

SECTION 09260 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 1. Interior gypsum wallboard.
 2. Exterior gypsum panels.
 3. Tile backing panels.
 4. Non-load-bearing steel framing.

1.2 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For gypsum board assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction. Products used in the assembly shall carry a classification label from a testing laboratory acceptable to authority having jurisdiction.
- B. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.

PART 2 - PRODUCTS

2.1 STEEL FRAMING

- A. Steel Framing, General: Comply with ASTM C 754 for conditions indicated.
- B. Suspended Ceiling and Soffit Framing
 1. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 00625 inch diameter wire, or double strand of 0-0475 inch diameter wire.
 2. Hanger Attachments to Concrete:
 - a. Powder-Actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other devices for attaching hangers of type indicated, and capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E 1190 by a qualified independent testing agency.
 3. Wire Hangers: ASTM A641/A 641M, Class 1 zinc coating, soft temper, 0162 inch diameter.
 4. Carrying Channels: Cold-formed commercial-steel sheet with a base metal thickness of 0.0538 inch, a minimum ½ inch wide flange, and in depth indicated.
 5. Furring Channels (Furring Members):
 - a. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch deep.

- 1) Minimum Base Metal Thickness: 0-0179 inch or members that can show independently verified test performance per ASTM C645 Section 9.2.
- C. Grid Suspension System for Interior Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
1. Armstrong World Industries, Inc.; Furring Systems/Drywall.
 2. USG Interiors, Inc.; Drywall Suspension System.
- D. Partition and Soffit Framing:
1. Steel Studs and Runners: ASTM C 645, in depth indicated.
 - a. Minimum Base Metal Thickness: 0.0329 inch.
 2. Deep-Leg Deflection Track: ASTM C 645 top runner with 2 inch deep flanges.
 3. Proprietary Deflection Track: Steel sheet top runner manufactured to prevent cracking of gypsum board applied to interior partitions resulting from deflection of structure above; in thickness indicated for studs and in width to accommodate depth of studs.
 - a. Products:
 - 1) Delta Star, Inc., Superior Metal Trim; Superior Flex Track System (SFT)
 - 2) Metal-Lite, Inc., "The System"
 - 3) Dietrich Metal Framing; SLP-TRK® Slotted Deflection Track by Brady Innovations
 4. Proprietary Firestop Track: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.
 - a. Products:
 - 1) Fire Trak Corp.; Fire Trak
 - 2) Metal-Lite, Inc.; The System
 - 3) Dietrich Metal Framing; SLP-TRK® Slotted Deflection Track by Brady Innovations.
 5. Cold-Formed Channel Bridging and Bracing: 0-053 8 inch bare steel thickness, with minimum ½ inch wide flange, and in depth indicated.
 - a. Subject to compliance with requirements, provide one of the following:
 - 1) Dietrich Metal Framing; Spazzer® 9200 Bridging and Spacing Bar or equivalent
 - 2) U-Channel Assembly: 3/4 inches, 1-1/2 inches, 2 inches.
 - a) Dietrich Metal Framing; EasyClip™ U-Series™ Clip Angle or equivalent.
 6. Hat-Shaped, Rigid Furring Channels: ASTM C 645, in depth indicated.
 - a. Minimum Base Metal Thickness: 0-0179 inch or members that can show independently verified test performance per ASTM C645 Section 9.2.
 7. Resilient Furring Channels: ½ inch deep, steel sheet members designed to reduce sound transmission asymmetrical or hat shaped, with face attached to single flange by a slotted leg (web) or attached to two flanges by slotted or expanded metal legs.
 - a. Subject to compliance with requirements, provide Dietrich Metal Framing Resilient Channel RCSD, RCUR.
 8. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
 9. Flat Strap and Backing Plate: Sheet for blocking and bracing in length and width indicated:
 - a. Subject to compliance with requirements, provide Dietrich Metal Framing: Danback™ Fire Treated Wood Backing Plate D16F, D24F or equivalent

