BRITISH STANDARD

BS 7671:2018

Amendment 3:2024

Requirements for Electrical Installations

IET Wiring Regulations
Eighteenth Edition

The Institution of Engineering and Technology

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The Institution of Engineering and Technology is registered as a Charity in England & Wales (no. 211014) and Scotland (no. SC038698).

The Institution of Engineering and Technology is the institution formed in 2006 by the joining together of the IEE (the Institution of Electrical Engineers) and the IIE (the Institution of Incorporated Engineers).

British Standards Institution is the independent national body responsible for preparing British Standards. It presents the UK view on standards in Europe and at the international level. It is incorporated by Royal Charter.

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The UK participation in its preparation was entrusted to Joint Technical Committee JPEL/64 Electrical Installations. A list of organizations represented on this committee can be obtained on request to its Committee Manager.

It is the constant aim of The Institution of Engineering and Technology and BSI to improve the quality of their products and services. We should be grateful if anyone finding an inaccuracy or ambiguity while using this British Standard would inform the Committee Manager, M Coles {mcoles@theiet.org}, The Institution of Engineering and Technology, Futures Place, Kings way, Stevenage, SG1 2UA, United Kingdom.

IET Technical Regulations staff

as at July 2024

JPEL/64	Joint IET/BSI Technical Committee Electrical Installations	M Coles BEng(Hons) MIET
JPEL/A/64	Verification	M Peace CEng MIET MCIBSE
JPEL/B/64	Thermal Effects	Eur Ing L D Markwell MSc BSc(Hons) CEng MIET MCIBSE LCGI
JPEL/C/64	Shock Protection	S G Devine IEng MIET
JPEL/D/64	External Influences	C O'Neill BEng(Hons) MIET
Associate Committee Manager		G D Cronshaw CEng FIET

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Proofread by E Bowen

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Foreword

This British Standard is published under the direction of the British Standards Institution and the Institution of Engineering and Technology (IET).

Following a full review, this Standard replaced the 17th Edition of the IEE Wiring Regulations BS 7671:2008 as amended. Copyright is held jointly by the IET and BSI.

Technical authority for this Standard is vested in the Joint IET/BSI Technical Committee JPEL/64. This Joint Technical Committee, which is responsible for the work previously undertaken by the IEE Wiring Regulations Committee and the BSI Technical Committee PEL/64, meets the constitutional and operational requirements of both parent bodies. JPEL/64 has the responsibility for the content of this British Standard under the joint authority of the IET and the BSI Standards Board.

All references in this text to the IET Wiring Regulations or the Regulation(s), where not otherwise specifically identified, shall be taken to refer to BS 7671:2018 Requirements for Electrical Installations, as amended by Amendment 1:2020, Amendment 2:2022 and Amendment 3:2024.

Introduction to Amendment 3:2024

BS 7671:2018+A3:2024 *Requirements for Electrical Installations* was issued on 31st July 2024 and is intended to be implemented immediately.

The Regulations apply to the design, erection and verification of electrical installations, also additions and alterations to existing installations. Existing installations that have been installed in accordance with earlier editions of the Regulations may not comply with this edition in every respect. This does not necessarily mean that they are unsafe for continued use or require upgrading.

This Amendment provides for the inclusion of two new definitions and one new Regulation relating to the use of bidirectional and unidirectional devices.

Editions

The following editions have been published:

FIRST EDITION	Entitled ‘Rules and Regulations for the Prevention of Fire Risks Arising from Electric Lighting’. Issued in 1882.
SECOND EDITION	Issued in 1888.
THIRD EDITION	Entitled ‘General Rules recommended for Wiring for the Supply of Electrical Energy’. Issued in 1897.
FOURTH EDITION	Issued in 1903.
FIFTH EDITION	Entitled ‘Wiring Rules’. Issued in 1907.
SIXTH EDITION	Issued in 1911.
SEVENTH EDITION	Issued in 1916.
EIGHTH EDITION	Entitled ‘Regulations for the Electrical Equipment of Buildings’. Issued in 1924.
NINTH EDITION	Issued in 1927.
TENTH EDITION	Issued in 1934.
ELEVENTH EDITION	Issued in 1939. Revised, issued in 1943. Reprinted with minor Amendments, 1945. Supplement issued, 1946. Revised Section 8 issued, 1948.
TWELFTH EDITION	Issued in 1950. Supplement issued, 1954.
THIRTEENTH EDITION	Issued in 1955. Reprinted 1958, 1961, 1962 and 1964.
FOURTEENTH EDITION	Issued in 1966. Reprinted incorporating Amendments, 1968. Reprinted incorporating Amendments, 1969. Supplement on use in metric terms issued, 1969. Amendments issued, 1970. Reprinted in metric units incorporating Amendments, 1970. Reprinted 1972. Reprinted 1973. Amendments issued, 1974. Reprinted incorporating Amendments, 1974. Amendments issued, 1976. Reprinted incorporating Amendments, 1976.
FIFTEENTH EDITION	Entitled ‘Regulations for Electrical Installations’. Issued in 1981. (Red Cover) Amendments issued, 1 January 1983. Reprinted incorporating Amendments, 1983. (Green Cover) Amendments issued, 1 May 1984. Reprinted incorporating Amendments, 1984. (Yellow Cover) Amendments issued, 1 January 1985. Amendments issued, 1 January 1986. Reprinted incorporating Amendments, 1986. (Blue Cover) Amendments issued, 12 June 1987. Reprinted incorporating Amendments, 1987. (Brown Cover) Reprinted with minor corrections, 1988. (Brown Cover)
SIXTEENTH EDITION	Issued in 1991. (Red Cover) Reprinted with minor corrections, 1992. (Red Cover) Entitled and reprinted as ‘Requirements for Electrical Installations BS 7671:1992'. (Red Cover) Amendment No 1 issued, December 1994. Reprinted incorporating Amendment No 1, 1994. (Green Cover) Amendment No 2 issued, December 1997. Reprinted incorporating Amendment No 2, 1997. (Yellow Cover) Amendment No 3 issued, April 2000. BS 7671:2001 issued, June 2001. (Blue Cover) Amendment No 1 issued, February 2002. Amendment No 2 issued, March 2004. Reprinted incorporating Amendments 1 and 2, 2004. (Brown Cover)
SEVENTEENTH EDITION	BS 7671:2008 issued, January 2008. (Red Cover) Reprinted incorporating Amendment No 1, 2011. (Green Cover) Amendment 2 issued, Aug 2013. Reprinted incorporating Amendments 2 and 3, 2015. (Yellow Cover)
EIGHTEENTH EDITION	BS 7671:2018 issued, July 2018. (Blue Cover) Amendment 1 issued, February 2020 (electronic) Amendment 2 issued, March 2022. (Brown Cover) Amendment 3 issued, July 2024 (electronic)

