

No cheating on cleating

With the first international standard for cable cleats for electrical installations just issued, is the industry ready to adopt safe practice?



Not compulsory

The new standard covering cable cleats such as Ellis Patents' Alpha unit is advisory, not regulatory

"THE INTRODUCTION of IEC 61914 (2009) is a huge boost for everyone associated with cable cleats and is something that we at Ellis Patents applaud," declares Richard Shaw, managing director of cable cleat manufacturer Ellis Patents.

"It provides global recognition of the need for secure cleating in electrical installations and, when you consider that as recently as 2003 there wasn't even a European standard for cleats, it demonstrates just how far we've come in the journey towards the widespread adoption of safe cleating practice."

Unfortunately, the journey is far from over, argues Shaw, and the new international standard simply moves the industry further down the road, rather than delivering it to a final, secure destination.

"The reason for this viewpoint has nothing to do with glasses appearing half empty but is based on the impact the European standard had when it was introduced in 2003," claims Shaw. "In a nutshell, it failed to spark the kind of interest anticipated among specifiers and contractors, while a significant number of cleat manufacturers did little, if anything, to

bring their product in line with it."

One of the key reasons for this was that the standard was advisory rather than regulatory and that the vast majority of it was self-certifying.

"This is exactly why the new international standard will fail to achieve the desired outcome," says Shaw. "Some companies and, dare I say, countries will embrace it with great zeal, but this won't be enough to provide the wholesale change in attitude needed to deliver the widespread adoption of safe cleating practice."

How can this be achieved? The first thing that needs to be done is that everybody needs to be educated as to the importance of cleats, and also their correct use.

Shaw uses as an example a cable management system fitted with under-specified cleats.

"Some may think this would provide a certain level of short-circuit protection, but it doesn't," he says. "The cables might as well be secured with plastic cable ties. Different cable cleats are designed to withstand specific forces, and so the only thing under-specified cleats will do when a short circuit occurs is add to the shrapnel."

Everyone needs to remember that electricity is as dangerous as any substance or liquid mankind works with. It can and does kill and maim. Cable cleats are designed specifically to restrain cables in potentially lethal short-circuit situations. There is absolutely no doubt that any short cuts that increase risk, whether to the installer, the end-user or the passer-by, need to be stamped out.

"The problem we face in changing market perceptions is not just that such short cuts exist, but that they are so plentiful and deeply ingrained in the specification and installation process that many people may not be aware that they are taking them," argues Shaw.

Most specifiers and engineers are very diligent when it comes to system design. System fault levels will normally be calculated so that anticipated forces between cables will be known. And, in most

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instances, the type of cleat and appropriate spacing will be given careful consideration. Sometimes a product defined by part number will be included in the specification, but this is usually balanced with the words "or equivalent".

The specification is usually passed to a number of contractors who bid competitively for the contract. The most common scenario, and where the problems begin to occur, claims Shaw, is that cleats are lumped in with bulk electricals and not considered properly when a contractor submits a tender.

"When the contract is won, the bulk electricals are passed to a buyer, who may not appreciate the importance of the work undertaken in the original specification. As a result, cleats are often seen as an easy

