SECTION 26 05 33

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

A. The General Conditions, Supplementary Conditions, and Division 1 – General Requirements apply.

1.2 SECTION INCLUDES

Specifier Note: Delete items below that are not included in this section.

A. Surface mounted raceways.

B. Multi-service in-wall boxes.

C. Floor boxes.

D. Poke-thru systems.

1.3 RELATED SECTIONS

Specifier Note: In this article, specify work specified in other sections that is related to work of this section.

A. Section 07 84 13.16 - Penetration Firestopping Devices.

B. Division 26 - Electrical: Electrical systems and components.

C. Division 27 - Communications: Communications systems and components.

D. Division 28 - Electronic Safety and Security: Security systems and components.

Specifier Note: The following paragraph is a sample that may be used in this article. Add to or delete from the following as appropriate for the specific project.

E. Section [*xxxxx*] – [*Section Title*]: [*Include brief description of work specified in another section that is related to the work of this section.*]

1.4 SUBMITTALS

Specifier Note: In this article, specify various types of data to be furnished by the contractor before, during, or after construction. Topics included in this article are: product data, shop drawings, samples, design data, test reports, certificates, manufacturers' instructions, manufacturers' field reports, qualification statements, and closeout submittals.

A. Submit under provisions of Section [01 33 00] [_____].

B. Product Data: Submit for surface raceways, multi-service in-wall boxes, floor boxes, and poke-thru systems.

C. Shop Drawings: For the following electrical system components. Include plans, elevations, sections, details, and attachments to other work.
   1. Multi-service in-wall boxes.
   2. Floor boxes.
   3. Poke-thru systems.

D. Samples: Submit three (3) 6-inch lengths of exposed type surface raceways with required color and finish. Show standard color ranges available.

1.5 QUALITY ASSURANCE

Specifier Note: In this article, describe qualifications, regulatory requirements, certifications, field samples, mock-ups, and pre-installation meetings.

A. Manufacturer Qualifications: Firms regularly engaged in manufacture of raceway systems, boxes and fittings of the types and sizes required, whose products have been in satisfactory use in similar service for not less than 10 years. Provide raceways and boxes produced by a manufacturer listed in this section.

B. Electrical Raceways, Boxes, and Components: Comply with requirements of applicable local codes, NEC, UL, and NEMA Standards pertaining to raceways, boxes, and components. Listed and labeled in accordance with NFPA 70, Article 100.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver raceways and distribution systems in factory labeled packages.

B. Store and handle in strict compliance with manufacturer's written instructions and recommendations.

C. Protect from damage due to weather, excessive temperature, and construction operations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: The design for each raceway and distribution system is based on products manufactured by The Wiremold Company, 60 Woodlawn Street, West Hartford, CT 06110; toll-free 800-621-0049, telephone 860-233-6251, fax 860-232-2062; Web Site: www.wiremold.com.

B. Substitutions will be considered under provisions of Section 01600.

2.2 SURFACE MOUNTED RACEWAYS

A. General:

Specifier Note: In the following subparagraph, delete the bracketed text if the DS4000 model raceway is deleted in Paragraph 'C' below.

1. System: Provide surface raceway systems for branch circuit and data network voice, video and other low-voltage wiring. Surface raceway system shall consist of raceway bases, covers, [pre-divided raceway bases, dual covers,] appropriate fittings and device mounting plates necessary for a complete installation.

Specifier Note: In the following subparagraph, delete the first bracketed text if the DS4000 model raceway is retained in Paragraph 'C' below; otherwise delete the second bracketed text.

2. Configuration: [Raceways shall be one- or two-piece design with base and snap-on cover, or three-piece design with base and two snap-on covers which snap side by side on a common base. Base shall be dividable with a fixed barrier for up to 4 compartments. Raceway shall be available in widths of 3/4-inch to 10-inch and depths of 17/32-inch to 5-inch. Provide raceways from a company that can provide custom sizes if required. Raceway covers shall be available in tamper-resistant form with screws on access plates and covers of fittings, but not on standard cover lengths.] [Raceways shall be multi-piece design with metal base and snap-on metal covers. Assembled base and cover is 5-3/4 inches wide by 2-1/8 inch high with a cross section area of 10.06 sq in. Base shall have 2 wiring channels, separated by 1 integral divider, large enough to accept standard power and communication devices without restricting capacity of the adjacent channel. The raceway base shall accept 2 covers that allow separation of services. The cover shall slightly curve and form the raceway sidewall. Provide the base with scored lines to facilitate sectioning of the raceway in 4-inch increments and include mounting holes, and tunnel knockouts in the divider wall that will facilitate the crossing over of services.]

