

## SECTION 26 05 33.33

### PULL, JUNCTION, AND TERMINAL BOXES

#### PART 1 – GENERAL

##### 1.1 DESCRIPTION

- A. Scope:
  - 1. CONTRACTOR shall provide all labor, materials, equipment, and incidentals as shown, specified, and required to furnish and install pull, junction, and terminal boxes.
- B. Related Sections:
  - 1. Section 26 05 05, General Provisions for Electrical Systems.
  - 2. Section 26 05 29, Hangers and Supports for Electrical Systems.
  - 3. Section 26 05 53, Identification for Electrical Systems.

##### 1.2 REFERENCES

- A. Standards referenced in this Section are.
  - 1. AASHTO, Standard Specifications for Highway Bridges.
  - 2. UL 886, Outlet Boxes and Fittings for Use in Hazardous (Classified) Locations.

##### 1.3 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. NEC Article 314, Outlet, Device, Pull and Junction Boxes; Conduit Bodies; Fittings; and Handhole Enclosures.

##### 1.4 SUBMITTALS

- A. Action Submittals: Submit the following:
  - 1. Product Data:
    - a. Manufacturer's technical information for pull, junction, and terminal boxes proposed for use.

#### PART 2 – PRODUCTS

##### 2.1 MATERIALS

- A. Pull, Junction, and Terminal Boxes:
  - 1. General – Applicable to All Boxes:
    - a. Description and Performance Criteria:

- 1) Provide pull, junction, and terminal boxes rated at not less than NEMA 12. Boxes shall be appropriate for each location in accordance with NEMA requirements and as required for area classifications specified in Section 26 05 05, General Provisions for Electrical Systems.
  - 2) For flush-mounted pullboxes in slabs or pavement potentially subject to vehicular traffic, boxes and covers shall be constructed for H-20 loading in accordance with AASHTO Standard Specifications for Highway Bridges.
  - b. Manufacturers: Provide products of one of the following:
    - 1) Appleton Electric Company.
    - 2) Crouse-Hinds Company.
    - 3) Hoffman Engineering Company.
    - 4) Or equal.
  - c. Materials: Pull boxes embedded in concrete slabs shall be cast iron.
  - e. Terminal strips and terminal blocks in terminal boxes shall be mounted on terminal box sub-panels.
  - e. Identification: Boxes shall be identified in accordance with Section 26 05 53, Identification for Electrical Systems.
2. Materials and Construction – Dusty Locations:
    - a. Material: Welded and galvanized sheet steel of USS gage.
    - b. Gasket: Oil-resistant gasket.
    - c. Access: Lift-off hinges and quick-release latches.
    - d. Material Thickness:
      - 1) Boxes with dimension two feet and smaller shall be 14-gage.
      - 2) Boxes with dimension between two and three feet shall be 12 gage.
      - 3) Boxes with dimension of three feet or more in any direction shall be 10-gage.
  3. Materials and Construction - Wet, Corrosive, or Hazardous Locations:
    - a. Rating:
      - 1) Pull boxes in wet, corrosive, or outdoor areas shall be NEMA 4X.
      - 2) Boxes for areas classified as hazardous locations, where required by NEC, shall be explosion-proof and comply with UL 886.
    - b. Material:
      - 1) Cast gray iron alloy with hot-dip galvanized finish, or cast malleable iron bodies and covers.
      - 2) Large boxes not generally available in cast iron construction shall be copper-free aluminum alloy or Type 304 stainless steel, as required by location.
      - 3) In corrosive locations, where the conduit system is PVC-coated, boxes shall be cast metal with factory-applied 40-mil PVC coating, Type 304 stainless steel, or non-metallic thermoplastic or fiberglass reinforced plastic material.
    - c. Gasket:
      - 1) Provide neoprene gaskets for wet and corrosive locations.
      - 2) Gaskets shall be an approved type designed for the purpose. Improvised gaskets are not acceptable.

- d. Access: Stainless steel cover bolts.
- e. Features:
  - 1) External mounting lugs.
  - 2) Drilled and tapped conduit holes.
  - 3) Boxes where conduits enter building or structure below grade shall have 1/4-inch drain hole at bottom of the box.
  - 4) Provide threaded connections for explosion proof boxes.

B. Terminal Blocks:

- 1. Products and Manufacturers: Provide one of the following:
  - a. Allen-Bradley Company, Bulletin, Model 1492.
  - b. General Electric Company, Model CR151K.
  - c. Or equal.
- 2. Material and Construction:
  - a. NEMA-rated nylon modular terminal blocks.
  - b. 600-volt rated.
  - c. Control and alarm circuit terminals shall be screwed type with permanently affixed numeric identifiers beside each connection.
  - d. Power terminals shall be copper and rated for the circuit ampacity.

## PART 3 – EXECUTION

### 3.1 INSPECTION

- A. Examine conditions under which the Work will be installed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions are corrected.

### 3.2 INSTALLATION

- A. Mount boxes so that sufficient access and working space is provided and maintain clearance of not less than 1/4-inch from walls.
- B. Securely fasten boxes to walls or other structural surfaces on which boxes are mounted. Provide independent supports that comply with Section 26 05 29, Hangers and Supports for Electrical Systems, where boxes will not be mounted on walls or other structural surface.
- C. Install pull boxes where shown or indicated, and provide pull boxes where one or more of the following conditions exist:
  - 1. Conduit runs containing more than three 90-degree bends.
  - 2. Conduit runs exceeding 200 feet in length.
- D. Provide removable, flame-retardant, insulating cable supports in boxes with any dimension exceeding three feet.

- E. Field-apply PVC touch-up to scratched PVC boxes damaged during installation. Touch-up work shall be in accordance with manufacturer's recommendations and instructions.
- F. Size junction, pull, and terminal boxes in accordance with NEC Article 314 and other Laws and Regulations.
- G. Provide terminal blocks in boxes where shown and where cable terminations or splices are required.

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