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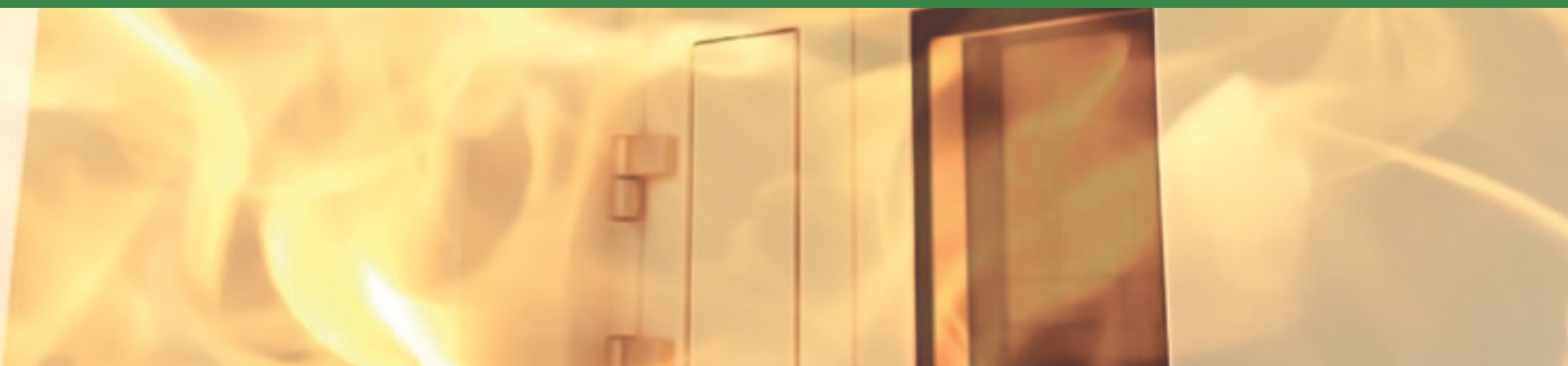
Cables under the Construction Products Regulation



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DISCLAIMER

This document reflects the best knowledge of industry experts across Europe and the state of the art at the time of writing (September 2024). It represents our best understanding of the CPR. It is not a legally binding document and is not intended as a substitute for each stakeholder's own assessment and decision making. A binding interpretation of Community legislation remains the exclusive competence of the European Court of Justice. Europacable declines any and all liability for any measure taken or not taken on the basis of this document, **which is a private non-binding information document to be possibly used and accommodated by National Associations to prepare their own national documents.**

Edited by the Europacable CPR Conformity Communication Team

1. Fire – A global concern

Fire in buildings and civil engineering works takes a heavy toll on human life. 4000 people in Europe are still killed by fire every year. Although construction materials and buildings have changed dramatically in recent years, many of the regulations that monitor their fire safety have not kept pace. In 2016, fires in residential buildings caused 81% of civilian fire deaths and 73% of civilian fire injuries.

A fire can now engulf a room in 3 minutes, compared to 25 minutes 50 years ago, and this change has come about because of the increase in plastics in our homes. People escaping often have only a few minutes to get out of a building safely before the smoke makes it increasingly difficult to orientate themselves. This makes it impossible to identify escape and rescue routes. Dense and corrosive smoke makes the work of rescue teams more difficult and dangerous.

Within Europacable, innovative fire protection solutions are being discussed and brought to the attention of the public. For example, the cable industry in Europe has developed a range of Low Fire-Hazard cables which, in the event of fire, produce very low levels of smoke and hazardous gases.

The Lund University study[1] confirmed that the use of Low Fire-Hazard cables can significantly reduce the danger in the event of a fire. By using materials with low opacity and low corrosiveness of the smoke produced, visibility and therefore the chances of escape and action by rescue teams were significantly improved.

The aim of this paper is to bring the latest technical standards and regulations for building cables closer to all concerned groups such as designers, installers and building occupants. It will also explain design approaches that may make the building as a system safer in the event of a fire.

[1] https://portal.research.lu.se/en/publications/simulation-of-critical-evacuation-conditions-for-a-fire-scenario-?utm_source=email

2. Fire in constructions and contribution of cables

Getting reliable information on constructions products in relation to their origin and their fire performance is often difficult also considering the open market and the lack of a shared technical language at European level. As a consequence, a consistent amount of cable products sold into the European cable market are still below specifications and with poor performance when it comes to fire safety.

Whereas the rules of EU Member States Authorities – responsible for the safety of their citizens - require that construction works should be designed and executed so as not to endanger the safety of persons, domestic animals or property nor damage the environment, the European Union created uniform classification criteria – a common language – to define the fire performances of construction products throughout Europe within the framework of the renewed Construction Products Regulation of 2011 (CPR[2]).

