



Lightning Protection Systems for Churches & Houses of Worship



Lightning Protection Institute

Churches spend millions of dollars each year on property damage caused by lightning fires. This doesn't include the cost of electrical surges that can damage computers, sound systems, alarm systems and electronics.



Lightning can cause considerable damage to a church building. A professionally installed lightning protection system protects the structure and equipment by providing a safe path to ground for lightning's harmful electricity.



Above:
A close-up of down conductor installed for this church shows how inconspicuous lightning protection can be when properly installed.



Above (3):
Lightning protection elements such as strike termination devices, conductors and grounding are barely visible to the untrained eye.

A lightning strike to an unprotected church A single bolt of lightning, carrying more than 300,000 amperes, can rip through roofs, explode brick and concrete.

According to Underwriters Laboratories (UL), lightning accounts for more than one billion dollars annually in structural damage to buildings in the United States. Zurich Services Corporation,

which provides nationwide insurance for churches and affiliated schools, reported 945 lightning strikes to church customers between 2003 and 2007, with an average claim cost of \$12,500. These lightning losses cost millions of dollars and resulted in untold hours of interruption of church ministries—losses that could have been prevented with the installation of a lightning protection system.

System Requiring Installation Expertise

Every component of a lightning protection design is based on serious evaluations and calculations in accordance with national safety standards, LPI, NFPA and UL. An experienced LPI lightning protection specialist will ensure your system is installed using UL-listed materials and make sure installation methods are performed in accordance with safety standards. Churches require special design consideration due to their height, roof style and construction type. Since lightning is a unique form of electricity, lightning protection is a highly specialized trade. Proper installation is imperative to assure compliance with industry standards and codes. Entrusting your light-

ning protection system design and installation to a LPI certified professional ensures a safe and effective system that won't compromise aesthetics.

Combined Technology

Steeple only lightning protection will not typically protect the entire structure and partial system designs do not comply with the lightning protection safety standards.

Installation of partial lightning protection, designed to ground a steeple, cupola or weathervane, could be more dangerous than providing no protection at all. A single path to ground is not adequate to conduct the current involved with a lightning discharge. When lightning strikes a partial system (such as a grounded cupola), side-flash to other conductive components on or in a structure can occur. This side-flashing can also damage building wiring, computer systems and electronics and result in structural damage or even fire.

There is no way to provide “some” protection from lightning—a full system with all elements (**strike termination devices, conductor, bonds, grounding and surge protection**) are essential for a complete and effective system. A trained, LPI-certified lightning specialist will follow



Above:
Components must be UL-listed and labeled for lightning protection use.

can be catastrophic.
 10 million volts of electricity
 etc and ignite fires.

safety standards to ensure your installa-
 tion includes all elements necessary to
 protect your facility. In addition, a LPI-
 certified specialist will arrange for a UL
 inspection to verify that your lightning
 protection system is compliant with UL
 Lightning Protection Safety Standard 96A.

Right:
 UL's Master
 Label certificate
 signifies that the
 lightning protection
 system is installed
 in compliance with
 national safety
 standards.



Reasons To Consider Lightning Protection

- Insurers now require higher levels of safety for public venues such as churches, which often includes the installation of a lightning protection system.
- Studies from the American Geophysical Union confirm that conventional lightning protection systems, in accordance with NFPA 780 Safety Standard, are highly effective in reducing lightning-caused fires and electrical surge damage to churches.
- Lightning protection systems do not attract lightning, but simply provide a preferred path of low resistance to dissipate lightning's electricity.
- Lightning is a leading cause of church fires (30%) in the U.S.
- Lightning protection systems direct lightning's harmful current to ground, instead of traveling through the building's plumbing or electrical systems.



