

SECTION 26 05 26 GROUNDING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 SUMMARY

- A. This Section includes grounding of electrical systems and equipment and basic requirements for grounding for protection of life, equipment, circuits, and systems. Grounding requirements specified in this Section may be supplemented in other Sections of these Specifications.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 26 Section "Wires and Cables" for requirements for grounding conductors.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Product Data for grounding rods, connectors and connection materials, and grounding fittings.
- C. Qualification data for firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Field tests and observation reports certified by the testing organization and indicating and interpreting the test reports for compliance with performance requirements.

1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7, or a full member company of the InterNational Electrical Testing Association (NETA).
 - 1. Testing Agency Field Supervision: Use persons currently certified by NETA or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- B. Comply with NFPA 70.

C. Comply with UL 467.

D. Listing and Labeling: Provide products specified in this Section that are listed and labeled.

1. The Terms "Listed" and "Labeled": As defined in the National Electrical Code, Article 100.
2. Listing and Labeling Agency Qualifications: A "Nationally Recognized Testing Laboratory" (NRTL) as defined in OSHA Regulation 1910.7.

2.0 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Apache Grounding; Nashville Wire Products.
2. Boggs: H. L. Boggs & Co.
3. Chance: A. B. Chance Co.
4. Dossert Corp.
5. Erico Inc.; Electrical Products Group.
6. Galvan Industries, Inc.
7. Hastings Fiber Glass Products, Inc.
8. Heary Brothers Lightning Protection Co.
9. Ideal Industries, Inc.
10. ILSCO.
11. Kearney.
12. Korn: C. C. Korn Co.
13. Lightning Master Corp.
14. Lyncole XIT Grounding.
15. O-Z/Gedney Co.
16. Raco, Inc.
17. Salisbury: W.H. Salisbury & Co., Utility.
18. Thomas & Betts, Electrical.
19. Utilco Co.

2.2 GROUNDING AND BONDING PRODUCTS

A. Governing Requirements: Where types, sizes, ratings, and quantities indicated are in excess of National Electrical Code (NEC) requirements, the more stringent requirements and the greater size, rating, and quantity indications govern.

2.3 WIRE AND CABLE GROUNDING CONDUCTORS

A. Comply with Division 26 Section "Conductors and Cables." Conform to NEC Table 8, except as otherwise indicated, for conductor properties, including stranding.

1. Material: Use only copper wire for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.

B. Equipment Grounding Conductors: Insulated with green color insulation.

C. Grounding-Electrode Conductors: Stranded cable.

D. Bare Copper Conductors: Conform to the following:

1. Solid Conductors: ASTM B 3.
2. Assembly of Stranded Conductors: ASTM B 8.
3. Tinned Conductors: ASTM B 33.

2.4 MISCELLANEOUS CONDUCTORS

A. Grounding Bus: Bare, annealed-copper bars of rectangular cross section.

B. Braided Bonding Jumpers: Copper tape, braided No. 30 AWG bare copper wire, terminated with copper ferrules.

2.5 CONNECTOR PRODUCTS

A. Pressure Connectors: High-conductivity-plated units.

B. Bolted Clamps: Heavy-duty type.

C. Exothermic-Welded Connections:

Provided in kit form and selected per manufacturer's written instructions for specific types, sizes and combinations of conductors and connected items.

3.0 EXECUTION

3.1 APPLICATION

A. Equipment Grounding Conductors: Comply with NEC Article 250 for types, sizes, and quantities of equipment grounding conductors, except where specific types, larger sizes, or more conductors than required by NEC are indicated.

1. Install equipment grounding conductor with circuit conductors for all circuits and raceways.

2. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways unless they are designated for telephone or data cables.

B. Separately Derived Systems: Where NEC requires grounding, ground according to NEC.

3.2 INSTALLATION

GROUNDING

- A. General: Ground electrical systems and equipment according to NEC requirements, except where Drawings or Specifications exceed NEC requirements.

3.3 CONNECTIONS

- A. Equipment Grounding-Wire Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.
- B. Noncontact Metal Raceway Terminations: Where metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically noncontinuous conduits at both entrances and exits with grounding bushings and bare grounding conductors, except as otherwise indicated.
- C. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values. Where these requirements are not available, use those specified in UL 486A and UL 486B.
- D. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by manufacturer of connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

END OF SECTION 260526