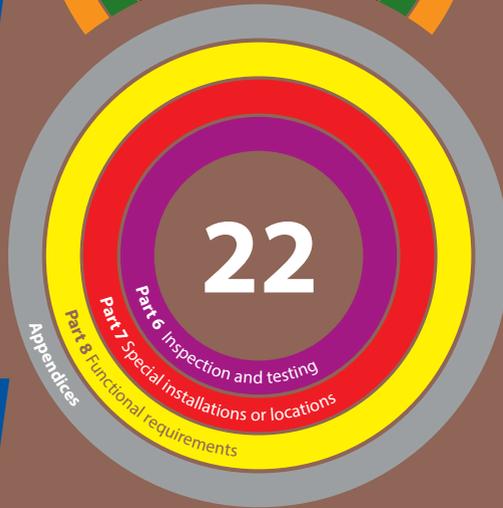


# BS 7671:2018+A2:2022 **FACTSHEET**



# Amendment 2

## BS 7671:2018+A2:2022 18th Edition

BS 7671:2018+A2:2022 Requirements for Electrical Installations was issued on 28th March 2022 and may be implemented immediately. BS 7671:2018+A1:2020 remains current and will be withdrawn on 27th September 2022.

This factsheet will give some of the main changes in BS 7671:2018+A2:2022.

### Overall

There has been a raft of changes that will have an effect on the requirements for Electrical Installations.

### New Part 8

The introduction of a Part 8 which covers Functional Requirements and brings in Chapter 82 Prosumer's low-voltage electrical installations.



## Part 1 Scope, Object and Fundamental principles

There have only been minor changes to the content in Part 1 with the introduction of prosumers electrical installations and including the terms for fibre optic cables.

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## Part 2: Definitions: New item and significant changes

### Arc fault detection device (AFDD):

*Device intended to mitigate the effects of arcing faults by disconnecting the circuit when an arc fault is detected.*  
Due to the mandating of AFDDs for some installation types, there is now a requirement to define AFDDs.

### Producer (of electricity):

*Party generating electrical energy.*

### Prosumer:

*Entity or party which can be both a producer and a consumer of electrical energy.*

### Prosumer's Electrical Installations (PEIs):

*Low voltage electrical installations connected or not to a public distribution network.*

Lots of new definitions have been added as a result of the new Part 8 concerning prosumers electrical installations.

### Protected escape route:

*A route enclosed with specified fire-resisting construction designated for escape to a place of safety in the event of an emergency.*  
Section 422 Precautions where particular risks of fire exist has been significantly updated to include further requirements for fire protection and introduces protected escape routes.

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## Part 4: Protection for safety

### Regulation 411.3.1.2 Protective equipotential bonding

The change to this Regulation now removes the confusion about an insulating section and states clearly if an insulated service pipe enters the building it does not require bonding.

It also reinforces the need to bond any extraneous-conductive-part within a consumers building to be bonded to the main earth terminal.

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### Regulation 411.3.3 Additional requirements for socket-outlets and for the supply of mobile equipment for use outdoors

There has been a major redrafting of Regulation 411.3.3 where new terminology highlighting the capability of persons has been introduced. These capabilities are explained in Appendix 5/Utilization:

BA1: Ordinary

BA2: Children

BA3: Disabled

There are now three bullet points where RCDs are required:

- (i)  $\leq 32$  A Socket-outlets BA1, BA2 and BA3 capability of persons use the area
- (ii)  $\leq 32$  A Socket-outlets for other locations
- (iii) for mobile equipment  $\leq 32$  A

Although under the DPC the Risk Assessment was to be removed, this has now been retained for bullet (ii) where a suitably documented risk assessment determines that RCD protection is not necessary.

**Regulation 411.4.2** which fall under the requirements for TN Systems where a recommendation to install an additional connection to Earth via an earth electrode.

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## Chapter 42 Protection against thermal effects

There has been several revisions to the regulations under this section.

### Regulation 421.1.7 Arc fault detection devices (AFDDs)

It is now a requirement, not a recommendation, to install arc fault detection devices to protect single-phase AC final circuits supplying  $\leq 32$  A Socket-outlets in the following areas:

- Higher Risk Residential Buildings
- Houses of Multiple Occupation
- Purpose-built student accommodation
- Care Homes

For all other premises, the Regulation remains a recommendation.

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## 422 PRECAUTIONS WHERE PARTICULAR RISKS OF FIRE EXIST

### Regulation 422.1

There have been several changes within this section including now the reference to the fire safety design of a building and the requirement to record for particular instances and locations where the risk of fire exists. It refers to the fire safety manual and the person responsible for the building and list BS 9999 as an example.

It introduces the recommendation for the electrical installer/designer to provide the person responsible for the building details of the design and maintenance requirements with respect to fire safety.

### Regulation 422.2

This Regulation now has a change of title where the term Protected Escape Route is now in use, the previous references to BD 2, BD3 and BD4 have been deleted although the conditions that they referred remain in Appendix 5 under the list of external influences.

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## Chapter 44 Protection against voltage disturbances and electromagnetic disturbances

**Regulation 443.4** has been now split with two Regulations covering the redrafted wording.

**Regulation 443.4.1** covers transient overvoltages from indirect lightning strokes with the mandatory requirement for protection for the following instances where there can be:

- (i) serious injury to, or loss of, human life
- (ii) failure of a safety service, as defined in Part 2
- (iii) significant financial or data loss.

