Information about the Construction Products Regulation (CPR)

What is the CPR? (Construction Products Regulation)

Anyone who wants to place a copper or FO cable on the market in Europe must test, classify, and label the product in accordance with the CPR, a set of regulations that are standardized across Europe. CE marking as defined in the Construction Products Regulation is mandatory for all cables and cable assemblies that are permanently connected to buildings. The CPR defines the fire classes of copper and FO cables by way of referencing with approved standard EN50575. Special CE marking must be in place by July 1, 2017 at the latest and all national standards adapted accordingly. After this date, standards that deviate from the CPR may no longer be used.

Requirements of the CPR for manufacturers

A manufacturer who produces cables and cable assemblies under the new standard must use an authorized body for testing and for the manufacturing inspection. The properties that are relevant to the CPR must be reported in a 'Declaration of Performance' (DoP). All products that fall within the scope of the CPR bear a mandatory CE marking with the CPR fire class on the packaging.

Fire behavior according to the CPR

The fire behavior of cables is classified as follows:

- Main criterion: Flame propagation and heat release (EN 60332-1, EN 50399)
- Additional criteria: Smoke production (EN 50399, EN 61034-2), corrosivity (EN 50267-2-3) and flaming droplets (EN 50399)

EN 13501-6 defines the combinations in which the above test criteria may occur. The harmonized standard EN 50575 ultimately defines how the CPR is to be implemented for cabling and specifies the new fire protection classes.

There are seven new Euro classes: A_{ca}, $B1_{ca}$, $B2_{ca}$, C_{ca}, D_{ca}, E_{ca} and F_{ca}
Four of these are relevant to data cabling. $B2_{ca}$, C_{ca}, D_{ca}, E_{ca}

Euro classification (ca)	Classification criterion	Additional criteria	Assessing and examining the consistency of the performance system
A	EN ISO 1716 Gross heat of combustion		1+ Verification documents: • Type testing • Regular works audit • Regular sampling of ongoing production
B1	EN 50399 Heat release Flame propagation EN 60332-1-2 Flame propagation	Smoke production (s1a, s1b, s2, s3) EN 50399 / EN 61034-2 Acidity (a1, a2, a3) EN 50267-2-3 Flaming droplets (d0, d1, d2) EN 50399	
B2			
C			
D			3 Verification documents: • Type testing
E	EN 60332-1-2 Flame propagation		
F			4 No verification documents

Description of the Euro classes

Euro class $B2_{ca}$ and class C_{ca}

Products with very high or high fire protection, no continuous flame propagation, limited fire development, and a limited heat release rate.

Euro class D_{ca}

Products with medium fire protection, continuous flame propagation, moderate fire development, and a limited heat release rate.

Euro class E_{ca}

Products with normal fire protection, exposure to a small flame may ignite the cable, low resistance to temperature increases.

Additional classification

Production/density of smoke

There are three classes for smoke production and density in cables:

s1 = weak smoke production

s2 = moderate smoke production

s3 = potentially strong smoke production

Acid production/corrosivity

There are three classifications of corrosivity:

a1 = slightly corrosive fumes

a2 = moderately corrosive fumes

a3 = potentially highly corrosive fumes

Flaming droplets

There are three classes for the production of flaming droplets:

d0 = no flaming droplets

d1 = flaming droplets for a short time

d2 = potentially long-lasting flaming droplets

Recommendations for the future use of EU fire protection classification

First and foremost, the CPR enables a comparison between the fire protection properties of different products. However, every member state is instructed and required to define the minimum necessary fire protection classification for the various applications themselves. The requirements placed on products can thus differ greatly across Europe for each building type. Therefore, the planner must check and comply with the local regulations. Various organizations and international associations have also declared their own recommendations, which sometimes go well beyond the legal minimum requirements.

In consideration of cost vs. benefit, R&M makes the following recommendation:

Euro classification	Additional classification			Fire protection level of the installation cables (Use recommendations from R&M)*
Flame propagation Heat production	Smoke production/ density	Acid production/ corrosivity	Flaming droplets	
A_{ca}				NA
$B1_{ca}$				NA
$B2_{ca}$	s1	a1	d1	Very high (e.g. escape routes, tunnels, high-risk industries)
C_{ca}	s1	a1	d1	High (e.g. hospitals, nursing homes, schools)
D_{ca}	s2	a2	d1	Medium (e.g. public buildings, hotels, airports, industrial environments)
E_{ca}				Normal (e.g. normal office buildings, residential premises)
F_{ca}				Low (not recommended)

* The necessary fire protection classification for installation cables is prescribed by the relevant fire prevention authority.

