

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 6-1/4 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 1/4 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	<i>0.107 Nm/mm</i>
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