



# CPR, Construction Products Regulation

## What is it and how does it affect electrical cables?

# CONTENTS

1. What is the CPR?
2. The new classes: B2, C, D, E
3. Additional classification levels: s, d, a
4. Summary of CPR classification
5. Assessment and verification of constancy of performance (AVCP)
6. Which cable should I install?
7. Period of implementation of CPR
8. Identification of CPR cables
9. Declaration of performance (DoP)
10. Additional information on the new CPR regulations



# 1. What is the CPR?

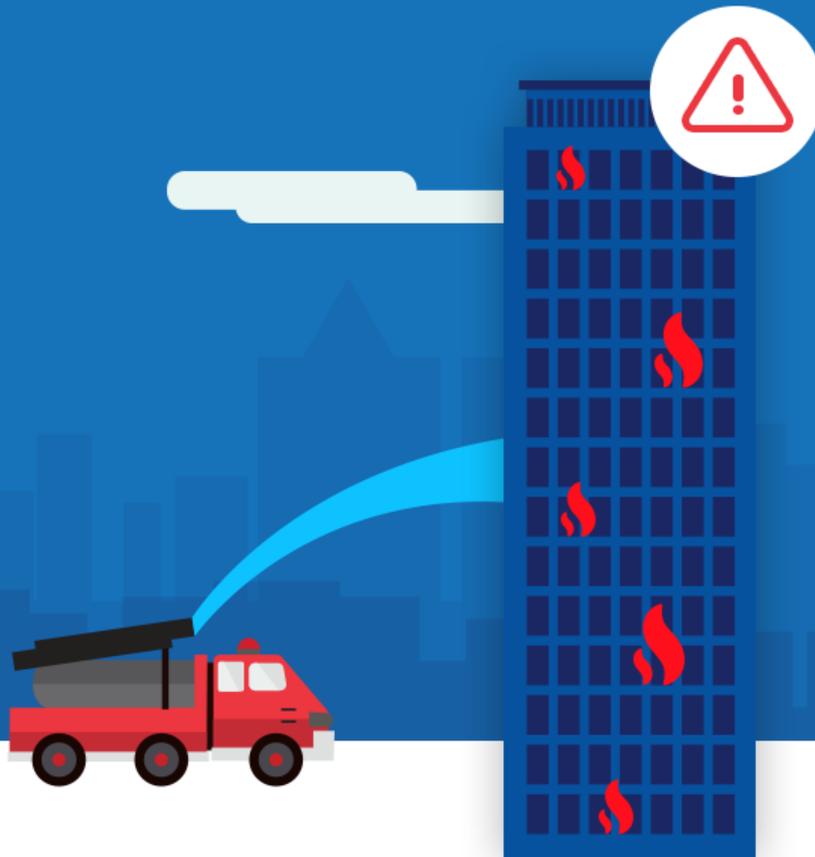
The CPR (Construction Product Regulation) is a regulation issued by the European Union, in force since 1<sup>st</sup> July 2016.

The purpose of the CPR is to:

- Ensure the **harmonisation across Europe** of the materials used in construction
- Achieve **higher safety levels for fire and dangerous substances** in materials used in construction
- Provide **greater clarity and traceability** of products used in construction

# 1. What is the CPR?

The CPR applies to all products intended to be used permanently in construction.



- ✓ Public Locals.
- ✓ Households.
- ✓ Civil engineering works.
- ✓ Connecting facilities.
- ✓ Exterior lighting.

## 2. The new classes



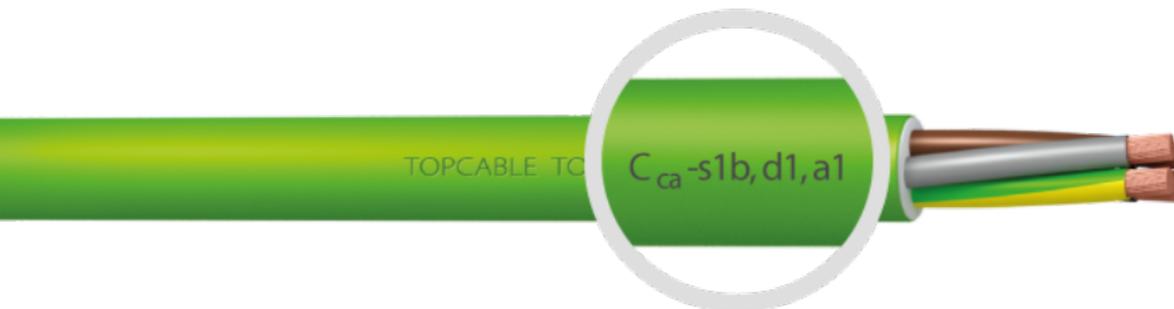
Maximum security  
against fire

Basic security  
against fire

The CPR includes four classes that directly apply to electrical cables: B2, C, D and E.

