

**SECTION 26 41 00**  
**LIGHTNING PROTECTION for STRUCTURES**

**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 07 52 00 - Roofing systems

1.3 REFERENCES

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

1.4 SYSTEM DESCRIPTION

- A. Lightning Protection systems: Provide 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 01 33 00 – Submittals Procedures for submittals.
- B. Shop Drawings:
  - 1. Indicate layout of air terminals, grounding electrodes, and bonding connections to structure and other metal objects.
  - 2. 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 01 33 00.
- B. Record the 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 three years documented experience and member of the Lightning Protection Institute.
- B. Installer: Authorized installer of manufacturer with minimum three 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, exterior, and interior finish installations.

## **PART 2 PRODUCTS**

### **2.1 COMPONENTS**

- A. Air Terminals: Provide either solid copper or aluminum with adhesive bases for single-ply roof installations.
- B. Air Terminal for Chimney: Lead-coated copper
- C. Decorations: Ball
- D. Grounding Rods: Solid copper
- E. Ground Plate: Copper
- F. Grounding down conductors and grounding ring electrodes: Copper.
- G. Conductors except those noted above copper or aluminum.
- H. 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.
  - 1. Protect adjacent construction elements and finishes from damage.
- C. Bond exterior metal bodies on building to the lightning protection system, and provide intermediate level interconnecting loops 60' (18 m) on center.
- D. Do not install copper lightning protection materials on aluminum roofing, siding, or other aluminum surfaces.
- E. Do not install aluminum lightning protection materials on copper surfaces.
- F. Protect copper components installed within 24" of the top of a chimney or vent emitting corrosive gases 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 NFPA 780.
- C. Provide owner with an Underwriters Laboratories final certification of the lightning protection system.
- D. Contractors' tests shall be scheduled and documented in accordance with the commissioning requirements.
  - 1. Refer to Section 01 91 00 - Commissioning, for further details.

### **3.3 DEMONSTRATION AND TRAINING**

- A. Training of the Owner's operation and maintenance personnel is required in cooperation with the Owner's Representative.
  - 1. Provide competent, factory authorized personnel to provide instruction to operation and maintenance personnel concerning the location, operation, and troubleshooting of the installed systems.
  - 2. Schedule the instruction in coordination with the Owner's Representative after submission and approval of formal training plans.

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3. Refer to Section 01 91 00, Commissioning, for further contractor training requirements.
- B. Provide demonstration and training for all types of lightning protection systems installed in this project.

END OF SECTION