

# CPR and BS6701:2016+A1:2017

At a glance...



## What is CPR?

The 'Construction Products Regulation' aims to break down technical barriers and provide a common technical language to assess the performance of construction products and to harmonise the rules for marketing these products.

### Four Key Concepts of CPR:

- A system of harmonised technical specifications
- A framework of notified bodies
- A system of conformity assessment for each product family
- CE marking of products



## Why is LSOH no longer enough?

Low-smoke, zero-halogen (LSOH) cables were designed to meet three IEC standards:

- IEC60332: Flame Spread
- IEC60754: Smoke Acidity
- IEC61034: Smoke Emission

The CPR applies additional criteria and testing procedures to promote a more **harmonised standard to describe a cable's reaction to fire.**

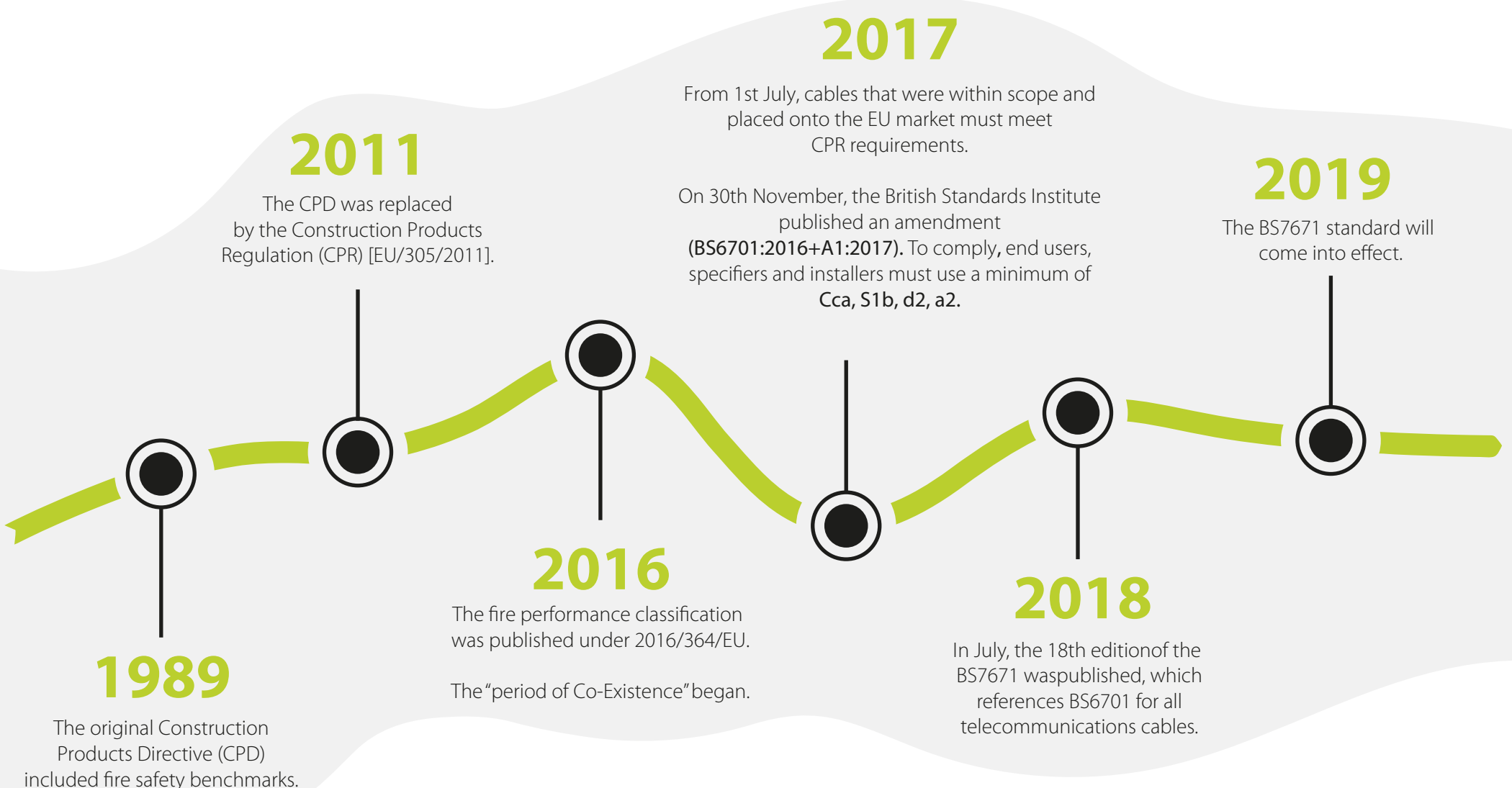
## BS6701

### Standards Compliance

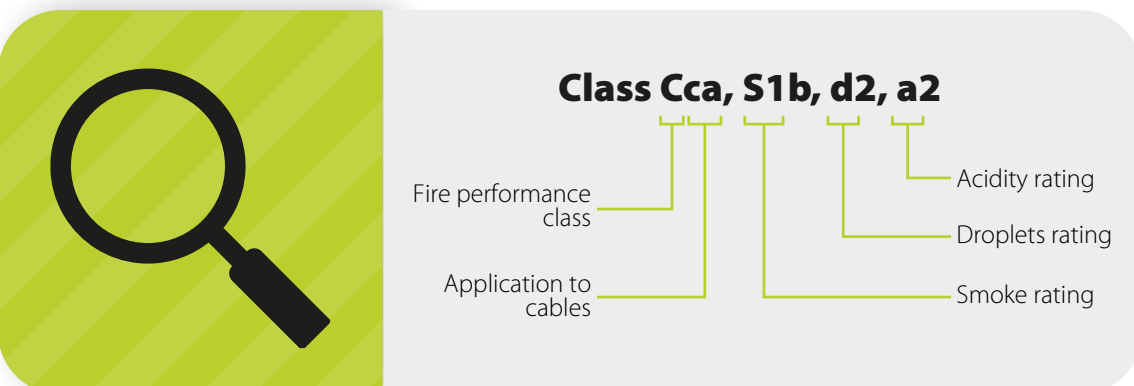
Most data cabling tender specifications stipulate the requirement for a 'Standards Compliant' system to be supplied.

In the UK, to achieve this you must specify compliance with **BS6701:2016+A1:2017**, which states:

"For new installations and the refurbishment or extension of existing installations within the external fire barrier of the building, installation cables which are subject to the CPR shall as a minimum meet the requirements of Euroclass Cca, s1b, d2, a2."



