Quality Control

by T.L.Journeaux

With the credit crunch upon us and cost cutting high up on the agenda, buying cheaper alternative cable may seem attractive but the risks involved could turn out to be far more costly. Terry Journeaux of Prysmian Cables & Systems discusses the risks of choosing second rate cable and the dangers posed by the specification and use of faulty, unsafe and even fake cable.

It is all too easy for commercial pressures to bear down on the quality of products available as buyers search for cheaper products and wholesalers and distributors try to satisfy the demands of the market. A recent survey carried out for BASEC (British Approvals Service for Cables) 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, faulty cable products have become a major issue in the electrical industry.

Initiatives

The problem has been widely reported and the campaigns by BASEC and other organisations are doing an important job in raising awareness.

In addiition, Basec recently stated that the need to ensure the correct specification of cables for major projects has reached a critical point as series of new industry regulations and legislation come into force. The implementation of the 17th Edition of the IEE Wiring Regulations means design and specification changes for many types of installation.

This change will also be subject to the new Manslaughter and Corporate Homicide Act which came into force in April and means that individuals could ultimately be held responsible if anything goes wrong such as an electroculation or a fire which results in a death.

To assist with this BASEC has issued its six-point Spec Check initiative for specifiers and installers who may be in any doubt.

Poor performance

The world's commodity markets may seem a long way from the length 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 such a huge increase 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, which are usually imported from overseas, 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 is it too late to rectify the situation without substantial

and expensive remedial works. Such additional costs can have enormous implications for small businesses as well as the inconvenience for those occupying the building.

Fire resistant fakes

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 to the lives they are potentially putting at risk due to the lack of essential performance of their product.

Some of the alarming findings were:

- Cable marking that included “BS5839-1:2002 26.2d BS6360/BS6387 CWZ BS EN50200 PH30 British Made Cable” which would suggest a fire resistant cable
- 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

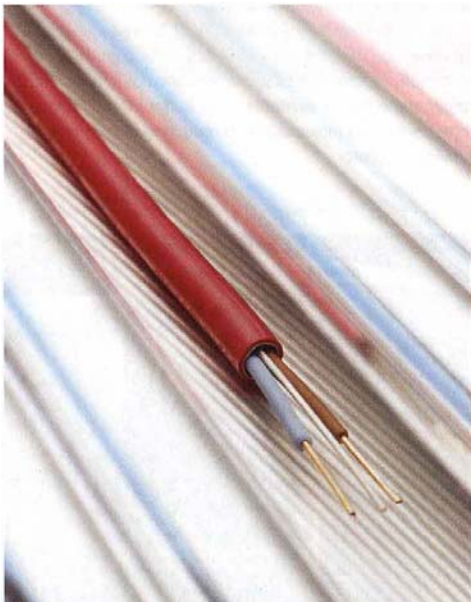
In fact, when tested in the laboratory, this particular cable survived for less than one minute although the marking claimed 180 minutes and indeed met none of the claimed fire related tests.

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 under the UK Regulatory Reform (Fire Safety) Order 2005 or even the Manslaughter and Corporate Homicide Act of 2008 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.

Cables from a reputable manufacturer in the UK will carry the BASEC or other recognised approval mark on the cable which guarantees that the cable is of a high quality and fit-for-purpose. The mark confirms that they have been rigorously tested and manufactured under an approved quality management system. For specifiers seeking for third party approval of products there is no higher level of approval than the BASEC mark.



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Surprisingly, the difference in cost between cables which carry the BASEC mark, and those who don't, 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.

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