Then for all other situations they shall be provided unless the owner of the installation accepts the damage and consequential loss.

**Regulation 443.4.2** covers transient overvoltages caused by equipment and has the means of protection to be considered if the equipment is likely to exceed the levels listed in table 443.2.

**Regulation 443.5** which covered the risk assessment and calculated risks level (CRL), fig 44.2 the flash density map, table 443.1 environment table and fig 44.3 which explained the cable lengths of Lp have all been deleted. Annexe A443 which had provided examples of the CRL Calculations has also been deleted.

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## Part 5: Selection and Erection

### Chapter 51 Common Rules

Within Section 514 Identification and notices there have been several changes which will have an effect on the provision of labels and notices for electrical installations.

**With Regulation 514.4.2** Protective conductors there has been a subtle change where the addition of conductors in multicore cables that are identified as green/yellow throughout its length shall not be overmarked therefore plugging the gap where these conductors have been used for other purposes.

**Regulation 514.9** Diagrams and documentation has been revised with the introduction in several Regulations 514.9.1, 514.12.1, 514.12.2 & 514.16, of an exemption for domestic and similar where the information is part of the certification or report.

**A New Regulation 514.9.2** details the references to the BS, BS EN and BS ISO standards which detail the requirements for diagrams, charts and notices.

The images and examples of the labels and notices have been removed from 514 and are now shown in Appendix 11

**Regulation 514.16.1** for non-standard colours has been removed and is no longer required to be fitted.

Regulation 514.9.16.1 brings in a requirement for SPD labels at the relevant distribution boards but also includes the exemption previously mentioned about domestic.

**Regulation 531.3.3** Removes Type AC RCDs from being listed as general purpose use RCDs and states that RCD Type AC shall only be used to serve fixed equipment, where it is known that the load current contains no DC components.

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### Chapter 64 Initial Verification

Within Chapter 64 and Regulation group 643.3 there are changes to the requirements for insulation resistance testing where there is more emphasis on the testing of the cables in accordance with Table 64 prior to the connection of any equipment likely to influence the reading. Then following the connection a further test at 250 V DC shall be carried out between live conductors and earth and a minimum test value of 1 M $\Omega$  applies.

There are changes to the requirements for testing RCDs where the test shall be at the rated residual operating current I $\Delta$ n and the introduction of Notes stating the maximum ms tripping times for general, time delay and for additional protection provisions.

**Regulation 644.3 and 653.2** have now split the certificate and reports means of documenting the circuit and test information where there are now a schedule of circuit details and a schedule of test results.

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## Part 7 Special Installations or Locations

**Section 701** The 3 m distance for positioning of socket-outlets from the boundary of zone 1 has been decreased to 2.5 m horizontally. Minor changes regarding the restrictions of the type of SELV and PELV supplies.

**Sections 702 and 703** Minor changes regarding the restrictions of the type of SELV and PELV supplies.

**Section 704** Construction Sites has changes to plug type and socket-outlet types and also introduces revised isolation requirements. New text added for PME earthing considerations, warning that protective bonding of all extraneous-conductive-parts is very difficult to achieve and maintain throughout the life of the installation.

**Section 710** Medial Locations has several revised and new requirements including two new Health Technical Memorandum reference documents. Minor changes regarding the restrictions of the type of SELV and PELV supplies.

**Section 711** Exhibitions, Show and Stands.

Requirements for additional protection for all socket-outlets, handheld equipment and lighting circuits. Protection by either 30 mA RCD, Electrical separation, SELV or PELV.

**Section 712 Solar PV**

This section has been subject to a major redrafting, including a new requirement for SPDs, where protection against transient overvoltage is required by Section 443, such protection shall also be applied to the DC side of the PV installation.

**Section 722 Electric Vehicles**

This Section now includes the extensive modifications made in 2020 Amendment 1. Further changes see Indent (i) of Regulation 722.411.4.1 deleted, reducing installation options for PME earthing systems.

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## Part 8 Functional Requirements

This is a new Part to BS 7671 and includes one Chapter.

Chapter 82 Prosumer's low voltage electrical installations

As a brand new chapter, this contains requirements and considerations for those producing their own electrical energy and introduces the term 'Prosumer'. This will provide the information for those involved in this activity to safely deliver the electrical energy to current-using equipment either from the public network or from other local sources.

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### Appendix 6 has undergone some major changes.

Electrical Installation Certificate has integrated the inspection schedule into the EIC instead of being a separate document.

The inspection schedule has now 14 items to be checked to ensure the outcome is correct. The previous inspection schedule examples and checklist have been retained as a reminder of the extent of the installation that requires verification.

Within all of the forms the notes, guidance for recipients have been revised and new items have been added taking into account the changes in 514.

The MEIWC has had some additional information to include all the details for the range of devices.

Inspection schedules have had changes to the requirements for checking the intake equipment where it is for noting and providing the information to the person ordering the work and not be classified with a code unless it is a C1.

The test schedule has now been split into two schedules, one for Circuit Details and one for Test Results

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**Appendix 11** previous not used has now been renamed Appendix 11 Warning and user instruction labels.

With the changes to 514, appendix 11 now provides information on the that such notices should contain.

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**Appendix 13** The previous content of Appendix 13 concerning methods for measuring the insulation resistance/impedance of floors and walls to Earth has been removed and replaced by guidance on escape routes and fire protection.

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## Conclusion

These are some of the main changes in the Amendment 2 for the 18th Edition of the Wiring Regulations, there are numerous other changes with varying degrees of importance.