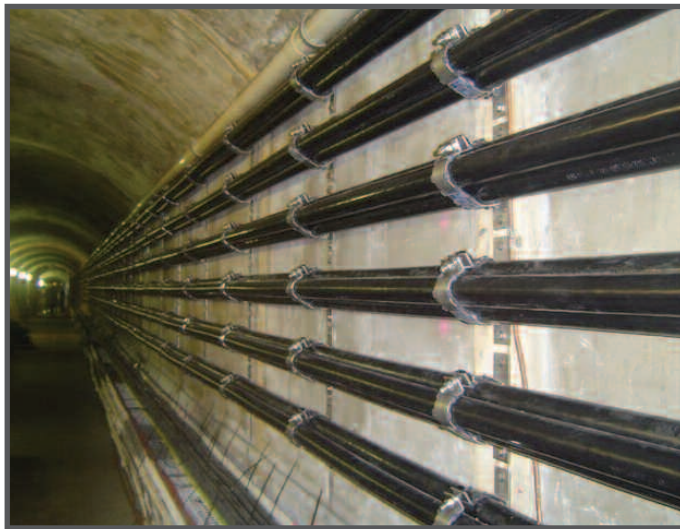
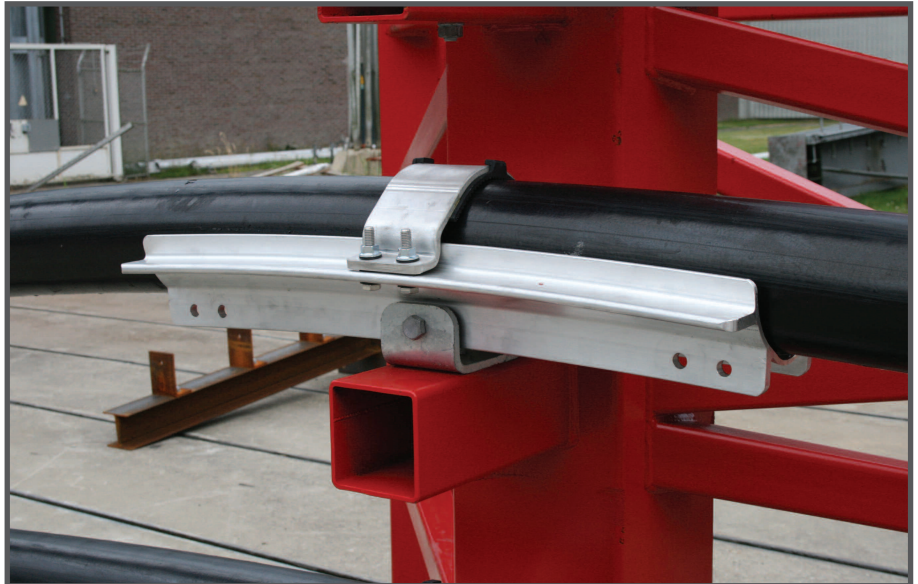
The most common scenario, and where the problems begin to occur, is that cleats are lumped in with bulk electricals and not even considered properly at the tender stage

target for cost-cutting, and the potential consequences are alarming," he says.

In simple terms, the end customer has a system diligently designed to comply with all current legislation and guidelines, but the system finally installed (and probably warranted) by the contractor may not meet the same standards.

Unfortunately, cleat manufacturers are as much to blame as anyone else when it comes to the lack of understanding about the importance of the product.

"The fact that the majority of cleats are manufactured as add-ons by companies that specialise in other areas doesn't help, but this isn't the major issue. The main cause for concern is the shocking lack of third party short-circuit testing prior to products being brought to market," says Shaw.

**Testing times**

There is a "shocking lack" of third party short-circuit testing prior to product launch

Security vital

There is no room for short cuts in potentially lethal short-circuit situations, such as in a tunnel

When you consider that the purpose of a cable cleat is to withstand the maximum forces generated by a cable installation, it stands to reason that any cleat should be thoroughly tested to ensure it has the capability to do this.

"Third party short-circuit testing is something that we carry out as standard on any new product, but a great deal of other products – especially the cheap copies flooding onto the market from emerging foreign manufacturers – are simply manufactured on the back of theoretical rather than actual testing.

"As a result, products that are said to be suitable for certain installations are often sorely lacking."

This, rather neatly, takes us back to *IEC 61914*, which covers the use of cable

cleats on electrical installations.

"We need to be cautious with the standard as adherence to it is not necessary, and even when manufacturers claim or suggest adherence to it, this can be done through self-certification."

The only way to guarantee correct and safe cleating is to ensure that the products specified and ultimately installed not only claim *IEC 61914* adherence but have the third party certification needed to prove that they actually conform.

Electricity and electrical installations are dangerous. There needs to be an intensive and on-going process of education that draws attention to the vital role of cable cleats in ensuring the safe harnessing of electrical installations. Without it, lives will continue to be put at risk.