

SECTION 16135

ELECTRICAL BOXES AND FITTINGS

PART - GENERAL

1.1 DESCRIPTION OF WORK

- A. The work of this section consists of providing labor, material, tools, appliances and miscellaneous accessories associated with the electrical box and electrical fitting work indicated by drawings and schedules.
- B. Types of electrical boxes and fittings in this section include the following:
 - 1. Outlet boxes.
 - 2. Junction boxes.
 - 3. Pull boxes.
 - 4. Floor Boxes.
 - 5. Bushings.
 - 6. Locknuts.
 - 7. Knockout closures.

1.2 RELATED DOCUMENTS

- A. Drawings
- B. General provisions of Contract, including General and Supplementary Conditions.
- C. Division 01 - Specification Section.
- D. Section 16010 - General Electrical Provisions.

PART 2 - PRODUCTS

2.1 OUTLET BOXES

- A. Provide galvanized coated flat rolled sheet-steel outlet wiring boxes, of shapes, cubic inch capacities, and sizes, including box depths, suitable for installation at respective locations. Construct outlet boxes with mounting holes, and with cable and conduit-size knockout openings in bottom and sides. Provide boxes with threaded screw holes, with corrosion-resistant cover and grounding screws for fastening surface and device type box covers, and for equipment type grounding. Sizes and minimum depths shall be as follows:
 - 1. Ceilings: 4" square or 4" octagonal, 2-1/8" deep.
 - 2. Plaster Walls: 4" square, 2-1/8" deep, with raised plaster cover; set with face approximately 1/8" from finished surface. Furnish shallow boxes where necessary.

3. Dry Wall Construction Walls: Standard galvanized switch box, 2-1/8" deep. Furnish shallow boxes where necessary.
4. Masonry Walls: Galvanized switch boxes made especially for masonry installations; depths of boxes must be properly coordinated for each specific installation.
5. Surface: Type FS or FD box with surface cover.
6. Special: Where above types are not suitable, furnish boxes to suit the use taking into account space available, appearance, and Code requirements.

B. Outlet Box Accessories:

1. Provide outlet box accessories as required for each installation, including box supports mounting ears and brackets, wallboard hangers, box extension rings and plaster rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, which are compatible with outlet boxes being used to fulfill installation requirements of individual wiring situations. Choice of accessories is Installer's code-compliance option.

C. Weatherproof Outlet Boxes:

1. Provide corrosion-resistant cast-metal weatherproof outlet wiring boxes, of types, shapes and sizes, including depth of boxes to suit each respective location and installation; construct with threaded conduit ends and with threaded screw holes for securing box covers and wiring devices.

2.2 JUNCTION AND PULL BOXES

- A.** Provide galvanized code-gage sheet steel or cast metal junction and pull boxes, with screw-on covers, of types, shapes and sizes, to suit each respective location and installation, with welded seams and equipped with stainless steel nuts, bolts, screws and washers.

1. Type for Various Locations:

- a. 100 Cubic Inches in volume or Smaller: Standard outlet boxes with stamped knockouts.
- b. 150 Cubic Inches in volume or Larger: code gage steel with sides formed and welded, screw covers unless shown to have hinged doors. Hinged doors with locking device same as furnished on panelboards. Knockouts factory stamped or formed in field with a cutting tool to provide a clean symmetrically-cut hole.
- c. Exterior or Wet Areas: Weatherproof galvanized steel construction with proper gaskets and corrosion resistant fasteners.

2.3 FLOOR BOXES

- A. Provide cast-iron watertight fully adjustable flush mounted floor boxes where indicated on the Drawings. Construct with threaded-conduit-entrance ends, vertical adjusting rings interior leveling screws, extended adjusting screws and box cap for rough in.
- B. Floor Box Accessories: Provide floor plates (brass or polished aluminum per architect) with flush screw-on covers, gaskets, and carpet plates with two flip-up covers.

2.4 BUSHINGS, KNOCKOUT CLOSURES AND LOCKNUTS

- A. Provide corrosion-resistant punched-steel knockout closures, conduit locknuts and plastic conduit bushings, and offset connectors, of types and sizes to suit respective uses and installation.

3.1 INSTALLATION OF ELECTRICAL BOXES AND FITTINGS

- A. General: Install electrical boxes and fittings where indicated, complying with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation", and in compliance with recognized industry practices to ensure that products fulfill requirements.
- B. Coordinate installation of electrical boxes and fittings with wire/cable and raceway installation work.
- C. Provide weather tight outlet boxes for interior (food service areas, janitorial rooms, swimming pool area, pool pump rooms, classroom wet areas, etc.) and exterior locations exposed to weather or moisture.
- D. Provide knockout closures to cap unused knockout holes where blanks have been removed.
- E. Install boxes and conduit bodies in those locations which ensure ready accessibility of electrical wiring.
- F. Avoid installing boxes back-to-back in walls. Provide in separate stud cavities if practicable, but never less than 6" separation.
- G. Avoid installing aluminum products in concrete.
- H. Position recessed boxes accurately to allow for surface finish thickness.
- I. Set floor boxes level and flush with finished floor.

- J. Round boxes are not acceptable where conduit must enter box through side of box, which would result in difficult and insecure connections when fastened with locknut or bushing on rounded surface.
- K. Fasten boxes rigidly to substrates or structural surfaces to which attached, or solidly embed electrical boxes in concrete or masonry.
- L. Mounting heights are specified on Drawings and in Section 16010.

END OF SECTION