R&M portfolio for installation cables

R&M tailored the range of installation cables to European and international standards at an early stage, as well as expanding this range. The broad selection of cables available can cover the wide variety of requirements. Depending on the cable construction, the existing range of copper cables covers the fire classes E_{ca} and D_{ca}. Due to the way they are constructed, FO cables are categorized in the classes E_{ca} and D_{ca} . From late March 2017 onward, all cables sold in Europe will be labeled with their Euro class. Newly developed cables in the fire classes $B2_{ca}$ and C_{ca} will be available from May 2017.

Fire class $B2_{ca}$/s

	Cat. 5e	Cat. 6	Cat. 6_A	Cat. 7	Cat. 7_A	Cat. 8.2
Level 3						
Level 2				**S-FTP LSFRZH $B2_{ca}$ 1000MHz** 0.56 mm / AWG23 CA = 75dB, SC = c 500 m: R833680	**S-FTP LSFRZH $B2_{ca}$ 1200MHz** 0.61 mm / AWG22 CA = 85dB, SC = d 500 m: R833681	
Level 1						

IEC 60332-1, IEC 60332-3, EN 50399, EN 50575, IEC 61034-2, IEC 60754-2

Fire class C_{ca}/s

	Cat. 5e	Cat. 6	Cat. 6_A	Cat. 7	Cat. 7_A	Cat. 8.2
Level 3					**S-FTP LSFRZH C_{ca} 1500MHz** 0.64 mm / AWG22 CA = 85dB, SC = d 500 m: R837011	
Level 2				**S-FTP LSFRZH C_{ca} 1000MHz** 0.56 mm / AWG23 CA = 75dB, SC = c 500 m: R833677	**S-FTP LSFRZH C_{ca} 1200MHz** 0.61 mm / AWG22 CA = 85dB, SC = d 500 m: R833678	
Level 1			**U-FTP LSFRZH C_{ca} 650MHz** 0.56 mm / AWG23 CA = 55dB, SC = c 500 m: R833675	**F-FTP LSFRZH C_{ca} 650MHz** 0.56 mm / AWG23 CA = 55dB, SC = c 500 m: R833676	**S-FTP LSFRZH C_{ca} 1200MHz** 0.58 mm / AWG23 CA=75dB, SC = c 500 m: R833678 1000 m: R828595	

IEC 60332-1, IEC 60332-3, EN 50399, EN 50575, IEC 61034-2, IEC 60754-2

Fire class D_{ca}/s

	Cat. 5e	Cat. 6	Cat. 6_A	Cat. 7	Cat. 7_A	Cat. 8.2
Level 3	**SF-UTP LSFRZH D_{ca} 200MHz** 0.5 mm / AWG24 CA = 75dB, SC = c 500 m: R35053 1000 m: R304365		**S-FTP LSFRZH D_{ca} 650MHz** 0.56 mm / AWG23 CA = 80dB, SC = d 500 m: R310488	**S-FTP LSFRZH D_{ca} 1000MHz** 0.56 mm / AWG23 CA = 80dB, SC = d 500 m: R809799 1000 m: R809801	**S-FTP LSFRZH D_{ca} 1500MHz** 0.64 mm / AWG22 CA = 85dB, SC = d 500 m: R507032 1000 m: R823871	**S-FTP LSFRZH D_{ca} 2000MHz** 0.64 mm / AWG22 CA = 85dB, SC = d 500 m: R828594
Level 2	**F-UTP LSFRZH D_{ca} 200MHz** 0.5 mm / AWG24 CA = 55dB, SC = c 500 m: R302039				**S-FTP LSFRZH D_{ca} 1200MHz** 0.61 mm / AWG22 CA = 85dB, SC = d 500 m: R306257 1000 m: R306258	
Level 1			**U-FTP LSFRZH D_{ca} 650MHz** 0.56 mm / AWG23 CA = 55dB, SC = c 500 m: R813847	**F-FTP LSFRZH D_{ca} 650MHz** 0.56 mm / AWG23 CA = 65dB, SC = c 500 m: R815143	**S-FTP LSFRZH D_{ca} 1200MHz** 0.58 mm / AWG23 CA = 75dB, SC = c 500 m: R319522	