Minimum BS6701:A1 - 2017 UK Threshold	Euroclass (ca)	Classification Criteria	Additional Criteria	Attestation of conformity system
Aca No contribution to fire	<b>A</b>	EN ISO 1716 Gross heat of combustion		1+ Initial type-testing and continuous surveillance with audit testing of samples by 3rd party certification body factory production control (FPC) by manufacturer
B1ca Very low contribution to fire	<b>B1</b>	EN 50399 Heat release Flame spread	Smoke production* (s1a, s1b, s2, s3) EN50399/EN61034-2 Acidity (a1, a2, a3) EN60754	3 Initial type testing by 3rd party laboratory FPC by manufacturer
B2ca Low contribution to fire	<b>B2</b>			
Cca Reduced contribution to fire	<b>C</b>	EN 50575 Flame propagation	Flaming droplets (d0, d1, d2) EN 50399	4 Initial type testing and FPC by manufacturer
Dca Improved contribution to fire	<b>D</b>			
Eca Basic flame retardance	<b>E</b>	EN 50575 Flame propagation		
Fca Non flame retardance	<b>F</b>			



### Are all cable types required to comply?

- The CPR applies to all permanently installed cables within a building; communication, power and control cables in fixed installations.
- There is no distinction between copper and fibre, or shielded and unshielded cables.
- The only exception is patch leads, which are not within scope of CPR.