b. Galvanized Sheet Steel

2.2 PANEL PRODUCTS

- A. Panel Size, General: Provide in maximum lengths and widths available that will minimize joints in each area and correspond with support system indicated.
- B. Gypsum Wallboard: ASTM C 1396.
 - 1. Regular Type: In thickness indicated and with long edges tapered.
 - 2. Type X: In thickness indicated and with long edges tapered.
- C. Sag-Resistant Gypsum Wallboard: ASTM C 1396, manufactured to have more sag resistance than regular-type gypsum board, 1/2 inch thick, and with long edges tapered. Apply on ceiling surfaces.
- D. Proprietary, Special Fire-Resistive Type: ASTM C 1396, having improved fire resistance over standard Type X, complying with requirements of fire-resistance-rated assemblies indicated, in thickness indicated, and with long edges tapered, tapered and featured (rounded or beveled) for prefilling.
- E. Foil-Backed Gypsum Wallboard: ASTM C 1396, with core type and in thickness indicated, and with long edges tapered.
- F. Proprietary Abuse-Resistant Gypsum Wallboard: ASTM C 1396, manufactured to produce greater resistance to surface indentation and through-penetration than standard gypsum panels, with core type and in thickness indicated, and with long edges tapered.
 - 1. National Gypsum Company; Gold Bond Hi-Abuse Wallboard.
 - 2. United States Gypsum Co.; SHEETROCK Brand Abuse-Resistant Gypsum Panels.
- G. Exterior Gypsum Panels:
 - 1. Glass-Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M, with core type and in thickness indicated.
 - a. Product: G-P Gypsum Corp.; Dens-Glass Gold
- H. Tile Backing Panels:
 - 1. Water-Resistant Gypsum Backing Board: ASTM C 1396, with core type and in thickness indicated
 - 2. Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with core type and in thickness indicated
 - a. Product: G-P Gypsum Corp; Dens-Shield Tile Backer
 - 3. Cementitious Backer Units: ANSI A11 S9, in thickness indicated

2.3 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047. Subject to compliance with requirements, provide drywall trims and accessories by Dietrich Metal Framing or equivalent.
 - 1. Cornerbead: Use at outside corners.
 - 2. LC-Bead: Use at exposed panel edges
 - 3. L-Bead: Use where indicated

4. U-Bead: Use where indicated
 5. Expansion (Control) Joint: Use where indicated
- B. Exterior Trim: ASTM C 1047, hot-dip galvanized steel sheet or rolled zinc.
1. Cornerbead: Use at outside corners
 2. LC-Bead: Use at exposed panel edges
 3. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening. Use where indicated.
- C. Extruded accessories of profiles and dimensions indicated.
1. Material: Aluminum alloy and temper with not less than the strength and durability properties of ASTM B221, alloy 6063-T5.
 2. Manufacturers:
 - a. Fry Reglet Corp.
 - b. Gordon, Inc.
 - c. MM Systems Corporation
 - d. Pittcon Industries
 - e. Dietrich Metal Framing
 3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.4 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475 B
- B. Joint Tape:
1. Interior Gypsum Wallboard: Paper
 2. Glass-Mat Gypsum Sheathing Board: 10 by 10 glass mesh
 3. Tile Backing Panels: As recommended by panel manufacturer
- C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
1. Prefixing: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
 2. Embedding and First Coat: For embedding tape and first coat on joints, flanges of trim accessories, and fasteners, use drying-type, all-purpose compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 3. Fill and Finish Coats: For second and third coat, use setting-type, sandable topping compound.
 4. For final coat of Level 4 finish, use drying-type, all-purpose compound.
- D. Joint Compound for Exterior Applications
1. Glass-Mat Gypsum Sheathing Board: As recommended by manufacturer.
- E. Joint Compound for Tile Backing Panels:
1. Water-Resistant Gypsum Backing Board: Use setting-type taping and setting-type, sandable topping compounds.
 2. Glass-Mat, Water-Resistant Backing Panel: As recommended by manufacturer.
 3. Cementitious Backer Units: As recommended by manufacturer.

2.5 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Acoustical Sealant for Exposed and Concealed Joints: No sag, paint able, no staining, latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 - 1. Products:
 - a. Pecora Corp.; AC-20 FTR Acoustical and Insulation Sealant
 - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant
- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0-033 to 0-112 inch thick and complying with ASTM C 1002 for steel framing less than 0-0329.
 - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Air Infiltration Barrier:
 - 1. "Tyvek" Building Wrap
 - 2. "Green Guard" Building Wrap

PART 3 - EXECUTION

3.1 NON-LOAD-BEARING STEEL FRAMING INSTALLATION

- A. General: Comply with ASTM C 754, and ASTM C 840 requirements that apply to framing installation.
- B. Suspended Ceiling and Soffit Framing:
 - 1. Suspend ceiling hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
 - 3. Attach hangers to structural members. Do not support ceilings from or attach hangers to permanent metal forms, steel deck tabs, steel roof decks, ducts, pipes, or conduit.