IEC 60332-1, IEC 60332-3, EN 50399, EN 50575, IEC 61034-2, IEC 60754-2

Fire class E_{ca}/s

	Cat. 5e	Cat. 6	Cat. 6_A	Cat. 7	Cat. 7_A	Cat. 8.2
Level 3	**SF-UTP LSZH E_{ca} 200MHz** 0.5 mm / AWG24 CA = 75dB, SC = c 500 m: R302089		**S-FTP LSZH E_{ca} 650MHz** 0.56 mm / AWG23 CA = 75dB, SC = c 305 m: R825755 500 m: R305649			
Level 2	**F-UTP LSZH E_{ca} 200MHz** 0.5 mm / AWG24 CA = 55dB, SC = c 305 m: R300316 500 m: R35049 1000 m: R315704	**F-UTP LSZH E_{ca} 200MHz** 0.54 mm / AWG24 CA = 55dB, SC = c 500 m: R314933	**U-FTP LSZH E_{ca} 650MHz** 0.56 mm / AWG23 CA = 55dB, SC = c 500 m: R308247	**S-FTP LSZH E_{ca} 1000MHz** 0.56 mm / AWG23 CA = 75dB, SC = c 500 m: R35257 1000 m: R303013		
Level 1	**F-UTP PVC E_{ca} 200MHz** 0.5 mm / AWG24 CA = 55dB, SC = c 305 m: R300317 500 m: R35048		**F-UTP LSZH E_{ca} 500MHz** 0.54 mm / AWG24 CA = 55dB, SC = c 500 m: R806969	**F-FTP LSZH E_{ca} 650MHz** 0.56 mm / AWG23 CA = 65dB, SC = c 500 m: R320249	**S-FTP LSZH E_{ca} 1200MHz** 0.58 mm / AWG23 CA = 75dB, SC = c 500 m: R809800 1000 m: R809802	

IEC 60332-1, EN 50399, EN 50575, non-PVC: IEC 61034-2, non-PVC: IEC 60754-2

Fire class D_{ca}/u

	Cat. 5e	Cat. 6 (splineless)	Cat. 6 (cross)	Cat. 6_A (8–9 mm)	Cat. 6_A (WARP)
Level 3			**U-UTP LSFRZH D_{ca}** **450MHz** 0.56 mm / AWG23 TCL = 40dB, SC = a 500 m: R812526 1000 m: R821301		**U-UTP LSFRZH D_{ca}** **650MHz** 0.56 mm / AWG23 TCL = 50dB, SC = b 500 m: R809764 R824373
Level 2				**U-UTP LSFRZH D_{ca}** **650MHz** 0.56 mm / AWG23 TCL = 50dB, SC = b 500 m: R824373	
Level 1					