Note by the Health and Safety Executive

The Health and Safety Executive (HSE) welcomes the publication of BS 7671:2018, Requirements for Electrical Installations, IET Wiring Regulations 18th Edition and its updating with the third amendment, published in 2024. BS 7671 and the IET/IEE Wiring Regulations have been extensively referred to in HSE guidance over the years. Installations which conform to the standards laid down in BS 7671:2018 including Amendment 2:2022 and Amendment 3:2024 are regarded by HSE as likely to achieve conformity with the relevant parts of the Electricity at Work Regulations 1989. Installations to which BS 7671 is relevant may have been designed and installed in accordance with an earlier edition, now superseded but then current. That, in itself, would not mean that the installation would fail to comply with the Electricity at Work Regulations, 1989.

PART 2

DEFINITIONS

Bidirectional protective device. A protective device where it is intended by the manufacturer that a source of supply is connected to either or both sets of connection terminals.

Unidirectional protective device. A protective device where it is intended by the manufacturer that a source of supply is only connected to one defined set of connection terminals.

CHAPTER 53

PROTECTION, ISOLATION, SWITCHING, CONTROL AND MONITORING

530.3.201 Selection and erection of equipment for protection shall take account of appropriate use of either a unidirectional protective device or a bidirectional protective device.

NOTE: Product standards as listed in Appendix 1 for some protective devices, including RCCBs, RCBOs, circuit-breakers and AFDDs, require these devices to be marked to indicate if they are unidirectional e.g. “in” and “out” or “line” and “load” or arrows.

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Corrigendum to BS 7671:2018+A2:2022

Changes and additions shown in red

Corrigendum to BS 7671:2018+A2:2022

Changes and additions shown in red

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Introduction to Corrigendum May 2023

This Corrigendum contains corrections to BS 7671:2018+A2:2022 and is intended for immediate implementation. For clarification, where appropriate, deleted text has been ruled through and additional text has been underlined. Sufficient existing text has been included to enable users to identify the nature, extent and application of the change to each provision.

Regulation 422.2 has been amended to clarify the scope of the provision.

Indent (ii) of Regulation 443.4.1 has been removed. The term *safety service*, formerly included in Regulation 443.4.1 (ii), encompassed a wide range of systems. The provision, therefore, had unintended consequences for improvements to fire safety systems within installations.

Table 443.2 and the Note to Regulation 534.4.1.1 have been amended to remove examples of equipment.

Regulation 701.1 has been amended to remove the reference to birthing pools.

A new Regulation, 710.422.2.201, has been included in order to modify requirements in Regulation group 422.2 for protected escape routes in healthcare facilities.

Corrigendum to BS 7671:2018+A2:2022

Changes and additions shown in red

SECTION 422

422 PRECAUTIONS WHERE PARTICULAR RISKS OF FIRE EXIST

422.2 Protected escape routes

Cables or other electrical equipment shall not be installed in a firefighting lobby, shaft or staircase of a protected escape route unless part of:

(i) an essential fire safety or related safety system

(ii) general needs lighting

(iii) socket-outlets provided for cleaning or maintenance.

NOTE 1: Guidance is provided in Appendix 13.

NOTE 2: Generally, this means cables in a firefighting lobby, shaft or staircase of a protected escape route should be limited to lighting and associated accessories, emergency lighting and fire detection and alarm systems, although cables for other safety systems may be necessary. Hospitals may have special requirements as detailed in Section 710.