The regulation became effective on July 1st 2013 and since then is mandatory for all EU Member States. The CPR goes hand in hand with an extensive **certification system** which ensures that only approved products can be used in construction works (buildings, metro and any sort of civil engineering works).

Each Member State created a team (the Market Surveillance Authority) responsible to assure the **Market Surveillance** through the formal and physical verification of the compliance of construction product. These teams could be activated by each EU citizen or economic entity in case of suspected unconformity.

2.1. The Mandate M443 for power, control and communication cables

The European Union conscious of the relevance of cables for safety during fire, issued to CENELEC a Mandate (M443) to produce the harmonized standard that makes cables subject to the Construction Products Regulation.

The Harmonized Standard EN 50575:2014 and its amendment A1:2016 for power, control and communication cables, listed on June 2016 in the OJEU C209/14. came into force on June 10th 2016 and the coexistence period ended 1st July 2017.

Now cables permanently installed in construction works are subjected to the CPR if covered by a harmonised standard or conform to a European Technical Assessment which has been issued for them.

The Mandate M443 – amended later by the Commission Decision 21 May 2011 attached here later (images 1 and 2) - covers both the fire performance of cables: reaction-to-fire and resistance-to-fire. The reaction-to-fire performance is already in place since 2017 as explained above.

The Mandate M443 defines the level of severity of the protocol of AVCP (Attestation and Verification of Constancy of Performances) for the various Classes of performance (see the abstract here later, images 1 and 2).

UK, who left the EU in January 2020, is maintaining aligned the national regulation with CPR for the reaction-to-fire performance, but likely not for the resistance-to-fire performance.

[2] Construction Products Regulation No 305/2011 of 9 March 2011

PRODUCT FAMILY

POWER, CONTROL AND COMMUNICATION CABLES (1/3)

Systems of attestation of conformity

For the product(s) and intended use(s) listed below, CEN/Cenelec is requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s):

Product(s)	Intended use(s)	Level(s) or class(es) *(reaction to fire)*	Attestation of conformity system(s)
Power, control and communication cables	for uses subject to regulations on reaction to fire	A_{ca}, $B1_{ca}$, $B2_{ca}$, C_{ca}	1 +
		D_{ca}, E_{ca}	3
		F_{ca}	4

System 1+: see point (i) of Section 2 of Annex III to Directive 89/106/EEC, with audit-testing of samples taken at the factory.
System 3: see point (ii) of Section 2 of Annex III to Directive 89/106/EEC, second possibility.
System 4: see point (ii) of Section 2 of Annex III to Directive 89/106/EEC, third possibility.

Image 01 – extract from the Commission Decision 21 May 2011 – Procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards power, control and communication cables – **REACTION TO FIRE**

PRODUCT FAMILY

POWER, CONTROL AND COMMUNICATION CABLES (2/3)

Systems of attestation of conformity

For the product(s) and intended use(s) listed below, CEN/Cenelec are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s):

Product(s)	Intended use(s)	Level(s) or class(es) *(resistance to fire)*	Attestation of conformity system(s)
Power, control and communication cables	for uses subject to fire regulations on resistance to fire	P15 – P30 – P60 – P90 – P120 PH15 (*) – PH (*) 30 – PH (*) 60 – PH (*) 90 – PH (*) 120	1 +

System 1 +: see point (i) of Section 2 of Annex III to Directive 89/106/EEC, with audit-testing of samples taken at the factory.
(*) Applies to small diameter power or signal cables or systems (< 20 mm diameter and with conductor sizes ≤ 2,5 mm^2).

Image 02 – extract from the Commission Decision 21 May 2011 – Procedure for attesting the conformity of construction products pursuant to Article 20(2) of Council Directive 89/106/EEC as regards power, control and communication cables – **RESISTANCE TO FIRE**

2.2. *The Delegated Regulation on Resistance to Fire*

The resistance to fire performance is defined by the Delegated Regulation 2024/1681 on Resistance to Fire Classification presented by the Commission on the 17th of March 2024 and in place as of the 3rd of July 2024. That will make possible to CE mark also Fire resistant cables once the Harmonized Product Standard EN50575 will be updated to integrate also Resistance to Fire and will be published on the EU Official Journal. More elements will be provided as the procedure to produce the updated hEN 50575 will be settled.

The following table shows the different resistance to fire classes whereby classes P_{ca} 15-360 are measured with the test method EN 50577 and classes PH_{ca} 15-360 (limited to cables of max 20mm diameter and conductor size max 2.5 mm^2) are measured with the test method EN 50200.

The EN 13501-3 is still in approval phase at the time of publication of this document. Expected by end 2024

The range of possible classifications was extended beside the classes already existing in local Regulation to be aligned with the other product families included in the Delegated Regulation and the Mandate 443.