IEC 60332-1, IEC 60332-3, EN 50399, EN 50575, IEC 61034-2, IEC 60754-2

Fire class E_{ca}/u

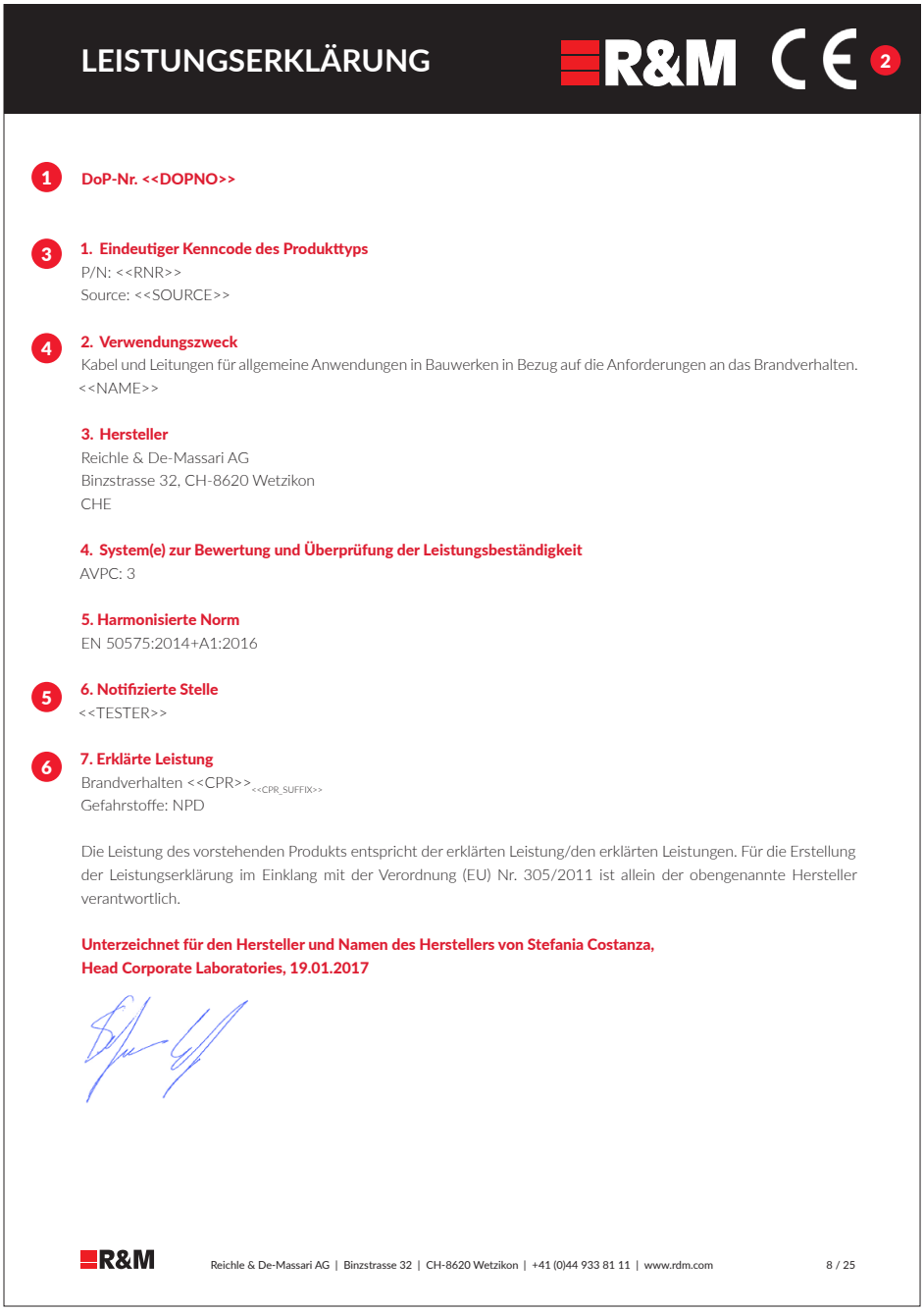
	Cat. 5e	Cat. 6 (splineless)	Cat. 6 (cross)	Cat. 6_A (8–9 mm)	Cat. 6_A (WARP)
Level 3			**U-UTP LSZH E_{ca}** **450MHz** 0.56mm / AWG23 TCL = 40dB, SC = a 305 m: R317604 500 m: R35057 1000 m: R305283		**U-UTP LSZH E_{ca}** **650MHz** 0.56 mm / AWG23 TCL= 50dB, SC = b 500 m: R804269 R814611
Level 2	**U-UTP LSZH E_{ca}** **200MHz** 0.5 mm / AWG24 TCL = 40dB, SC = a 305 m: R35292 500 m: R35045	**U-UTP LSZH E_{ca}** **250MHz** 0.52 mm / AWG24 TCL= 40dB, SC = a 305 m: R809796 1000 m: R814603	**U-UTP PVC E_{ca}** **450MHz** 0.56 mm / AWG23 TCL= 40dB, SC = a 305 m: R317603 500 m: R35056	**U-UTP LSZH E_{ca}** **650MHz** 0.56 mm / AWG23TCL= 50dB, SC = b 305 m: R504252 500 m: R808400 R807392	**U-UTP PVC E_{ca}** **650MHz** 0.56 mm / AWG23TCL= 50dB, SC = b 500 m: R804268
Level 1	**U-UTP PVC E_{ca}** **200MHz** 0.5 mm / AWG24 TCL = 40dB, SC = a 305 m: R35291 500 m: R35044 1000 m: R302285	**U-UTP PVC E_{ca}** **250MHz** 0.52 mm / AWG24 TCL= 40dB, SC = a 305 m: R809797		**U-UTP PVC E_{ca}** **650MHz** 0.56 mm / AWG23 TCL= 50dB, SC = b 305 m: R504236 500 m: R807393	

IEC60332-1, EN50399, EN50575, non-PVC: IEC 61034-2, non-PVC: IEC 60754-2

Declaration of Performance (DoP)

R&M will provide the Declarations of Performance upon request for the time being.
From the middle of this year, the DoPs will then be available online on the R&M website.
The corresponding DoP number is noted in the R&M data sheet or on the part label.

The DoP is issued in 23 languages.



