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Requirements for Electrical Installations

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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.

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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.

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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	-	-	-	-
<p>a According to BS EN 60038.</p> <p>b This rated impulse voltage is applied between live conductors and PE.</p> <p>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.</p>					

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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.

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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.

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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).