

Lightning Protection System

26.40.00

Description:

The purpose of the section is to highlight the current applicable UMD Design Standards for the design and implementation of lightning protection systems.

Related Sections:

- TBD

Effective Date:

January 1, 2020

Applicable Standards:

- Underwriter's Laboratories, Inc. Standards for Lightning Protection Systems, UL 96A.
- National Fire Protection Association Code for Lightning Protection Systems, #78.
- Underwriter's Laboratories Inc., Standards for Master Labeled Lightning Protection Systems, UL 96A, latest edition and the Master Label covering the existing buildings.

General Requirements:

The Contractor shall furnish all labor, materials, equipment and services necessary for the furnishing and installing of a complete Lightning Protection System.

- **Quality Assurance**
 - The Lightning Protection System shall be designed and installed by a firm regularly engaged and experienced in installing Master Labeled Lightning Protection Systems and shall be listed with the Underwriter's Laboratories, Inc.
 - The Lightning Protection Installer shall issue a UL compliance certification suitable to present and satisfy any and all requirements.
- **Shop Drawings**

The contractor shall submit, for approval, shop drawings showing complete details with description of all air terminals, air terminal bases, conductors, conductor fasteners, splicers, bonding clasps, ground rods, etc., necessary for installation. All shop drawings require an approved seal/certification stamp from a licensed engineer. Only shop drawings bearing the "stamp of approval" of the Architect/Engineer of record shall be used by the Contractor.
- **Workmanship**

The contractor shall guarantee all materials and workmanship furnished and installed under this section of the specifications two years from date of final acceptance of the work. The Contractor also agrees that he will, at his own expense, repair and/or replace all such defective materials or effective workmanship which becomes defective during the term of this guarantee.
- **Products**
 - The system to be furnished under this specification shall be the standard product of a manufacturer regularly engaged in the production of Lightning Protection Systems and shall be the manufacturer's latest approved design.
 - All material specified for this work shall be Underwriter's Laboratories, Inc. approved and shall be manufactured by Bonded Lightning Protection, Inc., Rockville, Maryland; Thompson Lightning Protection, Inc., St. Paul, Minnesota; Independent Protection Co., Goshen, Indiana; or Robbins Lightning Protection Co., Maryville, Missouri.
- **Materials**

Materials used in connection with the installation of the lightning protection system shall be approved for this system by the Underwriter's Laboratories, Inc.

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- **Conductors**

All conductors shall be bare stranded cable, 28 strands of 14 gauge.
- **Air Terminals**

Air terminals shall be aluminum, 1/2 inch in diameter with tapered points; they shall extend not less than 10" above the object they are to protect.
- **Fasteners, Clamps, Etc.**

All fasteners, clamps, and connectors shall be bolted pressure type and shall be substantial in construction, not subject to breakage, shall be of the same material as the conductor or of such nature that there will be no serious tendency toward electrolytic corrosion in the presence of moisture.
- **Ground Rods**
 - Ground rods shall be 3/4 inches in diameter by 10 feet in length, made of copper-clad steel. The portion of copper on copper-clad rods shall be approximately 27% of the weight of the rod.
 - All ground rods shall be equipped with Bonded Lightning Protection #107 ground reservoirs and shall be driven to a depth of 36 inches below finished grade and/or finished floor, minimum.
- **Test Well**
 - Provide a 6 inches diameter by 24 inches terra cotta test well with steel covers for each ground rod.
 - Test wells shall be installed flush with the finished first floor and/or finished grade. Tests wells shall be Bonded Lightning #200. Ground resistance test shall be performed on the finished system and the results submitted to the University of Maryland.
 - Grounds resistance shall not exceed 10 ohms on completion.
- **Installation**

The installation of the Lightning Protection System shall avoid penetrations of existing building roofs.