Corrigendum to BS 7671:2018+A2:2022

Changes and additions shown in red

SECTION 443

443 PROTECTION AGAINST TRANSIENT OVERVOLTAGES OF ATMOSPHERIC ORIGIN OR DUE TO SWITCHING

443.4.1 Transient overvoltages due to the effects of indirect lightning strokes

Protection against transient overvoltages shall be provided where the consequence caused by the overvoltage could result in:

(i) serious injury to, or loss of, human life

(ii) ~~failure of a safety service, as defined in Part 2~~ *Deleted by BS 7671:2018+A2:2022, Corrigendum (May 2023)*

(iii) significant financial or data loss.

For all other cases, protection against transient overvoltages shall be provided unless the owner of the installation declares it is not required due to any loss or damage being tolerable and they accept the risk of damage to equipment and any consequential loss.

443.6.2 Rated impulse voltages of equipment and overvoltage categories

Category IV equipment is suitable for use at, or in the proximity of, the origin of the electrical installation, for example, upstream of the main distribution board. Equipment of category IV has a very high impulse withstand capability providing the required high degree of reliability, and shall have a rated impulse voltage not less than the value specified in Table 443.2.

Category III equipment is suitable for use in the fixed installation downstream of and including the main distribution board, providing a high degree of availability, and shall have a rated impulse voltage not less than the value specified in Table 443.2.

Category II equipment is suitable for connection to the fixed installation, providing a degree of availability normally required for current-using equipment, and shall have a rated impulse voltage not less than the value specified in Table 443.2.

Category I equipment is only suitable for use in the fixed installation where SPDs are installed outside the equipment to limit transient overvoltages to the specified level, and shall have a rated impulse voltage not less than the value specified in Table 443.2. Therefore, equipment with a rated impulse voltage corresponding to overvoltage category I should, preferably, not be installed at or near the origin of the installation.

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TABLE 443.2 – Required rated impulse voltage of equipment (U_W)

Nominal voltage of the installation V[a]	Voltage line to neutral derived from nominal voltages AC or DC up to and including V	Required rated impulse voltage of equipment[b] kV			
		Overvoltage category IV (equipment with very high rated impulse voltage)	Overvoltage category III (equipment with high rated impulse voltage)	Overvoltage category II (equipment with normal rated impulse voltage)	Overvoltage category I (equipment with reduced rated impulse voltage)
		For example, energy meter, telecontrol systems	For example, distribution boards, switches socket-outlets	For example, domestic appliances, tools	For example, sensitive electronic equipment ~~such as alarm panels, computers and home electronics~~
120/208	150	4	2.5	1.5	0.8
230/400[c] 277/480	300	6	4	2.5	1.5
400/690	600	8	6	4	2.5
1000	1000	12	8	6	4
1500 DC	1500 DC	-	-	-	-

a According to BS EN 60038.

b This rated impulse voltage is applied between live conductors and PE.

c For IT systems operating at 220-240 V, the 230/400 row should be used, due to the voltage to earth at the earth fault on one line.

Corrigendum to BS 7671:2018+A2:2022

Changes and additions shown in red

SECTION 534

534 DEVICES FOR PROTECTION AGAINST OVERVOLTAGE

534.4.1.1 Where SPDs are required:

(i) SPDs installed at the origin of the electrical installation shall be Type 1 or Type 2

(ii) SPDs installed close to sensitive equipment to further protect against switching transients originating within the building shall be Type 2 or Type 3.

NOTE: Type 1 SPDs are often referred to as equipotential bonding SPDs and are fitted at the origin of the electrical installation to specifically prevent dangerous sparking which could lead to fire or electric shock hazards. In accordance with BS EN 62305-4, a lightning protection system which only employs equipotential bonding SPDs provides no effective protection against failure of sensitive electrical and electronic systems. Further SPDs (Type 2 and Type 3) are required to protect sensitive and critical equipment (for example, hospital equipment ~~and fire/security alarm systems~~) downstream of the origin of the electrical installation.

Corrigendum to BS 7671:2018+A2:2022

Changes and additions shown in red

SECTION 701
LOCATIONS CONTAINING A BATH OR SHOWER

701.1 Scope

The particular requirements of this section apply to the electrical installations in locations containing a fixed bath (bath tub~~, birthing pool~~) or shower and to the surrounding zones as described in these regulations.

This section does not apply to emergency facilities such as emergency showers used in industrial areas or laboratories.

Corrigendum to BS 7671:2018+A2:2022

Changes and additions shown in red

SECTION 710
MEDICAL LOCATIONS

710.422.2.201 Within a healthcare facility, cables or other electrical equipment may be installed in a protected escape route, where:

(i) the healthcare facility complies with Health Technical Memoranda (HTM) and healthcare fire safety guidance, and

(ii) the particulars of the electrical installation within the protected escape route are documented as part of a fire strategy.

NOTE: Specific guidance on fire safety for healthcare premises can be found in relevant Health Technical Memoranda as published by the Department of Health/NHS England. There are equivalent guidance documents in other devolved administrations, e.g. Scotland (SHTM) and Wales (WHTM).