LEISTUNGSERKLÄRUNG

R&M CE 2

1 **DoP-Nr. <<DOPNO>>**

3 **1. Eindeutiger Kenncode des Produkttyps**
P/N: <<RNR>>
Source: <<SOURCE>>

4 **2. Verwendungszweck**
Kabel und Leitungen für allgemeine Anwendungen in Bauwerken in Bezug auf die Anforderungen an das Brandverhalten.
<<NAME>>

3. Hersteller
Reichle & De-Massari AG
Binzstrasse 32, CH-8620 Wetzikon
CHE

4. System(e) zur Bewertung und Überprüfung der Leistungsbeständigkeit
AVPC: 3

5. Harmonisierte Norm
EN 50575:2014+A1:2016

5 **6. Notifizierte Stelle**
<<TESTER>>

6 **7. Erklärte Leistung**
Brandverhalten <<CPR>><<CPR_SUFFIX>>
Gefahrstoffe: NPD

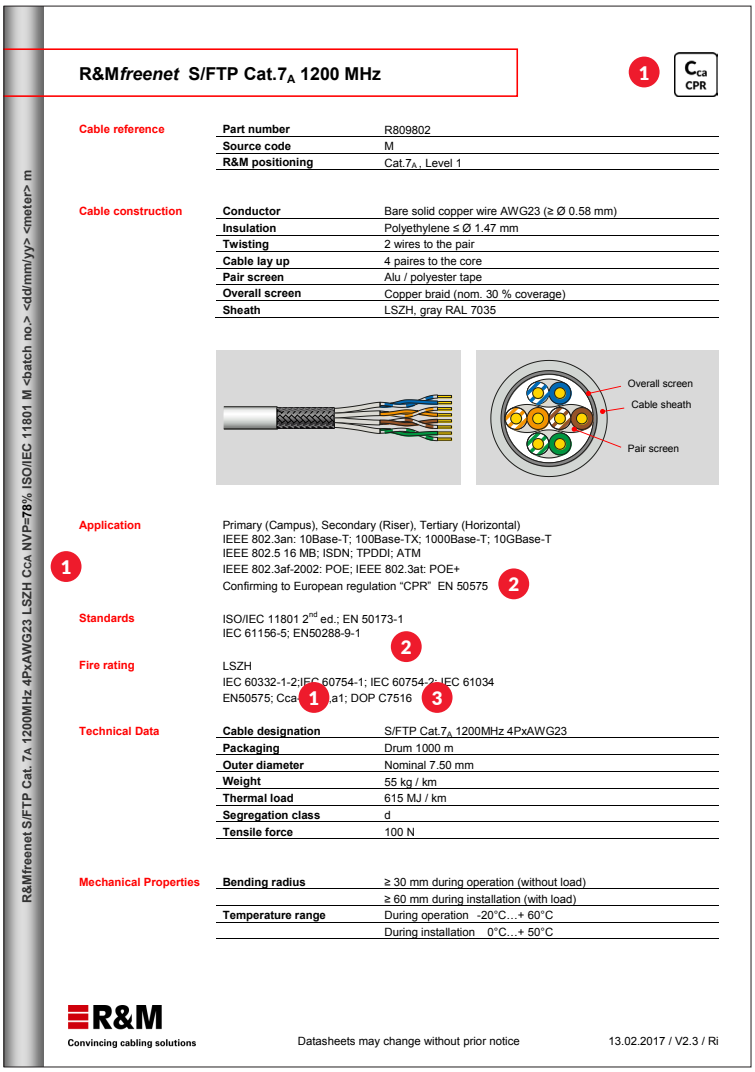
Die Leistung des vorstehenden Produkts entspricht der erklärten Leistung/den erklärten Leistungen. Für die Erstellung der Leistungserklärung im Einklang mit der Verordnung (EU) Nr. 305/2011 ist allein der obengenannte Hersteller verantwortlich.

