

SECTION 16130
BOXES

PART 1 GENERAL

1.1 SECTION INCLUDES:

- A. Wall and ceiling outlet boxes.
- B. Floor boxes.
- C. Pull and junction boxes.

1.2 REFERENCES

- A. ANSI/NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
- B. ANSI/NEMA OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- C. ANSI/NFPA 70 - National Electrical Code.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).

1.3 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01700.
- B. Accurately record actual locations and mounting heights of outlet, pull, and junction boxes.

1.4 PROJECT CONDITIONS

- A. Verify field measurements are as shown on Drawings.
- B. Verify locations of floor boxes and outlets prior to rough-in.
- C. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Install at location required for box to serve intended purpose. The Architect may change the location of a box as much as 6', at no extra cost to the Owner.

PART 2 PRODUCTS

2.1 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, galvanized steel, 4" x 4" x 1.5" deep, minimum.
- B. Cast Boxes: NEMA FB 1, Type FD cast iron. Provide gasketed cover by box manufacturer. Provide threaded hubs.

2.2 FLOOR BOXES

- A. Floor Boxes: ANSI/NEMA OS 1, fully adjustable.
- B. Shape: Rectangular.
- C. Conform to regulatory requirements for concrete-tight floor boxes.

2.3 PULL AND JUNCTION BOXES

- A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.
 - 1. Minimum Size Box: 4" x 4" x 1.5" deep.
- B. Surface-Mounted Cast Metal Box: NEMA 250, Type 4; flat-flanged, surface-mounted junction box.
 - 1. Material: Galvanized cast iron.
 - 2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.
- C. Fiberglass Hand holes:
 - 1. Minimum size die-molded fiberglass handholds.
 - a. Brooks 1419 series, or approved equal for handholds with conduit sizes 1½" or smaller.
 - b. Brooks 1324 series, or approved equal for handholds with conduit sizes 2" or larger.
 - 2. Cover: Bolt down fiberglass weatherproof cover with ⅜" stainless steel bolts and be traffic rated.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.

- B. Install electrical boxes to maintain a 6'-6" headroom and to present neat mechanical appearance.
 - C. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
 - D. Inaccessible Ceiling Areas: Install junction boxes no more than 24" from ceiling access panel or from removable recessed luminary with box opening facing access panel or luminary.
 - E. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods under the provisions of Section 07270.
 - F. Align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices with each other.
 - G. Use flush mounting outlet boxes in finished areas.
 - H. Do not install flush mounting boxes back-to-back in walls; provide minimum 6" separation. Provide minimum 24" separation in acoustic rated and fire rated walls.
 - I. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
 - J. Use stamped steel bridges or steel studs to fasten flush mounting outlet box between studs.
 - K. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
 - L. Do not support boxes with wires.
 - M. Support boxes from building structure or structural member.
 - N. Use gang box where more than one device is mounted together. Do not use sectional box.
 - O. Use gang box with plaster ring for single device outlets.
 - P. Use cast outlet box in exterior locations exposed to the weather and wet locations.
 - Q. Use cast iron floor boxes or nonmetallic floor boxes for installations in slab on grade; formed steel boxes are acceptable for other installations.
 - R. Set floor boxes level.
 - S. Large Pull Boxes: Boxes larger than 100 cubic inches in volume or 12" in any dimension.
 - 1. Interior Dry Locations: Use hinged enclosure under provisions of Section 16160.
 - 2. Other Locations: Use surface-mounted cast metal box.
 - T. Floor boxes shall not be used for feed through wiring except to another floor box.
 - U. Cast boxes at the end of a run shall have one additional conduit into slab for support.
 - V. Pull boxes shall be added, as necessary, to eliminate conduit runs from exceeding 400' in length for systems and 750' in length for power.
 - W. Locate handholds, in grassy areas.
 - X. A maximum of one extension ring shall be used on a box.
 - Y. Lay-in type ceiling area: Install junction boxes no more than four feet above the ceiling grid.
 - Z. Conductors not rated for direct burial shall not be located exposed in the bottomless underground hand holes, i.e. Brooks Boxes. Weatherproof PVC boxes are permitted to be located inside the fiberglass hand holes.
- 3.2 INTERFACE WITH OTHER PRODUCTS
- A. Coordinate installation of outlet box for casework furnished under Section 06410.
 - B. Coordinate locations and sizes of required access doors with Section 08305.
 - C. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
 - D. Coordinate mounting heights and locations of outlets mounted above counters, benches and backsplashes.
 - E. Position outlet boxes to locate luminaries as shown on reflected ceiling plan.
- 3.3 ADJUSTING
- A. Adjust floor box flush with finish flooring material.
 - B. Adjust flush-mounting boxes to make front flush with finished wall material. Plastic Add-a-depth rings may be used for device boxes.
 - C. Install knockout closure in unused box opening.

END OF SECTION