

**SECTION 260553 – ELECTRICAL IDENTIFICATION**

- 1.0 Adhesive Marking Labels for Raceway: Pre-printed, flexible, self-adhesive labels with legend indicating voltage and service shall be used for identifying all exposed conduits.
  - A. Label Size: As follows:
    1. Raceways 1-inch and Smaller: 1-1/8 inches high by 4 inches long.
    2. Raceways Larger than 1-inch: 1-1/8 inches high by 8 inches long.
  - B. Color: Black legend on orange background.
- 2.0 Wire/Cable Designation Tape Markers: all splice or pull boxes, panelboards, switchboards, switchgear or other connected equipment, identify all branch circuit power and all control cables and conductors using vinyl or vinyl-cloth, self-adhesive, wraparound, cable/conductor markers with preprinted numbers and letters. Such identification shall include circuit/circuit breaker number, wire number (where applicable) gauge of conductor and either destination (at source locations) or source (at destination and intermediate locations).
- 3.0 Plasticized Card Stock Tags: For medium voltage and 480 volt feeder cables, provide phenolic or laminated plastic tags with machine printed legend to suit the application. Provide black legend on orange background, except as otherwise indicated on project documents, and eyelet for fastening. Tags shall identify circuit/circuit breaker number, conductor gauge, and destination (at source location) or source (at destination and intermediate locations).
- 4.0 Nameplates: Engraved three-layer laminated plastic, black letters on white background. Printed plastic tape labels shall be permitted for use in identifying internal components in electrical enclosures, and for panelboard branch circuit identification, only. Embossed, anodized metal nameplates supplied by manufacturers for switchgear, transformers, etc., for equipment ratings are acceptable, but these do not circumvent the need for additional nameplates bearing the project equipment identification.
- 5.0 Provide nameplates with equipment name and drawing schedule identification for all electrical equipment including panelboards, cabinets, switchgear, switchboards, starters, and fire alarm devices. Devices serving a dedicated load shall be identified in a similar manner. Identify the incoming breakers or switches on high voltage switchgear and fused switch lineups with the utility or University substation source circuit identification number and location. A schedule or drawing shall identify proposed nameplates and verbiage, which shall be approved by the University Engineering Department.
- 6.0 Fasteners for Plastic Laminate and Metal nameplates: Provide self-tapping stainless steel screws or No. 10/32 minimum stainless steel machine screws with nuts, and flat and lock washers. Glue-on or self-adhesive nameplates are not permitted.
- 7.0 Cable Ties: Provide fungus-inert, self-extinguishing, one piece, self-locking nylon cable ties 0.18 inch minimum width. Fifty (50) pounds minimum tensile strength and suitable for a temperature range from -50 degrees F. to plus 350 degrees F.
- 8.0 Underground Warning Tape: Provide 4 inch wide plastic tape, detectable type, colored red with suitable warning legend (located 12 inches below grade) continuously above all underground conduits and ductbanks.

- 9.0 All receptacle cover plates, including laboratory multi-outlet raceway receptacles, shall be identified as to panel and circuit number; this information shall be identified by means of a printed self-adhesive label. Label shall be translucent or clear polyester with black lettering, waterproof, and scratchproof.
- 10.0 Control wiring shall be identified and tagged at all terminals to correspond with wire numbers or other identifications as shown on Vendor's drawings.
- 11.0 Provide revised typed panel index to indicate spare and installed circuits after balancing panelboard loads, incorporating final room designations. Handwritten directories are not permitted.
- 12.0 Arc Flash and Shock Warning Signs:
- A. Provide nameplate type markings on all switchgear, switchboards, panelboards, motor control centers, starters, VFDs, transformers, disconnect switches and control panels per NFPA 70E and NEC Article 110 indicating the following:
1. Voltage (phase to phase)
  2. Limited Approach (inches)
  3. Restricted Approach (inches)
  4. Working Distance (inches)
  5. Arc Flash Boundary (inches)
  6. Incident Energy ( $\text{cal}/\text{cm}^2$ )
- B. Refer to NFPA 70E for proper safety practices and protective equipment requirements
- C. Comply with ANSI Z 535 for label requirements.
- D. Equipment warning labels shall have orange background as follows:



- E. Where no level of PPE offers protection and equipment must be de-energized for work, dangerous equipment labels shall have red background as follows:

