

**Cables produced by ELKOND HHK, a.s. already are in compliance with parameters required by the coming norm EN 50575:2014.**

Our cables with Reaction to fire class B2<sub>ca</sub>-s1,d0,a1 are being produced **since 2011**. ELKOND HHK, a.s. has many years of experience with production of cables for purposes of fire safety of buildings and is 'CPR Ready'.

### Information to the CPR legislation

Construction Product Regulation (or **CPR**) is an *EU PARLIAMENT AND COUNCIL REGULATION nr. 305/2011 from 9th March 2011*, which establishes harmonized conditions for entering construction products into the EU market. It also defines construction products, duties of producers and distributors, requirements on documents and also basic requirements on whole buildings. It defines following basic requirements on constructions:

1. Mechanical robustness and stability
2. Safety in case of fire
3. Hygiene, health and environmental impact
4. Safety and accessibility during usage
5. Noise protection
6. Energy economy and heat retention
7. Sustainable use of natural resources

Cables intended for permanent incorporation into the building are also construction products and thus are subject of this EU regulation. From the CPR perspective, cables are responsible for safety in case of fire (2<sup>nd</sup> requirement from the above listed), which is determined by two parameters:

- Reaction to fire class (ranging from A to F (from best to worst))
- Circuit integrity in fire (specified in minutes)

The harmonized standard *EN 50575:2014 Power, control and communication cables — Cables for general applications in construction works subject to reaction to fire requirements* was published 10.06.2016. It is a product oriented norm for cables with reaction to fire classification.

**The EN 50575:2014 standard becomes valid from 1.7.2017 (latest date by which this document has to be implemented at national level)!**

According to this norm cables are divided into following classes of reaction to fire:

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Class	Test methods				
	EN ISO 1716	EN 50399	EN 60332-1-2	EN 61034-2 <sup>a)</sup>	EN 60754-2 <sup>a)</sup>
<b>A<sub>ca</sub></b>	X	–	–	–	–
<b>B1<sub>ca</sub></b>	–	X	X	X	X
<b>B2<sub>ca</sub></b>	–	X	X	X	X
<b>C<sub>ca</sub></b>	–	X	X	X	X
<b>D<sub>ca</sub></b>	–	X	X	X	X
<b>E<sub>ca</sub></b>	–	–	X	–	–
<b>F<sub>ca</sub></b>	Parameter not specified.				
a) tests of additional classifications					

This chart lists testing methods corresponding to each class. Individual classes represent behaviour of cables in fire – heat production, smoke production and spread of the flame on the cable coat. Class **A<sub>ca</sub>** represents the best parameters and class **F<sub>ca</sub>** the worst. Classes from **B1<sub>ca</sub>** to **D<sub>ca</sub>** have also additional classifications:

- s (smoke)** - expresses quantity and opacity of smoke released from a burning fire, which affects evacuation possibilities and human health (values: s1, s1a, s1b, s2, s3)
- d (droplets)** - quantity of burning droplets falling from the burning cable which might support spread of fire (values: d0, d1, d2)
- a (acidity)** - pH and conductivity of fire fumes in contact with water (water for fire extinguishing or contained in lung tissue), that damage constructions, equipment and human health (values: a1, a2, a3)

Lower value represents better fire safety of cables.

Sample of the cable marking:

N2XH-J 3x1,5 B2<sub>ca</sub>-s1,d1,a1 – Power cable 3x1,5mm<sup>2</sup> with reaction to fire class B2<sub>ca</sub> and additional classifications s1, d1, a1.

It depends on individual EU member countries, which reaction to fire classes will be required for buildings by their national legislation. At present the legislation of Slovakia requires for cables used in certain fire zones the highest reaction to fire class B2<sub>ca</sub>-s1,d1,a1 and legislation of the Czech republic requires B2<sub>ca</sub>-s1,d1.

Depending on the class of reaction to fire, cables are tested according to specific systems of **Assessment and verification of constancy of performance – AVCP**.

Product	Intended use	Level or Class	System of AVCP
Power, control and communication cables	For use in relation to reaction to fire regulations	A <sub>ca</sub> , B1 <sub>ca</sub> , <b>B2<sub>ca</sub></b> , C <sub>ca</sub>	1+
		D <sub>ca</sub> , E <sub>ca</sub>	3
		F <sub>ca</sub>	4

**System 1+:** Is the strictest. In addition to *Factory production control (FPC)* and planned tests executed by the producer, it requires also the presence of a notified body (Authorised certification and testing institute).