These classes refer to combustible cables in ascending order of fire growth rate (FIGRA) and heat release.

All of these cables also comply with the flame non-propagation test in accordance with UNE-EN 60332-1-2.



## 2. The new classes



Cables classified as B and C are those with the **highest performance levels against fire** and provide **maximum protection for individuals and teams**.

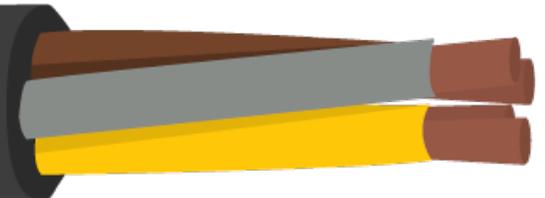


## 2. The new classes



Cables in Classes D and E provide a more basic level of safety.

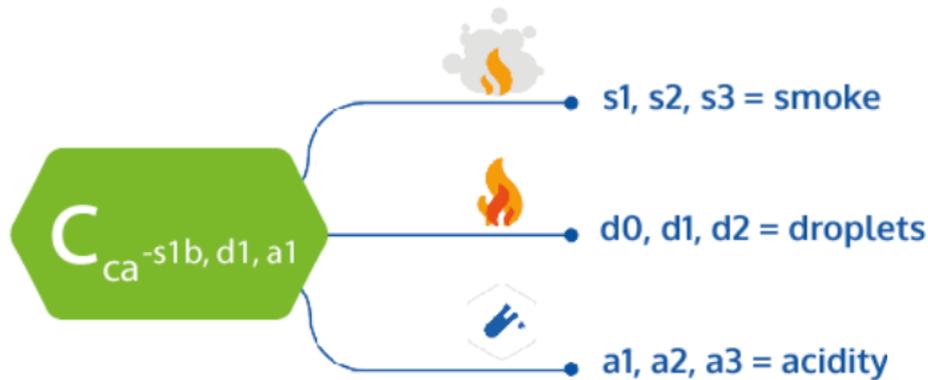
Top Cable XTREM H07RN-F E<sub>ca</sub>



### 3. Additional classification levels: s, d, a.

Three additional classification levels have been established regarding:

- The amount of smoke produced (s)
- The particles released by the cable during combustion (d)
- The acidity – or toxicity – of the smoke (a)