4. Wire-tie or clip furring channels to supports, as required to comply with requirements for assemblies indicated.
 5. Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- C. Partition and Soffit Framing:
1. Where studs are installed directly against exterior walls, install isolation strip between studs and wall.
 2. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.
 3. Frame door openings to comply with GA-600 and with gypsum board manufacturer's applicable written recommendations, unless otherwise indicated. Screw vertical studs at jambs to jamb anchor dips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
 - a. Install two studs at each jamb, unless otherwise indicated.
 - b. Extend jamb studs through suspended ceilings and attach to underside of floor or roof structure above.
 4. Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.

3.2 PANEL PRODUCT INSTALLATION

- A. Gypsum Board: Comply with ASTM C 840 and GA-216
1. Space screws a maximum of 12 inches o-c for vertical applications.
 2. Space fasteners in panels that are tile substrates a maximum of 8 inches o-c.
 3. On ceilings, apply gypsum panels before wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
 4. Single-Layer Fastening Methods: Apply gypsum panels to supports with steel drill screws.
 5. Multilayer Fastening Methods: Fasten base layers as required by specified assembly.
 6. Add control joints per ASTM C 840 unless indicated on the drawings
- B. Exterior Ceilings and Soffits: Apply exterior gypsum panels perpendicular to supports, with end joints staggered and located over supports.
1. Fasten with corrosion-resistant screws.
- C. Tile Backing Panels:
1. Water-Resistant Gypsum Backing Board: Install with 1/4-inch gap where panels abut other construction or penetrations.
 2. Glass-Mat, Water-Resistant Backing Panel: Install with 1/4-inch gap where panels abut other construction or penetrations.
 3. Cementitious Backer Unit Application: ANSI A108.11.

3.3 FINISHING

- A. Installing Trim Accessories: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Finishing Gypsum Board Panels: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration.
 - 1. Prefill open joints, rounded or beveled edges, and damaged surface areas.
 - 2. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
 - 3. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
 - 4. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.
- C. Cementitious Backer Units: Finish according to manufacturer's written instructions.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840, for locations indicated:
 - 1. Level 1: Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistance-rated assemblies and sound-rated assemblies.
 - 2. Level 2: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where panels are substrate for tile and where indicated.
 - 3. Level 4: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges at panel surfaces to receive paint.

END OF SECTION 09260

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SECTION 09310 - CERAMIC TILE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Ceramic mosaic tile.
2. Glazed floor tile.
3. Stone thresholds installed as part of tile installations.
4. Metal edge strips installed as part of tile installations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products by the following HT approved manufacturer:

Product: Daltile/American Olean
Contact Person: Jonathan Studioso
405 Forsyth Hall Drive
Charlotte, NC 28273
Ph: 704.516.6310
jonathan.studioso@daltile.com

B. Novabell Roma Tile

C. Crossville Ceramics company, L.P.

Product: Crossville Incorporated
Contact Person: Anthony Coggins (Branch Manager)
Danny Guelzow, CSR
927-B Pressley Road
Charlotte, NC 28217
Ph: 704.927.8453
Fax: 704.927.8453
rcoggins@crossvilleinc.com
dguelzow@crossvilleinc.com

2.2 TILE PRODUCTS

- A. Manufacturers:
1. Daltile/American Olean
 2. Crossville Ceramics Company, L.P.
 3. Novabell Roma Tile
- B. ANSI Ceramic Tile Standard: Provide Standard grade tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
- C. Glazed Ceramic Mosaic Tile CT: Factory-mounted flat tile as follows:
1. Composition: Porcelain
 2. Module Size: As indicated on finish schedule.
 3. Thickness: As indicated on finish schedule
 4. Face: Plain, with cushion edges.
 5. Color: As indicated on finish schedule
 6. Products:
 - a. Laufen International Tile; See finish schedule.
 - b. Novabell Roma Tile; See Finish Schedule.
 - c. Crossville Tile; See Finish Schedule.
- D. Glazed Ceramic Floor Tile: Factory-mounted flat tile as follows:
1. Composition: Porcelain
 2. Module Size: As indicated on finish schedule.
 3. Thickness: As indicated on finish schedule
 4. Face: Plain, with cushion edges.
 5. Color: As indicated on finish schedule
 6. Products:
 - a. Novabell Roma Tile; See Finish Schedule.
- E. Ceramic Mosaic Trim Units: Matching characteristics of adjoining flat tile and coordinated with sizes and coursing where applicable.
1. Base Cove: Cove, module size; As indicated on finish schedule
 2. Base Cap: Bullnose, module size; As indicated on finish schedule
 3. External Corners: Bullnose, module size; As indicated on finish schedule
 4. Internal Corners: Cove, module size; As indicated on finish schedule