### Seven Euroclasses

Additional Requirements	Flames	Heat	Smoke	Droplets	Acidity	Aca	B1ca	B2ca	Cca	Dca	Eca	Fca
			s	d	a							

The categorisation elements will be specified to form a complete Euroclass reference.

\* No Requirement



### A closer look at CPR Euroclasses

<b>Fca</b> Undetermined reaction	<b>B2ca</b> Low reaction
<b>Eca</b> Basic reaction	<b>B1ca</b> Very low reaction
<b>Dca</b> Improved reaction	<b>Aca</b> No reaction
<b>Cca</b> Reduced reaction	

- A CPR-Compliant cable must belong to 1 of 7 Euroclass categories.
- Each category relates precisely to the way it performed under the reaction testing.
- Each Euroclass Aca – Fca determines an individual cable's reaction to fire.

### A closer look at the additional classifications

<b>Smoke Production</b> 1a: 1 smoke icon 1b: 2 smoke icons 1: 3 smoke icons 2: 4 smoke icons 3: 5 smoke icons	<b>Flaming Droplets</b> 0: 0 droplet icons 1: 1 droplet icon 2: 2 droplet icons	<b>Acidity</b> 1: 1 acid icon 2: 2 acid icons 3: 3 acid icons
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**s1a:** >80% light transmittance  
**s1b:** >60% light transmittance  
**s1:** </ 50 m2  
**s2:** </ 400 m2  
**s3:** not meeting s2 or no performance

**d0:** no droplets persisting longer than 20 minutes  
**d1:** no droplets persisting longer than 10 seconds within 20 minutes  
**d2:** not meeting d1 or no performance

**a1:** conductivity <2.5 µSmm-1, pH > 4.3  
**a2:** conductivity <105 µSmm-1, pH > 4.3  
**a3:** not meeting a2 or no performance

### So, which CPR Euroclass should you choose?

Different Member States require different CPR classification levels for various applications. Each Member State may implement the standard in line with their regional requirements. For example, hospitals require a B2ca rating in some countries, but only a Cca rating in others.

To achieve standards compliance in the UK, it is important to choose a cable with a CPR Euroclass of **a minimum of Cca, s1b, d2, a2** - as stipulated in **BS6701:2016+A1:2017**. This applies to any new installations or the refurbishment and/or extension of existing installations within the external fire barrier of the building.

**We advise to always check with a country's local regulations.**

### Our Commitment to you...

The regulation defines a clear process and requirements for proof of compliance to a specific Euroclass. When purchasing products in scope of CPR it is advisable to request suppliers to provide confirmation of compliance by means of a DOP or to demonstrate that the product was placed on the market prior to July 2017. Inability to meet either of these requests should cause alarm and we would recommend a 'proceed with caution' approach.

### Excel's Euroclass Compliance

	B2ca	Cca	Dca	Eca
<b>CAT 7<sub>A</sub></b>	✓		✓	
<b>CAT 6<sub>A</sub></b>	✓	✓	✓	✓
<b>CAT 6</b>	✓		✓	✓
<b>CAT 5e</b>		✓	✓	✓
<b>Loose Tube Fibre</b>			✓	
<b>Loose Tube CST Fibre</b>		✓		✓
<b>Loose Tube SWA Fibre</b>				✓
<b>Tight Buffered Fibre</b>		✓		

Excel supplies a range of CPR-compliant cabling across their copper and fibre portfolios.

Find out more in our CPR Pocket Guide and our Excel Encyclopaedia V4!  
Go to section 2!

### Excel Explains... CPR

Our series of "Excel Explains" webinars has been designed to provide important technology updates in bite size sessions and are based on frequently asked questions received by our Technical Team. The first series focused on the Construction Products Regulation, covering various topics in more detail.

Take a look - <https://www.excel-networking.com/excel-explains-cpr>