



The Fibreoptic Industry Association

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## CLARIFICATION REGARDING FIRE PERFORMANCE REQUIREMENTS BS 7671 AND BS 6701

by  
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### Introduction

BS 6701:2016 was amended in October 2017 to include new “reaction to fire” performance requirements for cables inside buildings and these requirements were based upon products of a given “Euro”Class in accordance with the Construction Products Regulation. This was felt to be necessary because the 18<sup>th</sup> Edition of BS 7671 was intended to specify the requirements of LV power cables leaving the requirements for telecommunications cables to be specified within BS 6701. Unfortunately, certain elements of our joint industries (including the British Cable Association in their Position Paper entitled “BS 6701:2016+A1:2017”) are confusing the situation by suggesting that telecommunications cables have to meet both the requirements of BS 6701 and BS 7671. This was never the intention of the proposals for the two documents.

This White Paper explains the background to the situation and lays out, in unequivocal form, the actual objectives.

### BS 7671 and the supplementary nature of BS 6701.

Clause 110.1.3 of BS 7671 states that

BS 7671 is “**intended to be applied to electrical installations generally but, in certain cases**” it “**may need to be supplemented by the requirements or recommendations of other British ...Standards**” and “**such cases include**” amongst other “**Telecommunications systems - BS 6701**”

The term “**supplemented**” generally means “added to” – i.e. for LV power supply cabling you follow BS 7671 and for telecommunications you also follow the additional requirements of BS 6701. However, with regard to the fire performance of cables, this was not the intention. The “Foreword” of the amendment of BS 6701: 2016 states

**“This amendment applies the existing general requirements of BS 7671 for cables in evacuation routes to all “permanently installed” telecommunications cables and translates those requirements into the terminology of the Construction Products Regulation”**

It is quite clear from this text that BS 6701 translates, and does not supplement, the requirements of BS 7671 from their traditional LV cable environment into the CPR-based environment of the telecommunications world.

### Reaction to fire performance within the 18<sup>th</sup> Edition of BS 7671

The 18<sup>th</sup> Edition of BS 7671 was published on 1<sup>st</sup> July 2018 and comes into full force on 1<sup>st</sup> January 2019 (and in the interim period the 17<sup>th</sup> and 18<sup>th</sup> Editions coexist). The areas of BS 7671 dealing with fire performance of cables went through some significant re-development before publication but at the time of publication the requirements can be summarised as being of two types:

- 1) conformance to the minimum recommended requirements of BS EN 60332-1-2 (defining flame propagation only);
- 2) conformance to the minimum recommended requirements of the relevant part of BS EN 60332-3 standards (defining flame propagation) together with a smoke obscuration requirement of 60% in accordance with BS EN 61034-2.

The most obvious omission from these requirements is the application of a "Euro"Class designation in accordance with the European Union Constriction Products Regulation. This is being considered for inclusion in a future amendment of the 18<sup>th</sup> Edition which is already underway – targeted for 2021.

The text defining "in which locations" the cables of either option 1) or 2) are used are scattered throughout BS 7671.

### Reaction to fire performance within BS 6701:2016 Amendment 1:2017

BS 6701 translates the specifications of BS 7671 in CPR-conformance "Euro"Class implementations as follows:

- 1) "installation cables" are required to meet "Euro"Class C<sub>ca</sub>-s1b,d2,a2;
- 2) "other cables" are required to meet Euro"Class E<sub>ca</sub> or, if CPR does not apply to the cable, the minimum recommended requirements of BS EN 60332-1-2.

The definition and application of "installation" and "other" cables is dealt with other **FIA** White Papers including "THE PUBLICATION OF BS 6701 AMENDMENT 1:2017 - IMPLICATIONS FOR CABLE SUPPLIERS AND CABLING INSTALLERS" last updated in July 2018.


However, the Foreword of BS 6701:2016 Amendment 1:2017 points out that "The use of space in modern buildings tends to change with time and it is increasingly difficult to predict which spaces will become evacuation routes. With a cabling system having a design life exceeding 15 years the common sense approach is to assume everywhere is, or could become, an evacuation route and cable accordingly." For this reason BS 6701 does not differentiate the requirements for different locations within buildings is employed in BS7671:2018.

### Summary

To avoid any confusion the requirements of BS 6701, which apply to telecommunications cables of all types, are not in any way additional to those of BS 7671.

The Construction Products Regulation was intended to replace non-discriminatory test methods (with purely informative pass/fail criteria) such as the BS EN 60332 standards, by using the "Euro"Class designation – and makes this a legal requirement. This has not been applied in BS 7671:2018.

Therefore, to attempt to add the location-specific requirements of BS 7671 to the simplified CPR designated requirements of BS 6701 would be foolish in the extreme.

 <p><b>The Fibreoptic Industry Association</b> <a href="http://www.fia-online.co.uk">www.fia-online.co.uk</a></p> <p><b>GUIDANCE</b></p>	<ul style="list-style-type: none"><li>• <b>BS 6701 applies to telecommunications cables of all types;</b></li><li>• <b>BS 7671 contains "reaction to fire" performance requirements which are restricted to LV power cables;</b></li><li>• <b>BS 6701 translates the requirements of BS 7671 into non-location-specific requirements using the EuroClass system of CPR (which is a legal requirement in Europe);</b></li><li>• <b>do not mix up the two sets of requirements;</b></li><li>• <b>do not accept combinations of these requirements from customers or suppliers;</b></li><li>• <b>if you need further clarification contact the FIA Secretariat.</b></li></ul>
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### BIBLIOGRAPHY

BS 6701: Telecommunications equipment and telecommunications cabling - Specification for installation, operation and maintenance

BS 7671: Requirements for Electrical Installations - IET Wiring Regulations

End of report  
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2<sup>nd</sup> October 2018