2.3 ACCESSORY MATERIALS

- A. Thresholds: Fabricate to provide transition between adjacent floor finishes. Bevel edges at 1:2 slope; limit height of bevel to 1/2 inch or less, and finish bevel to match face of threshold.
 - 1. Marble Thresholds: ASTM C 503 with a minimum abrasion resistance of 10 per ASTM C 1353 or ASTM C 241 and with honed finish.
 - a. Description: Uniform, fine- to medium-grained white stone with gray veining.
- B. Waterproofing for Thin-Set Tile Installations: Manufacturer's standard product that complies with ANSI A118.10
 - 1. Fabric-Reinforced, Fluid-Applied Product: Liquid-latex rubber with fabric reinforcement.
 - a. Products:
 - 1) LATICRETE International Inc.; Laticrete 9235 Waterproof Membrane.

2.4 SETTING AND GROUTING MATERIALS

- A. Manufacturers:
 - 1. LATICRETE International Inc.
 - 2. MAPEI Corporation.
- B. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.1A.
- C. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4.
 - 1. Prepackaged dry-mortar mix combined with liquid-latex additive.
- D. Organic Adhesive: ANSI A136.1, Type I.
- E. Chemical-Resistant, Water-Cleanable, Tile-Setting and Grouting Epoxy: ANSI A 118.3.
- F. Standard Sanded Cement Grout: ANSI A118.6, color as indicated.
- G. Standard Unsanded Cement Grout: ANSI A118.6, color as indicated.
- H. Polymer-Modified Tile Grout: ANSI A118.7, color as indicated.
 - 1. Polymer Type: Liquid-latex form for addition to prepackaged dry-grout mix.

2.5 MISCELLANEOUS MATERIALS

- A. Elastomeric Sealants: Elastomeric sealants of base polymer and characteristics indicated that comply with applicable requirements in Division 7 Section "Joint Sealants."
1. One-Part, Mildew-Resistant Silicone: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for in-service exposures of high humidity and extreme temperatures.
 - a. Products:
 - 1) Dow Corning Corporation; Dow Corning 786.
 - 2) GE Silicones; Sanitary 1700.
 - 3) Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
 - 4) Tremco, Inc.; Tremsil 600 White.
 2. Multipart, Pourable Urethane Sealant for Use T: ASTM C 920; Type M; Grade P; Class 25; Uses T, M, A, and, as applicable to joint substrates indicated, O.
 - a. Products:
 - 1) Pecora Corporation; NR-200 Urexpan.
 - 2) Tremco, Inc.; THC-900.
- B. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials, unless otherwise specified in Division 3.
- C. Metal Edge Strips: Angle or L-shape, white zinc alloy exposed-edge material.
- D. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints that does not change color or appearance of grout.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.
- B. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions.
- C. Remove protrusions, bumps, and ridges by sanding or grinding.
- D. Blending: For tile exhibiting color variations, use factory blended tile or blend tiles at Project site before installing.

- E. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, pre-coat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.2 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
- B. TCA Installation Guidelines: TCA's "Handbook for Ceramic Tile Installation." Comply with TCA installation methods indicated in ceramic tile installation schedules.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Grind cut edges of tile abutting trim, finish, or built-in items. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- E. Jointing Pattern: Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise indicated.
- F. Expansion Joints: Locate expansion joints and other sealant-filled joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Locate joints in tile surfaces directly above joints in concrete substrates.
 - 2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."
- G. Grout tile to comply with requirements of ANSI A108.10, unless otherwise indicated.
 - 1. For chemical-resistant epoxy grouts, comply with ANSI A108.6.
- H. Install waterproofing to comply with ANSI A108.13 and waterproofing manufacturer's written instructions to produce waterproof membrane of uniform thickness bonded securely to substrate.
 - 1. Do not install tile over waterproofing until waterproofing has cured and been tested to determine that it is watertight.
- I. For installations indicated below, follow procedures in ANSIA 108 Series tile installation standards for providing 95 percent mortar coverage.
 - 1. Tile floors in wet areas.
 - 2. Tile floors composed of tiles 8 by 8 inches or larger.

