

Lightning

Protecting Places of Worship



There is a growing concern in faith communities across Canada regarding lightning and its potential to cause catastrophic damage to places of worship. Faith buildings have innate features and architecture that put them at elevated risk. Although this issue is not new, a number of recent losses, including a total loss by fire, were the direct result of lightning strikes.

Such losses are often preventable. Most provinces in Canada require lightning protection systems to be installed under CSA Standard CAN/CSA-B72-M87 — Installation Code for Lightning Protection Systems. **Churches are in the CSA's highest risk category** because of their height, construction, size and the presence of spires or steeples.

Our Findings

Ecclesiastical Insurance's Risk Control Department recently inspected a number of churches that were thought to have adequate lightning protection. These surveys were carried out with a representative from a licensed¹ lightning protection company. Each of the lightning protection system inspected revealed serious deficiencies, illustrating the urgent need to have existing lightning protection systems thoroughly inspected by a licensed lightning protection company.

During these inspections, we identified various critical deficiencies including:

- Lack of proper grounding
- Bonding of the system to other building components
- Deteriorated condition of the down conductors
- Location of the air terminals/lightning rods

Any one of these deficiencies could result in a serious threat to life and property.

Current Legislation

Some provinces, including New Brunswick¹, Prince Edward Island², and Ontario³, have enacted legislation specifically related to lightning rods and require installers to be licensed. Most other provinces and territories, such as BC, Nova Scotia⁴, Yukon, and Saskatchewan, while perhaps having no specific legislation or licensing requirements, follow CSA standard CAN/CSA-B72-M87. The National Building code requires compliance with the CSA standard in the absence of any applicable provincial legislation. Section A5.1 of the CSA Installation

Code for Lightning Protection Systems recommends an annual visual inspection be made of the entire system and that it be thoroughly inspected every five years. Alberta requires that lightning protection devices be installed in accordance with the Canadian Electrical Code and that all equipment used be certified. It is important to understand that the approach taken by each province and territory can differ significantly—it is necessary to investigate the requirements applicable in your area to ensure you are in compliance.

Recommendations

In an effort to assist our clients in managing their risk of loss from lightning, Ecclesiastical Insurance recommends that existing lightning protection systems be thoroughly inspected immediately by a licensed lightning protection company. This is of particular importance if this system has not been inspected within the last five years.

We further recommend lightning protection systems undergo a visual inspection each year, by you as an insured, to ensure down conductors or cables connecting the air terminals to the ground are continuous and have not been cut or separated in any way. Any deficiencies or concerns are to be discussed with a licensed lightning protection company.

A similar visual inspection of the lightning protection system is recommended after any roof work or access by other parties to the rooftop or other areas where the air terminals/lightning rods are located, to ensure that the down conductors or cables have not been inadvertently cut or separated.

For churches currently without lightning protection, it is recommended that you consult with Ecclesiastical Insurance, your broker, or a licensed professional about the urgent need for such protection.

Conclusion

According to Environment Canada, lightning flashes in Canada about 2,700,000 times a year, including about once every three seconds during the summer months. Churches are in the CSA's highest risk category of being struck by lightning. Lightning also causes over \$1,000,000,000 in damage in North

America each year. We urge you not to become a statistic. Take the measures discussed in this bulletin to protect your church and community from the potential devastating effects of a lightning strike.

Surge Protection

While considering protection from lightning strikes, it is prudent to discuss protecting your electrical system, electrical equipment, and other electronics including computers and sound systems. Lightning

may enter your premises from nearby power lines or your own electrical system. Furthermore, power surges may result from artificially generated electricity such as power spikes.

Recommendations

Ecclesiastical Insurance is recommending that in conjunction with an inspection of your lightning protection system, you also consider seeking professional advice concerning the installation of surge protectors and/or or surge arrestors.

References

1 NEW BRUNSWICK

Lightning protection systems are required to be installed and are governed by the Electrical Installation and Inspection Act (O.C. 82-934) under New Brunswick regulation 82-215.

2 PRINCE EDWARD ISLAND

Lightning protection systems are required to be installed under the Lightning Rod Act Chapter L-12 RSPEI 1974 and are governed by the Chief Electrical Inspector pursuant to the Electrical Inspection Act RSPEI 1988.

3 ONTARIO

Lightning protection systems are required to be installed under the Lightning Rods Act RSO 1990 Chapter L.14 and are governed by the Fire Marshall of Ontario.

4 NOVA SCOTIA

The Province of Nova Scotia repealed their Lightning Rod Act as of February 28, 2003 however; installation requirements are now governed under the Fire Safety Regulations for the Province. Installation also is carried out under the guidelines of CSA Standard CAN/CSA-B72-M87—Installation Code for Lightning Protection Systems—under Section 6.9 of the Fire Safety Act for the Province of Nova Scotia.

For more risk control information, please consult an Ecclesiastical Risk Control Specialist in your region or visit www.ecclesiastical.ca.

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