

# Construction Products Regulation (CPR) FAQ

## 1. Which are the EU directives and regulations related to construction products?

- CPD (Construction Products Directive 89/106/EEC)
- Construction Products Regulation (EU) No 305/2011 (CPR) adopted on the 9th of March 2011

CPR adopted in March 2011 replaces the previous CPD and affects any organisation involved in the design, build, test, installation, and selection of construction products.

## 2. What is the purpose of the Construction Products Regulation?

- Ensures reliable information on construction products in relation to their performance
- Provides a “common technical language,” offering uniform assessment methods for the performance of construction products
- Applies to all construction products produced for, or incorporated within, building and civil engineering construction works
- Harmonises all construction products subject to regulatory controls for CE marking purposes

CPR is an EU effort to ensure all building materials are qualified in a manner to allow easy trade regardless of manufacturer or country of origin in regard to critical requirements of health and safety.

## 3. Who is affected by the CPR?

- Manufacturers when declaring the performance of their products
- Authorities of member states when specifying requirements for construction products
- EU-accredited test institutes (Notified Bodies) that issue manufacturers with test results and declarations of conformity to standards
- Organisations (architects, engineers, constructors) when choosing the products for use in construction works

## 4. How does CPR address communication cables?

- Annex IV of the CPR identifies Product Area 31: Power, control, and communication cables
- Cables incorporated as a permanent part of the building construction need to be constructed and tested in accordance with CPR

This group of products concerns both fibre optic and copper datacom cables.

## 5. Which cables are not considered in the CPR regulation and must not be tested?

- Cables that are not permanently installed in buildings and all outdoor (duct, aerial, and direct buried) cables

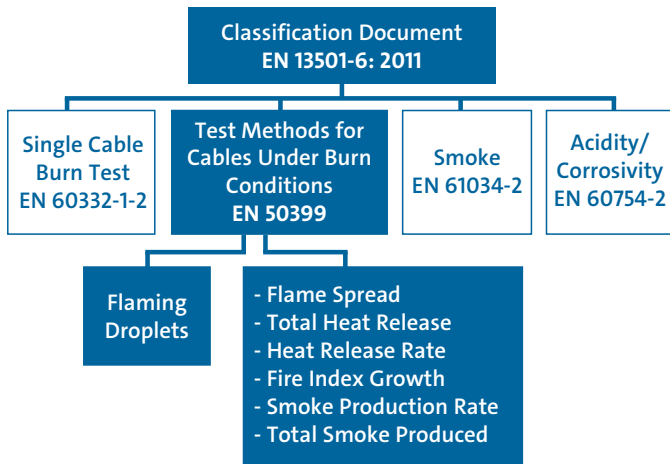
## 6. Which are the burn tests and standards prior to CPR?

- Cable safety in respect to burning was expressed in terms of flame retardant and non-corrosive (FRNC) and/or low-smoke, zero-halogen (LSZH). For respective standards used, please see below table.
- FRNC/LSZH definitions have been superseded with a new approach for cable reaction to fire under CPR

	Common Abbreviation	CENELEC	IEC
Single Cable Burn Test	FR	EN 60332-1-2	IEC 60332-1-2
Bunched Cable Burn Test	FR	EN 60332-3	IEC 60332-3
Smoke Density	LS	EN 61034-2	IEC 61034-2
Acidity/Corrosivity	NC (includes ZH)	EN 60754-2 (replaces EN 50267-2-3)	IEC 60754-2

## 7. Which standards are defining burn classifications of a cable?

- EN 13501-6 is the leading standard within CPR and lays down the new test methods and performance criteria that must be met for a particular classification of cable
- It contains new standards for burn classification as well as older standards



Note: bunched test does not appear in the diagram above, but tests according to EN 50399 are conducted in a bunched configuration

- **Burning behaviour of single cables (EN 60332-1-2)** measures the flame spread of a cable under exposure to an open flame
- **Smoke production of burning cables (EN 61034-2)** measures the opacity/translucency of the smoke produced by a burning cable (opaque smoke may prevent occupants from safely escaping buildings)
- **Acidity levels produced by burning cables (EN 60754-2)** measures the acidity or corrosiveness of the gas produced by a burning cable (gases are poisonous to occupants and may damage equipment or materials in the building)
- **Burning behaviour of bunched cables (EN 50399)** measures the reaction of bunched cables in the early stages of a fire, under direct exposure to a 20.5 kW flame source (Scenario 1) and a 30 kW flame source (Scenario 2)

Parameters measured include: flame spread (FR), total heat release (THR), heat release rate (HRR), fire index growth rate (FIGRA), total smoke produced (TSP), smoke production rate (SPR), and the number of droplets of flaming material. In addition, there is another standard that applies to a new class of cables that are incombustible:

- **The oxygen bomb calorimeter (EN ISO 1716)** measures the heat flow while a material burns, as a material that releases high heat while burning may ignite other materials

