

# APPLICATION NOTE

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## Construction Products Regulation (CPR)

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## 1 Implementation of CPR at HUBER+SUHNER

If HUBER+SUHNER manufactures cables for installation in buildings, these products fall under the Construction Products Regulation (CPR). The appropriate fiber optic cables must be certified according to EU Regulation 305/2011/EN. Currently, certification is not possible because the notified bodies for certifying the cables have not yet been approved. The accreditation of the notified bodies has been postponed and will start on 1 July 2016. HUBER+SUHNER will accredit its fiber optic cable production in accordance with conformity system 1+ and test the defined product portfolio by priority. The aim is to have the certifications of all identified products completed by 30 June 2017.

## 2 Time schedule

The CPR is valid as of 1 July 2013. For cables, a transitional period has been defined during which the notified bodies will be approved and the products certified (see chart 1). The notified bodies will be certified by 1 July 2016. Once this is complete, the products can be certified. Following the amendment to the official EU journal C378/6 on 13 November 2015, the date for the mandatory declaration of performance has been changed from 1 December 2016 to 1 July 2017. The use of certified products is therefore optional until 30 June 2017 and compulsory as of 1 July 2017.

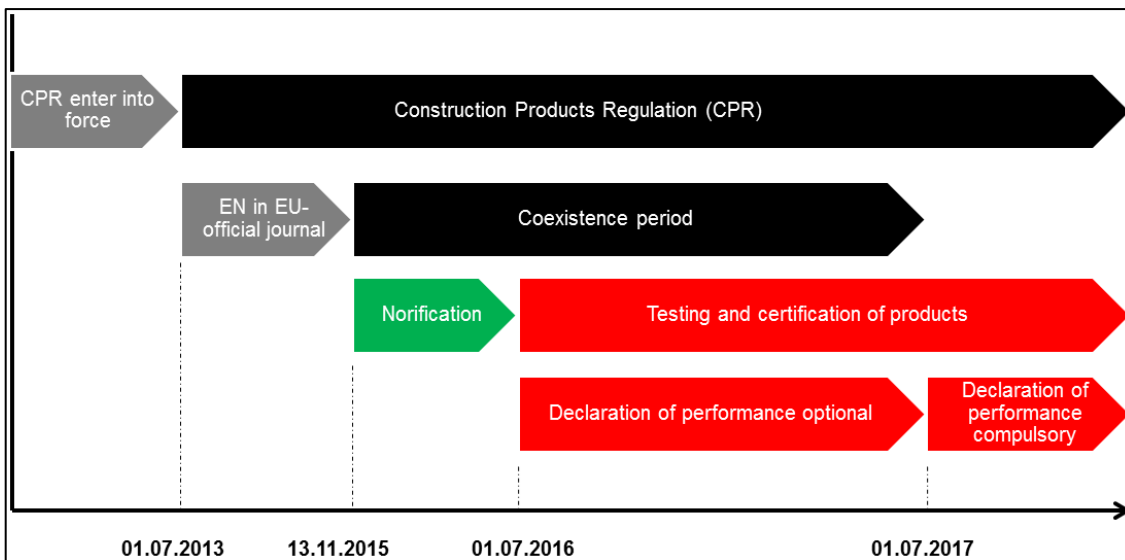


Figure 1: Schedule for implementation phase

## 3 CPR of the EU and legislative process in Switzerland

### 3.1 General information

The Construction Products Guideline 89/10/EEC has been superseded by the Construction Products Regulation (CPR) 305/2011. As of 1 July 2013, only products that comply with this regulation are allowed to be placed on the market. This allows the performance of different products to be compared. The Regulation has the following objectives:

- Increase safety in buildings
- Ensure health protection of individuals
- Promote environmental protection
- Reduce material wastage
- Reduce energy consumption
- Dismantle barriers to trade

Under its Mutual Recognition Agreement (MRA) with the European Union, Switzerland has adopted the CPR in its legislation and regulations. These provisions are defined in the Construction Products Act (BauPG, SR 933.0) and in the Construction Products Regulation (BauPV, SR 933.01).

