

## **Section 16050**

### **Basic Electrical Materials and Methods**

#### **PART 1: General**

- 1.1 *Summary* – This section includes:
  - 1.1.1 Electrical equipment coordination and installation.
  - 1.1.2 Common electrical installation requirements.
  - 1.1.3 Concrete equipment bases.
  - 1.1.4 Touch-up paint.
- 1.2 *Definitions* –
  - 1.2.1 *EPDM* – Ethylene propylene diene monomer rubber.
  - 1.2.2 *NBR* – Acrylonitrile-butadiene rubber.
- 1.3 *Submittals* –
  - 1.3.1 *General* – Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
  - 1.3.2 *Shop Drawings* – Shop Drawings detailing fabrication and installation of supports and anchorage for electrical items.
  - 1.3.3 *Graphical Representation* – Samples of color, lettering style, and other graphic representation required for each identification product for Project.
  - 1.3.4 *Coordination Drawings for Electrical Installation* –
    - 1.3.4.1 Prepare Coordination Drawings according to "Submittals" to a 1/4-inch-equals-1-foot (1:50) scale or larger. Detail major elements, components, and systems of electrical equipment and materials in relation to each other and to other systems and installations. Indicate locations and space requirements for installation, access, and working clearance. Show where sequence and coordination of installations are important to the efficient flow of the Work. Coordinate drawing preparation with effort specified in other Specification Sections. Include the following:
      - 1.3.4.1.1 Provisions for scheduling, sequencing, moving, and positioning equipment to the site during construction.
      - 1.3.4.1.2 Plans, elevations, and details, including the following:

- 1.3.4.1.2.1 Clearances to meet safety requirements and for servicing and maintaining equipment, including space for equipment disassembly required for periodic maintenance.
  - 1.3.4.1.2.2 Sizes and locations of required concrete pads and bases.
  - 1.3.4.1.2.3 Cross section of underground ducts at all pipe crossings showing clearance.
- 1.4 *Coordination* – Coordinate arrangement, mounting, and support of electrical equipment:
- 1.4.1 To provide for ease of disconnecting the equipment with minimum interference to other installations.
  - 1.4.2 To allow right of way for piping and conduit installed at required slope.
  - 1.4.3 So connecting raceways, cables, and wire ways will be clear of obstructions and of the working and access space of other equipment.
- 1.5 *Quality Assurance* –
- 1.5.1 Comply with NFPA 70 for components and installation.
  - 1.5.2 Provide products specified in this Section that are listed and labeled.
- The terms "Listed and Labeled": As defined in the National Electrical Code, Article 100.
- 1.6 *Sequencing And Scheduling* –
- 1.6.1 Coordinate electrical equipment installation with other components.
  - 1.6.2 Arrange for chases, slots, and openings in structures during progress of construction to allow for electrical installations.
  - 1.6.3 Coordinate installing required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
  - 1.6.4 Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work. Coordinate installing large equipment requiring positioning prior to closing in the building.
  - 1.6.5 Coordinate connecting electrical service to components furnished under other Sections. All conduits shall terminate under or over the intended enclosure whether an elevated platform or not.

## **PART 2: Products**

### **2.1 *Concrete Equipment Bases* –**

- 2.1.1 *Forms and Reinforcing Materials* – As specified in Section 3200-"Cast-In-Place Concrete."

2.1.2 *Concrete* – 3000-psi, 28-day compressive strength as specified in Section 3200-"Cast-In-Place Concrete."

2.2 *Touch-Up Paint* –

2.2.1 *For Equipment* – Provided by equipment Manufacturer and selected to match equipment finish.

2.2.2 *For Non-Equipment Surfaces* – Matching type and color of undamaged, existing adjacent finish.

**PART 3: Execution**

3.1 *Common Requirements for Electrical Installation* –

3.1.1 *Standards* – Comply with NECA 1.

3.1.2 *Measurements* – Measure indicated mounting heights to bottom of unit for rack mounted items and lighting fixture for pole mounted items fixtures.

3.1.3 *Equipment* – Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.

3.1.4 *Installation* – Install items level, plumb, and parallel and perpendicular to each other and other systems and components, except where otherwise indicated. Follow manufacturer's instructions for installation.

3.1.5 *Right-of-Way* – Give to piping systems installed at a required slope.

3.2 *Touch-Up Painting* –

3.2.1 Thoroughly clean damaged areas and provide primer, intermediate, and finish coats to suit the degree of damage at each location.

3.2.2 Follow paint Manufacturer's written instructions for surface preparation and for timing and application of successive coats.

3.3 *Cutting And Patching* –

3.3.1 Drill slabs and other surfaces necessary for electrical installations. Perform cutting by skilled mechanics of the trades involved.

3.3.2 Repair disturbed surfaces to match adjacent undisturbed surfaces.

3.3.3 Core-drill holes or form openings.