

**The Dangers Associated with Utilizing
Unestablished Brands and Illegitimate
Communication Cable.**

This paper will look at some of the risks associated with the use of unestablished cable brands (a brand virtually unknown to the domestic market), and illegitimate cable. For the purpose of this paper, we will use the term illegitimate to describe the following:

- Communication cables that may be manufactured in a manner that do not meet U.S. National Electrical Code, but are intentionally marketed and labeled in a manner that indicates they are.
- Communication cables that are accidentally mislabeled due to shortcomings in quality control.
- Counterfeit cables that are intentionally manufactured as a counterfeit of an established brand.

This paper assumes that in all instances, all purchasers, installers and end-users of illegitimate cables believe the products to be accurately represented and labeled correctly, and of the original manufacturer identified on the package. However, the ramifications, as this paper will outline, for using illegitimate cables can be extremely significant for those that distribute, install or utilize these cables.

Use caution when buying unknown brands.

With the growth of the global market and burgeoning overseas economies, solicitations for lower cost products have permeated the domestic market where once only domestically made products were available. If a cheaper product is available, it may be sourced by a distributor to help them gain a price advantage on a competitor, or by an end-user to simply save money on a project. The promise of a lower cost product is often difficult to pass up. However, great care should be used when sourcing products from an overseas manufacturer when little is known about that manufacturer, especially when it comes to communication cable.

Obviously, many of the leading brands currently available in the U.S. were founded outside of the U.S. Brands like BMW, Nokia and Hitachi are known worldwide as leading brands with long histories in making quality products. They have spent decades establishing their names. Their brick and mortar locations can be easily found with an Internet search. Some of these companies, such as Hitachi, have even established manufacturing facilities in the U.S. These companies have gained credibility, market share and public awareness because of the quality, price and overall value that their products offer. Today, however, virtually unknown manufacturers seem to be popping up and promising similar products, but at a lower price. These new manufacturers may not have done the research, development and testing that the better known and more established brands have done. They may also have not employed the same manufacturing processes, quality control

and environmental protection procedures that the leading brands do. The downside of choosing a lesser known manufacturer recently became evident when a major home improvement retailer had to recall 11 million feet of communication cable that they had purchased and sold. The cable was sold as Category 6 Riser (CMR) cable, but was found to not pass the testing required by U.S. National Electrical Code for installation in riser environments within buildings. How much of the cable that was sold was installed? Cable, which may be considered a construction item, like plumbing or electrical wiring, is not easily installed or removed. We do not know what became of the company that manufactured this illegitimate cable, but firmly believe this could happen again. It would appear that by dealing only with well-known, established manufacturers, problems like this could possibly be avoided. However, if they do occur, one would expect a high level of accountability from the manufacturer and an action plan to quickly remedy the situation. Such a high level of accountability may not be the expected action from an unknown manufacturer and especially not from one whose sole manufacturing objective is to be substantially cheaper than other manufacturers. This appears to be an example of the long-lived adage, "You get what you pay for."

Does the purchase of low-cost products from unestablished manufacturers contribute to the spread of illegitimate products?

It is commonly accepted that the non-branded manufacturers are also the most likely source of any counterfeit products that find themselves into the supply chain. This perception exists because they have the resources to manufacture it, an understanding of the channels necessary to market the product and an understanding of what type of labeling and packaging is required to get past most initial quality inspections. Also, the countries from which counterfeit product are alleged to originate are known to have loose regulations regarding the manufacture of these and other products, little or no means to enforce what rules they may have, or corrupt officials with no desire to act against the infringing companies at all. Underwriters Laboratories (UL), a world leader in product testing, deals with this issue on a daily basis. UL safety tests a number of products that we interact with on a regular basis and it would be a challenge to list all those products here. They see firsthand how counterfeit products from all over the world fail the required safety testing of the original products. Many of these failures can directly impact the safety of the user. Even counterfeit solar panels exist. Would you want an untested electrical product mounted to the roof of your house? A visit to UL's public notices section of their website <http://ul.com/newsroom/publicnotices/> illustrates just how big and serious of a problem counterfeiting is. To be clear, in many of the UL instances, it is the UL stamp of approval that is being hijacked and used by a manufacturer. So

