Lightning Systems of Virginia, L.L.C.

Your Professional Lightning Protection Installers

About LSV

You are guaranteed to receive the most effective lightning protection available.

What is a Lightning Protection System?

A lightning protection system is a passive means of preventing property damage from the effects of a lightning strike.

Who Needs Lightning Protection?

If your home or business meets 5 or more of the following criteria, you are in a high risk group.

Personal Lightning Safety

If you are outside and you notice a storm brewing, do you know what to do?

Lightning Protection Specifications

All lightning protection materials and components shall comply in weight, size and composition with UL96A and NFPA-780 lightning protection material code requirements for this type of structure.

Contact Us

Questions or Comments? We'd love to hear from you.

Lightning Protection Specifications

General: Provide and install a complete lightning protection system in compliance with the specifications and standards of the most current editions of the National Fire Protection Association's Lightning Protection Code NFPA-780 and Underwriters Laboratories Lightning Protection Code UL96-A. the system shall be installed by a lightning protection contractor who is listed by Underwriters Laboratories, Inc.

Materials: All lightning protection materials and components shall comply in weight, size and composition with UL96-A and NFPA-780 lightning protection material code requirements for this type of structure.

All materials shall be copper, bronze, or stainless steel. Aluminum components shall be used in locations where system components are mounted to aluminum surfaces to avoid galvanic corrosion of dissimilar metals. Class I materials shall be used on structures not more than 75 feet in height. Class II materials shall be used on structures over 75 feet in height.

Installation:

Air terminals may be of copper or aluminum and shall project a minimum of 10 inches above the object to be protected. Air terminals shall be placed at an interval not exceeding 20 feet along ridges and around perimeters and not more than 24 inches from ridge ends, roof edges and the outside of corners of protected structures. On mid-roof sections, additional air terminals shall be located at intervals not exceeding 50 feet. Prominent non-metallic objects or metal objects having a thickness of less than 3/16 inch require the installation of air terminals and conductors as required.

Copper or aluminum **conductors** or the size required by UL-96A and NFPA-780 code requirements shall interconnect all air terminals and provide a two way path to the ground form all air terminals and provide a two-way path to the ground from each air terminal. Conductors shall maintain a horizontal and/or downward path to the ground and shall be free of excessive splices and sharp bends. No bend shall form an included angle of more than 90 degrees or have a radius of less than 8 inches. Fasteners shall be placed on each run of exposed conductor at

intervals not exceeding 3 feet. Down conductors shall be spaced at intervals averaging not more than 100 feet around the perimeter of the structure. A structure shall never have fewer than 2 down conductors. In the case of structural steel frame buildings, cable down conductors may be omitted. Roof conductors shall be instead connected to the structure's steel frame at intervals averaging not more than 100 feet around the perimeter. Connection to the steel frame will be made with bonding plates which provide a minimum of 8 square inches of contact.

Roof penetration is required for down conductors or for connection to structural steel framework shall be made using thru-roof assemblies with solid bars and appropriate roof flashings. Conductors shall not pass directly through the roof. Roof flashings compatible with the roofing system shall be furnished and installed by the roofing contractor per roofing manufacturer's specifications.

All cable **connections** shall beet specifications for Class I and Class II systems with bolt pressure fittings preferred. All fasteners used in these connectors shall be comprised of stainless steel.

Common grounding of all grounding mediums within the building shall be ensured by interconnecting with main size conductors and fittings. All other metal bodies shall be bonded as required by NFPA-780 and UL96A.

Ground Terminations: Each downlead shall terminate in a ground connection below finished grade. Ground terminations shall consist of 5/8 inch x 10 foot (minimum) copper-clad steel ground rods. The down conductor shall be connected to the ground rod using a bronze ground clamp having at least 1-1/2 inches of contact between the rod and the conductor. The rods shall be located a minimum of 1 foot below grade, a minimum of 2 feet from the foundation and extend a minimum of 10 feet vertically into the earth. In instances where structural steel framework is utilized as down conductors, the perimeter columns shall be grounded at intervals averaging not more than 60 feet. Columns shall be bonded using bonding plates with 8 square inches of surface contact. Conductor from ground connections to the ground terminations shall be Class II copper lightning conductor.

Inspection and Certification: Upon completion of the installation, the contractor shall furnish the Master Label issued by Underwriters Laboratories, Inc. for this system. If the protected structure is an addition to or is attached to an existing structure is an addition to or is attached to an existing structure that does not have a lightning protection system, the contractor shall advise the Owner of installation requirements on the existing structure to obtain the Master Label. If the existing structure does have a lightning protection system, the contractor shall advise the Owner of any additional work required on the existing system to achieve compliance with current UL Master Label requirements.

Home | About LSV | Lightning Protection | Who Needs It? | Personal Safety | Specs | Contact

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