# 3. Additional classification levels: s, d, a.

$C_{ca}$  -s1b, d1, a1



**s1, s2, s3**  
S (smoke)

## SMOKE OPACITY

**s1:** Little production and slow propagation of smoke

**s1a:** S1 with visibility over 80% (UNE-EN 61034-2)

**s1b:** S1 with visibility over 60% and below 80% (UNE-EN 61034-2)

**s2:** Intermediate values of production and propagation of smoke

**s3:** Neither s1 or s2



**d0, d1, d2**  
D (droplets)

## FALL OF DROPLETS DURING COMBUSTION

**d0:** No fall of droplets or flamed particles (UNE-EN 50399)

**d1:** Fall of droplets and inflamed particles that persist for less than 10 seconds (UNE-EN 50399)

**d2:** Neither d0 or d1



**a1, a2, a3**  
A (acidity)

## SMOKE ACIDITY

**a1:** Low acidity (UNE-EN 60754-2 conductivity <2,5ms/mm y pH > 4.3)

**a2:** Intermediate values of acid (UNE-EN 60754-2 conductivity <10 ms/mm y pH > 4.3)

**a3:** Neither a1 or a2

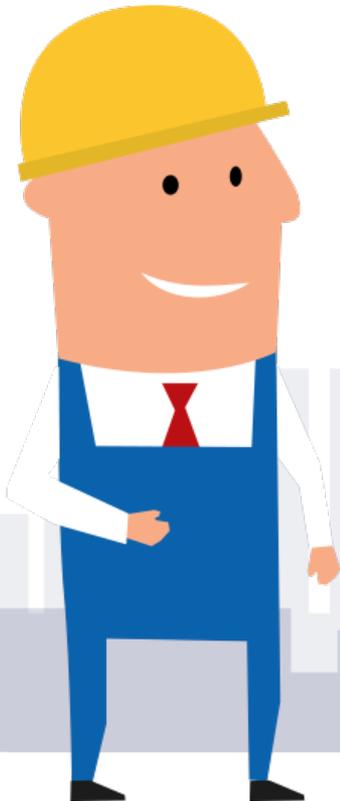
# 4. Summary of CPR classification



Class	Main classification criteria			Additional criteria		
	UNE-EN 50399 (heat emission, fire growth rate)	UNE-EN 50399 (Non-propagation of fire)	UNE-EN 60332-1 (Non-propagation of fire)	UNE-EN 50399/ 61034-2 s → Smoke emission	UNE-EN 50399 d → Flamed particles	UNE-EN 60754-2 a → Acidity
	+++	+++	+++	S1a ++++ S1b +++ S1 ++ S2 + S3	d0 +++ d1 + d2	a1 +++ a2 ++ a3
	++	++	+++	S1a ++++ S1b +++ S1 ++ S2 + S3	d0 +++ d1 + d2	a1 +++ a2 ++ a3
	++		+++	S1a ++++ S1b +++ S1 ++ S2 + S3	d0 +++ d1 + d2	a1 +++ a2 ++ a3
			+++			

# 4. Summary of CPR classification

This new European classification system enables the easy comparison of different products in order to select the most suitable cable for each type of installation.



## 5. Assessment and verification of constancy of performance



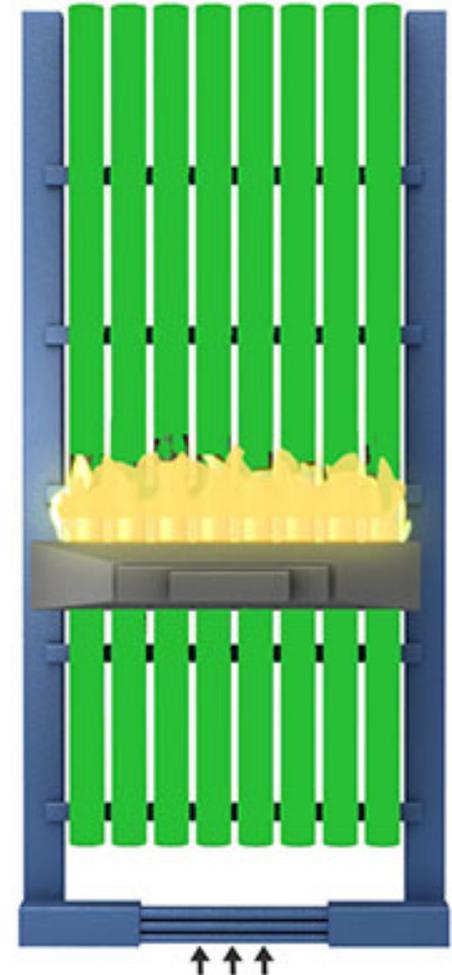
The CPR assessment and verification of constancy of performance (AVCP) is established by the manufacturer with the involvement of:

The Notifying Body for classes  $B1_{ca}$ ,  $B2_{ca}$ ,  $C_{ca}$

- The **Notifying Body** inspects, monitors, assesses and controls production and the carrying out of the initial sample and follow-up tests undertaken by the Notifying Laboratory. The frequency of the follow-up tests is at the highest level.

The Notifying Laboratory for classes  $D_{ca}$ ,  $E_{ca}$

- The manufacturer is required to carry out initial verification and follow-up tests on its products with a Notifying Laboratory, the participation of a Notifying Body not being mandatory.





# 5. Assessment and verification of constancy of performance

CLASS	EVCP	CERTIFICATION
B2ca		Type tests by notifying body
Cca	1+	Initial factory inspection by notifying body Continuous follow-up (auditing and sampling) Includes sample tests by certified body  Production controls and sample tests by manufacturer
Dca	3	Type tests by notifying laboratory
Eca		Production controls by manufacturer