6. PRODUCTS TO BE USED WITHIN ELECTRICAL, POWER CONTROL AND COMMUNICATION BUILDING SERVICE INSTALLATIONS									
Applies to	Unprotected electric, power control and communication cables with intrinsic fire resistance.								
Classification Standard	EN 13501-3								
CLASSIFICATION:									
P_{ca}	15	20	30	45	60	90	120	180	360
Notes	For power cables and control cables the classification shall indicate for which rated voltage the performance criteria are satisfied.								
Applies to	Unprotected small electric, power control and communication cables with intrinsic fire resistance (< 20 mm diameter and with conductor sizes ≤ 2,5 mm^2).								
Classification Standard	EN 13501-3								
CLASSIFICATION:									
PH_{ca}	15	20	30	45	60	90	120	180	360
Notes	For power cables and control cables the classification shall indicate for which rated voltage the performance criteria are satisfied.								
Required performances to be defined by National Regulators.									

Table 01 – Fire Resistant Classes defined by the Delegated Act on Resistance to fire of Construction products.

[3] See Delegated Regulation 2024/1681 on Resistance to fire classification of construction products dated March 2024 and published on the EUOJ on 13/06/2024.

3. Performances of construction cables

3.1. *Cables for General Applications*

The CPR covers cables for different applications and permanent installation in buildings and construction works within the scope of the harmonised product standard EN50575:2014 - Power, control and communication cables - Cables **for general applications in construction works subject to reaction-to-fire requirements**, its amendment A1:2016

Thereby, Europe created new fire protection classes for cables demanding a reassessment of their performances in buildings.

The following Chart 1 shows the different reaction to fire classes whereby class A_{ca} is categorized as “non-combustible” and class Fca is not passing the EN60332-1-2 test.

The CPR Classification of Reaction-to-fire includes also the following additional classifications:

- “Smoke production”, ranging from s1 to s3, with s3 indicating a very low visibility, with possibility of differentiating s1 in 2 subclasses s1a or s1b for a transmittance respectively of more than 80% or 60%,
- “Flaming droplets”, ranging from d0, indicating virtually no flaming droplets, to d2, indicating long and persistent flaming droplets.
- “Acidity of the emissions”, ranging from a1, attributed to Low Fire-Hazard cables, to a3, for standard cables.

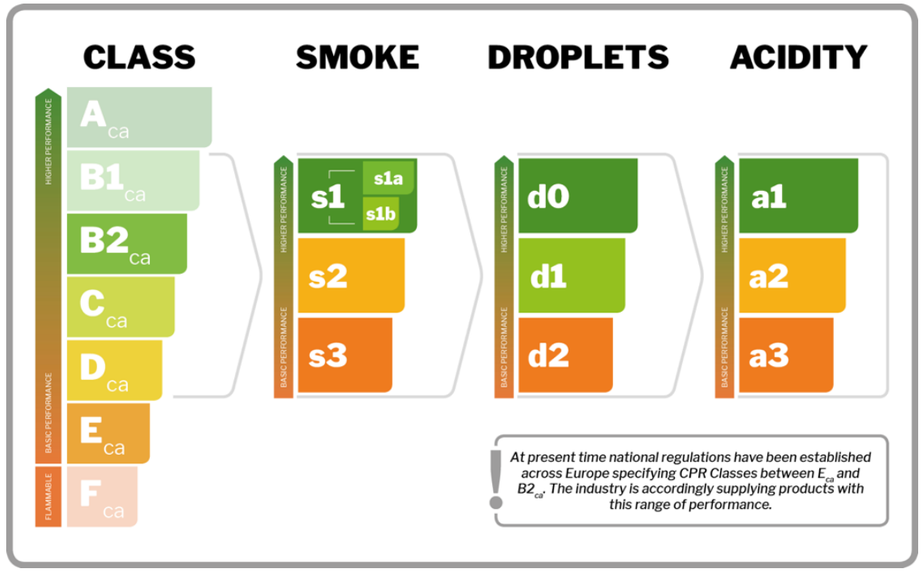


Image 03 – Explanation of Classes and additional characteristics

➔ To know the performances required in **your country**, please go to **cpr.europacable.eu**

ADICTIONAL CLASSIFICATION	CLASS	PERFORMANCE
SMOKE PRODUCTION	s1	TSP1 200 ≤ 50 m2 and Peak SPR ≤ 0,25 m2/s
	s1a	s1 and transmittance in accordance with EN 61034-2 ≥ 80 %
	s1b	s1 and transmittance in accordance with EN 61034-2 ≥ 60 % < 80 %
	s2	TSP1 200 ≤ 400 m2 and Peak SPR ≤ 1,5 m2/s
	s3	not s1 or s2
FLAMING DROPLETS/ PARTICLES	d0	No flaming droplets/particles within 1 200 s
	d1	No flaming droplets/particles persisting longer than 10 s within 1 200 s
	d2	not d0 or d1
ACIDITY ACCORDING WITH EN 60754-2	a1	conductivity < 2,5 µS/mm and pH > 4,3
	a2	conductivity < 10 µS/mm and pH > 4,3
	a3	not a1 or a2
NO DECLARATION		No Performance Determined

Table 3 – Definition of Additional Classifications.

