



Over the last decade, a much wider range of cable management products has become available

# Management decisions

Today's cable management systems are not only somewhere to house electrical wiring, as they also need to protect data and voice cables, prevent the spread of infection and help reduce overall project costs. **Rob Shepherd** explains how this has led to a variety of system options for use in a multitude of applications

Once upon a time, the role of cable management was simply to make sure that the wiring in a building was safely contained. However, continuing growth in both the complexity of wiring and cabling for multiple services in modern buildings has brought the need for safe and efficient cable management systems into sharp focus.

## Made to measure

The biggest impact on cable management product design and application has been the growth of data infrastructures within buildings. Now the 'fourth utility', the IT infrastructure has developed rapidly over the last 20 years and can be both complex and extensive.

Schneider Electric's marketing manager, Lee Jones, comments: 'With modern working environments containing

more data and information cabling, cable management solutions have become a significant part of the planning and specification process.'

This has placed demands on manufacturers to produce systems with greater capacity and flexibility. Three-compartment uPVC trunking can accommodate power, data and voice cabling, and it is usual to see two of the three compartments being used for cabling, with the third centre compartment providing cable segregation as well as room for easy termination.

While traditional steel tray is also popular, wire tray is continuing to gain market share as it is flexible, quick and easy to install. The range of different finishes available also means that the type of wire tray used can be tailored to a specific application.

Despite the range of products on offer, Paul Diggins, sales director at Marco Cable Management believes that some contractors are failing to use appropriate products. He says: 'All too often we see the latest structured cabling solutions being installed within inadequate containment solutions, which will have an adverse effect on the integrity of the client's data throughput for years to come.'

### Grand designs

Category 6, 6A and 7 four pair twisted pair cables have precise manufacturing tolerances. The distribution of these cables requires specific and careful management, including greater separation between power and data and, in some circumstances, aluminium or steel screening.

A key challenge for cable management solutions is to ensure that they maintain the minimum bend radius through which the cable needs to travel. This dictates the size and design of both wire and uPVC systems, with special attention to both the internal and external bends along with the entry to the back boxes for termination of the data points.

Jim Fletcher, managing director of Marshall-Tufflex, explains: 'The advance in category standard requirements means a demand for increased bend radius in trunking to facilitate installation and the development of systems with larger capacity data compartments.'

### Features and benefits

Cable management has evolved in line with the needs of the marketplace and over the last decade a much wider range of uPVC and wire based products have become available.

Lee Jones of Schneider Electric believes that contractors must recognise the unique features of these products. He says: 'Contractors have shifted their way of viewing cable management, and the general consensus we are seeing is for the products to be treated as a commodity. This has meant value has started to erode from the market as contractors look for the lowest priced option and often neglect the features and benefits that vary between products.'

One area that has grown enormously is the use of wire mesh cable tray. It is easy to cut and shape on-site using simple hand tools and a few nuts and bolts, meaning there is virtually no wastage, even on complex cable runs. It can offer significant time and total cost savings compared with traditional heavy sheet steel products. Wire mesh tray also allows an installation to be modified easily.

Cablofil's managing director, Paul-Edouard Courson, ▸



The distribution of IT network cables requires specific and careful management



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### In the news

The BBC is nearing completion of a massive project to redevelop and extend Broadcasting House in central London. The building will house 5,000 people, and as part of this scheme the Marshall-Tufflex MT-32 power distribution system is being utilised.

The project is highly time-sensitive and power installation work has to be carried out as quickly as possible. The new system had to be compatible with one already installed in the original Broadcasting House as part of the shift to digital broadcasting.

The bespoke solution was designed and pre-fabricated at Marshall-Tufflex's manufacturing base. It has eliminated hardwiring on site at the BBC and permitted much faster installation times for electrical contractor, Phoenix Electrical.

The modular power distribution system is delivered to site in cable management bays complete with pre-wired cable sets marked with circuitry and ready to feed into distribution boards. The system has gone into the initial fit-out of the central apparatus area (CAA) and local apparatus rooms throughout the new 12-storey building, including three basement levels.

Ivan Phelps, operations director at Phoenix Electrical, comments: 'The initial CAA alone has required 81,000m of power cabling, 2,000 sockets and 32 pre-wired units contained within 513 bays supplied by Marshall-Tufflex. A further 322 bays are being installed throughout the building. The supply of cable sets pre-wired and ready to attach to the mains has made life a lot easier and fitting far quicker.'

### About the author

#### Rob Shepherd

Rob Shepherd is a freelance journalist who has worked in the electrical contracting industry for over 10 years, most recently as editor of *Electrical Contracting News (ECN)*.



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Wire mesh tray is easy to cut and shape on-site using simple hand tools



Manufacturers have to consider the environment cables will be located in



Wire mesh tray is flexible, quick and easy to install

comments: 'First and foremost, a cable tray must act as an effective, resistant and durable support for cables. The mechanical performance of all products and accessories must be tested against the very demanding requirements imposed by the international standard IEC61537.'

### Horses for courses

Manufacturers have had to consider the environment in which the containment is located and who will be using it. This has impacted upon the composite material used in the production of these systems.