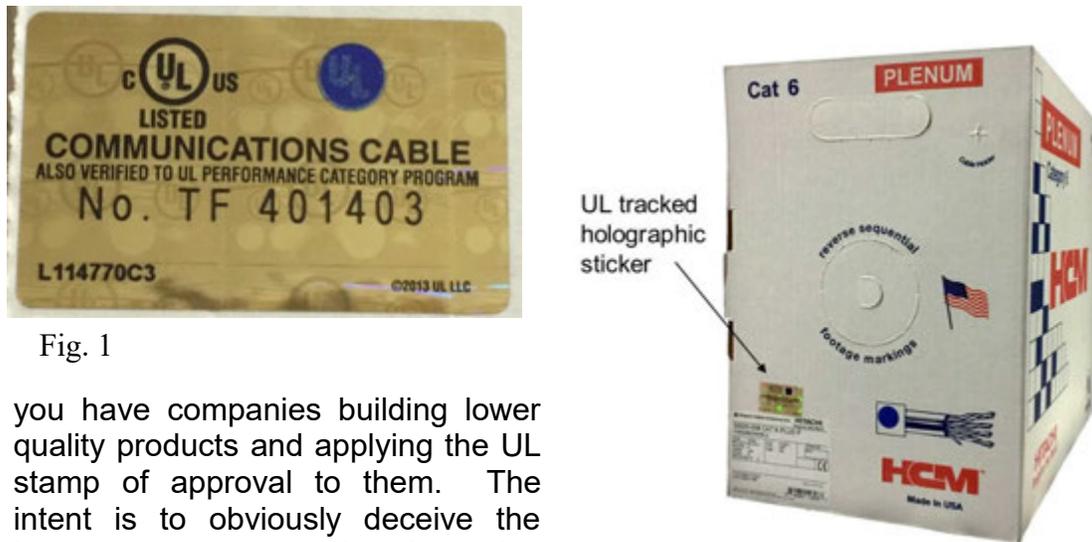


Fig. 1

you have companies building lower quality products and applying the UL stamp of approval to them. The intent is to obviously deceive the buyer/user. So, who is using counterfeit UL approvals? Once again the finger must be pointed to the unknown brands without a reputation to protect.

To help limit the spread of counterfeit communication cable, UL provides to its cable manufacturing customers unique holographic stickers (Fig.1) that are placed on each package. This sticker identifies the manufacturer and point of origin of the cable. However, UL must occasionally alter the design of the sticker to ensure that it too is not counterfeited. Based on this practice, it is safe to say that UL perceives counterfeiting to be a sizeable problem. According to UL, this is a growing problem.

Who is liable when illegitimate products are used?

In a culture as litigious as that of the United States, a distributor, installer or end user should strongly consider the liability associated with the purchase, installation and use of illegitimate cable. But, how would someone know if they were using illegitimate cable? Though it may be difficult, the key indicators are often there. For example, if the product was purchased at a price surprisingly lower than that which can be obtained for a similar product through established distribution channels, it may be illegitimate. If you are using a well-known brand and the labeling or package isn't consistent with other products from that brand, it may indicate a counterfeit cable. Additionally, inconsistent information in the product literature or, in the case of cable, what may be printed on the cable jacket, can identify the cable as counterfeit or at least suspect. When using products from an unestablished manufacturer, it may be very difficult to tell the difference between a legitimate product and one that is not. If the solicitation of the cable came through an unusual or unestablished channel, it could have issues. With

some cable purchases being made via the internet through unknown channels, the chances for deception assuredly increases.

A cable once presented to UL for evaluation had both CMP/CMR printed on the jacket. This is inconsistent with identification methods for communication cables in North America. The marking of CMP on the cable jacket indicates that the cable can be used in plenum spaces in a building while the CMR marking indicates it is appropriate for riser environments, and not plenum spaces. Due to the more stringent flammability requirements for cables intended for plenum spaces established by National Electrical Code, the cables require different materials to pass the CMP flammability test. As a result, CMP rated cables cost more to manufacture than CMR. It could have been a printing issue with the cable manufacturer, or it could have been printed in that manner because the manufacturer didn't know the difference. Regardless of the reason for the mislabeling of the cable, if it was installed in a building, it would certainly draw the attention of the local building inspector and it would most assuredly have to be removed. Due to the non-standard marking, it would not be known whether it was CMP cable with the additional CMR printing on it, or CMR cable with additional CMP printing on it. If the project required CMP cable and this was purchased because it was a great deal, it is unlikely that savings would come anywhere near the costs associated with removing and replacing it. Who would be held financially responsible for the removal and replacement of the cable? Is it the distributor who purchased then sold the cable, or the contractor that purchased and installed it?