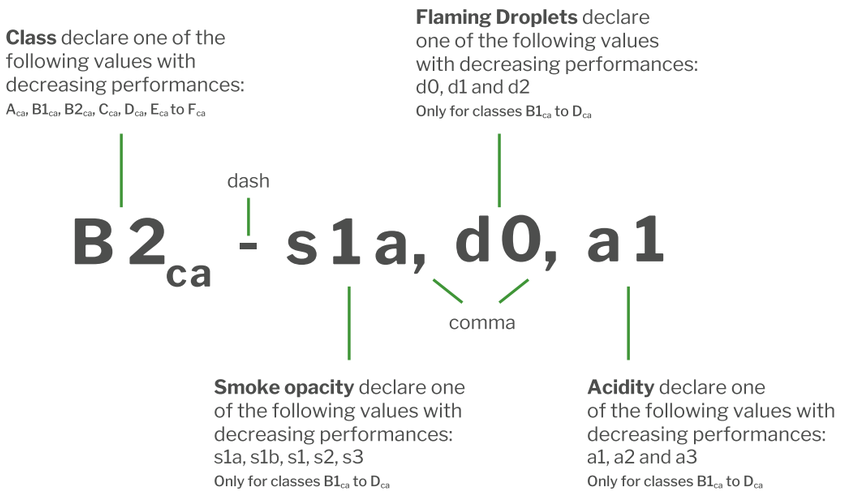


Image 04 – How to write the classification of cables for reaction to fire.

	CLASS[3]	CLASSIFICATION CRITERIA[4]	TEST METHOD(S)	ADDITIONAL CLASSIFICATION[5]	TEST METHOD(S)	APPROXIMATE PERFORMANCES OF DIFFERENT CLASSES ACCORDING TO EN13501-6
TOP CLASSES	A_{ca}	Gross heat of combustion (PCS)	EN ISO 1716			Level of highest performance corresponding to products that practically cannot burn
	$B1_{ca}$	• Vertical flame spread (FS) • Total heat release (THR) • Maximum value of heat release (Peak HRR) • Fire growth rate index (FIGRA)	30 kW flame source (very high intensity) and	Smoke production Flaming droplets/particles Acidity	EN 61034-2 EN 50399 EN 60754-2	Products that are combustible but show no or very little burning.
		Vertical flame spread (H)	EN 60332-1-2			
	$B2_{ca}$	• Vertical flame spread (FS) • Total heat release (THR) • Maximum value of heat release (Peak HRR) • Fire growth rate index (FIGRA	20.5 kW flame source (high intensity) and	Smoke production Flaming droplets/particles Acidity	EN 61034-2 EN 50399 EN 60754-2	Products that are combustible but show very little burning.
		Vertical flame spread (H))	EN 60332-1-2			
HIGH CLASS	C_{ca}	• Vertical flame spread (FS) • Total heat release (THR) • Maximum value of heat release (Peak HRR) • Fire growth rate index (FIGRA)	20.5 kW flame source (high intensity) and	Smoke production Flaming droplets/particles Acidity	EN 61034-2 EN 50399 EN 60754-2	Products that do not give a continuous flame spread, show a limited fire growth rate and show a limited heat release rate.
		Vertical flame spread (H)	EN 60332-1-2			
BASIC CLASS	D_{ca}	• Total heat release (THR) • Maximum value of heat release (Peak HRR) • Fire growth rate index (FIGRA)	20.5 kW flame source (high intensity; total burning allowed) And	Smoke production Flaming droplets/particles Acidity	EN 61034-2 EN 50399 EN 60754-2	Products that show a fire performance approximately like wood. Products show a continuous flame spread, a moderate fire growth rate, and a moderate heat release rate.
		Vertical flame spread (H)	EN 60332-1-2			
	E_{ca}	Vertical flame spread (H)	EN 60332-1-2			Products where a small flame attack is not causing large flame spread.
	F_{ca}	Vertical flame spread (H)	EN 60332-1-2			Flammable.

Table 2 - Reaction to fire classes for cables

3.2. Fire Resistant cables

The upgrade of the EN50575, to include the resistance to fire performance, is currently in progress.

Europacable will keep you informed when ready.

