



Fire testing & CE marking for cables

WHO IS CONCERNED?

- Any cable manufacturer selling its products on the European market for building application.
- Any cable, cable compound and fire retardant manufacturer expecting to develop and provide an optimized formulation for their cables.

WHY ARE FIRE TESTING AND CE MARKING IMPORTANT FOR CABLES?

- Cables with improved fire performances are increasingly used in different sectors such as power plants, telecommunications, industry, transportation...
- The **new classification “Euroclasses for cables” is more precise and is allowing a better qualification of the materials.** As a consequence, the classification differentiates efficiently cables' performances, allowing the manufacturers to better position their products on the market.
- Cables with reaction to fire characteristics used in buildings are covered by the Construction Product Regulation (CPR 305/2011) since 1st July 2013 and will have to be CE marked in accordance with the relevant harmonized standard prEN 50575.

WHY WORKING WITH EFECTIS?

We provide all the necessary services and support to our customers while also providing the highest level of assurance:



Working with Efectis also means taking advantage of:

- comprehensive product and testing knowledge with over 60 years of experience,
- more than 10 years of experience as notified body for construction products,
- an excellent knowledge of testing and certification standards due to a **proactive participation in the different technical committees overlooking fire safety standards and regulations in Europe (CEN) and worldwide (ISO),**
- a well established brand name and services portfolio,
- an excellent customer track record in many countries,
- **large experience of testing products according to the EXAP (Extended Application) rule to minimize the number of tests (EXAP – prTS 50576 for cables),**
- dedicated highly qualified and multilingual project managers.

TESTING METHODS

The most relevant test standards for cables manufacturers are:

THE REACTION TO FIRE TESTS

The set of test standards for reaction to fire is defined, **allowing manufacturers to get ready for the CE marking:**

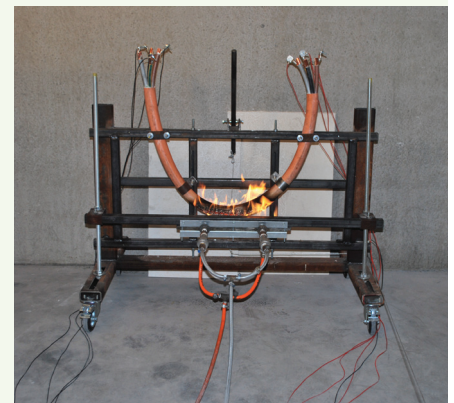
- EN 50399
- EN ISO 1716
- EN 60332-1-2
- EN 50267-2
- EN 61034-2

THE FIRE RESISTANCE TESTS

The testing standard EN 50200 has been published in 2006. Other European testing standards are being drafted.



Reaction to fire test according to **EN 50399** standard



Fire resistance test according to **IEC 60331-1** standard



Fire resistance test according to **prEN 50577** standard

REACTION TO FIRE TESTS FOR CABLES

STANDARD	EQUIVALENT STANDARD	DEFINITION
EN 50399	EN 60332-3-10 EN 50266-1 for railway application	Vertical flame spread, heat release and smoke measurement (FIPEC apparatus)
EN ISO 1716	-	Assessment of heat of combustion
EN 60332-1-2	EN 50265-2-1 NF C 32-070 (C2)	Propagation test flame (Procedure of 1kW pre-mixed flame)
EN 50267-2	-	Material from cables: acidity of gases
IEC 60332-2	-	Vertical flame propagation for a single small insulated wire or cable
EN 60332-3-21	EN 50266-2	Vertical flame spread on bunched cables Cat. A F/R
EN 60332-3-22	EN 50266-2	Vertical flame spread on bunched cables Cat. A
EN 60332-3-23	EN 50266-3	Vertical flame spread on bunched cables Cat. B
EN 60332-3-24	EN 50266-4	Vertical flame spread on bunched cables Cat. C
EN 61034-2	-	Smoke emission test of cables

FIRE RESISTANCE TESTS FOR CABLES

STANDARD	DEFINITION
EN 50200	Circuit integrity for electrical cables: testing method for fire resistance of unprotected small cables used in emergency circuits
IEC 60331-1	Tests for electrical cables under fire conditions: circuit integrity Part 1: Cables exceeding 20 mm
IEC 60331-2	Tests for electrical cables under fire conditions: circuit integrity Part 1: Cables not exceeding 20 mm
IEC 60331-21	Tests for electrical cables under fire conditions: circuit integrity Part 21: Procedures and requirements: cables of rated voltage up to and including 0,6/1,0 kV
BS 6387	Circuit integrity for electrical cables
DIN 4102-12	Fire resistance of electrical cable systems required to maintain circuit integrity
prEN 1366-11	Fire resistance tests for service installations Part 11: Fire protective systems for cable systems and associated components
prEN 50577	Electrical cables: fire resistance test for unprotected Cables (P classification)
IEEE 1717	Testing circuit integrity cables using a hydrocarbon pool fire test protocol
NEK TS 606	Small jet fire test on hydrocarbon fire resistant cables

Apart from standardized tests, Efectis can perform any specific **tailor-made test** such as oversized specimen tests, extended testing time, higher exposure: 1350 °C for cables in tunnel applications - RWS - fire curve...



Safety issues. Solved.

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Efectis is a major European player in fire science and covers all fire safety expertise in testing, modelling, certification and inspection around the world.

To always offer safer life environments, the Efectis teams expand their skills to other safety domains such as structures integrity, pathologies assessments of materials, components and systems, life prediction and durability for new and ancient buildings, monuments and infrastructures.

Efectis Group. Safety issues. Solved.