

SECTION 16670
LIGHTNING PROTECTION SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Grounding and bonding for lightning protection.
- B. Air terminals and interconnecting conductors.

1.2 RELATED SECTIONS

- A. Section 7500: Roofing systems.

1.3 REFERENCES

- A. LPI-175 - Lightning Protection Installation Standard
- B. LPI-176 - Lightning Protection System Material and Components Standard
- C. LPI-177 – Inspection Guide for LPI Certified Systems
- D. NFPA 780 – Lightning Protection Code
- E. UL 96 – Lightning Protection Code
- F. UL 96A – Installation Requirements for Lightning Protection Systems.

1.4 SYSTEM DESCRIPTION

- A. Lightning Protection systems: Conductor system protecting roofs consisting of air terminals on roofs, roof-mounted mechanical equipment, chimneys, stacks, steeple, parapets, and penthouse roofs; bonding of structure and other metal objects; grounding electrodes; interconnecting conductors, and irrigation pumps and structure.

1.5 SUBMITTALS

- A. Section 01300 – Submittals: Procedures for submittals.
- B. Shop Drawings: Indicate layout of air terminals, grounding electrodes, and bonding connections to structure and other metal objects. Include terminal, electrode, and conductor sizes and connection and termination details.
- C. Product Data: Provide dimensions and materials of each component, and include indication of listing in accordance with UL 96.

1.6 PROJECT RECORD DOCUMENTS

- A. Submit under Provisions of Section 01300.
- B. Record actual locations of air terminals, grounding electrodes, bonding connections, and routing of system conductors in project record documents.

1.7 QUALITY ASSURANCE

- A. Perform work in accordance with NFPA 780.
- B. Perform work in accordance with UL 96A and provide master label.
- C. Perform work in accordance with LPI-175 and provide LPI certification.
- D. Maintain one copy of each document on site.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in lightning protection equipment with minimum five years documented experience and member of the Lightning Protection Institute.
- B. Installer: Authorized installer of manufacturer with minimum five years documented experience and certified by the Lightning Protection Institute.

1.9 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

1.10 COORDINATION

- A. Coordinate work with roofing and exterior and interior finish installations.

PART 2 PRODUCTS

2.1 COMPONENTS

- A. Air Terminals: Cooper solid with adhesive bases for single-ply roof installations (aluminum installation on roofs with aluminum coping.).
- B. Air Terminal for Chimney: Lead-coated copper.
- C. Decorations: Ball
- D. Grounding Rods: Solid cooper.
- E. Ground Plate: Copper.
- F. Conductors: Copper (aluminum for installation on roofs with aluminum coping.)
- G. Connectors and Splicers: Bronze

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with NFPA 780, UL 96A, and LPI-175.
- B. Connect conductors using exothermic welding process. Protect adjacent construction elements and finishes from damage.
- C. Bond exterior metal bodies on building to lightning protection system, and provide intermediate level interconnection loops 60' (18 m) on center.
- D. Do not install copper lightning protection materials on aluminum roofing, siding, or other aluminum surfaces.
- E. Aluminum lightning protection materials shall not be installed on copper surfaces.
- F. Copper components installed within 24" of the top of a chimney or vent emitting corrosive gases shall be protected by a hot-dipped lead coating or equivalent.
- G. Down conductors shall be routed concealed in PVC sleeves installed in the structure.
- H. Connect conductor to metal bodies of conductance located within 6' by secondary conductor.
- I. Provide lightning protection for buildings, covered walkways, press boxes, scoreboards, and all other structures required by NFPA 780.

3.2 FIELD QUALITY CONTROL

- A. Obtain the services of Underwriters Laboratories, Inc. to provide inspection and labeling of the lightning protection system in accordance with UL 96A.
- B. Perform inspection and testing in accordance with LPI-177.

END OF SECTION