[4] The level of reaction to fire performance decreases in going from Class A_{ca} to Class F_{ca}

[5] The full description of the classification criteria, the symbols used and the numerical values of reaction to fire performance are given in the Commission delegated regulation (EU) 2016/364 of 1 July 2015 (L 68/4 - 15 March 2016). These will eventually be taken into an updated version of EN 13501-6 Fire classification of construction products and building elements - Part 6: Classification using data from reaction to fire tests on electric cables.

[6] The additional classifications apply only to Classes $B1_{ca}$, $B2_{ca}$, C_{ca} and D_{ca}. They are additional, but essential for use with cables described as Low Fire-Hazard (also known as “low smoke” and/or “halogen-free”). Their full description can be found in the same documents as for footnote (4).

4. Product Certification

Within the terms of the EU-product certification, the certification of reliable products, i.e. from class E_{ca} onwards, is carried out by **Notified Bodies**. These are testing and/or certification institutes which are independent from manufacturers. Notified Bodies are designated by one single defined body that has been entitled by each Member State and that already has been subjected to an authorization procedure.

It depends on the reaction to fire class to which degree a Notified Body is involved in the certification of products. All Resistance-to-fire features will be certified according with AVCP System 1+. The system for cable assessment complies with the allocation represented in chart 2.

Reaction to Fire Class	Resistance to Fire Class	Assessment and verification of constancy of performance (AVCP) system for cables	Duties of notified body
A_{ca}, $B1_{ca}$, $B2_{ca}$, C_{ca}	P_{ca} PH_{ca}	1+	▪ type testing ▪ regular plant auditing ▪ regular audit-testing of samples from ongoing production
D_{ca}, E_{ca}	//	3	▪ type testing
F_{ca}	//	4	▪ none

Table 4 – Assessment and Verification of Constancy of Performance systems and obligations

Whereas a class F_{ca} product is declared as such by the manufacturer, a class D_{ca} product or a class E_{ca} product needs to run through a notified testing laboratory’s type testing. A product falling into classes A_{ca}, $B1_{ca}$, $B2_{ca}$ or C_{ca}, and P_{ca} or PH_{ca} which are critical for fire safety, will be continually surveyed in production in accordance with the conformity procedure System 1+ by a notified product certification body.

A successfully completed assessment procedure is a prerequisite for labelling a product with CE marking and issue a Declaration of Performance.

The assignment to the respective class is documented by the CE marking. Hence, the user can be sure that required fire safety criteria have been ascertained, are met and that the class can be easily identified.

To ensure an entire building’s fire safety level, the cable Industry recommends to use Low Fire-Hazard cables which combine low flame/fire spread and heat release with low emission of smoke and harmful gases. Therefore, it is recommended to use at least class $B2_{ca}$ cables in buildings and civil works with very high safety requirements as well as in escape routes, and at least class C_{ca} cables in buildings with high safety requirements (e.g. in hotels and office buildings). Additional parameters are recommended to be set minimum at s1 and a1.

[7] See the Commission Decision 21 May 2011 which amends the Mandate M443.
[8] (e.g. in tunnels, hospitals, nurseries).

Each National Association can indeed propose levels of performances depending on the local fire hazard scenario, and taking also into consideration construction techniques and installation methods. For high or very high fire risk applications Europacable recommends and supports the adoption of droplets d1 performance level.

The final decision about the minimum level of performance in each Member State is anyhow competence of local Authorities and needs to be checked with the local Authorities.

Look at the Europacable website (cpr.europacable.eu) to find the Country Technical Datasheet with the performances applicable in your country.

5. CE marking of cables under the CPR

Once certified the performance of the cable following the procedure described at chapter 3. the Manufacturer can affix the CE marking and issues two mandatory accompanying documents related to CPR are the **Declaration of Performance (DoP)** and the **Label.**

All of the elements of the table below shall be present in the Declaration of Performance / on the Label and contain all the required information. **It is worth to carry out a formal check of both documents which shall be perfectly coordinated and aligned. Follow the instructions in the table below. In case you find any unconformity, please inform your National Market Surveillance Authority (see the list at https://ec.europa.eu/docsroom/documents/60716?locale=it)**

The CE label must be affixed visibly, legibly and indelibly on the packaging or cable reel.

The DoP and CPR documents must be easily accessible and kept for 10 years (Art. 11.2 of the Regulation n.305/2011)

The DoP is not a test report issued by a Notified Body, but an official document issued by the manufacturer with a complete list of mandatory information to make informed decisions and trace back all relevant information.

The DoP must be translated into the languages in which the product is sold.

See an example of DoP in Annex 1.