3. Tile floors composed of rib-backed tiles.
- J. Install tile on floors with the following joint widths:
1. Ceramic Mosaic Tile: 1/16 inch
 2. Quarry Tile: 1/4 inch
 3. Paver Tile: 1/4 inch
- K. Stone Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile, unless otherwise indicated.
1. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent non-tile floor finish.
- L. Metal Edge Strips: Install at locations indicated or where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.
- M. Install tile on walls with the following joint widths:
1. Ceramic Mosaic Tile: 1/16 inch
 2. Glazed Wall Tile: 1/16 inch
 3. Quarry Tile: 1/4 inch

3.3 FLOOR TILE INSTALLATION SCHEDULE

- A. Interior floor installation on concrete; cement mortar bed (thickset) bonded to concrete; TCAF112.
1. Bond Coat/Thin-Set Mortar: Latex-portland cement mortar.
 2. Grout: Polymer-modified sanded.
- B. Interior floor installation on concrete; thin-set mortar; TCA F113.
1. Thin-Set Mortar: Latex-portland cement mortar.
 2. Grout: Polymer-modified sanded grout.
- C. Interior floor installation on waterproof membrane over concrete; thin-set mortar; TCA F122.
1. Thin-Set Mortar: Latex-portland cement mortar.
 2. Grout: Polymer-modified sanded grout.

3.4 WALL TILE INSTALLATION SCHEDULE

- A. Interior wall installation over solid backing, organic adhesive; TCA W223.
1. Grout: Polymer-modified un-sanded grout
- B. Interior wall installation; thin-set mortar; over gypsum board; TCA W243.
1. Thin-Set Mortar: Latex-portland cement mortar.

2. Grout: Polymer-modified un-sanded grout.

END OF SECTION 09310

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SECTION 09511 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes acoustical panels and exposed suspension systems for ceilings.

1.2 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics:
 - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Ratings are indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.
 - a. Identify materials with appropriate markings of applicable testing and inspecting agency.

1.3 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Ceiling Panels: Full-size panels equal to 5 percent of quantity installed for each type, color, and pattern.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 GENERAL

- A. Acoustical Panel Standard: Comply with ASTM E 1264.
- B. Metal Suspension System Standard: Comply ASTM C 635.

- C. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
 - 1. CISCA's Recommendations for Acoustical Ceilings: Comply with CISCA's "Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings".
- D. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated.
 - 1. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E 1190, conducted by a qualified testing and inspecting agency.
- E. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 - 1. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch diameter wire.
- F. Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that fit acoustical panel edge details and suspension systems indicated; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.
- G. Acoustical Sealant for Exposed and Concealed Joints: Non-sag, paintable, non-staining, latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 - 1. Products:
 - a. Pecora Corp.; AC-20 FTR Acoustical and Insulation Sealant.
- H. Acoustical Sealant for Concealed Joints: Non-drying, non-hardening, non-skinning, non-staining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce airborne sound transmission.
 - 1. Products
 - a. Pecora Corp.; BA-98.
 - b. Tremco, Inc.; Tremco Acoustical Sealant.

2.3 ACOUSTICAL PANELS

- A. Insulated Lay-In Panels with FRP on face side for Acoustical Panel Ceiling (APC-1). Where this designation is indicated, provide acoustical panels complying with the following:
 - 1. Products: Provide the following:
 - a. Nudo Products; Prelaminated Insulated Ceiling Panels #F3PB500-FR-MR-F200-CT.
 - 2. Thickness: 2 1/2-inch
 - 3. Pattern: Textured
 - 4. Color: White
 - 5. Size: 24 by 48 inches

- B. Water-Felted, Mineral-Base Acoustical Panels for Acoustical Panel Ceiling (APC-2 & APC-5): Where this designation is indicated, provide acoustical panels complying with the following:
1. Products: Provide one of the following:
 - a. Minaboard Cortega; Armstrong World Industries, Inc.
 - b. Hytone Baroque: The Celotex Corp.
 - c. Radar; USG Interiors, inc., Model No. 2310 "Climaplus".
 2. Classification: Panels fitting ASTM E 1264 for Type III, mineral base with painted finish Form 2, water felted.
 3. Color: White.
 4. Light Reflectance Coefficient: Not less than LR 0.80.
 5. Noise Reduction Coefficient: NRC 0.55.
 6. Ceiling Sound Transmission Class: CSTC 35.
 7. Edge Detail: Square.
 8. Thickness: 5/8 inches
 9. Size: 24 by 48 inches (APC-2) and 24 by 24 inches (APC-5).
- C. Moisture Resistant Gypsum Lay-In Panels for Acoustical Panel Ceiling (APC-3 & APC-4). Where this designation is indicated, provide acoustical panels complying with the following:
1. Products: Provide one of the following:
 - a. 1/2" Vinyl Covered Gypsum Board Panels. "Climaplus White".
 2. Pattern: Textured.
 3. Color: White.
 4. Gypsum Thickness: 1/2-inch
 5. Size: 24 by 48 inches (APC-4) and 24 by 24 inches (APC-3).

