ECA Excellence in Electrotechnical & Engineering Services

AMD2 BS 7671:2018+A2:2022

TECHNICAL GUIDANCE NOTE

Top 10 changes to BS 7671:2018+A2:2022

Amendment 2 of the Wiring Regulations

Key Information

- In March 2022 an Amendment was released to the 18th Edition of the Wiring Regulations
- The following are considered the top 10 changes
- Other changes exist, this is just a summary

Top 10 changes to Members working to BS 7671:2018+A2:2022

The following are examples of what are considered to be the top 10 changes in BS 7671:2018+A2:2022, Amendment 2. Please note these highlighted changes are just samples of what is in Amendment 2 and Members are advised that there are many more updates in the Standard. These changes are listed in the order they are found within the Standard, not in order of potential impact.

1. Date of implementation

Amendment 2 is available from 28 March 2022 and installations can be designed to the updated Standard from this point on. The blue book edition of BS 7671 can still be used, as this remains current until 27 September 2022, after which it will be withdrawn. Any work started after 27 September must be designed to Amendment 2.

Members are reminded that they cannot cherry pick from both Standards, it would be one or the other.

2. RCD risk assessments 411.3.3

There has been an update to the requirements around socket-outlets and omitting RCDs via a risk assessment.

RCDs are now required for all socket-outlets up to 32 A that are for:

i. *Use by ordinary persons, children or disabled persons (BA1, BA2, BA3)*

ii. *Use in other locations*

iii. *Use outdoors*

The option to omit RCDs remains for (ii) provided a documented risk assessment is completed and attached to the relevant electrical certificate.

Item 11 of Amendment 2 highlights that the requirement for the risk assessment is placed at the duty holder of the building, although they may be assisted by someone skilled (electrically) in completing this form.

3. Additional earth electrode 411.4.2

Some new wording has been added to enhance this existing Regulation. Although this in itself isn't a major change it is worth noting that there is a difference and highlighting exactly what this means. The Regulation has a note that states:

It is recommended that an additional connection to Earth, by means of an earth electrode in accordance with Chapter 54, is made to the protective conductors (PE and PEN) where they enter any building. This recommendation does not apply to outbuildings of dwellings served by the installation

There are 2 key items here, firstly this is a note and not a Regulation. Notes are informative guidance and not a requirement. Secondly, this is a recommendation only. Within Part 1 of Amendment 2 there is some useful text that highlights the status of certain words and phrases and a recommendation is defined as:

Recommendation. Expression in the content of a document conveying that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others.

The current information in Regulation 114.1 is still true. This states that for a supply given in accordance with the ESQCR it shall be deemed that the Earth and neutral connection is permanent.

It would be wrong therefore to mandate additional earth electrodes in all cases, although some installations may benefit from this.

4. Arc fault detection devices (AFDDs) 421.1.7

There has been much debate over the use of AFDDs within electrical installations, Amendment 2 seeks to clarify this. AFDDs are now mandated on single-phase AC circuits supplying socket-outlets up to 32 A in:

- *Higher Risk Residential Buildings (HRRB)*
- *Houses in Multiple Occupation (HMO)*
- *Purpose built student accommodation*
- *Care homes*

The term HRRB is related to residential buildings over 18 m in height or in excess of six storeys, whichever is met first.

AFDDs are recommended in other circuits, but as seen earlier a recommendation is not a requirement.

Members are advised to ensure that they are aware of the benefits and limitations related to AFDDs before deciding upon their use.

5. Protected escape routes 422.1

A new phrase has been added to Amendment 2, that of a protected escape route.

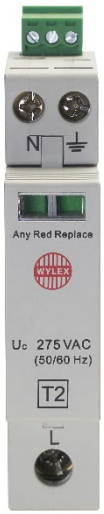
Previously BS 7671 referred to specific conditions for evacuation, and referenced BD locations in terms of density and ease of escape. Now, Regulations 422.1-422.2.1, along with guidance in Appendix 13, change the mindset. The concept of a protected escape route is now introduced. This is a specific part of a building that has an escape route that is designed to be protected against fire for a specified period of time. Previously BS 7671 referred to escape routes in general. During a fire, anything can be a route to an escape. However only a protected escape route will be designed to last for a specified period of time.