3. Fittings: Fittings shall include flat, internal and external elbows, couplings for joining raceway sections, wire clips, blank end fittings, and device mounting brackets and plates as applicable. Where required, provide tamper-resistant form, dividable with barriers and matching the size of the accompanying raceway base. Provide full capacity corner elbows and tee fittings to maintain a controlled 2-inch cable bend radius, meeting the specification for Fiber Optic and UTP cabling and exceeding the TIA/EIA-569-A requirements for communications pathways.
4. Device Brackets and Plates: Provide in sizes to match raceway width and with mounting holes located to ensure proper mounting of devices in up to 4 compartments. Device plates shall be available in any length from 6-inch to 60-inch, with cutouts to accommodate various combinations of power and communications devices in up to 4 compartments. Provide 6-inch and 12-inch long device plates with a flange to overlap the joint of adjacent cover as applicable.
5. Communications Devices and Accessories: Raceway shall accommodate a complete line of connectivity outlets and modular inserts for UTP (including Category 5, 5e, 6) STP (150 ohm) fiber optic, coaxial, and other cabling types with matching faceplates and bezels to facilitate mounting. Where indicated, provide connectivity outlets and modular inserts by Ortronics or approved equal.

B. Classification:
1. Raceway and system components shall be UL and CUL listed.
2. Surface raceways shall be suitable for use in dry interior locations only, as covered in Article 386 (Surface Metal Raceways) 388 (Surface Nonmetallic Raceways) of the National Electrical Code.
3. Surface metal raceways and fittings shall be listed by Underwriters Laboratories under File Number E4376, Listing and Classification Number RJBT and File Number E41751, Listing and Classification Number RJPR respectively.
4. Systems shall comply with UL Standard UL5 for Surface Metal Raceways.
5. Larger 2 and 3 channel non-metallic raceways shall be UL Listed under File Nos. E90378 Guide RJTX and E90377 Guide RJYT, respectively.

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

Specifier Note: In the following paragraph, delete the "prewired" option in the 4000 Series Single- or Dual-Channel Steel Raceway and DS4000 Series Multi-Channel Steel Raceway if project does not require prewired raceways.

C. Surface Mounted Metal Raceways: [V500 System One-Piece Metal Raceway] [V700 One-Piece Metal Raceway] [DS4000 Series [Prewired] Multi-Channel Steel Raceway] [4000 Series [Prewired] Single- or Dual-Channel Steel Raceway] [4000 Series Single- or Dual-Channel Steel Raceway] [S4000 Dual-Channel Stainless Steel Raceway] [6000 Series Metal Raceway] [V2100 Single-Channel Metal Raceway] [3000 Single-Channel Metal Surface Raceway] [V2400/V2400D Two-Piece Dual-Channel Metal Raceway] by The Wiremold Company.

Specifier Note: In the following subparagraph, retain only those materials that are to be incorporated into the project and delete the others. Coordinate with paragraph above.

1. Material: [Galvanized steel, minimum thickness 0.040-inches.] [Stainless steel type 304.] [_____.]

Specifier Note: In the following subparagraph, retain only those finishes that are to be incorporated into the project and delete the others. Coordinate with paragraph above.

2. Finish:

Specifier Note: In the following subparagraph, delete the first bracketed text if the DS4000 model raceway is retained in Paragraph 'C' above; otherwise delete the second bracketed text.

a. Manufacturer's standard [ScuffCoat™, gray, ivory] [Designer Ivory (fog white), Designer Gray, Metallic Bronze or Matte Black] or custom color as selected.

b. Factory-applied polyester topcoat applied over ivory base suitable for field-applied topcoat.
c. Stainless Steel: No. 4 brush finish with removable PVC coating.

3. Steel Device Brackets and Plates: Steel overlap device plate for horizontal installation of devices. Plate shall overlap cover to conceal seam.
4. Plastic Overlapping Cover Bracket and Faceplate: Plastic device mounting bracket and trim plate for horizontal installation of devices. Plate shall overlap cover to conceal seam. Faceplate shall accept a variety of power and data/communication devices. Plastic shall be compatible with UL 94 for Plastic.

Specifier Note: Delete the following subparagraph if the DS4000 model raceway is not retained in the Paragraph 'C' above.

5. Adjustable Length Raceway Couplings: Provide raceway base sections with adjustable couplings. Each pair of couplings works in conjunction with the raceway base's scored lines to allow less accurate field cuts. The coupling shall accommodate 4 inches of lateral movement and facilitate the ability of the raceway to maintain coordination with the wall framing as required. Each coupling shall provide a means of adding supplemental ground screws.

Specifier Note: Delete the following subparagraphs if the DS4000 model raceway is not retained in the Paragraph 'C' above.

6. Fittings: Fittings shall include flat, internal and external elbows, tees, entrance fittings, wire clips, cover clips, couplings, support clips, and end caps. Covers for fittings shall overlap adjoining raceway covers a minimum of 38 inches. Fittings shall be color matched to the raceway. Supply fittings with a base where applicable to eliminate mitering. Provide fittings with adjustable couplings that integrate with the raceway base. Provide a take-off fitting supporting dual services to adapt to existing flush wall boxes and other series of metallic raceways. Fittings shall have provisions to accept tamper resistant fasteners to fully secure the raceway.
   a. Fiber Optic/UTP/STP Fittings: Corner elbows, tees, and entrance end fittings as required to maintain a controlled 2-inch nominal cable bend radius that meets the specifications for Fiber Optic and UTP/STP cabling and exceeds TIA 569 requirements for communications pathways.
   b. Obstacle Avoidance and Offset Fittings: Provide fittings as required to bypass large and small obstacles and small offsets in supporting wall. Small obstacle avoidance fitting capable of being converted into a take off fitting to transition to other metallic raceways.

Specifier Note: Delete the following subparagraphs if the DS4000 model raceway is not retained in the Paragraph 'C' above.

7. Device Brackets and Plates:

Specifier Note: In the following subparagraph, delete the option if project does not require pre-mounted receptacles.

   a. Forward Fittings: Provide device brackets to install single-gang devices horizontally in either channel within the raceway. Provide horizontal device brackets with a single gang face plate. Horizontal device mounting brackets shall be a single piece with integral auxiliary grounding points. [Provide horizontal device brackets with factory pre-mounted receptacles with wire leads.] Device brackets and activation face plates shall allow the electrical or communications devices to face downward protruding from the sidewall of the raceway.
   b. Downward Fittings: Provide downward facing device brackets and face plates with internal tunneling devices to allow cabling to cross over the adjacent channel and exit the downward facing sidewall and maintain separation of services and full capacity of the specified channel. When this is provided, the maximum cable bend radius is 4 inches. Devices for both power and data/communication must have the

capacity of mounting flush or in conjunction with face plates. The face plates shall be used to conceal seams between raceway cover and installed face plate. Device brackets and plates with any combination of multiple opening options and with any combination of multiple device opening options. Color match device brackets and plates to the raceway.

Specifier Note: Delete the following subparagraphs if the DS4000 model raceway is not retained in the Paragraph 'C' above.

8. Communications Devices and Accessories: Raceway shall accommodate a complete line of connectivity outlets and modular inserts for UTP (including Category 5, 5e, 6) STP (150 ohm) fiber optic, coaxial, and other cabling types with matching faceplates and bezels to facilitate mounting. Provide with complete line of preprinted station and port identification labels.

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

D. Surface Mounted Aluminum Raceways: [ALA4800 Dual Channel Aluminum Surface Raceway] [ALA3800 Aluminum Raceway] [AL5200 Dual-Channel Aluminum Raceway] [AL2000 Plugmold® Multioutlet System] [AL2400 Aluminum Surface Metal Raceway] [AL3300 Single-Channel Aluminum Raceway] by The Wiremold Company.
   1. Material: Alloy 6063-T5 extruded aluminum; minimum thickness 0.050-inches.
   2. Finish: Satin, No. 204 clear anodized, 0.004-inch thick, Class R1 Mil-Spec.
   3. Device Cover Plates: Suitable to mount commercially available duplex devices, single 1.40-inch and 1.59-inch diameter receptacles. GFCI, surge receptacles and other rectangular faced devices, and voice and data jacks. Cover plates shall be removable using standard screwdriver without marring the finish.

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

Specifier Note: In the following paragraph, delete the "prewired" option in the 5400 Series Dual Channel Nonmetallic Raceway if project does not require prewired raceways.

