

REQUIREMENT FOR FIRE RESISTING SUPPORTS TO WIRING SYSTEMS IN ESCAPE ROUTES

BS 7671:2011+A3:2015 (IET Wiring Regulations Seventeenth Edition), which was published in January 2015 and comes into effect on 1 July, will include a requirement that wiring systems in escape routes shall have fire-resisting supports. The requirement is included in a new regulation (Regulation 521.11.201), which is reproduced below.

521.11.201 Wiring systems in escape routes shall be supported such that they will not be liable to premature collapse in the event of fire. The requirements of Regulation 422.2.1 shall also apply, irrespective of the classification of the conditions for evacuation in an emergency.

NOTE 1: Non-metallic cable trunking or other non-metallic means of support can fail when subject to either direct flame or hot products of combustion. This may lead to wiring systems hanging across access or egress routes such that they hinder evacuation and firefighting activities.

NOTE 2: This precludes the use of non-metallic cable clips, cable ties or trunking as the sole means of support. For example, where non-metallic trunking is used, a suitable fire-resistant means of support/retention must be provided to prevent cables falling out in the event of fire.

The term 'wiring system', which is used in the regulation, is defined in BS 7671 as 'an assembly made up of cable or busbars and parts which secure and, if necessary, enclose the cable or busbars.' Thus the term covers cables (and busbars) together with any containment system for them, such as conduit, trunking and cable tray.

Reason for the new regulation

The purpose of Regulation 521.11.201 is to improve the safety of firefighters and others in escape routes under fire conditions. Wiring systems that drop and hang across escape routes due to failure of a means of support in fire conditions have the potential to entangle persons. In recent years, a number of firefighters have died as a result of being entangled in this way.

Non-metallic cable clips, cable ties, conduit or cable trunking

As pointed out in Note 2 to Regulation 521.11.201, the requirements of the regulation effectively rule out the use of non-metallic cable clips, cable ties and conduit or cable trunking as the sole means of support for the cables in escape routes. The cables must be secured at appropriate intervals by proven metal supports that have adequate fire resistance, and that are fixed to non-combustible substrate of the building.

Metal cable management systems

Although the notes to Regulation 521.11.201 refer to non-metallic trunking (amongst other types of non-metallic cable support), the regulation itself applies equally to wiring systems that include, for example, a metal cable management system, such as a steel conduit, trunking or cable tray or a metal casing of a busbar trunking system.

Metal cable management systems in escape routes must not rely for support on anything liable to fail prematurely in the event of fire, as the collapse of such a cable management system could hinder or prevent escape in some way, even if not by entanglement.

Type of circuit, system or electrical service

It should also be noted that the requirements of Regulation 521.11.201 apply for all types of circuit, systems and electrical service that encroach on escape routes, irrespective of rated voltage. These might include (amongst others):

- a. distribution circuits;
- b. final circuits;
- c. safety services*; and
- d. data and communications services.

* For fire alarm and emergency lighting systems, BS 5859 and BS 5266, respectively, also include recommendations and/or requirements about the fire resistance of cable supports and cables.

Application of Regulation 422.2.1

A further requirement of Regulation 521.11.201 is that the requirements of Regulation 422.2.1 shall also apply, irrespective of the classification of the conditions for evacuation in an emergency. Regulation 422.2.1 contains various provisions for safety in the event of a wiring system being affected by fire.

What constitutes an escape route?

An escape route is a route designated for escape to a place of safety in the event of an emergency.

Escape routes may include not only defined routes such as corridors, stairways and hallways, but also open areas through which escaping persons might reasonably be expected to need to pass on their way to a place of safety.

For premises covered by The Regulatory Reform (Fire Safety) Order 2005 (FSO), which applies in England and Wales, the designation of the escape routes is part of the risk assessment that the FSO requires the 'responsible person' to carry out and keep up to date. Similar legal requirements apply in Scotland and Northern Ireland.

[Wiring Matters interviewed Charlie Pugsley](#), London Fire Brigade investigator, about the fire-related changes made by Amendment No. 3.