

### WHITE PAPER



#### www.unikkern.com

# CPR REGULATION

Electrical short circuits are a discreet yet potent threat, often causing significant damage and disruption. Evidence of this impact can be seen in several high-profile incidents worldwide. In 2010, Seoul's iconic 'Golden Tower' experienced a fire due to an electrical fault. While there were no fatalities, this 38-story structure, known for its golden glass, sustained substantial property damage and led to a reevaluation of the building's safety measures.

According to the European Safety Alliance, cautious estimates suggest that over 5,000 people die from residential fires in Europe each year, with the number of injured estimated to be ten times as high. The gravity of these numbers underlines the pressing need for enhanced prevention strategies and robust safety measures. Similarly, in the Hartsfield-Jackson Atlanta International Airport, an electrical short circuit in a maintenance shed caused a fire, resulting in power outages and flight delays, disrupting operations and affecting thousands of passengers. More recently, the Notre-Dame Cathedral in Paris suffered a devastating fire, with an electrical short circuit being one of the possible causes.

One such initiative aimed at addressing this need is the Construction Products Regulation (CPR) in Europe. Introduced to ensure that all construction products, including cables, meet specific safety and performance standards, the CPR represents an important step towards mitigatin g the risks posed by fires in buildings.

### **O 1** CPR Regulations, started in Europe from July 2013...

The push towards a standardized framework for construction products in the European Union (EU) culminated in the enactment of the Construction Products Regulation (EU) No 305/2011, also known as the CPR, on the 1st of July 2013.

The creation of this regulation was a significant milestone in the EU's effort to harmonize the internal market. Before the CPR was implemented, the construction products market in the EU was fragmented due to the presence of different national standards and testing methods. This fragmentation created obstacles to trade and hindered the free movement of construction products across borders within the European Economic Area.

The CPR was developed to address these challenges. By defining harmonized conditions for the marketing of construction products, and establishing 'essential characteristics' that products must meet, the CPR provides a 'common technical language' for the industry across all EU countries. One of the critical aspects of the CPR is its focus on fire safety. It sets out a series of 'reaction to fire' and 'resistance to fire' classifications that all construction products, including cables, must meet. The stringent requirements for fire safety, along with criteria for other areas such as mechanical resistance and stability, hygiene, health, and environmental considerations, are designed to ensure that all construction products used within the EU are safe and fit for their intended purpose.

In essence, the introduction of the CPR has significantly raised the bar for safety and performance in the construction industry across Europe. It also represents an important step forward in the EU's efforts to promote sustainability and protect human health and safety in the construction sector.





## **02** ... Until July 2017

For cables specifically, the date of applicability was extended to July 1, 2017, due to the complexities involved in testing and certifying the large variety of cables used in construction. From this date, all power, control and communication cables that are permanently installed in buildings and other civil engineering works in the European Economic Area (EEA) must comply with the CPR. This includes the requirement to carry a CE mark, which indicates that a product complies with the regulation.

## 03 Nowadays

With a rise in awareness about fire safety in the construction industry, complying with the Construction Products Regulation (CPR) has become a daily routine at Unikkern. This regulation, initially introduced in Europe, isn't new anymore to us; in fact, it is now an integral part of our cable design and manufacturing processes, and in-house Burrning cables testing Equipments: We are committed to crafting cables that not only meet but exceed the required safety and performance

standards set out by the CPR. Our product portfolio ranges from B2ca cables, which are used in highly demanding environments such as hospitals, airports or schools and deliver superior performance in terms of smoke (S1), acidity (A1), and droplets (D0), to more standard Dca products suitable for regular use.







## **04** Qualified testing laboratory

At Unikkern, we leave no stone unturned to ensure the highest standards of quality and compliance. All our cables undergo rigorous testing at SGS, a third-party laboratory renowned for its expertise and thorough examination processes. Regardless of the regulatory requirements of System 1+ (applicable to B2ca and Cca cables) or System 3 (applicable to Dca or Eca cables), each cable batch is tested meticulously.

### 05 How the CPR is implemented at Unikkern

Before cable manufacturing, each production batch of Low Smoke Zero Halogen (LSZH) compound is evaluated and qualified in our factory to ensure optimal performance and safety standards. This step represents our commitment to ensuring the highest quality right from the initial stages of production. Beyond the mandatory tests required by Systems 1+ and 3, we take it upon ourselves to conduct additional random checks for further assurance. Selected cable batches are sent back to SGS for random testing, further ensuring the consistent quality and compliance of our products. This approach reinforces our commitment to going above and beyond to guarantee the safety and reliability of our cables.







## 06 Optimal performance and safety standards

At Unikkern, we leave no stone unturned to ensure the highest standards of quality and compliance. All our cables undergo rigorous testing at SGS, a third-party laboratory renowned for its expertise and thorough examination Each cable's performance classification - be it B2ca, Cca, Dca, or Eca - is prominently displayed on the cable itself. Fur- thermore, we have developed distinct logos for each performance category that are printed on the labels adhered to every box and drum(applicable to Dca or Eca cables), each cable batch is tested meticulously.



Beyond manufacturing, we also strive to ensure complete transparency and accessibility in terms of compliance documentation. The Declaration of Performance (DoP) for each cable, an essential component of the CPR, is readily available for download on our website. These technical datasheets provide detailed information on the performance characteristics of our cables and are easily referenced





## **07** CPR is a lot about traceability...

Each cable's performance classification - be it B2ca, Cca, Dca, or Eca - is prominently displayed on the cable itself. Furthermore, we have developed distinct logos for each performance category that are printed on the labels adhered to every box and drum.





This allows for easy identification of cable performance, enhancing the ease of use for our customers.

At Unikkern, we are not only mindful of regulatory compliance but also consistently work towards simplifying compliance for our customers. Through thoughtful design, clear labeling, and easily accessible documentation, we aim to provide products that not only meet but also illustrate our commitment to safety and performance.









At Unikkern, we are not only mindful of regulatory compliance but also consistently work towards simplifying compliance for our customers. Through thoughtful design, clear labeling, and easily accessible documentation, we aim to provide products that not only meet but also illustrate our commitment to safety and performance.



CPR

More Technicalities about



www.unikkern.com



#### Additionally, the CPR designates three supplementary sub-classifications that assess specific elements of fire behavior:

### 01

Smoke Opacity (s): This classification measures the quantity and spread speed of smoke. Categories range from s1 (little production and slow prop agation of smoke) to s3 (neither fulfilling s1 or s2 conditions). The s1 class further divides into s1a (visibility over 80%, per EN 61034-2) and s1b (visibility between 60% and 80%, per EN 61034-2).

### 02

Combustion Droplets (d): This criterion considers the occurrence of droplets or flamed particles during combustion. Classifications include d0 (no droplets or flamed particles, per EN 50399), d1 (droplets and flamed particles persisting less than 10 seconds, per EN 50399), and d2 (neither d0 nor d1).

## 03

Smoke Acidity (a): This factor gauges the smoke's acidity or toxicity. The categories include a1 (low acidity with conductivity <2.5ms/mm and pH > 4.3, per EN 60754-2), a2 (intermediate acidity with conductivity <10 ms/mm and pH > 4.3, per EN 60754-2), and a3 (neither a1 nor a2).

It should be noted that the Eca and Fca classes do not carry any additional classification criteria. These stringent and detailed classification standards are crucial in ensuring safety by minimizing the hazards associated with electrical cable fires. This above presentation is a copy of an existing one and needs to be redrawn differently