Members working within installations that have protected escape routes are advised to ensure that they meet the requirements of this Chapter and understand any limitations that Amendment 2 places on the electrical designer, such as reducing possible fire loads by limiting cabling and accessories to only those relevant for that location.

6. Surge protection 443.4.1

Over the years the use of Surge Protection Devices (SPDs) has been misunderstood, this has hopefully been clarified within Amendment 2, which now states that:

> *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*
>
> *(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.*



SPDs are now clearly needed in some locations. In others, the risk of damage is really a decision that the building owner/duty holder has to make and decide upon.

Members are advised to have a discussion with the client when undertaking designs where SPDs are not mandated but may be beneficial and ensure that the client is aware of their benefits and limitations before making a decision on their inclusion or not.

7. Bonding of outbuildings 544.1.1

The Regulation has been re-written to highlight that in an outbuilding, the bonding can be sized in accordance with the incoming supply to that building, for TN-S and TT systems (not PME).

Previous editions of BS 7671 required the bonds in any outbuilding to be sized in accordance with the incoming earth or neutral of the main building.

Now bonding in outbuildings can be sized in accordance with the incoming cable protective conductor to that particular building, with a minimum of 6 mm^2 copper cable and not exceeding 25 mm^2 copper.

8. Solar PV 712

Section 712 has been extensively re-written and has introduced many changes that the solar PV installer needs to be aware of.

Of course, not all contractors work with solar PV systems so this change may not impact many, however this market is growing, along with other renewable and green technologies. Members are therefore encouraged to consider the changes within Section 712 and how their businesses could get involved in this workstream in the correct manner.

9. Prosumer electrical installations and Part 8-2

A whole new Part to BS 7671 has emerged, Part 8 with Chapter 8-2, prosumer's low voltage electrical installations being implemented for the first time in Amendment 2. It is intended that this Chapter will help with the transition to a low carbon built environment by aiding designers and installers who are working in prosumers installations. A prosumer is a building that both consumes and produces electrical energy, such as a building with solar PV on the roof.

Some would assume this is not worthy of a new Part within a British Standard, and for a simple installation such PV that may be correct. But when you start adding additional technologies such as heat pumps, electric vehicles, electrical energy storage systems (batteries) and then consider the ability for that building to work in island mode (disconnected from the grid entirely) a new Part makes sense.

ECA are championing an electrical revolution in the UK and are encouraging all Members to consider adopting new working methods to encourage the use of energy efficient products and systems. A cleaner and greener future powered by 100 % renewable energy generation is coming, and Members are advised to ensure that their businesses are not left behind. Upskilling to work with these new technologies is both alluring and potentially profitable. Part 8 helps designers appreciate the challenges a prosumer electrical installation can offer.

10. Certification

Something ECA Members will no doubt appreciate, there has been a reduction in the number of boxes required to be ticked on the schedule of inspections related to an electrical installation certificate.

Previous schedule of inspections had 116 boxes requiring to be marked as either a tick or not applicable (as this is for an electrical installation these were the only options). Now just 14 boxes covering the basic concepts are either required to be marked with a tick or not applicable, making life far simpler for the person undertaking the inspection and testing and also for the recipient of the certificate.

Amendment 2 does, within Appendix 6, list a series of items that should be inspected (where applicable) and these should still be followed. It is just no longer required to complete the schedule of inspections.

Summary

As stated earlier, these items listed are considered to be the top 10 changes that will impact most Members, however there are a lot more to be considered.

Members should ensure that they are up to date with any changes that impact their work and consider what they can do going forward to ensure compliance with this and other British Standards.

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