Are You Grounded?: New Industry Trends Expose the Need for Anti-Static Rubber Flooring

Emergency personnel need to be "well-grounded" and focused on day-to-day and minute-to-minute aspects of their job.

Staticworx provides a wide variety of durable rubber "products that last forever and don't need to be waxed.

■ DAVID LONG

It's no secret that in 9-1-1 communications centers, employees must be alert and responsive at all times. This is challenging in any circumstances, but it is more difficult when environmental factors impede employees' concentration. Recent research shows how important it is to assist public safety professionals by reducing work stressors and eliminating distractions. According to Francis Holt, author of *Emergency Communication Management*, work environment issues like "lighting, noise, ventilation, windows, security and ergonomics can take just as much out of dispatchers as the work itself."

The choice of flooring products has always been a key environmental factor in keeping 9-1-1 communications centers stress-free and static-free (mitigating risks like equipment failure and shutdowns). In mission-critical environments, carpet has in the past been viewed as a good flooring option since it is moderately priced and has other benefits. However, as a result of heightened work site sensitivities, new technology and more available educational material on static-free flooring, the trade-offs of carpet versus resilient flooring alternatives are becoming more exposed.

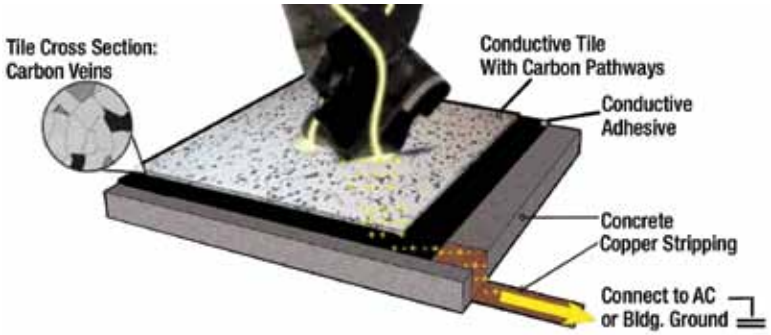
Increasingly, work sites are finding that anti-static, electrically conductive (EC) rubber flooring, with its inherent conductive properties and other advantages, is a better alternative (until recently, rubber flooring was only available as a static dissipative product, which provides a less electrostatic discharge [ESD]). In fact, during independent testing, MIT Lincoln Laboratories has found that electrically conductive rubber is the only fault-tolerant, static-resistant product that works regardless of footwear or relative humidity. This is critical since special shoes and grounding bracelets, commonly used by workers in electronic assembly facilities, don't fly in 9-1-1 operations.

Weigh the Variables

Before selecting a static-free flooring solution, it is important to weigh a number of variables. Following is a checklist for evaluating anti-static carpet tile and rubber flooring.

Installation

Historically, resilient flooring installations required more time than carpet tile, and this was an issue that sometimes resulted in the shutdown of operations. Now, an advancement in installation technology has resulted in a new dry adhesive application.[1] This odor-free product, which comes on a roll, precludes the need for mixing and waiting for glue to set or cure. It allows for immediate foot traffic upon flooring installation. In fact, rubber flooring can now be installed faster than carpet tile. In addition, rubber flooring isn't just installed over concrete; it can easily be laminated to access flooring panels in advance, before they arrive at the job site or field-installed at the site by an access flooring professional.



Staticworx EC (Electrically Conductive) Rubber has been recognized by MIT Lincoln Laboratories for having the best-available static-control properties.

Floor Replacement

Typically, carpet tiles need to be replaced every five to six years (or sooner), as the carpet gets beat up over time. The premature need for new carpet usually results in the use of lift systems to move equipment, as well as costly and disruptive shutdown of operations. In contrast, static-control rubber flooring is much more durable; in most circumstances, the only reason for replacing a rubber floor is the desire for a new color.

Floor Maintenance

9-1-1 centers are subject to daily traffic from public safety officials who may track in sand, mud, snow and salt from outside. This takes its toll as carpet tends to accumulate dirt and grime and is prone to stains. Maintenance typically requires invasive steam cleaning about two times a

Police in Lowell, MA, Answer the Call: Dispatch Center Stays Grounded With New Equipment and Staticworx Anti-Static Flooring

Dispatchers at the Lowell, MA Communications Center enjoy state-of-the-art technology without having to worry about electrostatic discharge (ESD).

Personnel at the police dispatch center appreciate the fact that rubber is slip-resistant and easy on their feet.

The job of police departments is to serve and protect. In their emergency dispatch centers, staff must be prepared 24/7, responding to situations that may threaten lives in the community. But what personnel are typically not prepared for is how to deal with the "invisible threat" of electrostatic discharge (ESD). More and more, police communications centers are discovering that the need for protection also extends to the installation of the right anti-static flooring to keep work sites safe.

The Lowell, MA Dispatch Communications Center, located north of Boston, receives tens of thousands of 9-1-1 phone calls every year, and it had done an adequate job of handling local emergencies. Still, the facility was hardly state of the art, and Mark Trudel, administrative officer, knew that an updated work environment would help dispatchers respond to calls faster and more efficiently. So, in 2009, Trudel and his associates decided it was time to transform their 750 square-foot analog technology communications center into a modern, 2,500 SF plug and play Project 25 (P-25)-compliant operation to meet industry standards.

Trudel also knew that anti-static flooring was important, and he was concerned that problems sometimes manifest themselves after it's too late to take preventive measures. But he didn't realize all the variables that would soon come into play. Ultimately, Trudel would entrust the center's flooring to Staticworx, manufacturing static control solutions. However, Trudel needed to perform a good deal of due diligence before Staticworx got the job.

Out with the Old, in with the New

It was clear that the old center in Lowell was cramped and lacked natural light. The consoles and furniture weren't flexible. The low ceiling and trampled carpet floor screamed 1950. To start transitioning, Lowell used a combination of internal and external resources. Kaestle Boos Associates, specialists in public safety design, was chosen for architectural needs. RDK Engineers brought strong mechanical and electrical design expertise. Techsite Flooring was hired based on their local experience in installing access flooring. And Trudel's previous background from the high-tech

year as well as daily vacuuming. This activity and related noise adds to workplace stress and distractions. In contrast, EC rubber flooring will not stain and is much easier to maintain, requiring just a damp mop for cleanup. Rubber maintains its high slip resistance whether wet or dry.

Odor

Carpet tufts collect and trap residues of material dropped or spilled on them. When chairs are rolled over carpet, contaminants are ground deep inside. The only way to thoroughly eliminate nasty odors and contamination is through wet steam or "dry encapsulation" cleaning. In contrast, EC rubber flooring is

EC Rubber is GREENGUARD Indoor Air Quality Certified and is free of halogens, PVC, lead, phthalates and asbestos.

industry provided value-added skills to the project.

The initial decision was to go exclusively with carpet flooring. But Chris Leck, the contractor from Techsite, thought a better, more cost-effective solution hadn't been fully explored. Leck realized that the missing element in the equation was the addition of the latest knowledge from the ESD industry. In early 2009, Chris contacted Staticworx President, Dave Long, regarding the right-grounded solutions. The next step was setting up a meeting between the city of Lowell's project team and Staticworx.

Long explained that new electronic communications equipment is especially vulnerable to ESD, with super-fast components that are sensitive to static discharges as low as 200 volts. According to Long, humans can't feel static discharges below 3,500 volts. But with tiny electronic devices, the impact can be dramatic: blown headsets, blank computer monitors, dropped calls and even data corruption and operations shutdown. Long stressed the need for a long-term ESD solution when split-second response time and public safety were at risk. So, the parties decided to review best-in-class practices. They visited about 30 other 9-1-1 operations in New England before they reached a final decision about how to get grounded. According to Mark LaFleur, a project manager with RDK Engineers, "It was a bidder's responsibility to show us installed products so our end user could make an informed choice."

Rubber Meets the Road

Lowell's decision was to go with static-free, fault-tolerant conductive rubber and ESD carpet tiles to protect all the raised access floors. The new flooring, manufactured by Staticworx, meets the Motorola R56 grounding standard, received the best anti-static rating from MIT Lincoln Laboratories, and was honored with the ESD Journal Seal Approval as the only static-control flooring suitable for Class 0 ESD applications. It also prevents the chance of ESD events that will harm equipment if people don't wear special antistatic shoes and grounding bracelets, which is the case in 9-1-1 centers.

Trudel was sold on the rubber application after seeing it at work in the Hampton, NH, 9-1-1-call center and reviewing its electrically conductive, antic-static properties. "We felt that rubber provided the combined benefits of an easy surface for rolling chairs with significant anti-fatigue properties for dispatchers who choose to stand rather than sit at their height-adjustable work stations," he says. In addition to being resilient, rubber also happens to be the easiest floor to maintain in a communications center because it only requires damp mopping and it never needs wax; it also lasts forever. In addition, Staticworx's peel-and-stick carpet squares were installed as a sound inhibitor in the general areas outside the workstations. The city even authorized the installation of Staticworx flooring in the emergency center's conference room.