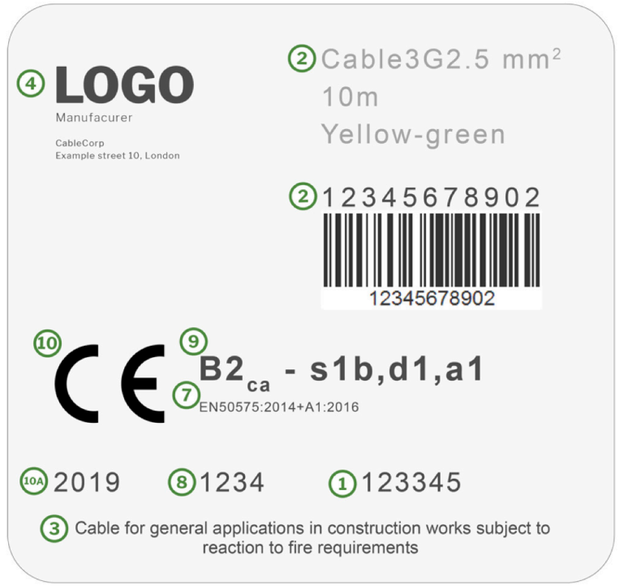


Image 05 - Example of CPR label – see the following Table 4 for the meaning of elements

#	INFORMATION	EXAMPLE	DoP	LABEL	HOW TO CHECK?
1	DoP number	1004253	✓	✓	Use the "DoP finder" in the manufacturer's website
2	Code of the product	12345	✓	✓	The identification must be unique
3	Intended use of the product	Cables for general applications in construction...	✓	✓	Sentence to be used only as intended in the Regulation: "cable for general application in construction works subject to reaction to fire requirements"
4	Manufacturer/Importer	Name of the cable producer	✓	✓	Name/logo of the manufacturer/importer and the full address. Check actual manufacturer is identified correctly and not just a marketing brand.
5	Authorised representative	Name of natural or legal person, in case it is appointed. This field can be blank.	✓		Any natural or legal person established within the EU who has received a written mandate from a manufacturer to act on his behalf in relation to specified tasks.
6	Type of AVCP system	AVCP 1+, 3 or 4	✓		Only 3 options can be used: AVCP 1+, AVCP 3, AVCP4
7	Technical specification applied	EN 50575-2014	✓	✓	Dated reference to the harmonised technical specification applied
8	Notified body number	1234	✓	✓	Search the number in the official list of certified labs Search
9	Declared class of performance	$B2_{ca}$-s1b, d1, a1	✓	✓	Sub-classes (s, d, a) need to be stated for $B2_{ca}$, C_{ca}, D_{ca}, not needed for A_{ca}, E_{ca}, F_{ca}
10	Presence of CE marking	CE		✓	The CE mark is proof of conformity with the respective EU directives: it is a legal mark and not a seal of quality
10A	Last two digits of the year	19	✓	✓	4 digits or last 2 digits of the year in which it was first affixed; any date before 16 is not correct

✓= mandatory (if not present = not required)

Table 04 – Elements of the Declaration of Performance and of the label

6. Economic operators and their responsibilities

In the supply chain from production to installation of CPR cables, the Economic Operators placing the product on the market have recognized responsibilities in the CPR beside Specifiers and Installers:

- Manufacturers (or Importers)
- Distributors.

Manufacturers shall CE mark their cables according with the rules detailed in the previous chapters.

The safety of a normal electrical circuit is influenced by the selection of the product and its installation. When referring to the fire safety of cables it is mainly – but non-exclusively – connected with the contribution of the material to the fire in terms of fire propagation, heat release and smoke emissions. These performance are regulated in each country with the CPR Classification.

When designing a circuit, besides the usual electrical features, the **Specifier** must prescribe the level of fire performance required by local Regulations expressed in CPR Classes and Additional Classifications (smoke opacity, flaming droplets and effluents acidity for Classes D_{ca} and above). Being aware that this is the minimum required and that it is his own responsibility to evaluate eventual specific risks, which could require raising the level of fire performance of the cable.

When assembling an electrical circuit, the **Installer** shall follow the local Installation standard for perfect execution but must be sure that the cables are CPR classified and their performance corresponds to the Regulations. Of course, Regulations supersede Specifications for the minimum admissible requirement. Specifications cannot prescribe the level of Classification lower than the Regulation.

Distributors should take appropriate measures to ensure that they place on the market only cables which are in compliance with the requirements of the CPR.

Cables for construction must first comply with the CPR when made available on the market. Therefore, cables even of the correct electric/mechanical requirement, but not CE marked under the CPR cannot be supplied.

Low voltage cables are CE marked under the Low Voltage Directive (LVD), but compliance with LVD doesn't allow for their use for fixed installation in construction. Maximum care must be given to avoid misunderstandings on the intended use of the cable.

The Declarations of Performance (DoP) should be supplied with the Electrical Installation Certificate issued by the Installer to describe an installation. Therefore, the DoP must be available for the Installer in the local language either on paper or digitally providing the information marked on the cable or on the label.

