



Be on the lookout

Coordination is necessary when encountering rooftop-mounted lightning protection systems

by Mark S. Graham

When reroofing, you need to be aware of lightning protection systems, more commonly known as LPS, that you could encounter. The following information and specific guidance will help you address LPS when you come across them.

LPS use

Lightning activity is a hazard in almost all areas of the U.S. and most intense in the mid-central, south-central and southeast regions of the country.

According to the Lightning Protection Institute, in 2018, insurance companies paid nearly \$1 billion in lightning-related claims to about 78,000 policy owners.

To minimize the risk to buildings and their occupants and contents, LPS sometimes are used to help avoid lightning-related damage.

LPS components

LPS are passive—they contain no moving parts—and each system's design is building- and structure-specific.



Effective LPS contain five primary components:

- Strike termination device, most commonly air terminals (formerly called “lightning rods”)
- Conductors
- Bonding
- Surge-protection device
- Grounding electrode system

The strike termination device, conductors and sometimes bonding typically occur at or above the roof surface and, as a result, become components roofing contractors may encounter.

Codes and standards

LPS are addressed in various building codes and standards.

In *NFPA 70 National Electrical Code*, Chapter 2-Wiring and Protection, Article 250-Ground and Bonding specifically addresses LPS in Section 250.106-Lightning Protection Systems. A nonmandatory informational note in Section 250.106 references NFPA 780, “Standard for the Installation of Lightning Protection Systems,” for further information.

NFPA 780 covers LPS for ordinary and certain specialized structures. Its purpose is to provide for the safeguarding of people and property from hazards arising from lightning exposure.

UL 96, “Standard for Lightning Protection Components,” addresses LPS components and

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provides a basis for component testing and labeling, such as UL Mark labeling.

UL 96A, “Standard for Installation Requirements for Lightning Protection Systems,” addresses installation requirements for LPS on most building and structure types.

LPI 175, “Standard of Practice for the Design, Installation and Inspection of Lightning Protection Systems,” is based on the latest edition of NFPA 780 and provides additional explanatory information intended to assist installers and inspectors.

UL Solutions has a Master Label Certificate and LPI has a Master Installation Certificate based on their respective standards.

FM Global’s Property Loss Prevention Data Sheet 5-11, “Lightning and Surge Protection for Electrical Systems,” provides additional guidance for FM Global-insured buildings.

NRCA’s recommendations

The installation, evaluation and maintenance of LPS are beyond the expertise of most roofing contractors though components of LPS are installed adjacent to or in direct contact with roof system components.

NRCA recommends designers clearly identify LPS components in construction documents provided to roofing contractors. Designers should include details indicating how LPS components interface with roof system components, taking into consideration the roof system manufacturer’s instructions.

In reroofing situations, if an existing LPS

has a Master Label Certificate or Master Installation Certificate, the building owner or manager or designer should notify the roofing contractor before beginning roofing work. Coordination with the building owner’s LPS contractor will be necessary to maintain the certificate.

For noncertified LPS, building owners should consider having existing LPS evaluated by their LPS contractors before beginning roofing work. UL’s Letter of Findings program or LPI’s Limited Scope Inspection program can be used to evaluate and document existing LPS and provide guidance about how to integrate existing LPS components with roof systems.

Project schedule coordination and proper work sequencing will be necessary between the roofing contractor and LPS contractor to ensure efficient installation of the roof system and LPS and minimize return trips to the job site.

Additional information about LPS is available in Appendix 3-Considerations for Lightning Protection Systems of *The NRCA Roofing Manual: Architectural Metal Flashing and Condensation and Air Leakage Control—2022*. NRCA members can download the manual free from the Free Member Resources link in the My Account section of nrca.net. A hard copy can be purchased from shop.nrca.net. 🌩️🔗

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CPWR research examines underlying causes of falls in construction

Falls from heights continue to be the leading cause of death and serious injury for the roofing and construction industries. According to 2020 data (the most recent data available) from the Bureau of Labor Statistics, 353 construction workers died from falls from heights that year. The Occupational Safety and Health Administration's fall-protection

standard, 29 CFR 1910, continues to be one of the most frequently cited standards by OSHA.

