

**SECTION 26 41 00
FACILITY LIGHTNING PROTECTION**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Strike (air) terminals and interconnecting conductors.
- B. Grounding and bonding for lightning protection.

1.02 RELATED REQUIREMENTS

- A. Section 26 05 26 - Grounding and Bonding for Electrical Systems: Electrical system grounds.
- B. Surge Protection for Wiring Systems: Specified in individual system requirements.
- C. Section 33 16 00 - Water Utility Storage Tanks: For concrete tanks, requirements for lightning protection, furnished and installed by tank manufacturer.
- D. Section 33 16 00 - Water Utility Storage Tanks: For metal tanks constructed so as to receive stroke of lightning without damage, ground connections to grounds provided in this section.

1.03 REFERENCE STANDARDS

- A. NFPA 780 - Standard for the Installation of Lightning Protection Systems; 2023.
- B. UL 96 - Lightning Protection Components; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination with Concrete Work: Coordinate embedding of lightning protection components in concrete.
- B. Coordination with Roofing Work: Ensure adequate attachment of strike terminals and conductors without damage to roofing.
- C. Preinstallation Meeting: Convene meeting at least at least two weeks prior to commencement of work affected by lightning protection system requirements to discuss prerequisites and coordination required by other installers; require attendance by representatives of installers whose work will be affected.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate location and 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.
 - 1. Where conductors or grounds are to be embedded or concealed in other construction, submit shop drawings at least 30 days prior to start of construction.
 - 2. If concrete-encased grounds are to be used and are not shown in Contract Documents, provide sufficient data to determine concrete encasement dimensions and location.
 - 3. Include data on actual ground resistance determined by field measurement in accordance with NFPA 780.
 - 4. Include engineering analysis of equalization of potential to metal bodies within structure.
 - 5. Include access panels, test holes, and disconnecting means for maintenance.
- C. Product Data: Provide dimensions and materials of each component, indication of testing agency listing, and installation instructions.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Installation Certification: Submit copy of certification agency's approval.
- F. Operation and Maintenance Data: Provide recommended inspection and testing plan, including recommended intervals, to achieve periodic maintenance as recommended in NFPA 780; provide customized plan reflecting actual installation configuration with specific installed components identified.

- G. Project Record Documents: Record actual locations of air terminals, grounding electrodes, bonding connections, and routing of system conductors in project record documents.

1.06 QUALITY ASSURANCE

- A. Maintain one copy of each referenced system design standard on site.
- B. Manufacturer Qualifications: Company specializing in lightning protection equipment with minimum three years documented experience.
- C. Designer Qualifications: Person or entity, employed by installer, who specializes in lightning protection system design with minimum three years documented experience.
- D. Installer Qualifications: Capable of providing specified certification of installed system.
- E. Products: Listed, classified, and labeled as suitable for purpose intended.
- F. Product Listing Organization Qualifications: Organization recognized by OSHA as Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Lightning Protection Components:
 - 1. allG Fabrication: www.allgfab.com/#sle.
 - 2. Harger Lightning and Grounding: www.harger.com/#sle.
 - 3. National Lightning Protection Corporation: www.theprotectionsource.com/#sle.
 - 4. nVent ERICO; System 2000: www.nvent.com/#sle.
 - 5. Robbins Lightning, Inc: www.robbsnlightning.com/#sle.
 - 6. thermOweld, subsidiary of Continental Industries; division of Burndy LLC: www.thermoweld.com/#sle.
 - 7. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 LIGHTNING PROTECTION SYSTEM

- A. Lightning Protection System: Provide complete system complying with NFPA 780, including air terminals, bonding, interconnecting conductors and grounding electrodes.
 - 1. Provide system that protects:
 - a. Entire structure.
 - b. Open air areas within 100 feet of exterior walls at grade level.
 - c. Open air areas within building footprint.
 - 2. Coordinate with other grounding and bonding systems specified.
 - 3. Treat isolated non-grounded protruding metal items as specified by NFPA 780 for heavy-duty stacks.
 - 4. Determine ground resistance by field measurement.
 - 5. Ground resistance has been determined according to the ground resistance requirements specified in Section 26 05 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS..
 - 6. Provide copper, bronze, or stainless steel components, as applicable; no aluminum.
 - 7. Provide copper, bronze, or stainless steel components, except where aluminum is allowed by NFPA 780.
 - 8. Provide disconnecting means and access panels or similar devices to allow complete periodic inspection and testing as described by NFPA 780 Annex D.
 - 9. Provide system certified by Underwriters Laboratories or Lightning Protection Institute.
- B. Strike Terminals: Provide strike (air) terminals where indicated on drawings.

2.03 COMPONENTS

- A. All Components: Complying with applicable requirements of UL 96.
- B. Strike (Air) Terminals: Copper, solid, with adhesive bases for single-ply roof installations.
- C. Grounding Rods: Solid copper.

- D. Ground Plate: Copper.
- E. Conductors: Copper cable.
- F. Connectors and Splicers: Bronze.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated on shop drawings.
- B. Coordinate work with installation of roofing and exterior and interior finishes.

3.02 INSTALLATION

- A. Install in accordance with referenced system standards and as required for specified certification.
- B. Connect conductors using mechanical connectors or exothermic welding process; protect adjacent construction elements and finishes from damage.
- C. Connect conductors using mechanical connectors.
- D. Connect conductors using exothermic welding process; protect adjacent construction elements and finishes from damage.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.
- B. Perform visual inspection as specified in NFPA 780 as if this were a periodic follow-up inspection.
- C. Perform continuity testing as specified in NFPA 780 as if this were testing for periodic maintenance.
- D. Obtain services of specified certification agency to provide inspection and certification of lightning protection system, including performance of other testing required by that agency.

END OF SECTION 26 41 00