2.4 METAL SUSPENSION SYSTEM

- A. Suspension System for Acoustical Panel Ceiling (APC-1, APC-4 and APC-5): Where this designation is indicated, provide acoustical panel ceiling suspension system complying with the following:
1. Products: Provide one of the following:
 - a. Prelude Plus XL Fireguard Exposed Tee System; Armstrong.
 - b. Celogrid 700 Series Galv. Grid15/16"; Celotex
 - c. Snap Grid 1260 System with aluminum cap; Chicago Metallic Corp.
 2. Wide-Face, Capped, Double-Web, Hot-Dip Galvanized-Steel Suspension: Main and cross runners roll formed from cold-rolled steel sheet hot-dip galvanized according to ASTM A 653/A 653M, G60 coating designation, with prefinished, 15/16-inch wide, aluminum caps on flanges; other characteristics as follows:
 - a. Structural Classification: Intermediate-duty system
 - b. Aluminum Cap Finish: Painted white

2.5 METAL SUSPENSION SYSTEM

- A. Suspension System for Acoustical Panel Ceiling (APC-2 and APC-3): Where this designation is indicated, provide acoustical panel ceiling suspension system complying with the following:
1. Products: Provide one of the following:
 - a. Prelude XL Exposed Tee System; Armstrong.
 - b. Celogrid 900 15/16" Standard; Celotex
 - c. Snap Grid 1200 System with aluminum cap; Chicago Metallic Corp.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook".
- B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders.
- C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers, use trapezes or equivalent devices.
 - 1. Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.
 - 2. Do not attach hangers to steel deck tabs or to steel roof deck.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.

END OF SECTION 09511

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SECTION 09651 - RESILIENT FLOOR TILE

PART 1 -GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Vinyl composition tile (VCT).

1.2 PROJECT CONDITIONS

A. Install in temperature controlled environment, portable heaters are not recommended to maintain temperatures within range recommended by manufacturer, but not less than 65 deg F or more than 85 deg F, in spaces to receive floor tile during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After post installation period, maintain temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Close spaces to traffic during floor covering installation.

D. Close spaces to traffic for 48 hours after floor covering installation. Tile should not be exposed to rolling traffic for at least 72 hours

E. Install resilient products after other finishing operations, including painting, have been completed.

1.3 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish 5 boxes for every color and style of tile used in the installation. (coordinate with the Harris Teeter Project Manager for storage location.)

PART 2 - PRODUCTS

2.1 VINYL COMPOSITION TILE (VCT)

A. Vinyl Composition Tile (VCT): ASTM F 1066.

1. Products: Subject to compliance with requirements, provide products as indicated on the finish schedule.
 - a. Armstrong Floor Products.; Imperial Texture Standard Excelon, Safety Zone & Translation Series

Contact Person: Roxanne Shell
Armstrong Floor Products, 5812
Cross Point Court, Waxhaw, NC 28173,
Voice Mail: 800-356-9301 ext. 8869
(O): 704-243-1738
(F): 704-243-1738
(C): 704-516-3261
rishell@armstrong.com

- b. Amtico International Inc. 3" x 36" Lengths Only (Beveled edge)
- B. Color and Pattern: As indicated in finish schedule.
- C. Class: 2 (through-pattern tile).
- D- Wearing Surface: standard manufacturer's finishes.
- E. Thickness: 0.125 inch.
- F. Size: As indicated in finish schedule.
- G. Fire-Test-Response Characteristics:
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm per ASTM E 648.

2.2 INSTALLATION MATERIALS

- A. Trowel-able Leveling and Patching Compounds: Only products manufactured by Ardex are allowed on the entire project (Ardex - SD-F Feather Finish/SD-P Self Drying, Fast Setting concrete underlayment/K15 Self Levelling Underlayment Concrete)
- B. Adhesives:
 - 1. Water-resistant type APAC 510 (by APAC Adhesive www.apacadhesivs.com) for VCT. Follow manufacturer's instructions.
 - 2. Acrylic Emulsion Amtico SF Adhesive for Amtico flooring. Follow manufacturer's instructions.
- C. Metal Edge Strips: Stainless Steel with mill finish with a width of 1", of height required to protect exposed edges of tiles, and in maximum available lengths to minimize running joints, (mechanically fasten strips to the floor @12 o.c.)

PART 3-EXECUTION

3.1 PREPARATION

- A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.