The upshot? The new center is operating as Trudel had envisioned, with faster and more efficient response time. The dispatchers are more comfortable in their modern, new surroundings. In fact, the new site is receiving unexpected rave reviews since its opening. The city helped fund a $3 million renovation that combined municipal money, a 9-1-1 revenue-sharing program, and a Project 25 grant. The new center was designed to use all digital communications equipment, graphical user interfaces, GUI technology and even ergonomic, height-adjustable workstation consoles. Since the center is now located in what had been a garage, the ceilings are high, and the architects took advantage of the available natural lighting to create a brighter, warmer and more comfortable environment. The advanced technology, available at the dispatchers' fingertips, includes multiple screens, monitors and high-tech furniture that look like it's out of a futuristic NASA space command center. Numerous visitors have come from public safety groups, newspapers and other media outlets. The center was even selected as a location for an upcoming movie.

"Our vendors worked with us to help us build this center on budget and on time," says Trudel. "That is a rare accomplishment in construction and a credit to all of those involved."

non-porous and smooth, so there is no way for contaminants to become trapped in the first place.

ESD Risk

When carpet tile is installed in operations using chairs with roller castors, vinyl chair mats are usually placed under the chairs to facilitate easy rolling. Since vinyl chair mats aren't anti-static, the potential for static discharge incidents is much greater. The results can be dropped calls, damaged headsets and other equipment failure that necessitates onsite technical servicing, equipment returns for repairs or product replacement. Static-control rubber flooring eliminates the mat problem because chairs easily roll back and forth over rubber.

Ergonomics

Carpet has always found its way into any workspace requiring noise attenuation. Compared with hard resilient flooring surfaces like vinyl or access floors laminated with high pressure laminates, carpet provides significant noise reduction properties. However, rubber flooring also attenuates noise—usually 6 to 20 decibels, depending on other environmental factors. Maintenance attributes like quiet damp mopping versus noisy vacuuming and steam cleaning make rubber a more ergonomically desirable option than any textile-based flooring material.

Cost and Value

While carpet tile may be a little less expensive to install on the front end, the total cost of ownership is greater than it is for rubber flooring when maintenance and replacement costs are considered. Overall, rubber flooring has much greater long-term value. The difference in value is further magnified when you consider that the shutdown costs for installing new flooring in a communications center can cost anywhere from $30K to $100K, depending on the length of shutdown and the size of the facility.

Earth-Friendly

Both rubber and carpet have good sustainability stories, available in earth friendly materials and in some cases contributing toward LEED credits. Electrically conductive rubber is the ideal green product for a crowded work space, as it is free of halogens, PVC, lead, phthalates and asbestos. Rubber is also GREENGUARD certified for indoor air quality involving children and schools.

Future Shock?

It's clear that emergency personnel need to be "well-grounded" and focused on day-to-day and minute-to-minute aspects of their job. Any unwanted noise or other distractions can lead to confused communication, lost calls … and lives may be hanging in the balance.

But 9-1-1 centers also need to look beyond their own work sites and keep up with industry changes. They need to determine how to modernize their operations to make them more efficient and responsive. Accordingly, more centers are investing in advanced technology, purchasing digital P-25-compliant communication equipment that is much faster. While this can be a great benefit, it also presents challenges to the uninitiated. The fact is that new electronic components are smaller and more vulnerable to ESD events. Because of this, it is even more important to install flooring that ensures permanent static control.

Perhaps the ideal scenario is a combination of flooring materials. Consider EC rubber in entry areas, walkways and in places where chairs are used. Consider carpet tile in the field areas. The combination of textures will enhance aesthetics, and static control will not be compromised.

Empower yourselves by learning the latest about anti-static flooring. Read articles on vendors' Web sites. Visit other emergency centers. Ask vendors for references. Above all, insist on a trusted supplier that understands ESD as well as flooring and customizes solutions that will work for you. **ECPM**

David Long *is President and CEO of Staticworx, manufacturer of electrostatic discharge (ESD) flooring products that protect work sites with customized, static-free solutions. Based in Watertown, MA, Staticworx has warehouses on both coasts and is factory-direct. Comprehensive flooring options include rubber, carpet, vinyl tile, epoxy and adhesives. All products meet international standards, are environmentally friendly and come with lifetime warranties. Start-to-finish services include ongoing access to technical support. David can be reached at (617) 923-2000, e-mail dave@staticworx.com or visit www.staticworx.com.*

Notes

1. This product, called StaticFix, is manufactured by Staticworx.