Legislation such as The Disability Discrimination Act 2005, through compliance with Part M and Section 8 of the Building Regulations, has to be addressed. Mike Bancroft, category manager at Schneider Electric, comments: 'Manufacturers have been responsive to Part M of the Building Regulations by ensuring a range of compliant products are available. For the contractor, it is simply a case of thinking how cable management solutions are used.'

In order to achieve Part M compliance, a majority of cable containment manufacturers have altered their existing trunking range with contrasting colours, offering a cost effective solution with no compromise on quality, style or durability.

### Safe from harm

Studies by the National Audit Office (NAO) have suggested that almost 10 per cent of patients have a healthcare acquired infection at any one time. Hospitals and other health care establishments have, therefore, become aware of the need to introduce preventative measures to reduce the outbreak of superbugs such as e-coli and methicillin resistant staphylococcus aureus (MRSA).

The cable management sector has a very important part to play in this. The perception used to be that whilst the switches, sockets and other electrical, air or gas outlets fitted to the cable management solution were being touched regularly, and could therefore harbour a medium for these superbugs, people rarely came into contact with the actual trunking. The reality is very different, and manufacturers have been actively seeking to enhance antimicrobial integral protection within their products.

The use of uPVC compounders can now be used in the production of the cable management systems rather than just applied as a surface coating. Therefore, it continues to work even if the plastic is scratched or damaged.

Jim Fletcher, managing director of Marshall-Tufflex, comments: 'We pioneered this approach and have found that the interest in this technology from the NHS, and from private healthcare, is converting to installations all over the UK.'

Stainless steel systems offer an excellent alternative to antimicrobial systems and are becoming increasingly specified in food factories where hygiene standards are a high priority. Paul-Edouard Courson of Cablofil adds: 'Thanks to its open structure and stainless steel finish, wire tray can be washed down with detergents and water to maintain high hygiene standards.'

### Smart thinking

In these tough economic times, electrical contractors are

## Pier pressure

More than 2.5km of Cablofil steel wire tray cable management was used to help complete a £51m rebuild of Weston Super Mare's Grade II listed Grand Pier.

The pier had to be rebuilt following a fire, and the revamped attraction comprises a 400m promenade and a state-of-the-art indoor entertainment venue. The whole structure is lit by LED lights configured in a chasing sequence to run down the length of the pier, rise up the three levels of the Pavilion and then back to the shore end.

Contractor, Barrie Beard, chose the Cablofil steel wire tray cable management system to provide ease and speed of installation and corrosion protection. Externally, 200mm marine grade stainless steel Cablofil with enclosed lids was used to contain both high and low voltage cables.

A spokesperson at Barrie Beard, said: 'This was fixed beneath the promenade structure where it was open to the elements and exposed to sea water, so it was specially treated with an anti-corrosion coating by Cablofil prior to delivery to site and the steel wire tray specialist also provided pre-coated anti-corrosion brackets for the external installation.'

having to work harder and smarter in order to secure reasonable margins and minimise time on site. However, manufacturers are also under pressure.

Paul Diggins, sales director at Marco Cable Management explains: 'The cost of raw material is having a major impact on the cable management industry. Steel and PVC prices have rocketed during the last 12 months – the former by more than 30 per cent. With these price hikes, we have seen an increase in our production costs which cascades down onto what we charge our customers.'

The result of this is that quality has become a major issue. Cablofil's Paul-Edouard Courson, explains: 'As suppliers fight for market share, the pressure is on to compete on price but, by definition, this strategy means that something has to be sacrificed in return. We have taken it as an opportunity to differentiate on the basis of product quality and excellent service.'

### A solution

The need to reduce costs has led to the growing use of prefabricated and modular wiring systems that are assembled and tested off-site. A complete installation can be achieved from the distribution board to the furthest point of a circuit by linking connectors or using a home run. This approach allows consulting engineers to design the electrical system early in the project and source the system/components from the same manufacturer.

Marco Cable Management's Paul Diggins, says: 'We have definitely seen a growth in this area. We recognise

the need to be versatile, both in terms of our approach to customer service and product adaptability. With contractors and end users looking at cost saving, labour efficiency and fast track construction methods, we must keep up to speed with their demands.'

The great advantage of a prefabricated system shows itself during the second-fix stage. Although the initial purchase price may be higher than that of hardwire products, at second-fix the speed of connection is indisputable. It has the added advantage that it allows project managers much greater flexibility of management to free up personnel more quickly to tackle other work.

Adopting a prefabricated approach does call for a change in working practices, since more design and planning is done in advance. By supplying project drawings, manufacturers can evaluate the electrical requirements of the scheme, measure the lengths of cables required and, once given the go-ahead, fabricate the components, which are then sent to site fully factory tested and boxed up ready for installation.

### Looking ahead

The cable management sector has moved with the times and there are many factors that have to be considered when designing and manufacturing these solutions. For contractors, taking the time to understand the benefits of the different types of products available will save time and money, and provide a cost effective and appropriate system. [ECAtoday](#)



**Adopting a prefabricated approach does call for a change in working practices**

# MADE TO MEASURE



The Electrocorder range of electrical data recorders has been designed and manufactured in the UK to help you do your job better. Every model has been expertly calibrated to give the most accurate electrical diagnoses, helping you to carry out comprehensive and reliable energy audits. Plus, with its simple design, free software and simple data transfer via USB to your laptop, the Electrocorder is such a low cost investment that it can't fail to amp up your business.

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