- B. Concrete Substrates: Prepare according to ASTM F 710.
1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 2. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
 3. Moisture Testing:
 - a. Perform relative humidity of concrete test, ASTM F 2170. Proceed with installation only after substrates have maximum relative humidity of 75% for vct.
 - b. Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
- C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- D. Use trowel-able leveling and patching compound to fill cracks, holes, and depressions in substrates.
- E. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
1. Do not install resilient products until they are same temperature as space where they are to be installed.
- F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.
- G. Grind all control joints, saw cuts, cleanouts, floor penetrations, etc. on sales floor level with surrounding floor surface. Use manufacturers recommended floor leveling/patching compound to repair damaged floor surfaces.

3.2 INSTALLATION

- A. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
1. Lay tiles in pattern indicated. (per manufacture spec.'s)
- B. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.
1. Lay tiles with grain direction as shown on architectural drawings.
- C. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.
- D. Extend tiles into toe spaces, door reveals, closets, and similar openings.

- E. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
- F. Floor Medallions:
1. Level designated area utilizing Armstrong S-153 to achieve the desired thickness.
 2. Install felt utilizing Armstrong S-235 adhesive.
 3. When multiple felt layers are necessary, allow each layer to dry completely before installing additional layers.
 4. Adhere medallion to felt with Armstrong S-575 adhesive.
- G. Perform the following operations immediately after completing resilient product installation: 1. Process required day of the completion on the entire sales floor.
- a. Remove adhesive and other blemishes from exposed surfaces.
 - b. Sweep and vacuum surfaces thoroughly.
 - c. Damp-mop surfaces with neutral detergent solution.
 - d. Apply (1 coat of good quality Floor Polish)
- H. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

END OF SECTION 09651

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SECTION 09653 - RESILIENT WALL BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Wall base.
2. Stair accessories.
3. Molding accessories.

1.2 PROJECT CONDITIONS

A. Maintain temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After postinstallation period, maintain temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Install resilient products after other finishing operations, including painting, have been completed.

1.3 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 COLORS AND PATTERNS

- A. Colors and Patterns: As indicated on finish schedule.

2.3 RESILIENT WALL BASE (VWB)

- A. Wall Base: ASTM F 1861.
 - 1. Armstrong World Industries, Inc.
 - 2. Johnsonite.
 - 3. Roppe Corporation.
- B. Type (Material Requirement): TV (vinyl).
- C. Group (Manufacturing Method): II (layered).
- D. Style:
 - 1. Cove (with top-set toe).
 - 2. Straight with no toe at carpeted areas
- E. Minimum Thickness: 0.080 inch
- F. Height: 4 inches.
- G. Lengths: Coils in manufacturer's standard length, but not less than 96 feet.
- H. Outside Corners: Premolded
- I. Inside Corners: Premolded
- J. Surface: Smooth.

2.4 INSTALLATION MATERIALS

- A. Trowel-able Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturers for applications indicated.
- B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.
- C. Stair-Tread-Nose Filler: Two-part epoxy compound recommended by resilient tread manufacturer to fill nosing substrates that do not conform to tread contours.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.
- B. Concrete Substrates for Stair Accessories: Prepare according to ASTM F 710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
 - 3. Moisture Testing:
 - a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
 - b. Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
- C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- D. Use trowel-able leveling and patching compound to fill cracks, holes, and depressions in substrates.
- E. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
 - 1. Do not install resilient products until they are the same temperature as the space where they are to be installed.
- F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 RESILIENT WALL BASE INSTALLATION

- A. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- B. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
- C. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- D. Do not stretch wall base during installation.

- E. On masonry surfaces or other similar irregular substrates, fill voids along top edge of wall base with manufacturer's recommended adhesive filler material.
- F. Pre-molded Corners: Install pre-molded corners before installing straight pieces.

3.3 RESILIENT ACCESSORY INSTALLATION

- A. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor coverings that would otherwise be exposed.

3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after completing resilient product installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
 - a. Do not wash surfaces until after time period recommended by manufacturer.
- B. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