Unterzeichnet für den Hersteller und Namen des Herstellers von Stefania Costanza,
Head Corporate Laboratories, 19.01.2017

R&M Reichle & De-Massari AG | Binzstrasse 32 | CH-8620 Wetzikon | +41 (0)44 933 81 11 | www.rdm.com 8 / 25

1. DoP number
2. CE mark
3. Part number & source code
4. Part description
5. Test laboratory number
6. Fire class

Data sheets



R&M*freenet* S/FTP Cat.7$_A$ 1200 MHz

1 C_{ca} CPR

R&Mfreenet S/FTP Cat. 7A 1200MHz 4PxAWG23 LSZH CCA NVP=78% ISO/IEC 11801 M <batch no.> <dd/mm/yy> <meter> m

Cable reference	**Part number**	R809802
	Source code	M
	R&M positioning	Cat.7$_A$, Level 1
Cable construction	**Conductor**	Bare solid copper wire AWG23 (≥ Ø 0.58 mm)
	Insulation	Polyethylene ≤ Ø 1.47 mm
	Twisting	2 wires to the pair
	Cable lay up	4 paires to the core
	Pair screen	Alu / polyester tape
	Overall screen	Copper braid (nom. 30 % coverage)
	Sheath	LSZH, gray RAL 7035

Overall screen
Cable sheath
Pair screen

Application
1
Primary (Campus), Secondary (Riser), Tertiary (Horizontal)
IEEE 802.3an: 10Base-T; 100Base-TX; 1000Base-T; 10GBase-T
IEEE 802.5 16 MB; ISDN; TPDDI; ATM
IEEE 802.3af-2002: POE; IEEE 802.3at: POE+
Confirming to European regulation "CPR" EN 50575 2

Standards
ISO/IEC 11801 2nd ed.; EN 50173-1
IEC 61156-5; EN50288-9-1
2

Fire rating
LSZH
IEC 60332-1-2;IEC 60754-1; IEC 60754-2; IEC 61034
EN50575; Cca 1 a1; DOP C7516 3

Technical Data	**Cable designation**	S/FTP Cat.7$_A$ 1200MHz 4PxAWG23
	Packaging	Drum 1000 m
	Outer diameter	Nominal 7.50 mm
	Weight	55 kg / km
	Thermal load	615 MJ / km
	Segregation class	d
	Tensile force	100 N
Mechanical Properties	**Bending radius**	≥ 30 mm during operation (without load)
		≥ 60 mm during installation (with load)
	Temperature range	During operation -20°C…+ 60°C
		During installation 0°C…+ 50°C

R&M Convincing cabling solutions

Datasheets may change without prior notice

13.02.2017 / V2.3 / Ri

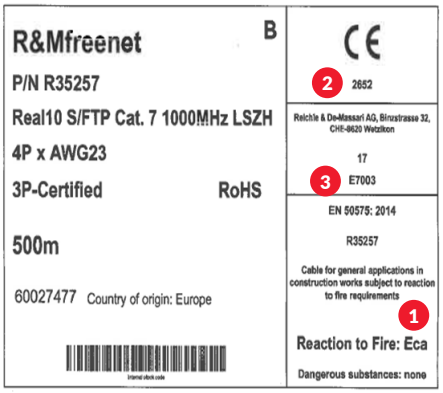
1 Fire class

2 Standards

3 DoP number

All important information for the customer in relation to the CPR fire class is listed on the R&M cable data sheet.

CE marking for boxes and drums



1 Fire class

2 Test laboratory certification body

3 DoP number

Since March 2017, R&M has been labeling installation cables available in Europe with fire protection classification as defined in the CPR.

Questions and answers concerning the introduction of the new fire classes

How can I obtain the DoPs and data sheets?
For the time being, DoPs and data sheets must be requested from R&M.
DoPs will be available online from June 1, 2017.

Can the same DoP be used if the sheath color is changed?
No, a new part number requires a new DoP number.
The manufacturer must inform the certification laboratory of the new part number.

Are there special requirements for cable marking?
No, the CPR does not cover cable labeling.

Who defines the fire classes to be installed in specific projects?
Architects/planners must specify the required fire classes in accordance with the country-specific regulations.

Can cables in stock that were produced before these regulations came into force continue to be sold?
Yes, there is no change to products with existing part numbers. The DoP and the data sheet also apply to cables that are already in stock.

Can installers continue to use cables that have not been tested according to the CPR until July 1, 2017?
Yes, the regulation only enters into force on July 1, 2017.

What happens with ongoing projects quoted before July 1, 2017?
It is recommended that the minimum fire protection requirements be checked.
If higher fire protection classification is required than was originally offered, a new quotation must be provided.

Do cabinet-to-cabinet connections also fall under the CPR?
Yes, if the connections are made using trunk cables that are permanently installed.

Do patch cables fall under the Construction Products Regulation?
No, only permanently installed (laid) cables fall under the CPR.

What happens in residential construction after July 1, 2017?
Only the fire classes prescribed by the country-specific regulations may be installed.