# 6. Which cable should I install?

HABITUAL CABLE	Minimum CPR Class		HABITUAL CABLE	Minimum CPR Class		HABITUAL CABLE	Clase mínima CPR	
	Cca-s1b,d1,a1 (High Safety)	Eca (Basic Security)		Cca-s1b,d1,a1 (High Safety)	Eca (Basic Security)		Cca-s1b,d1,a1 (High Safety)	Eca (Basic Security)
RV	CPR rating according to particular specifications of Electrical Company		RV-K		Eca	H07Z1-K (AS)	Cca	
XZ1 (S)			RZ1-K(AS)	Cca		RZ1MZ1-K (AS)	Cca	
RV			H07V-K		Eca	H07RN-F		Eca
XZ1 (S)			H07Z1-K(AS)	Cca		H07ZZ-F (AS)	Cca	
XZ1 (AS)			RV-K		Eca	H07V-K		Eca
RZ1-K (AS)	Cca		RZ1-K(AS)	Cca		H07Z1-K (AS)	Cca	
H07Z1-K (AS)			H07V-K		Eca	H05VV-F		Eca
RZ1-K (AS)			H07Z1-K(AS)	Cca		H07ZZ-F (AS)	Cca	
ES07Z-R (AS)			H07Z1-K(AS)	Cca		RVMV-K		Eca
H07Z1-R (AS)			H07ZZ-F (AS)	Cca		RZ1MZ1-K (AS)	Cca	
RV; RV-K		Eca	H07V-K		Eca	H07V-K		Eca
RZ1-K (AS)	Cca		H07Z1-K(AS)	Cca		H07Z1-K (AS)	Cca	
RV-K		Eca	RV-K		Eca	RV-K		Eca
RZ1-K (AS)	Cca		RZ1-K (AS)	Cca		RZ1-K(AS)	Cca	
RV-K		Eca	H07V-U; H07V-K		Eca	H07RN-F		Eca
RZ1-K (AS)	Cca		H07Z1-K(AS)	Cca		H07ZZ-F (AS)	Cca	
H07V-R; H07V-K		Eca	H07V-U; H07V-K		Eca	It is recommended to consult with a manufacturer		Eca
H07Z1-K(AS)	Cca		H05VV-F		Eca			Eca
H07V-K		Eca	H07ZZ-F (AS)	Cca				Eca
H07Z1-K(AS)	Cca		H07Z1-K(AS)	Cca				Eca
RV-K		Eca	RZ1-K(AS)	Cca		Same as wet local		
RZ1-K(AS)	Cca		H07ZZ-F (AS)	Cca		Same as wet local		
RV-K		Eca	Cables (AS+)	Cca				
RZ1-K(AS)	Cca		(fire resistant)					



# 7. Period of implementation of CPR

The new CPR regulation has been in force since 1<sup>st</sup> July 2016.

The European Union has set up a transitional period of 1 year, during which the entire supply chain is required to ensure its stocks comply with the new regulation.

**From 1<sup>st</sup> July 2017, it will not be possible to market cables that are not classified and which do not comply with the new CPR regulation.**



# 7. Period of implementation of CPR

The implementation of the new European CPR regulation obliges manufacturers, distributors, project managers and installers in the European Union to manufacture, distribute, prescribe and install cables that comply with the harmonised standard EN 50575.



## 7. Period of implementation of CPR

It is therefore important that stocks are adapted as soon as possible to cables that have already been designed and checked under CPR criteria.



## 8. Identification of CPR cables

- Identification of CPR class on the cable ( $D_{ca}$ ,  $E_{ca}$ ,  $C_{ca}$ ,  $B_{ca}$ )
- CE mark on the cover
- Declaration of Performance (DoP)

### CE mark on product packaging and labels

- ✓ Product identification.
- ✓ Plan to use.
- ✓ Reaction to Fire according to new regulations.