E. Surface Mounted Nonmetallic Raceways: [CableSmart™ 40N2 Series Dual Channel Raceway] [CableSmart™ 60N2 Series Dual Channel Raceway] [Eclipse™ 2 (PN20A) Two-Piece Surface Nonmetallic Raceway] [Eclipse™ (PN03L) (PN05L) (PN10L) Latching Surface Nonmetallic Raceway] [Eclipse™ (PN05A) PN10A) Two-Piece Surface Nonmetallic Raceway] [Access 5000 Dual Channel Nonmetallic Raceway] [5400 Series [Prewired] Dual Channel Nonmetallic Raceway] [5500 Series Nonmetallic Raceway] [(400) (800) (2300) Series Nonmetallic Raceway] [Uniduct (2700) (2800) (2900) One-Piece Latching Nonmetallic Raceway] by The Wiremold Company.
   1. Material: Raceway and system components UL Listed and exhibit nonflammable self-extinguishing characteristics, tested UL94V-0, or equivalent.
   2. Fittings: Rigid PVC compound with base to eliminate mitering.
   3. Device Brackets and Plates: For mounting standard devices in-line or offset from the raceway. Device bracket shall provide multiple gang openings at one location. Faceplates shall match and fit flush in the device plate.

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

F. Prewired Raceways: [Isoduct Single and Multiple Channel Prewired Aluminum Raceway] [4000 Single or Dual-Channel Raceway] [3000 Single-Channel Metal Surface Raceway] [5400 Dual Channel Nonmetallic Raceway] [5500 Dual Channel Nonmetallic Raceway] by The Wiremold Company.

Specifier Note: In the following subparagraph, retain only those materials that are to be incorporated into the project and delete the others. Coordinate with paragraph above.

1. Material: [Galvanized steel] [Aluminum.] [Nonmetallic].
2. Fittings: Multi-outlet system consisting of factory assembled components with a full complement of fittings including, but not limited to, elbows (90 degree, internal and external) slide couplings for joining raceway sections, blank end caps for closing open ends of the raceway, and flat tees. No field cutting of raceways will be permitted.
3. Devices: Wiring devices and other connectors shall be factory installed, electrically wired, and covers labeled as identified on the Drawings. Each receptacle shall be identified noting the panel number and circuit number from which it is fed. Receptacles rated higher than NEMA 5-20R shall also be provided with voltage, phase and amperage identified in the same manner. Raceway sections shall be provided with 12-inch pigtails at feed locations for ease of installation. Grounding shall be maintained by means of factory installed NEC sized grounding conductors and utilize insulation displacement connectors as required.
4. Raceway Covers and Device Plates: Raceway covers shall have either hole-cut provision for communications outlets or the voice and data/LAN outlets shall be factory mounted to the cover plates. Raceway shall be capable of containing, but not limited to, snap-in modular jacks (3-pair, 4-pair, 4-pair keyed and fiber optic, coaxial and F-connectors and communication grommets. Wiring connections of these devices shall be completed during installation.

2.3 MULTI-SERVICE IN-WALL BOXES

A. Multi-Service In-Wall Boxes: WallSource™ Multi-Service Box by The Wiremold Company.
1. Provide construction box system for bringing power and low voltage devices to one location or to back feed surface wiring systems. System shall consist of in-the-wall boxes, mounting brackets, dividers, device mounting brackets, trim rings, and device plates for a complete installation in accordance with the Drawings.

Specifier Note: In the following subparagraph, retain only those materials that are to be incorporated into the project and delete the others. Coordinate with paragraph above.

2. Material: [0.050-inch thick galvanized steel with gray or ivory suitable for field painting.] [0.063-inch thick extruded aluminum with clear anodized finish.]

B. Classification and Use: Provide construction box system to be utilized in dry, interior locations only as defined by Article 300-15 of the National Electrical Code, as adopted by the National Fire Protection Association and approved by the American National Standards Institute. The box and system components shall be UL listed in accordance with UL 514A and UL514C. The device mounting bracket shall be molded from color matching UL approved resin.

C. Boxes: Each box shall include the box, dividers and mounting brackets. Dimensions of each shall be a minimum of 32 cubic inches per gang and shall be manufactured of 16-gage minimum thick steel. The box shall accommodate standard power and communication devices.
1. The 2-gang box shall have knockouts located on top and bottom, 2-1/4 inches from the face to accommodate combinations of 1/2-inch, 3/4-inch, and 1-inch trade size conduits. Boxes of 4- or 6-gangs shall have knockouts to accommodate 1-1/2-inch trade size conduits.
2. Box shall have a separate ground terminal provided in each gang.
3. Box shall adjust for a flush installation with the finished wall. There shall be positive stops for surface mounting to 1/2-inch, 5/8-inch, 1-inch and 1-1/4-inches thick wallboard. Adjusting screws shall be located outside the box for adjustment prior to installation.

