

***Regulations concerning construction
products
(CPR)***

***Reaction to fire performance of electric
cables***

SR EN 50575:2015 / A1:2016



Intro:

The new CE marking regulations for products used in construction works in accordance with the EU Regulation No. 305/2011 (CPR) introduce a series of amendments applicable to the rules and procedures that govern the marking of construction products and the obligations that economic operators (manufacturers, authorized dealers, importers, distributors) must adhere to.

The EU Regulation No. 305/2011 (CPR) includes all construction products designed to be used in permanent installations within civilian, industrial and public buildings.

The EU Regulation No. 305/2011 introduces the mandatory Declaration of Performance (abbr. - DoP) and the CE marking of cables for construction works with their respective fire performance.

Performance requirements, as well as reaction to fire testing and assessment methods for electric supply, signalling and telecommunication cables used in construction works are laid down in the harmonized European standard SR EN 50575:2015 / A1:2016.

Please refer to the documents below for details and specifications on how to define cable families:

- **SR CLC / TS 50576: 2017** - Methodology for defining cable families subject to testing as well as the procedure regarding the extended application of test results to a whole cable family (EXAP);
- **SR EN 13501-6: 2014** - Classification using the results of fire reaction tests on electric cables.

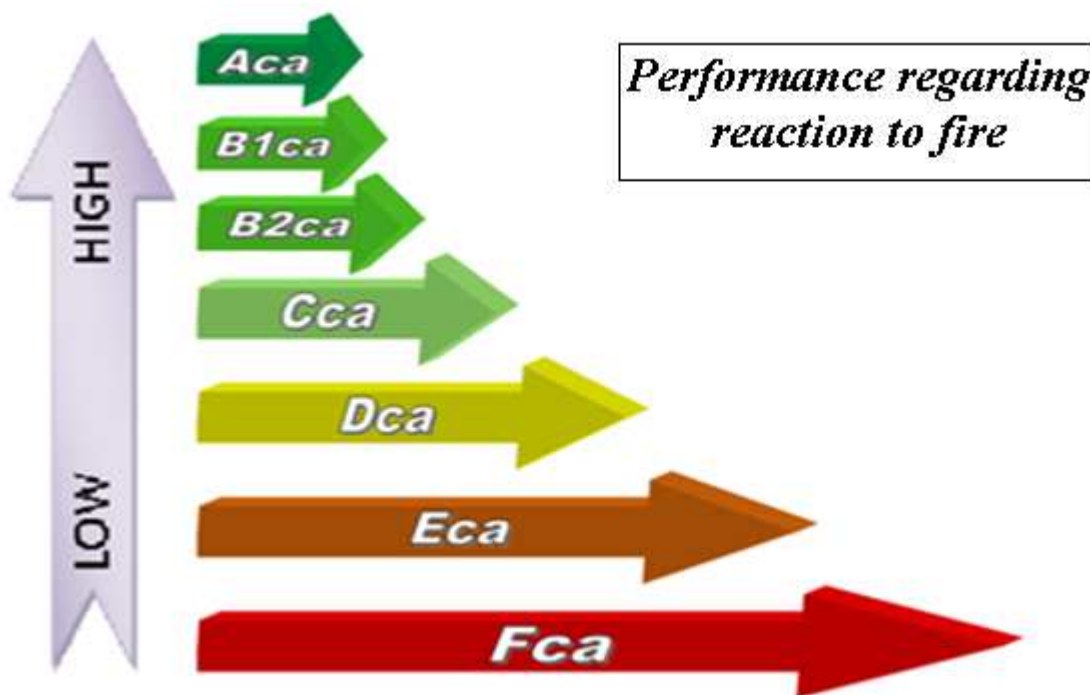
CLASSIFICATION OF EUROCLASSES

- Classification of electrical cables is made by taking into account their reaction to fire performance and their potential hazardous emissions (toxic gas, acidity, number of droplets).
- The harmonized standard SR EN 50575 provides 7 fire reaction classes (or "euroclasses") depending on the intended applications and the associated test standards.
- The contribution of power, control and communication cables to fire development must be checked in conformity with the testing methods pertaining to each class.

The results must be classified according to SR EN 13501-6:2014.

Performance classes for essential characteristics are related to the cables' reaction to fire property as demonstrated by the tests referred to in SR EN 50575.