7. Conclusion

It is a fact that, today, the cables take a more and more important place in the buildings, both for power and communication. The interconnection (to ensure networks integrity) is also key in the actual constructions. Thus, the design of the cables should be thought to ensure a satisfactory level of safety (or security) in case of fire in the different buildings they are used in.

Cables not only have to function during normal operation, but they also should ensure safety during fire. As described in this paper, the risk resulting from cable systems in the event of a fire can be minimized by using Low Fire-Hazard cables. Thus, the risk of fire propagation and of smoke and droplets release can be reduced and this in turn means that the right visibility, longer escape times, and safer environments for the rescue teams are ensured. The use of compliant Fire Resistant cable can ensure the integrity of circuits supplying power and communication to the critical saving-life equipment.

With the entrance into force of the Construction Products Regulation, starting from 10th of June 2016 for reaction to fire and shortly also for resistance to fire, regulators, specifiers, architects, consultants, manufacturers, contractors, distributors, installers and all the construction industry operators have a clear legal framework for specifying, selecting, buying, distributing and installing cables accordingly to the defined Classes. This with a specific attention to the most demanding applications; especially where evacuations problems can appear in case of fire, like in tunnels and high-rise buildings or with the presence of people with limited mobility (e.g. nursing home, hospitals, schools, jails).

Product quality and people safety all over Europe should be ensured. Through CPR the products' compliancy is being certified through the CE mark and the Declaration of Performance with Third Parties Notified Bodies involvement and issued by the manufacturers.

To ensure the proper and necessary fire safety level for people across the European Union, the cable Industry recommends regulators and specifiers and construction industry supply-chain operators to implement CPR at Member State level, by adopting, choosing and installing **Low Fire-Hazard** and **Fire Resistant** cables and by:

- re-assessing and upgrading if necessary the national reaction to fire and resistance to fire requirements through the CPR Classes to be applied for the different buildings and applications typologies.
- using at least **Top Class cables** (see Table 2) in special-purpose constructions in buildings, **tunnels** or construction engineering works with high or very high fire safety risk (e.g. **hospitals, nurseries, escape routes, airports, metro, train stations, buildings with high people density**…)
- using at least **High class cables** in buildings with medium or high fire safety risk (e.g. **leisure or commercial buildings, hotels, schools, administration or office buildings**…)
- Ensuring the appropriate and necessary level of **market surveillance** through the national competent Authorities and appointed bodies.

Implementing safety standards in buildings with high safety needs and adapting current national regulations behoves all construction ministries of the member states. Europacable looks forward to supporting the national implementation with its technical expertise and is prepared for a constructive dialogue with stakeholders.

The advantages of Low Fire-Hazard and Fire Resistant cables won't be noticeable in daily life – like airbags in vehicles – however, in the event of an accident or a fire you wish to rely on them. Therefore, a significant contribution to preventive fire protection is made by using Low Fire-Hazard and Fire Resistant cables according with the above recommendations.

8. Definitions

Low Fire-Hazard - cables performing Class D_{ca}-s1b, d1, a1 or above:

Specifier - professional who deals with the design and testing of electrical installations in a building

Installer - designates a technician qualified to carry out installation and maintenance work on electrical systems, with the task of helping to design the system layout, procuring materials and carrying out all fixing, assembly, connection, functional testing and acceptance work

Manufacturer (or **Importer**) - any natural or legal person who manufactures (or imports from a non-EU country) a construction product and markets it under his name and trademark (Art 11 and 14) of the Regulation n.305/2011

Distributor - any natural or legal person who places a construction product on the market (Art.13) of the Regulation n.305/2011

For other definitions please see Art 2 of the Regulation n.305/2011.

