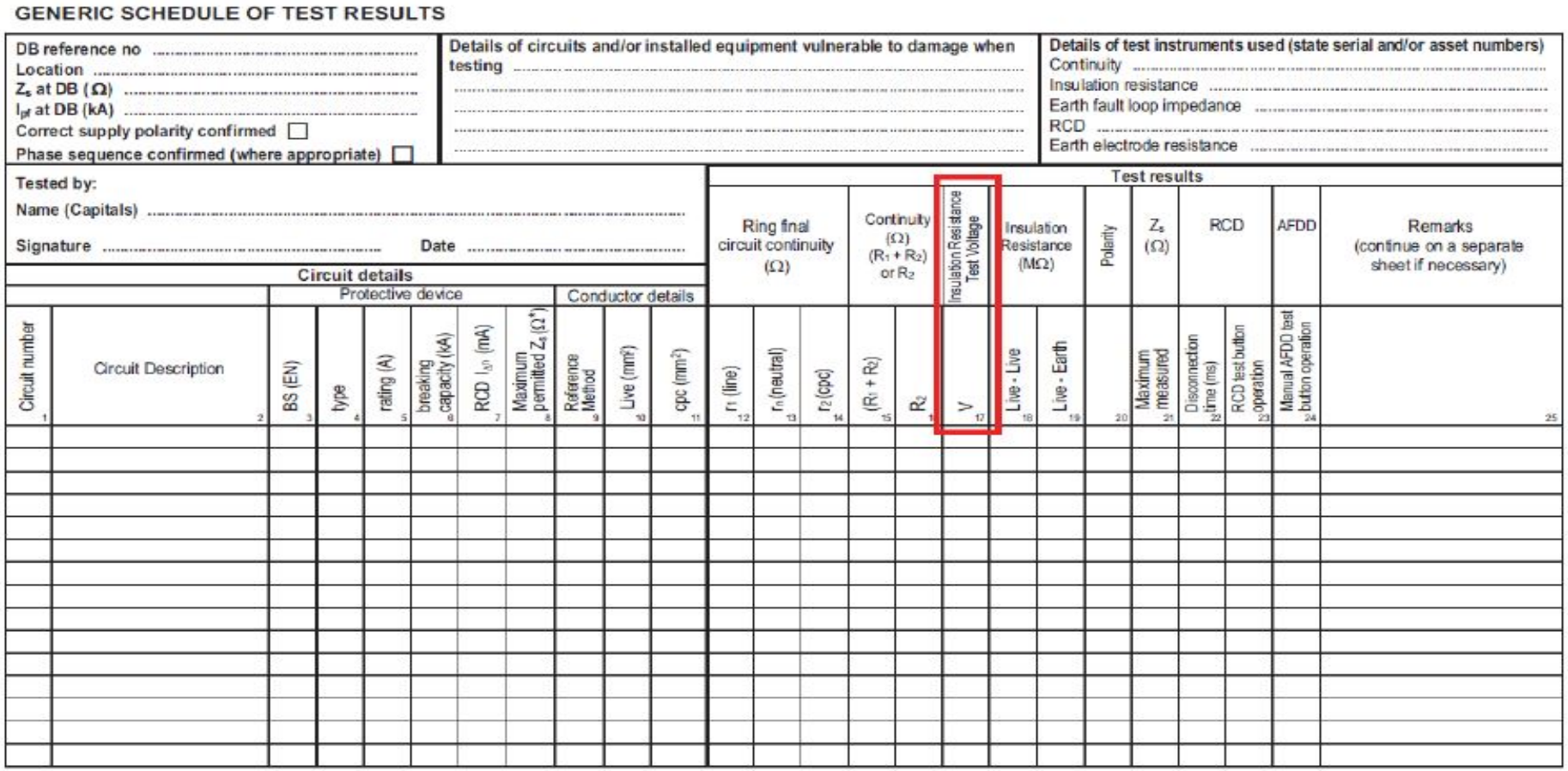
Polarity satisfactory: ☐ Maximum measured earth fault loop impedance: Z_s ..... Ω

RCD operation: Rated residual operating current ($I_{\Delta n}$) ..... mA

Disconnection time ..... ms

Satisfactory test button operation ☐

APPENDIX 6 - MODEL FORMS



GENERIC SCHEDULE OF TEST RESULTS

DB reference no .....
Location .....
Z_s at DB (Ω) .....
I_{pf} at DB (kA) .....
Correct supply polarity confirmed ☐
Phase sequence confirmed (where appropriate) ☐

Details of circuits and/or installed equipment vulnerable to damage when testing .....

