EU Construction Product Regulation for cables

CPR regulation: is it a law, or a standard? It's both.

1. CPR implies a legal obligation regarding how vendors classify each cable.
2. National regulations prescribe specific classes based on environment and installation rules.

Many communication cables now in place pre-date fire performance requirements, so no one really knows what kind of fire performance they have. That's not good enough, so the rules are changing.

- In 1989, the original Construction Product Directive (CPD) included fire safety benchmarks. It was replaced by CPR, EU/305/2011 in 2011.
- The fire performance classification—including cable requirements—was published in 2016 under 2016/364/EU.
- As an EU regulation, CPR is applicable in all countries of the EU without further transposition.

When does CPR apply?

The European regulation requires vendors to have the cable classification in place since July 1, 2017. National regulations prescribe specific classes based on environment and installation rules.

Why is the LSZH denomination not enough any longer?

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

- IEC60332: Flame spread
- IEC60754: Smoke acidity
- IEC61034: Smoke emission

CPR applies new criteria and testing procedures to promote a more harmonised standard describing cable fire performance.

The 7 EuroClasses

Class	Fire safety	Classification criteria (mandatory)					Additional classification (optional)
		Flame spread (EN 50399)	Total Heat Release	Peak Heat Release Rate	Fire Growth Rate	Flame spread (EN 60332-1-2)	
B2ca		≤ 1,5 m	≤ 15 MJ	≤ 30 kW	≤ 150 Ws^{-1}	≤ 425 mm	Smoke production (s)
Cca		≤ 2,0 m	≤ 30 MJ	≤ 60 kW	≤ 300 Ws^{-1}		Flaming droplets (d)
Dca			≤ 70 MJ	≤ 400 kW	≤ 1300 Ws^{-1}		Acidity (a)
Eca		Minimum fire performance classification					
Fca		Not advisable for public places				> 425 mm	

Two other classes (A and B1) are not applicable to LSZH data and telecommunication cables.

Decoding the EuroClasses label

Class Dca, s2, d1, a1

- Fire performance class
- Application to cables
- Acidity rating
- Droplets rating
- Smoke rating

Subclassification	Smoke opacity	Droplets	Acidity
3: s3, a3		N/A	
2: s2, d2, a2			
1: s1, d1, a1			
0: d0	N/A		N/A

Where does the certification come from?

Issued by notified body

Issued by manufacturer

Construction files

DoP (Declaration of Performance) is the certificate issued by the manufacturer, referencing the notified body's **CoC** (Certification of Conformance).

Notified bodies are for instance: BASEC, SP technology (Technical Research Institute of Sweden), Delta Labs, UL Labs, etc.

Only the DoP needs to be included in the construction files (the builder/contractor needs to collect all documents) to comply to local safety regulations.

What EuroClass is required for each environment?

Environment	Country A	Country B	Country C
Hospitals	B2ca	B2ca	Cca
Airports	Cca	B2ca	Cca
Commercial premises	Cca	Cca	Dca
Residential	Fca	Dca	Eca

* Refer to national regulations for updated requirements.

Are all cable types required to comply?

YES

The EU regulation applies to all permanently-installed cables, such as video, power and data cables (copper or fiber).

- There is no regulatory distinction between copper and fibre, or shielded and unshielded cables.
- The only exception are the cords, which are not classified for fire performance.

What will the CommScope fiber and copper cables portfolio look like?

Copper cables	Dca	Cca	B2ca
Cat 7/7A	✓	✓	✓
Cat 6A	✓	✓	✓
Cat 6	✓	✓	DMR
Cat 5e	✓	DMR	DMR

Fiber cables	Dca	Cca	B2ca
Distribution Construction	✓	✓	✓
Multi Loose tube construction	✓	✓	✓
Single Loose tube/ drop construction	✓	DMR	DMR
Hybrid/PFC cables	✓	✓	DMR

* DMR: depending on market requirements

Cable jacket marking and box labeling. What and when?

CPR requires the CE mark and fire performance class printed on the product label. The cable print is not required.

- CommScope will nevertheless print performance class on all cables classified above Dca class.
- Fire performance class will also appear on CommScope spec sheets and in the product catalog, along with subclassifications for smoke development, flaming droplets and acidity.
- DoPs can be found on CommScope's Product Catalog.

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