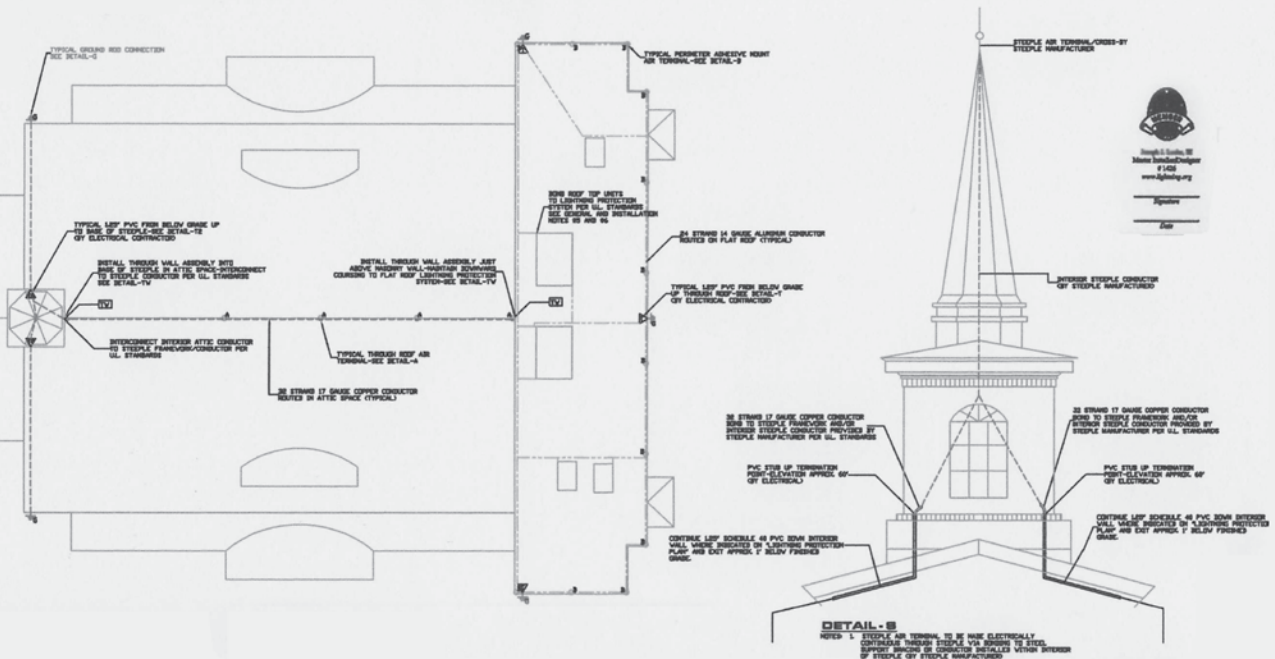
Lightning
 Protection
 Standard
 UL96A



Lightning
 Protection
 Standard
 NFPA780



Standard
 of Practice
 LPI175



LIGHTNING PROTECTION PLAN
 SCALE: 1/8" = 1'-0"

UL-
 lightning

Call on the LPI Experts

LPI conducts numerous educational, promotional and quality oriented programs on lightning protection and lightning safety and is the leading resource

for lightning protection information and system requirements. The LPI testing and Certification Program was created in 1971 to qualify competence in light-

ning protection. The program responds to the needs of architectural and engineering firms and insurance underwriters to certify excellence in system design, installation and inspection. Classifications of certification are marked by a series of tests and examinations structured to validate the participant's level of knowledge and expertise in the lightning protection

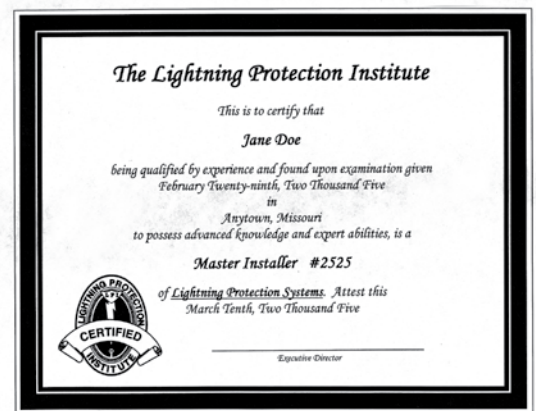
field. In addition, LPI requires yearly reapplication for all classes of membership and tests participant's continued knowledge of lightning protection safety standards when industry changes or scientific findings require updates in the documents.

LPI's Master Installer Program is designed to raise the bar for excellence in lightning protection installation and design. When your church contracts with a Master Installer or Master Installer/Designer, you ensure the highest level of instructional excellence for your lightning protection project.



Above:
Lightning fires commonly start in the steeple, roof or attic. A direct lightning strike destroyed the entire roof of this church in Mechanicsville, Virginia.

Front Cover:
Note: These churches are equipped with lightning protection systems, barely visible to on-lookers.



Contact your LPI representative today.

Lightning Protection Institute

Saving Lives & Protecting Property Since 1955

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