

TO CERTIFY OR NOT TO CERTIFY: Why Network Cable Certification Is Crucial in Preventing Problems and Ensuring Optimal Performance

Network certification is an essential process that verifies that network cabling meets rigorous performance and installation standards.

While it goes without saying that networks must be properly installed to ensure optimal performance, all too many projects omit the crucial step of network cable certification. With as many as half of all network failures due to cabling problems, skipping certification is a huge gamble that can result in a multitude of costly and show-stopping problems.

To be clear: network certification is far less expensive than network downtime, diagnostics, and cable repair.

Network cable-related issues are notoriously troublesome and complex to diagnose, and oftentimes when Omni is called in to troubleshoot a network problem, it's immediately apparent that the network was never certified. Usually, this is either because a network owner wasn't aware that certification was necessary, or because an installer – often the type that might not adhere to design and installation guidelines in the first place – wanted to cut corners.

Documented network certification proves system performance when a project is handed off to the owner and serves as a baseline if network problems or faults occur in the future. Also, cable manufacturers require proof of certification for long-term warranties. Each network segment should be pretested before instruments are connected to rule out trunk and backbone hardware issues should problems occur during device installation. Otherwise, readings will be inaccurate and will not

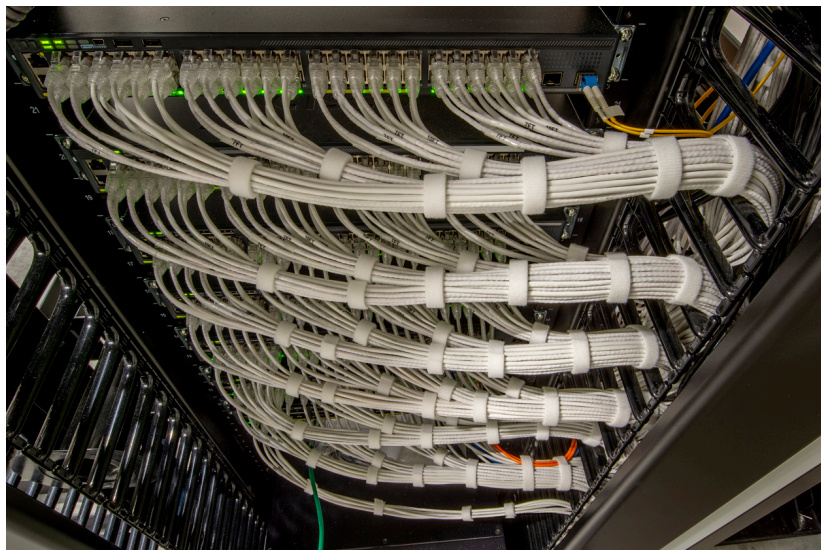


reflect the true status of the health of the network. Network certification should only commence after all devices have been installed, powered up, and commissioned.

Omni Instrumentation & Electrical Services, Inc. owns and utilizes NIST-traceable Fluke Networks cabling certification tools on every network project we do to verify proper performance in accordance with ISO and TIA standards. We also provide network cable certification as a standalone service.



PoE Lighting Emerges as Up-and-Coming Smart Building Solution



A smart building solution that's been garnering increased attention over the last few years is Power over Ethernet (PoE) lighting. PoE isn't a new technology – it's been used since 2003 to transmit both low-voltage DC power and data over a single Ethernet cable for things like wireless access points (WAPs), Internet Protocol (IP) cameras, Voice over Internet Protocol (VoIP), and instrumentation of various types. PoE with connected lighting, however, is a newer concept that's slowly but steadily gaining momentum.



PoE lighting is a low-power network of LED fixtures, sensors, and controls. There are numerous benefits of PoE lighting, the first being lower usage costs due to the significant reduction in the energy needed to power and control these systems. PoE doesn't require metal cladding or conduit, which decreases hazards and makes installation faster and easier than traditional lighting systems. PoE lighting also provides greater flexibility for design, placement, and control and can be easily integrated with other systems con-

ected to the network such as security cameras, daylight harvesting, shade controls, HVAC, door lock systems, occupancy sensors, etc. PoE lighting installation does not require a licensed electrician, however, these systems require thoughtful design, installation, and switch configuration by a qualified systems integrator.

Here in the Northeast and Mid-Atlantic regions, PoE lighting is just emerging as a technology of interest to forward-looking building owners, and studies and statistics bear this out. A [March 2022 survey](#) by LEDs Magazine and the Designers Lighting Forum of New York (DLFNY) showed that industry professionals had an overall positive outlook on the future of PoE lighting. In a [report](#) just released in April 2023, the Power over Ethernet lighting marketing was projected to experience significant growth by 2030, with a revenue CAGR of 26.5%. This growth will be driven by a variety of factors including decreasing LED costs, increased PoE lighting adoption in commercial, industrial, and healthcare settings, and increased use of smart systems and demand for smart workplaces. This report did note, however, that while PoE lighting is quite cost-effective in the long run, the initial investment to procure PoE equipment and accessories and set up a network can be substantial.

HEALTH & SAFETY: Poor Mental Health a Top Concern for Construction Industry

The construction industry is rife with many health and safety hazards, but there's one danger that claims five times more lives than all other construction workplace fatalities combined: **poor mental health**.

A recent industry study reported that 83% of construction workers have experienced some form of moderate to severe mental health issues such as depression, stress, and anxiety. According to the CDC, construction has the highest suicide rate among all industries, with 53 construction workers per 100,000 taking their own lives each year at a rate that's almost four times higher than the national average.



There are a variety of reasons why construction workers are at increased risk for mental health issues. Nearly 90% of construction workers are men, and the industry itself tends toward a “macho” work culture. This, combined with the fact that men underreport mental health problems in general, decreases the likelihood that struggling construction workers will receive the help they need. Construction workers are also under high pressure to perform in a physically challenging job, prone to chronic pain, have a high incidence of drug and alcohol abuse, are often separated from family, and frequently experience seasonal layoffs.

Employers in any industry should prioritize mental health by normalizing conversations that help to remove the associated stigma; consider conducting periodic mental health check-ins and toolbox talks. Make mental health resources available and encourage workers to seek help if they're struggling. Be on the lookout for signs that might indicate poor mental health such as a decline in productivity, increased accidents and near-accidents, conflicts with coworkers, poor problem-solving ability, and frequent tardiness and absenteeism.

Electrical Phenomenon: The Corona Effect in Transmission Lines

Have you ever heard a crackling or hissing noise or seen a purple glow emanating from high-voltage transmission line conductors? This is known as the **corona effect**, or corona discharge, which occurs when a localized electric field becomes sufficiently concentrated to ionize air close to the conductors, resulting in a partial discharge of electrical energy. Due to power loss and unwanted noise, it is considered to be an unwanted side effect by utility companies who continually work to reduce it as much as possible.