D. Device Mounting Brackets: Self-leveling device mounting bracket shall accommodate standard power devices, connectivity inserts, and Wiremold 5507 series faceplates. Mounting bracket shall be available to accommodate other manufacturer's devices. Mounting bracket shall accommodate six power devices or 18 communications inserts. All faceplates, mounting brackets and trim rings shall be color matched.

E. Communication Devices and Accessories: Box shall accommodate a complete line of connectivity outlets and modular inserts for UTP (including Category 5, 5e, 6) STP (150 ohm)

fiber optic, coaxial, and other cabling types with matching faceplates and bezels to facilitate mounting. Where indicated, provide connectivity outlets and modular inserts by Ortronics or approved equal.

F. Fiber Optic/UTP (including Category 5, 5e, 6) Radius: The depth of the box shall accommodate a 1-1/4-inch cable bend radius, which meets or exceeds the specifications for fiber optic and UTP cabling and TIA/EIA-569A requirements for communications pathways. A 1-inch controlled radius storage loop shall be available.

G. Device Covers: Device cover plates in the following configurations shall be available: duplex device cover plates, single 1.40-inch and 1.59-inch diameter receptacle cover plates, switch plates, GFCI cover plates, Sentrex surge receptacle cover plates and other rectangular faced plates. Single gang cover plates shall be modular in design.

H. Support Bracket: Provide support bracket for mounting on 16-inch on center studs on boxes with more than two gangs.

I. Dividers: Dividers shall be removable without any tools.

2.4 FLOOR BOXES

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

A. Floor Boxes: [880 Floor Boxes for Wood Floors] [Resource RFB Floor Box Series] [880 Omnibox® Series for Concrete Floors] [880MP Nonmetallic Rectangular Multiservice Floor Boxes] [RFB11, RFB9 & RFB4 High Capacity A/V Concrete Floor Boxes] by Walker Systems Inc, A Wiremold Company.
   1. Floor boxes provide the interface between power and communication cabling in an on-grade or above-grade concrete floor where power and communication services are required. Boxes shall provide flush or recessed device outlets that will not obstruct the floor area. Refer to Drawings for size and types.

B. Classification and Use: Provide floor boxes approved for use in concrete floor construction. Boxes shall be approved for above grade (stamped steel) and on grade (cast iron or nonmetallic) applications. Floor boxes shall have been examined and tested by Underwriters Laboratories Inc. to meet UL514A and Canadian Standard C22.2 and shall bear the appropriate label. Floor boxes shall conform to the standard set in the National Electrical Code. Multi-compartment box shall have been evaluated by UL to meet the applicable U.S. and Canadian safety standards for scrub water exclusion when used on tile, terrazzo, wood, and carpet covered floors.

C. Configurations: Boxes shall be available in one-, two-, or three-gang configurations or a single unit with four independent wiring compartments and available in stamped steel and cast iron versions. Boxes shall be rectangular in shape and available in deep and shallow versions. Boxes shall provide pre- and post-pour adjustments. Multiple gang boxes shall also provide a removable barrier between the individual compartments for greater capacity when required.

D. Cast-Iron Boxes: Box interior and exterior shall be painted. Boxes shall be available in one-, two-, and three-gang configurations. Boxes shall also be available in deep and shallow versions. Box shall provide 1-3/4 inches of pre-pour adjustment and 1/2-inch of post-pour adjustment.
   1. Covers and Flanges: Floor box options shall accept brass, brushed aluminum, and nonmetallic cover plates and flanges. Custom chrome flanges for brass, brushed aluminum, and nonmetallic cover plates shall be available in one-, two-, and three gang applications. Each flange shall provide 1/2-inch of adjustment to accommodate various floor coverings and concrete depths.
   2. Flanges shall accommodate connectivity outlets and modular inserts.
   3. Modular inserts shall snap directly into each flange through the use of a mounting bezel.

E. Stamped Steel Boxes: Boxes shall be manufactured from stamped steel and formed. Boxes shall be available in one-, two-, and three-gang configurations. Boxes shall also be available in deep and shallow versions. All stamped steel versions shall provide 1-3/4 inches of pre-pour adjustment and 1/2-inch of post-pour adjustment.
   1. Covers and Flanges: Floor box options shall accept both brass and nonmetallic cover plates and flanges. Flanges for both brass and nonmetallic shall be available in one-, two-, and three gang applications and install on the previous mentioned boxes. Each flange shall provide 1/2-inch of adjustment to accommodate various floor coverings and concrete depths.
   2. Flanges shall accommodate connectivity outlets and modular inserts. Where indicated, provide connectivity outlets and modular inserts by Ortronics or approved equal.
   3. Modular inserts shall snap directly into each flange through the use of a mounting bezel.

