

LARGE BUILDING AUTOMATION



Risk, Responsibility and Reputation: What You Need to Know about Non-Compliant Cable

CCCA addresses the safety, performance and liability risks associated with compliance.

In recent years, the industry has heard a lot of buzz surrounding the risks of installing non-compliant or counterfeit communications cable for in-building, low-voltage infrastructures that support network, security, and building automation systems. With plenty of unfamiliar cable brands available at reduced cost, and purported to have fire safety listing and verified standards compliance, staying informed and maintaining a degree of due diligence can ultimately make or break your reputation.

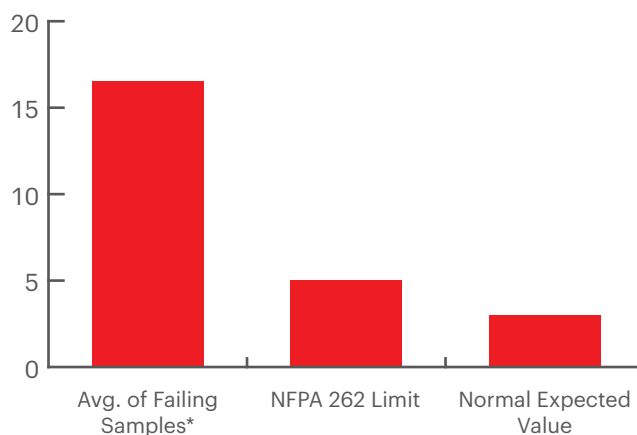
Much of the recent awareness has been fueled by testing that has brought the serious life safety risks of non-compliant or counterfeit cable to light. With greater awareness has also come confusion over the terms “non-compliant” versus “counterfeit.” While non-compliant cables are *intended* to meet code and standards but fall short, they are not all considered counterfeit. On the other hand, all counterfeit cables are indeed non-compliant. For the purposes of this article, the two terms are used interchangeably as neither are compliant.

What Are the Risks?

Fire safety and electrical performance transmission parameters have long been the industry approved set of codes and standards underpinning low-voltage communications cables.

The *National Electric Code (NEC®)*, requires communications cables installed in buildings to be listed by a recognized independent testing agency, such as Underwriters Laboratories (UL). To be listed, cables must pass stringent fire safety tests that aim to ensure reduced spread of fire and heavy smoke that can limit the ability to safely evacuate occupants from a building in the event of a fire.

Flame Spread (ft.)



* Avg test results of 5 separate off-shore cable samples
* All testing conducted by independent test laboratory
* Tests conducted July, 2012; Cables procured April 2012

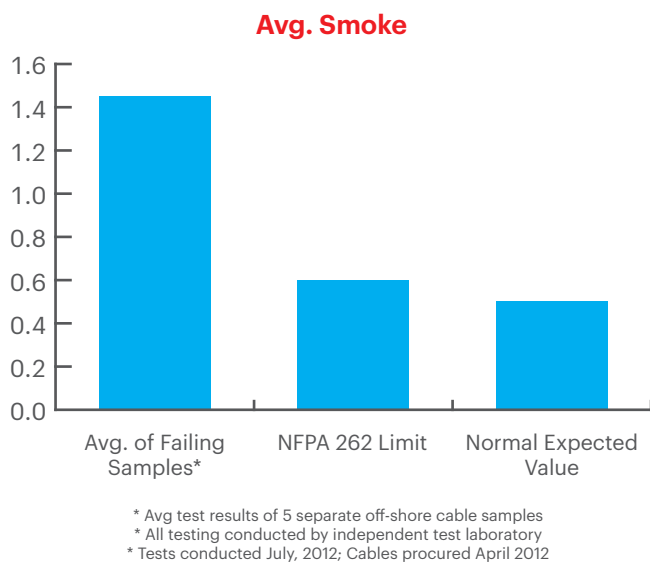
While some cables may be marked as listed, testing has shown that this is not always the case. In conjunction with a well-known U.S. listing agency, the Communications Cable & Connectivity Association (CCCA) tested 17 communications cable samples from 12 different manufacturers, all of which were unfamiliar yet available brands manufactured outside of the U.S.

Of the 9 riser-rated (CMR) cables tested, 7 failed flame spread testing. Some failures were serious with flame spread failing within 45 seconds, cables burning the entire length of the testing chamber and temperatures reaching 2000°F. Most of the 8 plenum-rated (CMP) cables tested also failed flame spread testing, and all 17 samples failed peak and average smoke density.

While fire safety is the biggest concern, testing also showed that the cables did not meet physical construction or transmission performance standards. Under UL and

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Telecommunications Industry Association (TIA) standards, several of the samples did not meet specifications for jacket and insulation thickness and other physical parameters. All of the cables tested did not pass one or more TIA-568.C transmission performance parameters.



A growing concern is the use of copper clad aluminum (CCA) conductors for communications cable, which may be considered counterfeit. While acceptable for use in certain electrical applications, CCA does not meet the requirements of UL 444 and TIA 568-C standards for CMP or CMR communications cable, which require solid or stranded copper conductors. CCA cables have higher resistance that is not suitable for today's applications, poor flexibility that can cause breakage, and a tendency to oxidize and adversely impact terminations.

