

## **SECTION 33 52 43.33 - FUEL SYSTEM IDENTIFICATION FOR ELECTRICAL SYSTEMS**

### **PART 1 - GENERAL**

#### **1.1 SECTION INCLUDES**

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable markers.
- D. Conduit markers and labels

#### **1.2 RELATED REQUIREMENTS**

- A. Section 26 05 19.01 - Low-Voltage Electrical Power Conductors and Cables - Fueling: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.
- B. Section 26 05 33.16 - Boxes For Electrical Systems

#### **1.3 REFERENCE STANDARDS**

- A. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

#### **1.4 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:
  - 1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
  - 2. Do not install identification products until final surface finishes and painting are complete.

#### **1.5 SUBMITTALS**

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
- B. Shop Drawings: Provide schedule of items to be identified indicating proposed designations, materials, legends, and formats.

## **1.6 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.

## **1.7 FIELD CONDITIONS**

- A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

# **PART 2 - PRODUCTS**

## **2.1 IDENTIFICATION REQUIREMENTS**

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
  - 2. Emergency System Equipment:
    - a. Use identification nameplate or voltage marker to identify emergency system equipment in accordance with NFPA 70.
    - b. Use identification nameplate at each piece of service equipment to identify type and location of on-site emergency power sources.
    - c. Use identification nameplate to identify emergency operating instructions for emergency system equipment.
- B. Identification for Conductors and Cables:
  - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 05 19.01.
  - 2. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
- C. Identification for Raceways:
  - 1. Match existing DFW standard labels.
  - 2. Use voltage markers to identify highest voltage present for accessible conduits at maximum intervals of 20 feet (6.1 m).
  - 3. Use voltage markers or color-coded bands to identify systems other than normal power system for accessible conduits at maximum intervals of 20 feet (6.1 m).
- D. Identification for Boxes:
  - 1. Match existing DFW standard labels.
  - 2. Use voltage markers or color coded boxes to identify systems other than normal power system.
    - a. Emergency Fuel Shut-Off System: Red.
  - 3. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.

## 2.2 IDENTIFICATION NAMEPLATES AND LABELS

### A. Identification Nameplates:

1. Manufacturers:
  - a. Brady Corporation: [www.bradyid.com/#sle](http://www.bradyid.com/#sle)
  - b. Brimar Industries, Inc: [www.brimar.com/#sle](http://www.brimar.com/#sle).
  - c. Kolbi Pipe Marker Co: [www.kolbipipemarkers.com](http://www.kolbipipemarkers.com).
  - d. Seton Identification Products: [www.seton.com](http://www.seton.com).
  - e. Approved equal.
2. Materials:
  - a. Indoor Clean, Dry Locations: Use plastic nameplates.
  - b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
3. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch (1.6 mm); engraved text.
4. Stainless Steel Nameplates: Minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
5. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch (0.8 mm); engraved or laser-etched text.
6. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch (25 mm) high; Four, located at corners for larger sizes.

### B. Identification Labels:

1. Manufacturers:
  - a. Brady Corporation: [www.bradyid.com/#sle](http://www.bradyid.com/#sle).
  - b. Brother International Corporation: [www.brother-usa.com/#sle](http://www.brother-usa.com/#sle).
  - c. Panduit Corp: [www.panduit.com/#sle](http://www.panduit.com/#sle).
2. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
3. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

## 2.3 WIRE AND CABLE MARKERS

### A. Manufacturers:

1. Brady Corporation: [www.bradyid.com/#sle](http://www.bradyid.com/#sle).
2. HellermannTyton: [www.hellermannntyton.com/#sle](http://www.hellermannntyton.com/#sle).
3. Panduit Corp: [www.panduit.com/#sle](http://www.panduit.com/#sle).
4. Approved equal..

### B. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth, wrap-around self-adhesive vinyl self-laminating, heat-shrink sleeve, plastic sleeve, plastic clip-on, or vinyl split sleeve type markers suitable for the conductor or cable to be identified.

- C. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- D. Legend: Power source and circuit number or other designation indicated.
- E. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
- F. Minimum Text Height: 1/8 inch (3 mm).
- G. Color: Black text on white background unless otherwise indicated.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Inside of equipment door.
  - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
  - 4. Elevated Equipment: Legible from the floor or working platform.
  - 5. Interior Components: Legible from the point of access.
  - 6. Conduits: Legible from the floor.
  - 7. Boxes: Outside face of cover.
  - 8. Conductors and Cables: Legible from the point of access.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Mark all handwritten text, where permitted, to be neat and legible.

#### **3.2 FIELD QUALITY CONTROL**

- A. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

**END OF SECTION 33 52 43.33**