### 3.2 Construction products

Construction products are defined as “any product or kit which is produced and placed on the market for incorporation in a permanent manner in construction works or parts thereof and the performance of which has an effect on the performance of the construction works with respect to the basic requirements for construction works”.<sup>1</sup> Buildings are divided into the categories of construction engineering (single and multi-family houses, commercial buildings, hospitals, car parks, schools, etc.) and civil engineering (tunnels, bridges, underground gas and water supplies, etc.). Exceptions to this are self-contained systems within a building. An example are products which are installed in an elevator system. These products are not considered as construction products because these products are components of the elevator system.

## 4 Requirements for cables

### 4.1 Requirements for cables as a construction product

Cables and wires are among the products listed in the CPR<sup>2</sup>. The requirements for cables are defined in the standard EN 50575. This sets out the performance requirements and the means of verifying the constancy of performance of the products. Figure 1 gives an overview of the requirements based on the standard EN 50575.

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<sup>1</sup> Cp.: Regulation (EU) no. 305/2011 of the European Parliament and of the Council of 9 March 2011

<sup>2</sup> Cp.: Commission communication in the framework of the implementation of Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (Publication of titles and references of harmonised standards under Union harmonisation legislation) Text with EEA relevance

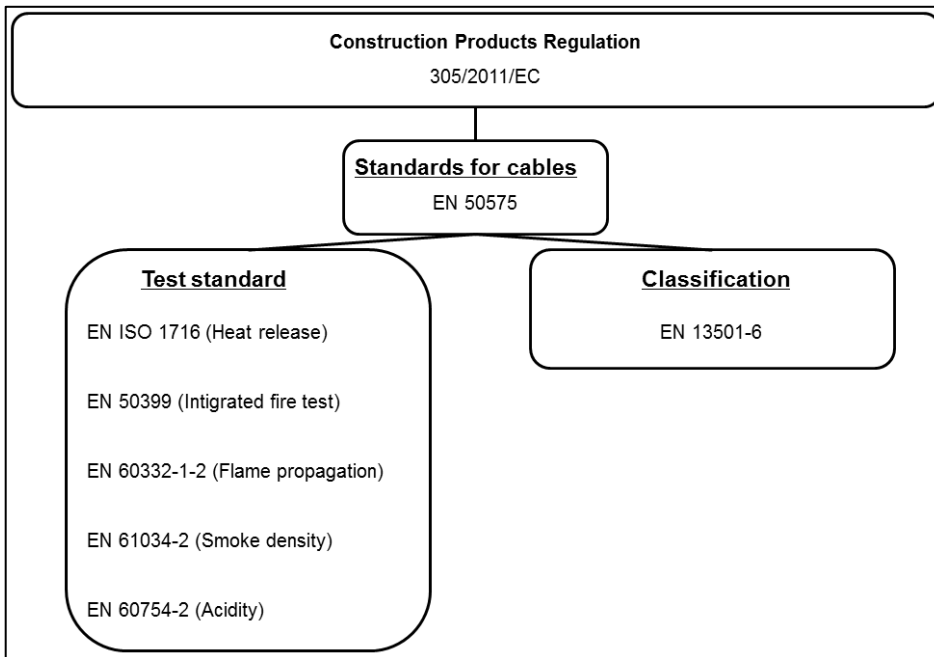


Figure 2: Standard framework of the CPR for cables<sup>3</sup>

## 4.2 Classification

We encounter different product classifications in our day-to-day life, such as the classification of the energy efficiency of household appliances or the CO<sub>2</sub> efficiency of cars. As with these products, the standard EN 13501-6 defines the classification of cables with regards to their fire behaviour. Under this standard, cables are divided into the main classes A<sub>ca</sub> to F<sub>ca</sub>. To achieve a certain main class, the product must comply with the limits specified in the standard. In addition to the main classes, additional classes have also been defined to describe the products' performance in greater detail. The additional classes are divided into the following categories:

- Smoke density: s1 – s3
- Flaming droplets: d0 – d2
- Acidity of gases: a1 – a3

Depending on the desired classification, the fire characteristics and testing standards shown in figure 2 must be used. For a classification C<sub>ca</sub>, a cable must be tested according to EN 50399 and IEC 60332-1-2, as well as the requirements of EN 13501-6 for the class C<sub>ca</sub>. For example, a complete classification could be C<sub>ca</sub>-s1,d2,a1. For class F<sub>ca</sub>, no requirements regarding fire behaviour must be met.