And it's not just cable that doesn't pass muster. In subsequent testing, the CCCA found an 85% failure rate on patch cords with unknown brand names manufactured by offshore companies. In contrast, a second sample set of patch cords from reputable U.S. manufacturers showed 0% failure rate. Not only can non-compliant patch cords cause poor network performance and invalid system warranties, they can also damage critical active equipment due to sub-standard plugs.

What are Your Responsibilities?

You might be asking yourself how these aforementioned risks affect you. If you are involved in specifying, buying and installing non-compliant or counterfeit cable, you have

a duty of care, are responsible and could be exposed to legal ramifications.

First of all, let's consider that the NEC® is mandated, in part or full, in state and/or local building codes. These codes are considered law, and those involved in the construction process must be aware of and follow that law. Deployment of non-compliant or counterfeit cables could result in building code violations, regardless of whether or not there was knowledge of the non-compliance. Enforcement can come in the form of costly repairs, lawsuits to recover damages, misdemeanors, fines, or even jail time.

While non-compliant or counterfeit cable is hopefully discovered and removed before causing harm, there is also the potential for civil liability if the cable does indeed cause or worsen a fire. Via civil lawsuits from property owners, building occupants or even victims' families, potential causes of action can include negligence, fraud, or breach of contract and warranty. Depending on the judicial ruling, these suits can result in significant punitive damages. For more information, visit the CCCA Web Site where you can access a white paper prepared by the law firm of Crowell and Moring entitled, "Potential Liability for Contractors Installing or Manufacturers Marketing Falsely Labeled Copper Clad Aluminum Cable."

How Can You Protect Your Business and Your Reputation?

While much is being done to limit the influx of non-compliant and counterfeit cable into the marketplace, there are many ways you can take action to protect yourself. Very low prices and unknown brands are often an indication of suspicious cable. Cable with CCA conductors can be easily identified by scraping the thin copper surface away to reveal the aluminum. Boxes of CCA cable also weigh substantially less than solid copper cables.

One of the best protections is to only purchase well-known brands of cable from reputable manufacturers. If you are considering an unknown brand, do your due diligence before purchasing. Look for and validate authentic marks and labels. Poorly done printing or typographical errors could indicate a counterfeit cable. And, as an added layer of protection, look for the UL mark and holographic label.

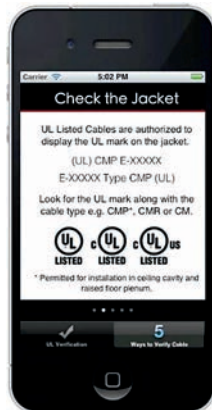
Although non-compliant and intrusion of counterfeit cables affects all independent testing agencies, UL in particular has initiated significant action and public awareness



to assure quality and protect its brand. UL file numbers can be verified via the UL Online Certification Directory, and UL posts public notices on unauthorized numbers.

Effective October 1, 2010, UL introduced a unique holographic label that features color-shifting ink and a distinct pattern. Most hologram labels are “standard” labels, and the issue or serial numbers are variable numbers assigned during the label ordering process. Also available from their Web Site at www.ul.com/marks, UL offers a credit-card sized Hologram Authenticator to identify legitimate holograms.

To help further identify counterfeit cable, the CCCA launched a free CableCheck™ mobile app for use as a field-screening tool. Readily available from the App Store for iPhone, iPad and iPod Touch, and from Google Play for Android devices, the app checklist includes a photo of a legitimate UL holographic label, instructions for how to check markings, quick access to the UL online certification directory, approximate correct box weights and more.



Above and beyond understanding the risk, knowing your responsibility and protecting your reputation, you can also help reduce the problem by making sure to alert industry agencies and associations any time you suspect non-compliant or counterfeit cable. Suspect cables can be reported to the CCCA through their Web Site at www.cccaassoc.org. ●

Frank Peri is Executive Director of the Communications Cabling & Connectivity Association (CCCA). CCCA's mission is to educate and create awareness on key issues affecting the structured cabling industry.

INDUSTRY TRENDS

Building Automation

A new research report expects growth in the global market for building automation systems from now until the start of next decade to exceed 60 per cent. The report, by Navigant Research, examines commercial building automation systems and sees global revenue in the field rising from \$58.1 billion in 2013 to \$100.8 billion by 2021. Navigant Research is a CABA Board member.

Gaming

Around the world, more than 1.2 billion people are playing video games, with about 700 million engaged in online gaming, according to a report by Spil Games, which makes mobile and online games for girls.

Wireless Lighting

Wireless LED light bulbs will be one of the fastest growing Internet of Things markets over the next decade, according to global technology research firm ON World. ON World's most recent survey of nearly 300 early technology adopting consumers found that wireless lighting controls is one of the most in demand smart home solutions. Nearly 50 per cent indicate that they are “interested” or “most interested” in adopting a smart lighting system. Sixty per cent would like their smart lighting system to connect with at least half of their home's light bulbs. ON World is a CABA member.

Set-top Boxes

Global shipments of Internet-connected set-top boxes will go from 65.8 million units last year to 125.6 million units in 2017, a 91 per cent increase, according to IHS Electronics & Media, a CABA member.

Physical Security

According to a recent report by research company MarketsandMarkets, the advent of a wider-than-ever variety of solutions in such sub-categories as video surveillance and access control should grow the global physical security market to \$85 billion by 2019, up from \$55 billion in 2013.