F. Nonmetallic Multiservice Floor Boxes: Boxes shall be manufactured through the use of injection molded Geon M3900 PVC material. The box shall be rectangular in shape. Box shall allow for ganging of boxes together through the dovetail, interlocking mechanism. Knockouts shall be provided on the side walls of each box to provide for pass-through capability between each gang. Box shall also have concrete depth markings on the exterior of the box to indicate box depth at the time of the pour. Box shall also provide graduated cubic inch markings on the interior of the box to indicate volume capacity at the appropriate box depth. Box shall accommodate concrete depths from 3-1/2 inches minimum to 6 inches maximum.
   1. Floor boxes shall provide two 1-1/4-inch conduit openings to feed cabling to the box. Box shall provide the means to reduce this opening to fit 1-inch, 3/4-inch and 1/2-inch conduit sizes. Box shall be equipped with a high impact mudcap to protect the box from damage and prevent concrete entry during the pour and debris entry after the pour. Box shall also provide ratchet teeth along interior box walls to attach cover. Box shall include internal spacer to prevent deformation of the box sidewalls when high temperature additives are used in the concrete pour.
   2. Adjusting rings shall be used to attach flanges and covers to the floor box body. Adjusting ring shall have ratchet teeth to align with the teeth on box wall to connect box body without the use of adhesive or mechanical fasteners. Adjusting ring shall provide for 10 degrees of adjustment after concrete pour to adjust to various concrete conditions and floor finishes. Provide brass inserts to mount finish flanges to box body. Adjusting ring shall also provide for grounding locations using brass inserts.
   3. Adjusting ring shall provide the ability to accept a modular connectivity system. Modular communication inserts shall snap directly into the adjusting ring openings. Adjusting ring shall provide a fiber storage loop to maintain proper fiber optic bend radius control and excess fiber storage. Each adjusting ring shall except up to six connectivity activation locations. Adjusting ring shall allow modular connectivity inserts to be mounted recessed and protected when not in use.
   4. Covers and Flanges: Floor box options shall accept both brass and nonmetallic cover plates and flanges. Flanges for both brass and nonmetallic cover plates shall be available in one-, two-, and three-gang applications. Each flange shall provide 1/2 inches of adjustment to accommodate various floor coverings and concrete depths.
   5. Flanges shall accommodate connectivity outlets and modular inserts.
   6. Modular inserts shall snap directly into each flange using a mounting bezel.

G. Multi-Compartment Boxes: Floor boxes shall be manufactured in stamped steel or cast-iron. Box shall be available in shallow version for stamped steel and deep version for stamped steel and cast iron. Box shall have four independent wiring compartments that allow up to 4 duplex receptacles and/or communications services.
   1. Boxes shall permit a tunneling feature that will allow internal wiring to various compartments. The box shall provide various size conduit openings.
   2. Boxes shall be fully adjustable, providing a maximum of 1-7/8-inch pre-pour adjustment, and a maximum of 3/4-inch post-pour adjustment.
   3. Boxes shall provide a series of device mounting plates that will accept both duplex power devices, as well as plates that will accommodate connectivity outlets and modular inserts.

Where indicated, provide connectivity outlets and modular inserts by Ortronics or approved equal.

Specifier Note: In the following subparagraph, retain only one finish and delete the others.

4. Activation covers shall be die-cast aluminum. Cover finish shall be as follows:
   a. Brushed aluminum finish.
   b. Powder coat finish, color shall be Black.
   c. Powder coat finish, color shall be Brass.
5. Activation covers shall be available in flanged or flangeless versions as selected. Covers shall be available with options for tile or carpet inserts, blank covers, or covers with concentric 1-1/4-inch and 2-inch trade size plug openings for furniture feed applications as applicable.

H. Concrete Depth: The minimum concrete depth shall depend on the type box used. Each box shall contain 4 locations to attach the box to the slab or concrete form or accommodate leveling for pre-pour adjustment.

2.5 POKE-THRU DEVICES

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

A. Poke-Thru Devices: [FIT, RC91GHBTC, RC92GHBTC] Pedestal Poke-Thru Series by Walker Systems Inc, A Wiremold Company.
   1. Poke-thru device provides an interface between power and communications cabling in an above grade concrete or steel deck floor and the workstation or activation location where power and or data communication device outlets are required. Refer to the Drawings for types.