A more significant risk associated with installing an illegitimate cable is one that relates to the actual safety of those in the building where the cable may have been installed. If a non-CMP rated cable is disguised as CMP cable and is installed in a building, and there is a fire, will that cable perform as required by National Electrical Code? CMP cable must exhibit certain characteristics when it is burned. These characteristics primarily have to do with how quickly the cable burns, how much smoke the burning cable gives off and how dense that smoke is. The intent is to have the cable contribute as little as possible to the fire so occupants of the building can gain precious time when exiting. Designing and testing cables to exceed the CMP requirements is an involved process. Unscrupulous companies without a brand to protect may cut those corners to save money. If there was a fire and the illegitimate cable was determined to have played a role, it is possible that any lawsuits that may result from such an incident would seek damages from all those involved, including the distribution, installation and perhaps even use of the illegitimate cable. Depending on the severity of the infraction, incarceration of the responsible party could even occur. Now, how likely is all this to happen if an illegitimate cable is used? The question is

why would anyone want to expose themselves to that type of risk in the first place?

What is the environmental impact of purchasing cable from unestablished/illegitimate cable manufacturers?

Though it would be difficult to precisely measure the impact that unestablished manufactures and illegitimate cable manufacturing may have on the environment, it is safe to conclude that it is greater than that of better known and legitimate cable manufactures. Companies with a reputation to defend, as well as those who wish to be leaders in social responsibility, and even those who just wish to avoid fines, abide by the environmental rules established both at the local and federal level. Whether it is the Clean Water Act, the Clean Air Act, or the more stringent Proposition 65 from California, it is in the best interests of these companies to abide by all applicable environmental laws. In the U.S., the Environmental Protection Agency (EPA) is charged with establishing and enforcing federal environmental regulations. With over 15,000 employees in the U.S., the EPA is well positioned to both create environmental law and enforce it. In 2013 alone, the EPA collected over \$4.5 billion in fines. From a manufacturer's perspective, staying aware of and in compliance with all the environmental laws can be both financially and technically challenging. There are obvious costs in regards to doing so. If a manufacturer has weak rules or fewer rules than a competitor with which to comply, their costs will be less than those facing stricter laws. Fewer environmental laws to comply with will also result in an increased risk to the environment. U.S. environmental laws, both federal and local, such as those regarding the dumping of hazardous substances, have helped curtail damage to the environment. Waterways, once heavily polluted with chemicals such as polychlorinated biphenyls (PCBs), have seen significant improvement over the years since the enactment of related environmental laws. With the dumping of PCBs now prohibited, the health of the waterways is steadily improving. When it comes to the unestablished manufacturers and the manufacturers of illegitimate cable, what is being done with their waste?

In addition to established environmental laws, there are those environmental initiatives that are good for the environment and can add value to a product. For example, removing lead from all cable components was a major undertaking for the cable industry. Since it is well documented that lead is bad for the environment and the organisms living in it, getting rid of it makes sense. Initiated in the mid 90's, the move to lead-free products had a substantial R&D cost associated with it. As a result of going lead-free, materials used for years were no longer acceptable. New materials had to be found. As the green movement grew, global environmental initiatives, such as RoHS (Reduction of Hazardous Substances) found their way from Europe into U.S. manufacturing plants. RoHS, technically known as

2002/95/EC, requires the reduced use of several materials known to be hazardous to humans and the environment. Those materials include lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl and polybrominated diphenyl ether. Some environmentally conscious companies adopted RoHS in the mid 2000's, much earlier than many other companies. In the U.S. RoHS is not mandated by law. Rather, it is a business decision based on making products that minimize their environmental impact and selling those products abroad. Following RoHS, in 2006 another European regulation entitled REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) was released. REACH is technically known as EC 1907/2006. REACH looks at the production and use of specific chemicals and their impact on the environment and humans. Over 143,000 chemical substances have been registered with REACH. Like RoHS, REACH is intended to protect the environment of Europe and those living there. Companies that sell into Europe are required to abide by the two regulations. As one might guess, abiding by these regulations requires significant research and designs capabilities. If unestablished or illegitimate cables are labeled as being compliant to these standards but are not, not only may their manufacture pose a threat to the environment, but their use may as well.

It is widely accepted that "greener" products tend to cost more than their non-green equivalent. This is a result of not just the materials being used, but the research, development and processes required to make them. Green manufacturing, which may involve using alternative or recycled materials, recycled water and alternative energy, does help the environment. If you were to compare the cost of products from an established brand that is environmentally conscious, with similar products from a company that doesn't abide by the same environmental laws, you are almost certain to find that the products from the environmentally conscious established brand will cost more.

As you can see, when you choose cable from an unestablished manufacturer or obtain illegitimate cable, you not only exposure yourself to financial risks, but you could also be jeopardizing the environment. By choosing cable from well-known brands, you avoid exposure to these risks.