Details of test instruments used (state serial and/or asset numbers)
Continuity .....
Insulation resistance .....
Earth fault loop impedance .....
RCD .....
Earth electrode resistance .....

Tested by:
Name (Capitals) .....
Signature ..... Date .....

Circuit details											Test results													
		Protective device						Conductor details			Ring final circuit continuity (Ω)			Continuity (Ω) ($R_1 + R_2$) or R_2		Insulation Resistance Test Voltage	Insulation Resistance (MΩ)		Polarity	Z_s (Ω)	RCD		AFDD	Remarks (continue on a separate sheet if necessary)
Circuit number 1	Circuit Description 2	BS (EN) 3	type 4	rating (A) 5	breaking capacity (kA) 6	RCD $I_{\Delta n}$ (mA) 7	Maximum permitted Z_s (Ω*) 8	Reference Method 9	Live (mm²) 10	cpc (mm²) 11	r_1 (line) 12	r_n (neutral) 13	r_2 (cpc) 14	($R_1 + R_2$) 15	R_2 16	V 17	Live - Live 18	Live - Earth 19	20	Maximum measured 21	Disconnection time (ms) 22	RCD test button operation 23	Manual AFDD test button operation 24	25

APPENDIX 6 - MODEL FORMS

GENERIC SCHEDULE OF TEST RESULTS

DB reference no .....
Location .....
Z_s at DB (Ω) .....
I_{pf} at DB (kA) .....
Correct supply polarity confirmed ☐
Phase sequence confirmed (where appropriate) ☐

Details of circuits and/or installed equipment vulnerable to damage when testing .....

Details of test instruments used (state serial and/or asset numbers)
Continuity .....
Insulation resistance .....
Earth fault loop impedance .....
RCD .....
Earth electrode resistance .....

Tested by:
Name (Capitals) .....
Signature ..... Date .....

Circuit details											Test results														
		Protective device						Conductor details			Ring final circuit continuity (Ω)			Continuity (Ω) ($R_1 + R_2$) or R_2		Insulation Resistance Test Voltage	Insulation Resistance (MΩ)		Polarity	Z_s (Ω)	RCD		AFDD	Remarks (continue on a separate sheet if necessary)
Circuit number 1	Circuit Description 2	BS (EN) 3	type 4	rating (A) 5	breaking capacity (kA) 6	RCD $I_{\Delta n}$ (mA) 7	Maximum permitted Z_s (Ω*) 8	Reference Method 9	Live (mm²) 10	cpc (mm²) 11	r_1 (line) 12	r_n (neutral) 13	r_2 (cpc) 14	($R_1 + R_2$) 15	R_2 16	V 17	Live - Live 18	Live - Earth 19	20	Maximum measured 21	Disconnection time (ms) 22	RCD test button operation 23	Manual AFDD test button operation 24	25

CHANGES TO OTHER APPENDICES

The following changes have been made within the appendices:

Appendix 1 British Standards to which reference is made in the Regulations includes minor changes.

Appendix 3 Time/current characteristics of overcurrent protective devices and RCDs
The contents of Appendix 14 concerning earth fault loop impedance have been moved into Appendix 3.

Appendix 7 (informative) Harmonized cable core colours
This Appendix includes only minor changes.

CHANGES TO OTHER APPENDICES (CONTINUED)

The follow main changes have been made within the appendices:

Appendix 8 Current carrying capacity and voltage drop
This Appendix includes changes regarding rating factors for current-carrying capacity.

Appendix 14 Determination of prospective fault current
The contents of Appendix 14 concerning earth fault loop impedance have been moved into Appendix 3. Appendix 14 now contains information on determination of prospective fault current.

Appendix 17
The new part 8 energy efficiency.

PART 8-ENERGY EFFICIENCY?

Any Questions

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