Specifier Note: Reference note: poke-thru device use is limited by the UL Fire Resistance Directory to a minimum spacing of 2 feet on center and not more than one device per 65 square feet of floor area in each span.

B. Classification and Use: Poke-thru device shall have been examined and tested by Underwriters Laboratories Inc. to comply with UL263, UL514A and/or UL514C, as applicable and tested to Canadian Standard C22.2 and bear the cULus mark. The poke-thru shall conform to the standards set in the National Electrical Code, Section 300-21.
   1. Poke-thru device shall be for use in 1, 1-1/2, or 2-hour rated, unprotected reinforced concrete floors and 1, 1-1/2, or 2 hour rated floors employing unprotected steel floor units and concrete toppings (D900 Series designs), or concrete floors with suspended ceilings. Fire resistive designs with suspended ceilings shall have provisions for accessibility in the ceiling below the poke-thru device fittings.
   2. Poke-thru device shall have been evaluated by UL to meet the applicable U.S. and Canadian safety standards for scrub water exclusion when used on tile, terrazzo, wood, and carpet covered floors.
   3. Poke-thru device shall be suitable for use in air handling spaces in accordance with Section 300-22C of the National Electrical Code.

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

C. Flush Furniture Feed: RC7AFFTC, RC9AFFTC, RC9AM2TC Furniture Feed P-T Series by Walker Systems Inc, A Wiremold Company. Assembly shall consist of an insert and an activation service head cover for flush mounted installation.
   1. RC7AFFTC Insert Body: Furnish with necessary channels to provide complete separation of power and communication services. There shall be one 3/4-inch channel for power and two 1/2-inch channels for communication cabling. The channels shall be arranged such that communication cables can be conduit protected and connected to the insert body.

2. RC9AFFTC Insert Body: Furnish with 1/2-inch trade size conduit for power and 1-1/4-inch trade size conduit for communication.
3. RC9AM2TC Insert Body: Furnish with 2-inch trade size conduit stem for either all power or all communication.
4. RC7AFFTC Poke-thru Device Insert: Consisting of a 3/4-inch conduit stub that is connected to the insert body and a 24.5 cubic inch stamped steel junction box for wire splices and connections.
5. Body shall consist of an intumescent firestop material to maintain the fire rating of the floor assembly. The intumescent material shall be held securely in place in the insert body and shall maintain the floor assembly fire rating without adjustment to the unit. Insert shall have a spring steel retaining ring that will hold the poke-thru device in the floor slab.
6. The RC7AFFTC activation cover shall provide three conduit openings to feed modular furniture applications and provide a flush appearance. The activation cover flange shall be one piece and manufactured of die-cast aluminum alloy and be capable of being powder coated or plated. The activation cover shall also be available in solid brass forging. A gasket shall be attached to the underside of the service head to be scrub watertight. Coated finish to be textured, two-stage epoxy paint in gray, black, or ivory, brushed brass and brushed aluminum finishes as selected.

D. Surface Mounted Furniture Feed: Assembly shall consist of an insert and an activation service head cover. The assembly shall be surface mounted.
1. The RC9AFFTC insert body shall have the necessary channels to provide complete separation of power and communication services. There shall be one 1/2-inch conduit channel for power wiring and one 1-1/4-inch conduit channel for communication cables.
2. Insert body shall consist of an intumescent firestop material to maintain the fire rating of the floor assembly. The intumescent material shall be held securely in place in the insert body and shall not have to be adjusted to maintain the fire rating of the unit and the floor slab. Insert shall have a spring steel retaining ring that will hold the poke-thru device in the floor slab.
3. The activation services head shall be manufactured of die-cast alloy and consist of a trim flange and a hexagonal service head. The activation cover shall be capable of being powder coated or plated. Finish shall be textured, two-stage epoxy paint available in gray or black finish as selected. A gasket is attached to the underside of the service head to be scrub watertight. Service head shall have six openings to address both power and communication requirements. Five openings shall have rubber grommets for communication cable pass-through. The sixth opening shall have a zinc die-cast threaded drop-in hub to accept a 3/4-inch conduit connector for power only. The service head shall be 2-5/32 inches high and 5-1/2 inches in diameter. The trim flange shall be 7 inches in diameter.
4. The RC9AM2TC Series activation cover shall be manufactured of aluminum die cast alloy. The activation cover shall be capable of being powder coated or plated. Finish shall be textured, two-stage epoxy paint available in a gray or black finish. Attach a gasket to the underside of the activation cover trim flange to maintain scrub water tightness. Trim flange shall have a combination 1-1/4 - 2-inch trade size conduit opening and closure plugs. The trim flange shall be 7 inches in diameter. All power connections must be made in a junction box below provided by others.