## 8. What are the new classes defined in the CPR?

- CPR covers seven classes of cable, from  $A_{ca}$  to  $F_{ca}$
- Classes are allocated on the basis of heat release and flame propagation criteria
- There are three supplementary classes for additional requirements:
  - Smoke production/emission (s),
  - Acidity (a), and
  - Flaming droplets (d)
- $A_{ca}$  – cables made out of non-combustible materials
- $B1_{ca}$ ,  $B2_{ca}$ ,  $C_{ca}$ ,  $D_{ca}$ ,  $E_{ca}$  – relevant for cables made out of combustible materials
- $F_{ca}$  – cables that have no fire protection at all
- Requirements for class  $A_{ca}$  and  $B1_{ca}$  are very stringent and currently cannot be fulfilled by cables consisting of thermoplastic halogen-free materials

Note:  $C_a$  refers to cable

Fire Situation	Class	Performance
Fully developed fire in a room	$A_{ca}$	No contribution to fire
	$B_{ca}$	Very limited contribution to fire
Single burning item in a room	$C_{ca}$	Limited contribution to fire
	$D_{ca}$	Acceptable contribution to fire
Small fire attack on a limited product area	$E_{ca}$	Acceptable reaction to fire
	$F_{ca}$	No requirement

	Classification	$A_{ca}$	$B1_{ca}$	$B2_{ca}$	$C_{ca}$	$D_{ca}$	$E_{ca}$	$F_{ca}$
Standard		EN ISO 1716	FIPEC Scen2	H/mm	H/mm	H/mm	–	–
EN 60332-1-2	H/mm		≤ 425	≤ 425	≤ 425	≤ 425	≤ 425	
EN 50399	FS/m		≤ 1.75	≤ 1.5	≤ 2.0			
	$THR_{1200s}/MJ$		≤ 10	≤ 15	≤ 30	≤ 70		
	HRR/kW		≤ 20	≤ 30	≤ 60	≤ 400		
	FIGRA/Ws-1		≤ 120	≤ 150	≤ 300	≤ 1300		
	Flaming Droplets		d0, d1, d2	d0, d1, d2	d0, d1, d2	d0, d1, d2		
EN 61034	Smoke Production TSP/SPR		s1, s1a, s1b, s2, s3	s1, s1a, s1b, s2, s3	s1, s1a, s1b, s2, s3	s1, s1a, s1b, s2, s3		
EN 60754	Acidity		a1, a2, a3	a1, a2, a3	a1, a2, a3	a1, a2, a3		

## 9. Who determines if a cable is compliant to CPR?

- In the EU, the “Notified Body” is an accredited test institute defined by a member country (e.g. VDE in Germany) that issues the Declaration of Conformity certificate based on which manufacturers issue the Declaration of Performance (DoP) for the product
- The accredited test institute performs the initial measurement and rates the cable according to its performance
- Test assessments can include inspection and examination of a product, its design, and manufacturing process
- Manufacturers need to CE-label the product to enable distribution and sale of the product in the European trade zone

The Notified Body assesses the products and provides the test reports and declaration of conformity. Manufacturers issue the Declaration of Performance for the respective product and mark it with the CE-label to enable trade within the EU.

## 10. What does the CE marking look like and where is it placed on a cable?

- Products complying with the new regulation have a CE marking that indicates the cable is both rated according to the standard EN13501-6 and conforms to the fire safety characteristics
- CE marks can be placed on the cable and/or the packaging and contain obligatory (origin, manufacturer’s name, part number, fire classification) and additional elements (year, individual certification marks, etc.)

Products complying with the new regulation have a CE marking indicating the cable’s rating in reaction to fire. The CE marking can be printed on the cable and/or on the package.

	System 1+	Systems 3 and 4
Product Label		
Accompanying Commercial Documents		

## 11. Do F<sub>ca</sub> cables (no fire protection at all) need a CE label?

- F<sub>ca</sub> cables must carry a CE marking as well

## 12. Is CE marking obligatory?

- Since 1 July 2017, it is mandatory to comply with the Construction Products Regulation No. 305/2011, including the provision of the Declaration of Performance document and CE-marking of products, which fall under this regulation.

Since 1 July 2017, CE-marking is obligatory.

## 13. Are there national regulations in addition to CPR?

- Each EU member state has to enforce CPR and any necessary national designations
- In Germany: MBO (Musterbauordnung) and MLAR (Muster Leitungsanlagen Richtlinie) are still valid and have to be fulfilled - new EU classes (B2<sub>ca</sub> to F<sub>ca</sub>) correlate to German DIN classes (B1, B2, B3)
- Federal state governments of Germany decide on requirements of classes for specific applications (e.g. schools, hospitals, office) and special areas in a building (e.g. evacuation routes)

Existing national designations (e.g. DIN in Germany) are still valid. The transition or development of national designations in addition to CPR may need to take place in a number of countries.

## 14. Where can I find additional information?

- On the European Commission, Enterprise, and Industry website <http://ec.europa.eu/growth/sectors/construction/product-regulation/>
- On the Corning website for future updates: [www.corning.com/opcomm/cpr](http://www.corning.com/opcomm/cpr)

CORNING

Corning Optical Communications GmbH & Co. KG · Leipziger Strasse 121 · 10117 Berlin, GERMANY  
+00 800 2676 4641 · FAX: +49 30 5303 2335 · [www.corning.com/opcomm/emea](http://www.corning.com/opcomm/emea)

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