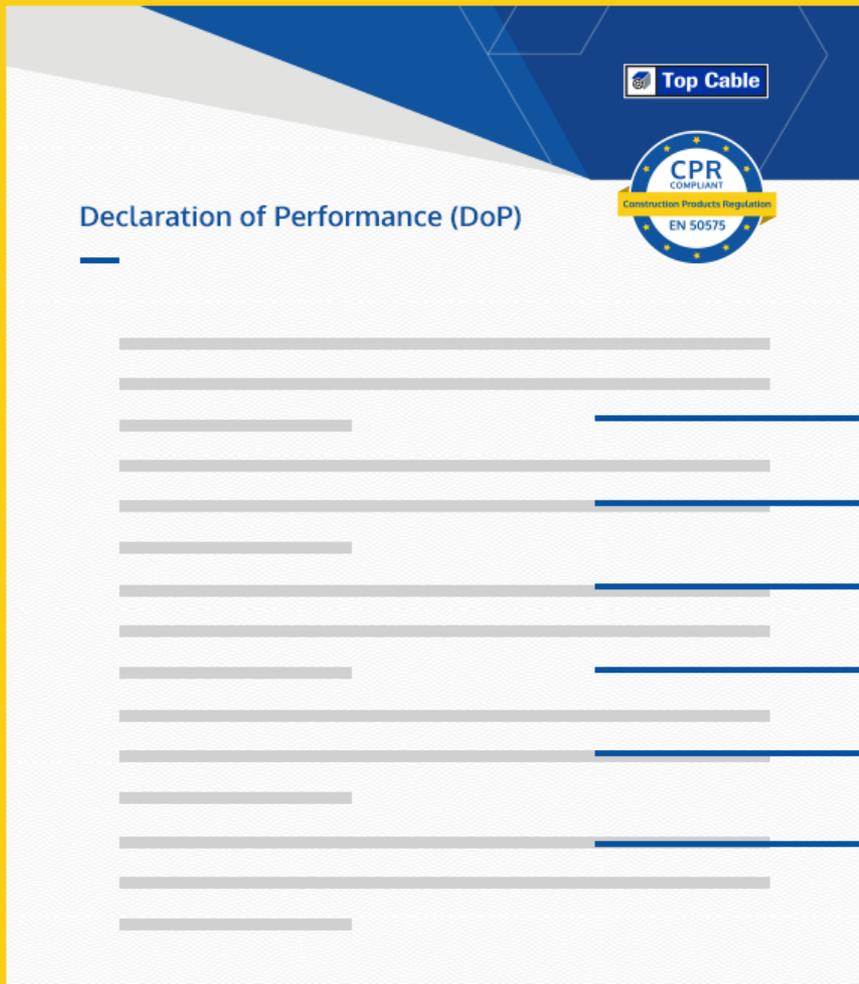
# 8. Identification of CPR cables

- CE mark on the cover



# 9. Declaration of Performance (DoP)

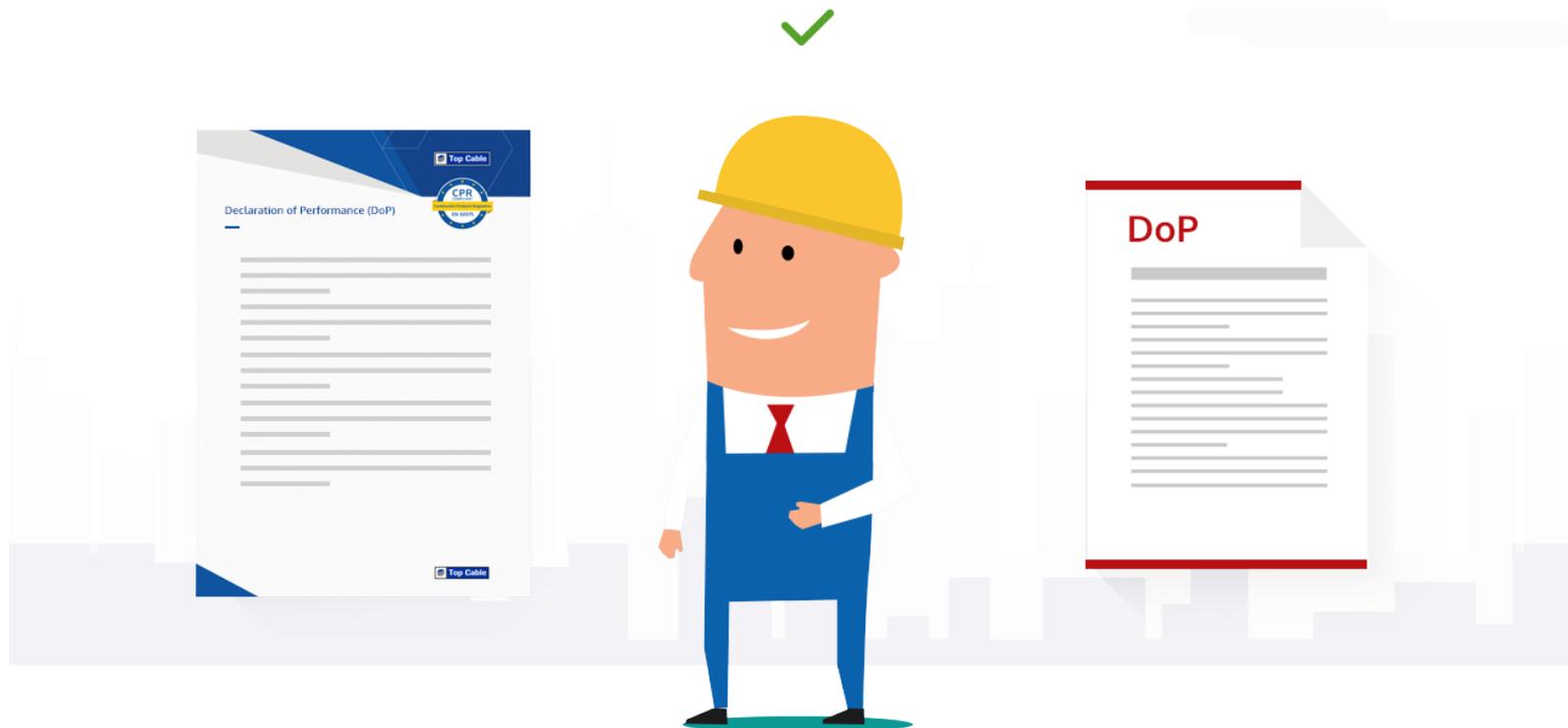
Declaration of Performance.