Specifier Note: In the following paragraph, retain only those products that are to be incorporated into the project and delete the others.

E. Flush Poke-Thru: RC7, RC9, RC3, RC4, AV3, and AMD8 Flush Poke-Thru Series by Walker Systems Inc, A Wiremold Company. Assembly shall consist of an insert and an activation service head cover for flush mounted installation.
1. RC7, RC9, RC3, and RC4 insert bodies shall have necessary channels to provide complete separation of power and communication services. There shall be one 3/4-inch conduit channel and two 1/2-inch conduit channels for power and communication cabling.

The channels shall be arranged such that communication cables can be conduit protected and connected to the insert body using a die-cast conduit connector with two 1/2-inch threaded openings to accept both rigid and flexible conduit connectors. The insert may also consist of up to four receptacles.

2. AV3 and AMD8 insert bodies shall have the channels necessary to provide complete separation of power and communication services. There shall be one 3/4-inch trade size channel for power and one 1-1/4-inch trade size channel for communication cabling. Arrange the channels such that communication cables can be conduit protected and connected to the insert body using a standard 1-1/4-inch trade size compression fitting coupler.
3. Insert body shall contain a nonmetallic bracket that will accommodate up to four connectivity modular inserts. The nonmetallic bracket shall also provide the necessary separation of power and communication services throughout the poke-thru body. The nonmetallic bracket shall also have an integral rubber grommet at the communication compartment opening to protect communication cables as they pass through the poke-thru body. The body will consist of an intumescent firestop material to maintain the fire rating of the floor assembly. The intumescent material shall be held securely in place in the insert body and shall maintain the floor assembly fire rating without adjustment to the unit. Insert shall have a spring steel retaining ring that will hold the poke-thru device in the floor slab.
4. Activation Cover: The activation cover shall be manufactured of die-cast aluminum alloy and be capable of being powder coated or plated. The activation cover shall also be available in a solid brass forging. Coated finish to be textured, two-stage epoxy paint in gray, black, or ivory as selected. Activation cover shall also be available in a solid brass forging or plated brass and a brushed aluminum finish. A gasket shall be attached to the underside of the trim flange to be scrub watertight. The activation cover slide holder shall be manufactured from textured PVC and be available in gray, black, ivory, and brass colors. The activation slide cover shall provide spring-loaded slides that snap back in place when not in use to protect the flush mounted power receptacle.

F. Communication Modules Mounting Accessories: The poke-thru manufacturer shall have available open modular inserts to facilitate mounting UTP (including Category 5, 5e, 6), STP, fiber optic, coaxial, and data/communications devices. The AV3 series shall accommodate Extron MAAP mini architectural adapter plates. Where indicated, provide connectivity outlets and modular inserts by Ortronics or approved equal.

G. Mounting: Units shall permit wiring to be completed at floor level. The units shall mount in either a 3-inch or 4-inch core hole as applicable. Installation shall be completed by pushing unit down into a cored hole. The specified poke-thru shall be UL listed to US and Canadian standards for use on carpet, tile, terrazzo, and wood covered floors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions under which raceways, boxes, distribution systems, accessories, and fittings are to be installed and substrate that will support raceways. Notify the [Architect/Engineer] [Construction Manager] in writing of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Strictly comply with manufacturer's installation instructions and recommendations and approved shop drawings. Coordinate installation with adjacent work to ensure proper clearances and to prevent electrical hazards.

1. Mechanical Security: Raceway systems shall be mechanically continuous and connected to all electrical outlets, boxes, device mounting brackets, and cabinets, in accordance with manufacturer’s installation sheets.

2. Electrical Security: Metal raceway shall be electrically continuous and bonded in accordance with the National Electric Code for proper grounding.
3. Raceway Support: Raceway shall be supported at intervals not exceeding 5 feet or in accordance with manufacturer's installation sheets.
4. Accessories: Provide accessories as required for a complete installation, including insulated bushings and inserts where required by manufacturer.
5. Unused Openings: Close unused raceway openings using manufacturer's recommended accessories.

3.3 CLEANING AND PROTECTION

A. Clean exposed surfaces using non-abrasive materials and methods recommended by manufacturer.

B. Protect raceways and boxes until acceptance.

END OF SECTION

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