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"ПРИРОДНИЧІ ТА ГУМАНІТАРНІ НАУКИ. АКТУАЛЬНІ ПИТАННЯ"

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## **ANALIZA ZACHOWANIA SIĘ KABLI PODCZAS POŻARU**

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## **ANALYSIS OF BEHAVIOUR OF CABLE DURING FIRE**

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Electrical wirings are inseparable elements of every kind of building. It's hard to imagine our lives without it. Daily life is based on electricity, but electrical wirings are also frequent cause of fire.

1<sup>st</sup> of August 2016 is a date of implementing Construction Products Regulation (CPR). Said regulation replaced Construction Product Directive (CPD). Old rules were replaced with new ones, with more strict conditions quality tests. New changes appeared also in distribution and production of every single construction products. The European Union focused on safety in case of fire like quicker evacuation or less smoke inside building.

Cables which are mounted permanently are construction products, that is why they are also considered by the new regulation. Cable's manufacturers had to regulate processes in their factories. Cables had to pass more quality tests. These tests enable cable's qualification to their classes of fire resistance. Except for the main class, which strictly means fire resistance, cables have got additional classes. Additional classes signify about cables while they are burning. Except for measurement of flame, CPR added four different parameters: precipitation of heat, smoke, poisonous gas and flaming droplets appearance. Current requirements enable specific analysis of product behaviour during fire.

However, CPR is not everything. Cable which are used in fire-fighting systems have got more specific quality tests. It is because they have to continuously work during the fire. It is hard to create cables, which are good for evacuation (not only is it very helpful for firemen, but it also often saves human lives), and also strong enough to conduct stream.

During fire risk analysis, it is very important to focus on materials used for producing a cable. Important parts are isolation and screen. Process of cable production seems not very complicated, but in fact, every single step is important for it's further use. Cable producing begins in technologist office, where engineers try out new materials or components for cables. They have to take into account where this cable will be used.

Statistic of fire causes are dramatic – electrical wirings are on the top of the lists. The fault lies both on cable's manufacturers and building constructors, who, for example, ignore to create a proper ventilation. Without it, even very high quality cables could fail. Fortunately our new regulations changed the old rules and new technology enable cable's manufacturers to create better and better products.