According to the fire growth rate (FIGRA) index and to the heat release rate (HRR), there are 7 classes (euroclasses) shown in the drawing below:



CLASS		AVCP SYSTEM*	OBLIGATIONS
Aca	Aca cable classification applies to non-flammable products, such as cables with ceramic insulation;	1+	<p><u>Notified certification body:</u></p> <ul style="list-style-type: none"> ✓ Initial type testing and inspection, including product sampling; ✓ Continuous surveillance audit of the manufacturing process; ✓ Random testing of samples collected by de notified certification body before product market launch; ✓ Issues a “Product Performance Constancy Certificate”; <p><u>Manufacturer:</u></p> <ul style="list-style-type: none"> ✓ Additional testing on in-house collected samples according to the required testing plan;
B1ca B2ca	Cables classified under B1ca, B2ca have the highest level of performance among flammable cables, with very low levels of flame propagation, heat release and smoke / toxic gas release.		
Cca	Cables classified under Cca have average fire performance.		
Dca	Dca class cables have an intermediate level of safety in case of fire.	3	<p><u>Notified testing lab:</u></p> <ul style="list-style-type: none"> ✓ Initial type tests; <p><u>Manufacturer:</u></p> <ul style="list-style-type: none"> ✓ Factory manufacturing control; ✓ Sample collection;
Eca	Eca class cable have a minimal safety level in case of fire, being fire tested according to SR EN 60332-1-2.		
Fca	Cables without fire performance or cables with unspecified performance.	4	<p><u>Manufacturer:</u></p> <ul style="list-style-type: none"> ✓ Factory manufacturing control; ✓ Initial type tests;

*AVCP - Assessment and Verification of Constancy of Performance

B2 – Reaction to fire class; ca = cables



Additional classification:



d = no. of droplets generated during combustion

s = smoke release class



Additional fire performance class symbols:

Additional classification includes three distinct levels of cable performance during combustion:

Smoke release:

- **s1:** Low smoke density
- **s2:** Moderate smoke density;
- **s3:** Density unclassifiable under **s1** or **s2**



Number of droplets / flaming particles after combustion:

- d0:** No droplets / flaming particle occurring within 1200 s;
- d1:** No droplets / flaming particles occurring that last for more than 10 s within 1200 s;
- d2:** Products that don't meet either d0 or d1 criteria.



Acidity classification

- a1, a2 and a3 classifications are inferred from tests performed in conformity with SR EN 60754-2:2014;

- a1:** Low acidity, conductivity < 2.5 $\mu\text{S}/\text{mm}$ and $\text{pH} > 4.3$
- a2:** Average acidity values, conductivity < 10 $\mu\text{S}/\text{mm}$ and $\text{pH} > 4.3$
- a3:** Products that don't meet either a1 or a2 criteria.


DECLARATION OF PERFORMANCE (DoP):

- All cables under the EU Regulation no. 305/ 2011 shall be accompanied by the Declaration of Performance (DoP) which indicates the performance of construction products with regard to their essential characteristics, according to the harmonized standard SR EN 50575:2015 / A1:2016.
- The declaration of performance shall be drawn up based on the technical documentation for each cable family according to art. 4 and 6 of the EU Regulation no. 305/ 2011.
- The declaration of performance includes the reference of the prototype, the intended use of the product, the AVCP system, the number of the harmonized technical specification, the product performance – the assigned class, the list of essential characteristics, the notified EU body in case of the AVCP 1+ system or the notified EU laboratory in case of the AVCP 3 system.

CE MARKING and LABELLING

- The CE marking symbol shall comply with the fundamental principles laid down in art. 30 of the EC Regulation no. 765 / 2008 and shall be applied visibly, legibly and indelibly on product labels attached to coils and drums of power, control and communication cables.
- The CE marking shall be applied before the product is launched onto the market. It can be followed by a pictogram or any other marking that indicates a hazard or some special use in particular (according to paragraph ZZ.3 in SR EN 50575:2015).

An example of CE marking for cables evaluated under the AVCP 1+ system:

 NB 2728	<i>Marcaj CE, constând din simbolul "CE"</i> <i>Numărul de identificare a organismului de certificare a produsului</i>
S.C. ELECTROPLAST S.A. RO-420132 Bistrita, Str. Subcetate, Nr.14 ROMANIA 17 13149	<i>Numele și adresa de înregistrare a producătorului sau marca de identificare</i> <i>Ultimele două cifre ale anului în care marcajul s-a aplicat pentru prima dată</i> <i>Numărul de referință al DoP</i>
SR EN 50575:2015/ A1:2016 D0223000D - N2XH 5x1,5 mm ² Alimentare cu energie electrică în clădiri și alte construcții civile în scopul limitării degajării și propagării focului și fumului Reacția la foc: B2 _{ca} -s1,d1 Substanțe periculoase: NPĐ	<i>Numărul standardului european aplicat, așa cum a fost referit în JOUE</i> <i>Codul de identificare unică a produsului tip</i> <i>Utilizarea prevăzută a produsului așa cum este stabilită în standardul european aplicat</i> <i>Clasa de performanță</i>