<sup>3</sup> Cp.: Slide show Bauprodukteverordnung EU 305/2011 Construction Product Regulation (CPR), J. Rellstab (Electrosuisse), 12 October 2015, page 14

Main class		Additional class	AVCP-System
A <sub>ca</sub>	Heat release (EN ISO 1716)		1+
B1 <sub>ca</sub>	Heat release and fire propagation (EN 50399)	Smoke density s1 – s3 (EN 50399, EN 61034-2)	
B2 <sub>ca</sub>		Flaming droplets d0 – d2 (EN 50399)	
C <sub>ca</sub>	Flame propagation (EN 60332-1-2)	Acidity of gases a1 – a3 (EN 60754-2)	3
D <sub>ca</sub>			
E <sub>ca</sub>	Flame propagation (EN 60332-1-2)		4
F <sub>ca</sub>			

Figure 3: Classification overview

### 4.3 Assignment of conformity system

Depending on the main class of a product, a specific conformity procedure (AVPC) must be applied by the manufacturer. The systems 1+, 3 and 4 have been assigned for cable products. Depending on the system, different tasks are required of the manufacturer and the notified body. These tasks include production control and sample testing by the manufacturer, as well as an evaluation of the product performance, ongoing monitoring and product audits by the notified body.

### 4.4 Notified bodies

Depending on the conformity procedure, an official notified body may be required to perform defined tasks in order for the manufacturer to receive certification. The notified bodies, which are approved by the Member States and confirmed by the EU, conduct the certification tests in accredited laboratories. They also verify conformity at the manufacturers and issue conformity statements if the tests are positive. Such notified bodies must be independent and are authorised in the EU and EEA countries only. They are authorised to perform cable certification following approval by the government authorities and registration in the EU database.

### 4.5 Declaration of performance

The key performance characteristics are declared in the mandatory Declaration of Performance (DoP). The manufacturer assumes responsibility for ensuring that the declaration complies with the relevant requirements. The following points must be included in the DoP:

- Unique identification number of the product type
- Intended use
- System for assessment and verification of the constancy of performance
- Identification number of the notified body
- Specified performance (performance and harmonised technical specification)

### 4.6 CE marking

CE marking is mandatory if the product are to be placed on the European market. Depending on the compliance system, different requirements apply for the content of the labelling. As a general rule for cables, the marking has to be displayed on the product, the packaging, the labelling or a combination of thereof. The marking must be clearly visible, easily legible and indelibly fixed on the cable reel.

#### **4.7 Further classification (resistance to fire)**

The aim is to launch a further classification for cables that involves testing the circuit integrity of a cable over a certain period when subjected to fire. The harmonised standard and associated test standards are still under development and are expected to be available in 2017.

## 5 References

- [1] Cp.: Regulation (EU) no. 305/2011 of the European Parliament and of the Council of 9 March 2011
- [2] Cp.: Commission communication in the framework of the implementation of Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (Publication of titles and references of harmonised standards under Union harmonisation legislation) Text with EEA relevance
- [3] Cp.: Slide show Bauprodukteverordnung EU 305/2011 Construction Product Regulation (CPR), J. Rellstab (Electrosuisse), 12 October 2015, page 14

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Robert Sporn received his technician degree in mechanical engineering from Karl-Heine-Schule (in Leipzig, Germany) in 2006 and a second degree as Master of Advanced Studies FHO in Business Administration and Engineering (MAS) from the Technical College East Switzerland (in St. Gallen, Switzerland) in 2011. He started at HUBER+SUHNER in 2007 as a Project Manager in Research and Development for Fiber Optic Cables. Since 2015, he has been responsible for the product management of fiber optic cables.