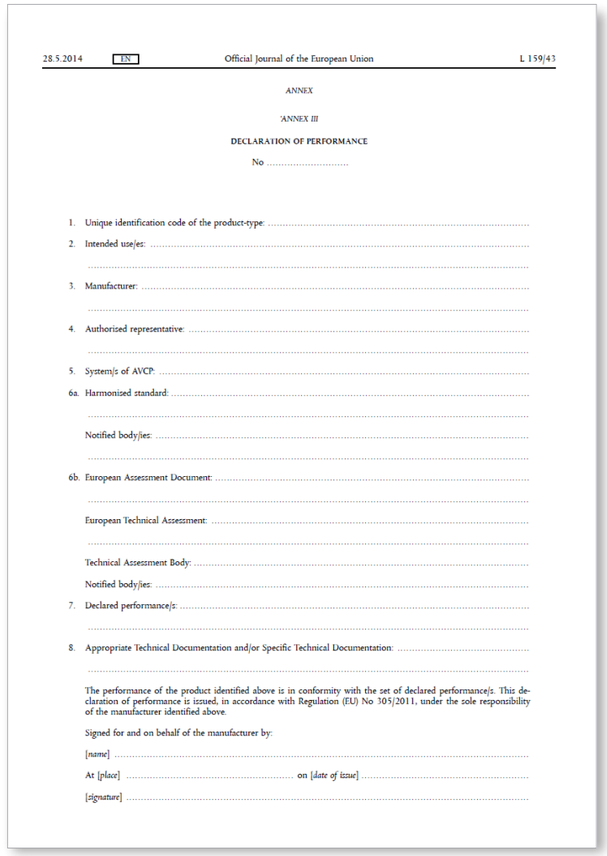
9. Sources

- CPR: Regulation 305/2011 published on the OJEU L88/05 on the 4/4/2011
- DOP: Delegated Regulation No. 574/2014 published on the OJEU L159/41 on the 28/5/2014
- I cavi e il Regolamento prodotti da costruzione by AICE – Italian Cablemakers Association.
- Le Règlement Produits de Construction appliqué aux câbles by Sycabel – French Cablemakers Association.
- Low Fire-Hazard cables improve safety by ZVEI German Electrical and Electronic Manufacturers' Association – German Cablemakers Association.
- Guìa para la implementacion de la CPR - FACEL.

→ Further information available under FAQ on CPR for cables - Europacable at **https://cpr.europacable.eu/en/faq**

10. Annexes

10.1. *Annex 01: Example of Declaration of Performance as for Commission Delegated Regulation No.574/2014*



28.5.2014 EN Official Journal of the European Union L 159/43

ANNEX

'ANNEX III

DECLARATION OF PERFORMANCE

No .....

1. Unique identification code of the product-type: .....
2. Intended use/es: .....
3. Manufacturer: .....
4. Authorised representative: .....
5. System/s of AVCP: .....
6a. Harmonised standard: .....

Notified body/ies: .....

6b. European Assessment Document: .....

European Technical Assessment: .....

Technical Assessment Body: .....

Notified body/ies: .....

7. Declared performance/s: .....
8. Appropriate Technical Documentation and/or Specific Technical Documentation: .....

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

[*name*] .....

At [*place*] ..... on [*date of issue*] .....

[*signature*] .....

10.2. *Annex 02 -Test Methods*

10.2.1. *EN 50399:2022*

The Standard specifies equipment and test methods for the assessment of vertical flame/fire propagation, heat release, smoke production and the presence of flaming droplets/particles on vertically mounted electrical cables under defined conditions.

This Standard specifies the equipment for the fire spread test, the arrangement and calibration of the instrumentation to be installed to measure the heat release and smoke production during the test. Gases produced by combustion are collected in a hood above the test chamber and are conveyed through an exhaust system, which allows measurement of the rate of heat release and smoke production. This procedure is applied for type approval tests for the classification of cables in classes $B1_{ca}$, $B2_{ca}$, C_{ca} and D_{ca} are specified. The installation of the cables on the test scale and the volume of air passing through the chamber are in accordance with Commission Decision 2006/751/EC, which is reflected in the requirements of this Standard.

This Standard completely replaces standard EN 50399:2011, which was applicable until 31-12-2023.

NOTE: For the purpose of this Standard, the term electric cable means all power, control and communication cables, including fibre optic cables and hybrid cables used for the transmission of power and/or signals.

10.2.2. *EN 60332-1-2:A12*

Tests on electrical and optical cables under fire conditions.

Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame.

This standard specifies the procedure for testing the resistance to vertical flame propagation for a single vertical electrical insulated conductor or cable, or optical fibre cable, under fire conditions.

10.2.3. *EN 60754-2:2014+A1:2020*

Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity.

This norm specifies the apparatus and procedure for the determination of the potential corrosivity of gases evolved during the combustion of materials taken from electric or optical fibre cable constructions by measuring the acidity (pH) and conductivity of an aqueous solution resulting from the gases evolved during the combustion. The general method specified in this standard is intended for the testing of individual components used in a cable construction. Formulae are given for the calculation of a weighted value for a combination of materials found in a specified cable. The use of this method will enable the verification of relevant requirements for either individual components or combined components of a cable construction stated in the appropriate cable specification.

A simplified method is included for the testing of individual components where it is required only to demonstrate compliance with a stated performance requirement for quality control purposes. The significant technical changes with respect to the previous edition are as follows:

- improved definition of safety requirements relating to capture of gases;
- introduction of guidance on the preparation of test specimens for more even combustion;
- better expression of tolerances and precision;
- clarification of the conductivity and acidity functions;
- improved definition of the heating procedure;
- greater precision in the definition of the test temperature for the determination of pH value and conductivity;
- correction of the formulae for the calculation of the test results.

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