- Manufacturer
- Cable identification
- Evaluation system used
- Applicable standard
- Certifying organism
- CPR product performance

## 9. Declaration of Performance (DoP)

Ask your usual manufacturer for the Declaration of Performance for all electrical cables that are to be permanently included in construction.



# 11. Conclusion.

When you choose Top Cable products, you are guaranteed that you are acquiring cables that fully comply with the requirements laid down in the new CPR regulation.



# # CPR\_Compliant



## 10. For more information:

More CPR information and its application in various Countries of the European Union on the website of Top Cable



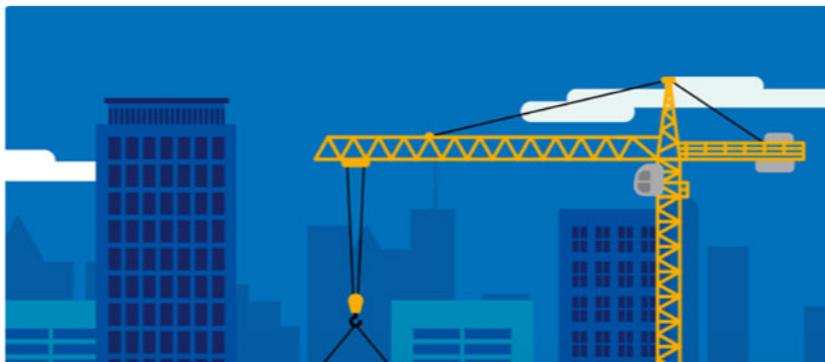
# 10. For more information:



Articles and videos on the new European CPR regulation can be found on the **Top Cable blog**.

## CPR, the new European regulation for the construction materials

Construction Product Regulation (CPR) is a regulation issued by the European Union with the purpose of regulating the limits of fire resistance and dangerous substances in the materials used in construction.



<http://www.topcable.com/blog-electric-cable/category/cpr/>

BUSCA EN EL BLOG

# 10. For more information:



Classes CPR



RSCIEI

## RELATING TO LEGAL PROVISIONS CONCERNING CONSTRUCTION PRODUCTS

- **REGULATION (EU) 305/2011 OF THE EUROPEAN PARLIAMENT AND COUNCIL of 9<sup>th</sup> March 2011** which lays down harmonised conditions for the marketing of construction products and which replaces Directive 89/106/CEE of the Council.
- **DELEGATED REGULATION (EU) 157/2014 OF THE COMMISSION of 30<sup>th</sup> October 2013** on the conditions for making a declaration of performance on construction products available on a website.
- **DELEGATED REGULATION (EU) 568/2014 OF THE COMMISSION of 18<sup>th</sup> February 2014**, amending Annex V to Regulation (EU) no. 305/2011 of the European Parliament and Council as regards the assessment and verification of constancy of performance of construction products.
- **DELEGATED REGULATION (EU) 574/2014 OF THE COMMISSION of 21<sup>st</sup> February 2014** amending Annex III to Regulation (EU) no. 305/2011 of the European Parliament and Council on the model to be used in drawing up a declaration of performance on construction products.
- **DELEGATED REGULATION (EU) 2016/364 OF THE COMMISSION of 1<sup>st</sup> July 2015** on the classification of the reaction to fire performance of construction products pursuant to Regulation (EU) no. 305/2011 of the European Parliament and Council.

# Thank you for your time



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