CPWR—The Center for Construction Research and Training—recently released findings from a research survey it conducted in the construction industry regarding the underlying causes of falls from heights.

The survey revealed several key findings and cited lack of planning, lack of rescue training and failure to use fall-protection equipment as primary underlying causes of falls from heights. In addition, respondents who believed fall protection was required by their employer were

much more likely to use fall-protection equipment compared with those who did not believe it was an employer requirement.

The goal of the survey was to increase understanding of underlying causes while also informing voluntary standards through ANSI/ASSP; create more targeted resources and materials to support OSHA's national fall-prevention campaign and stand-down; improve outreach and education; influence future research regarding fall safety; and improve collective fall-prevention efforts by safety and health organizations, industry representatives, government officials and other interested parties through data sharing.

NRCA and CPWR continue to foster a longstanding partnership to improve the safety and health of roofing professionals and the construction industry.

For additional information regarding NRCA's fall-prevention resources and training, contact Rich Trewyn, an NRCA director of enterprise risk management, at rtrewyn@nrca.net.



To access CPWR's survey findings, go to professionalroofing.net.

Most organizations remain unprepared for ransomware attacks

A recent survey revealed IT professionals at only one in five organizations consider their organizations as prepared as possible for potential ransomware attacks, according to [constructiondive.com](https://www.constructiondive.com). Boston-based data protection company HYCU Inc.'s 2022 State of Ransomware Preparedness survey included 400 respondents; almost 15% said they are very or somewhat unprepared for an attack.

Ransomware preparedness might not be a top priority for many organizations. A majority of respondents said they spend less than five hours per week on ransomware preparedness, and almost one-third invest less than an hour per week on the matter. More than four out of 10 respondents said they've already had a ransomware attack that resulted in infiltration or data encryption.

The gap between perceived and actual preparedness among respondents signifies most businesses are still trying to identify and mitigate points of compromise that could be exploited by attackers.

The survey showed employee training is an underused mitigation strategy. Only two in five respondents said their organizations fully implemented a training program for information security, email and ransomware. One in 10 said his or her organization has no such training at all; others have started the process.

The survey also examined the consequences of ransomware attacks and found organizations' recovery and response tactics are lacking. Crucial tools and services remain at heightened risk of prolonged ransom.

To minimize downtime, organizations need to assess all systems and categorize them based on business importance, the study concluded. This exercise allows organizations to develop appropriate mitigation and recovery plans in line with potential risks and investments they're willing to make in each category.



National BIM program will launch

The National Institute of Building Sciences has developed an implementation and launch plan for the U.S. National Building Information Management Program, which aims to reach a new level of efficiency and productivity through digitalization, according to constructiondive.com.

The program reportedly will create a BIM standard throughout the life cycle of designing, constructing and operating in the built environment. An executive roundtable recently was held to present the plan, including a budget and steps to make the building process more efficient, less expensive and safer during the next five years.

The BIM process virtually builds a structure in a digital environment first, putting each steel beam, floor tile and window in place to work through every aspect of construction before completing it in the real world.

Although the U.S. has been a global leader in developing and implementing BIM applications, the construction industry reportedly has lagged regarding implementing technology that significantly can increase productivity, averaging just 1% productivity growth during the past 20 years, according to NIBS.

NIBS began the planning process for the U.S. National BIM Program in 2021. The program is the result of work from NIBS' BIM Council, which focuses on the requirements of U.S. building owners to document best prac-

tices and provide guidance regarding the adoption of digital technology to increase productivity and performance.

The BIM program aims to help the construction industry by accelerating supply chain effectiveness, providing predictable processes, improving project outcomes, driving efficiency and fostering innovation.

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