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Are you getting the performance you expect?

The essential life safety systems designed into the fabric of our buildings depend on the performance of the electrical cables that power them. But, says **Ufuk Colak**, Marketing Product Manager at Prysmian Cables and Systems, with the increasing problem of counterfeit and substandard cable in the marketplace, how can you be sure of getting the product – and the performance – you expect?

The Middle East construction industry is experiencing an unprecedented boom. Quality and reliability have become paramount in the thriving industry, and electrical cables used to power the essential life safety systems in buildings springing up throughout the Middle East have come under close scrutiny. The problem of fake and faulty cable on the market still however poses a real threat to safety, not only in the Middle East but throughout the world.

With counterfeit cable so readily available on the market it has become an absolute prerequisite that cable is obtained from a reliable and trusted source. Prysmian cable has been the cable of choice for many prestigious developments in both Dubai and Abu Dhabi for this very reason. Prysmian's FP Plus Flex was installed in the world famous Burj Dubai Tower and the robust FP400 has recently been installed in the new seven-story, \$82million Canal Point Hospital also in Dubai. Construction of the hospital was started in March 2008 and is due for completion in March 2009. Designed as a world-class medical facility, the hospital is also combined with a spa-like wellness centre. An important part of the hospital construction is the cable used to connect the generator and the essential power supply panels. Deputy general manager on the project, Mr Vankatesh of Trans Gulf Electro- Mechanical, explained that as well as being commercially the best option, "Prysmian was used because it is known or its good quality cable and is met with wide local approval."

Quality Purchasing

Purchase manager for International Electromechanical Services, the company that installed FP400 and FP200 in the newly completed Emirates Airlines Headquarters, Antony Vas said that, "buying cable from a reputable manufacturer and distributor is one of the most important deciding factors when purchasing cable." Reliable cable used to power all fire alarm and emergency systems was absolutely necessary for the development which consists of an impressive modern nine story building with two basements and tunnel leading staff underground directly into the airport.

However, purchasing decisions are unfortunately, not always based on quality as commercial pressures around the globe force buyers to search for cheaper products and wholesalers and distributors try and satisfy the demands of the market. A recent survey carried out for BASEC (British Approvals Service for

Cables) in the UK revealed that 30% of wholesalers and distributors said their customers are inclined to buy a cheaper alternative to their usual product and 23% of wholesalers admitted selling some cable products not approved by BASEC. So it is not surprising that, sub-standard cable products have become a major issue in the electrical industry.

Poor Performance

The world's commodity markets may seem a long way from the quality of cable used in a new electrical installation but in fact it is having a direct impact. Being a good conductor, copper is a key component in most types of cable and the volatility in the cost of copper has pushed up cable prices. Simply cutting down on the diameter of copper conductor wire used in a cable has the effect of reducing conductivity. This could cause a cable to overheat and catch fire. There are also other examples of substandard cable which use badly recycled copper, copper-coated aluminium or even steel wire rather than copper.

Some of these cheaper cables also use the wrong type of insulation and sheathing materials, which can lead to reduced life and sometimes poor smoke and fire performance in supposedly fire and smoke-rated cables. What is more, it is often not until cables have been installed and used that problems come to light, by which time it is too late to rectify the situation without substantial and expensive remedial works. Such additional costs can have enormous implications for businesses as well as the inconvenience for those occupying the building.

Fakes in the Fire Resistant Market

A most concerning recent activity has been the targeting of the fire resistant cable markets with "fake" cable which has no fire resistance at all. One recent example of cable taken from a fire alarm installation and examined in the Prysmian laboratory illustrated the steps some manufacturers and their suppliers will take to increase their profits with no regard for the lives they are potentially putting at risk due to the lack of essential performance of their product. This particular cable carried the marking "BS5839-1:2002 26.2d BS6360/BS6387 CWZ BS EN50200 PH30 British Made Cable" which would suggest a fire resistant cable.

However, alarmingly:

- The conductors were actually copper clad aluminium instead of copper
- The insulation was actually PVC which quickly softened and degraded in a fire instead of a fire resistant type
- The screen was not in contact with the drain wire so there would be no automatic earthing of the screen

In fact, when tested in the laboratory, this particular cable survived for less than one minute although the marking claimed 180 minutes and indeed met none of the claimed fire related tests.

Never has the warning "caveat emptor" been so necessary. Use of such a cable would potentially put lives at risk due to non-functioning of the fire alarm system and could lay the installer open to serious penalty.

Quality Assurance

So, what can you do to ensure that the cables used are fit for purpose and will not leave you open to fire and safety risks? Evidently, it is not sufficient to look only for the necessary standards to be marked on the product but also to ensure that the product is from a reputable manufacturer and backed by verifiable approval from an independent body.

Trusted manufacturers, such as Prysmian, will ensure that cables have been rigorously tested and manufactured under an approved quality management system. For specifiers seeking third party approval of products it is essential that products specified are obtained from such manufacturers.

Surprisingly, the difference in cost between a cable from a reputable source and a cable from an unknown source is not very great. The extra cost is a small price to pay for the reassurance that you have a quality product, fit-for-purpose and that you are not running the risks of having to take out and replace a faulty cable, with all the expensive remedial works that that involves. ■
