

Click image to access the article.



LIGHTNING PROTECTION SYSTEMS

Understanding the Updates to the Code Language

By Brad Van Dem and Tim Harger
Photo courtesy East Coast Lightning Equipment Inc.

A BOLT OF LIGHTNING CAN PRODUCE ANYWHERE FROM 100 MILLION TO ONE BILLION VOLTS AND STRIKES, AND CONTAINS BILLIONS OF WATTS OF POWER, ACCORDING TO NATIONAL GEOGRAPHIC. IN FACT, ENERGY FROM LIGHTNING HEATS THE AIR BRIEFLY TO AROUND 27,760 C (50,000 F) ACCORDING TO THE NATIONAL OCEANIC AND ATMOSPHERIC ASSOCIATION (NOAA).

It is no wonder lightning poses such a threat to property with potentially significant damages. In 2018 (latest data available), insurance companies paid nearly \$1 billion in lightning-related claims to some 78,000 policy holders, according to the Lightning Protection Institute (LPI). Beyond physical building damage, lightning poses a threat to data, security, and all electrical and electronic components in a building. LPI estimates \$1.7 trillion in data was lost in one year alone. In addition, approximately 3 to 5 percent of all commercial insurance claims involve lightning, which is a reliably preventable issue. A properly designed,

installed, inspected, and certified lightning protection and grounding system can virtually mitigate this risk to policyholders and the public.

To help prevent structural damage and loss due to lightning strikes, many commercial building owners have opted to have a lightning protection system (LPS) installed.

What is a lightning protection system?

According to NFPA 780, the National Fire Protection Association's (NFPA's) ANSI standard for lightning protection systems in North America includes five fundamental elements:

1. Air terminals or strike termination devices. Strike termination devices, formally known as lightning rods, are installed on high points of a building. Their purpose is to intercept lightning before it hits the building, or a building component, and lead the electrical charge to the ground. Air terminals can be solid, and either pointed or blunt tipped, and are typically made of copper or aluminum alloy.
2. Cable conductors. Cable conductors are heavy-duty metal cables that connect the air terminals

www.constructionspecifier.com | October 2023 | The Construction Specifier 17