The notified body executes testing of the product (tests that determine the parameters, reaction to fire class and additional classifications of the product), initial inspection, continuous oversight and verification testing of cable samples before it is entered into the market. The notified body issues a Certification of constancy of performance of the product acc. to Act No. 133/2013 Coll.

**System 3:** The producer must have a working system of FPC. A notified testing laboratory executes testing of the product (tests that determine the parameters, reaction to fire class and additional classifications of the product).


**System 4:** The producer must have a working system of FPC and executes the product testing (determines its parameters and reaction to fire class) himself.

According to CPR, the producer is obliged to declare parameters of his products as follows:

1. The producer must issue a document **Declaration of performance (DoP)**. This document contains following data:
  - identification of the product and its purpose in the building
  - name of the producer and his address
  - declared parameters (Class of reaction to fire and eventual additional classifications) of the AVCP system to which the cable is assigned, and eventually the notified body that executed the testing of parameters and executes also continuous oversight
  - product norm

The producer is also commits himself to take responsibility for his product. A sample of the Declaration of performance can be found in the attachment.


Notice: The *Declaration of performance* is not required in those member countries, which don't have legal requirements related to relevant properties for intended use of the product. In these cases is the producer not obliged to declare such properties of his products. The CE documentation and the Declaration of performance can contain the information: "*No performance determined*" (or *NPD*).

2. Each product must be marked in compliance to the EN 50575:2014 standard. It must be marked by the  symbol and have a **label** that contains:

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AVCP system: 1+

 XXXX
<b>ELKOND HHK, a.s., Oravická 1874, 028 01 Trstená Slovakia</b>  <b>17</b>  <b>(1234)</b>
<b>EN 50575:2014</b>  <b>(1234)</b>  <b>Power supply in buildings and other engineering constructions with the purpose of limiting spread of fire and smoke</b>  <b>Reaction to fire class: B2<sub>ca</sub>-s1,d1,a1</b>  <b>Release of dangerous substances: No</b>

- CE sign

- Id. number of the certification authority for products.

- Name and registered address of the producer or identification marking.

- Last two digits of the year when the marking has been applied.

- Ref. number of the Declaration of performance (DoP)

- EU standard according to the EU Official Journal.

- Unique ID code of the product type.

- Intended use of the product according to the applied EU standard.


- Class of the parameter.

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**AVCP system: 3**

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<b>EN 50575:2014</b>  <b>(1234)</b>  <b>Power supply in buildings and other engineering constructions with the purpose of limiting spread of fire and smoke</b>  <b>Reaction to fire class: E<sub>ca</sub></b>  <b>Release of dangerous substances: No</b>

- CE sign
- Id. number of the notified testing laboratory.
- Name and registered address of the producer or identification marking.
- Last two digits of the year when the marking has been applied.
- Ref. nr. of the Declaration of performance (DoP)
- EU standard according to the EU Official Journal.
- Unique ID code of the product type.
- Intended use of the product according to the applied EU standard.
- Class of the parameter.

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AVCP system: 4

<b>CE</b>	- CE sign
<b>ELKOND HHK, a.s., Oravická 1874, 028 01 Trstená Slovakia</b>	- Name and registered address of the producer or identification marking.
<b>17</b> <b>(1234)</b>	- Last two digits of the year when the marking has been applied. - Ref. nr. of the Declaration of performance (DoP)
<b>EN 50575:2014</b>  <b>(1234)</b>	- EU standard according to the EU Official Journal. - Unique ID code of the product type.
<b>Power supply in buildings and other engineering constructions with the purpose of limiting spread of fire and smoke</b>	- Intended use of the product according to the applied EU standard.
<b>Reaction to fire class: F<sub>ca</sub></b>	- Class of the parameter.
<b>Release of dangerous substances: No</b>	

All installations after 1.7.2017 made according to CPR, which is being applied to cables permanently incorporated into buildings according to the *harmonized standard EN 50575:2014*, the end users, installers, sellers and project engineers should watch as follows:

- ❖ if the cables are marked **CE**
- ❖ if they have a **proper label** with all data required by the norm
- ❖ if the producer is able to declare relevant parameters and their constancy through a **Declaration of performance**

Note: This standard does not apply to cables with intended use for power supply, communication, detection and signalling of fire alarm in buildings and other engineering constructions, with the requirement for permanent power supply and/or transfer of signals for safety installations. Examples: electrical fire alert systems and fire equipment installations (fire resistant cables).

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