

SECTION 16135

ELECTRICAL JUNCTION BOXES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Electrical junction boxes and extensions, including maintenance markers.

1.2 RELATED SECTIONS

- A. Section 02056: Common Fill
- B. Section 02061: Select Aggregate
- C. Section 02842: Delineators

1.3 REFERENCES

- A. AASHTO M 111: Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- B. AASHTO M 183: Structural Steel. (Metric)
- C. ASTM D 256: Determining the Pendulum Impact Resistance of Notched Specimens of Plastics
- D. ASTM D 543: Evaluating the Resistance of Plastics to Chemical Reagents
- E. ASTM D 635: Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
- F. ASTM D 638: Tensile Properties of Plastic
- G. ASTM D 648: Deflection Temperature of Plastics Under Flexural Load

- H. ASTM D 790: Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- I. AWS D 1.5

PART 2 PRODUCTS

2.1 PLASTIC JUNCTION AND PULL BOXES

- A. Plastic body and cover meeting the physical and chemical requirements listed in Table 1 and the following:
 - 1. All components constructed of a high density polyethylene with ultraviolet inhibitors.
 - 2. Non-skid surface on lid required.
 - 3. Vandal resistant recessed bolts.
 - 4. Capacity to support a 6 ¼ inch diameter load of 5,000 lbs with a maximum lid deflection of 1 inch.
 - 5. Withstand a 7940 lb wheel load without cracking.
- B. Minimum wall thickness of ¼ inch.
- C. Self-extinguishing when tested by the industry standard. ASTM D 635.
- D. Show no appreciable change in physical properties when exposed to the weather.

Table 1

Properties	ASTM Test	Value
Tensile Strength	D 638	4,300 psi
Flexural Modulus	D 790	190,000 psi
Defection Temp at 66 psi	D 648	165 degrees F.
Notched Impact	D 256	0.107 N@n/mm
Effect of Acids	D 543	Very Resistant
Effect of Alkalies	D 543	Very Resistant

- E. Mark the junction box lid in the logo area with 1 inch letters:
 - 1. “Traffic Signal” when the junction box contains traffic signal conductors with or without street lighting conductors.

2. "Street Lighting" when the junction box contains street lighting conductor only. Inscribe "High Voltage" below the words "Street Lighting" when the junction box contains voltage above 600 V.
 3. "Communication" when the communication conduit is in the junction box.
 4. "Sprinkler Control" when the sprinkler control conduit enters the junction box.
 5. "Count Station" when the traffic count station conduit enters the junction box.
- F. All ferrous metal parts: minimum chromium content of 18 percent and a minimum nickel content of 8 percent.

2.2 STEEL JUNCTION BOX

- A. Provide galvanized steel junction box with welds as specified.
- B. Meet requirements of:
 1. AASHTO M 183
 2. AWS D 1.5
 3. AASHTO M 111

2.3 DUCT CAULKING

- A. For junction boxes: waterproof, rodent proof, non-corrosive, non-oxidizing, and non-hardening when subject to temperatures ranging from -15 degrees F to 150 degrees F.

2.4 MAINTENANCE MARKERS

- A. At junction box.
- B. Steel posts: Refer to Section 02842.

2.5 BACKFILL

- A. Free draining granular backfill borrow. Refer to Section 02061.
- B. Granular backfill borrow. Refer to Section 02056.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Place the top of junction boxes flush with adjacent surface.
- B. Junction box and extension:
 - 1. Holes drilled in junction box must not be more than 1/4 inch larger than conduit diameter. Seal conduit ends inside all non-metallic junction boxes with at least 2 inches thick duct caulking after wires are installed.
 - 2. Hand tamp the granular backfill borrow material around the junction box. Match the top 4 inches to the composition, density, and elevation of the surrounding surface.

END OF SECTION