END OF SECTION 09653

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SECTION 09671 - RESINOUS FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. High-performance resinous flooring.
- B. Related Sections include the following:
 - 1. Division 3 Section "Cast-in-Place Concrete" for concrete substrates to receive resinous flooring.
 - 2. Division 7 Section "Joint Sealants" for joint-sealant materials and installation of sealant materials at joints in resinous flooring systems.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer (applicator) who has specialized in installing resinous flooring similar in material, design, and extent to that indicated for this Project and who is acceptable to resinous flooring manufacturer.
 - 1. Engage an installer who is certified in writing by resinous flooring manufacturer as qualified to install resinous flooring systems specified. Installer must have at least five years experience and have completed at least ten projects in the past year.
- B. Source Limitations: Obtain primary resinous flooring materials, including primers, resins, hardening agents, and sealing or finish coats, through one source from a single manufacturer. Provide secondary materials, including patching and fill material, joint sealant, and repair materials, of type and from source recommended by manufacturer of primary materials.
- C. Field Samples: On floor area selected by Contract Administrator, provide full-thickness resinous flooring system samples that are at least 48 inches square to demonstrate texture, color, thickness, chemical resistance, cleanability, and other features of each resinous flooring system required. Simulate finished lighting conditions for review of in-place field samples.
 - 1. If field samples are unacceptable, make adjustments to comply with requirements and apply additional samples until field samples are approved.
 - 2. After field samples are approved, these surfaces will be used to evaluate resinous flooring.
 - 3. Obtain Contract Administrator's approval of field samples before applying resinous flooring.
 - 4. Final approval of colors will be from field samples.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage and mixing with other components.
- B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with resinous flooring manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting resinous flooring application.
- B. Lighting: Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during resinous flooring application.
- C. Close spaces to traffic during resinous flooring application and for not less than 24 hours after application, unless manufacturer recommends a longer period.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products indicated for each designation in the Resinous Flooring schedule at the end of Part 3.

2.2 MATERIALS

- A. Resinous Flooring: Resinous floor surfacing system consisting of primer coat; a trowelled body coat comprised of epoxy resin, hardener, aggregates, and colorants, if any; two seal coats of clear epoxy, each coat being broadcast with decorative colored quartz aggregate to specifically match Sherwin Williams/General Polymers Color #314 Forest Green; an initial clear, top coat of high chemical resistant epoxy; and a final clear finish coat of Polyasphartic Resin and hardener. Minimum ¼" thick. Comply with requirements indicated in the Resinous Flooring Schedule.
- B. Patching and Fill Material: Resinous product of or approved by resinous flooring manufacturer and recommended by manufacturer for application indicated.
- C. Joint Sealant: Type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated.

PART 3 - EXECUTION

3.1 PREPARATION

- A. General: Prepare and clean substrates according to resinous flooring manufacturer's written instructions for substrate indicated. Provide clean, dry, and neutral substrate for resinous flooring application.
- B. Concrete Substrates: Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with resinous flooring.
 - 1. Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.
 - 2. Repair damaged and deteriorated concrete according to resinous flooring manufacturer's written recommendations.
- C. Resinous Materials: Mix components and prepare materials according to resinous flooring manufacturer's written instructions.
- D. Use patching and fill material to fill holes and depressions in substrates according to manufacturer's written instructions.
- E. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written recommendations.

3.2 APPLICATION

- A. General: Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
 - 1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate, and optimum intercoat adhesion.
 - 2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
 - 3. At substrate expansion and isolation joints, provide joint in resinous flooring to comply with resinous flooring manufacturer's written recommendations.
 - a. Apply joint sealant to comply with manufacturer's written recommendations.
- B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- C. Apply troweled or screeded body coat(s) in thickness indicated. Hand or power trowel and grout to fill voids. When cured, sand to remove trowel marks and roughness.
- D. Integral Cove Base: Apply cove base mix to wall surfaces at locations indicated. Round internal and external corners. Install cove base according to manufacturer's written instructions and details including taping, mixing, priming, troweling, sanding, and topcoating of cove base.

- E. Apply sealing or finish coat(s), including grout coat, if any, of type recommended by resinous flooring manufacturer to produce finish indicated. Apply in number of coats and at spreading rates recommended in writing by manufacturer.

3.3 FIELD QUALITY CONTROL

- A. Core Sampling: At the direction of Owner and at locations designated by Owner, take 1 core sample per 1000 sq. ft. of resinous flooring, or portion of, to verify thickness. For each sample that fails to comply with requirements, take 2 additional samples. Repair damage caused by coring and correct deficiencies at no additional cost to Owner.
- B. Material Sampling: Owner may at any time and any number of times during flooring application require material samples for testing for compliance with requirements.
 - 1. Owner will engage an independent testing agency to take samples of materials being used. Material samples will be taken, identified and sealed, and certified in presence of Contractor.
 - 2. Testing agency will test samples for compliance with requirements, using applicable referenced testing procedures or, if not referenced, using testing procedures listed in manufacturer's Product Data.
 - 3. If test results show installed materials do not comply with specified requirements, pay for testing, remove non-complying materials, prepare surfaces coated with unacceptable materials, and reapply flooring materials to comply with requirements.

3.4 CLEANING AND PROTECTING

- A. Protect resinous flooring from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by resinous flooring manufacturer.
- B. Clean resinous flooring not more than 4 days before dates scheduled for inspections intended to establish date of Substantial Completion in each Project area. Use cleaning materials and procedures recommended in writing by resinous flooring manufacturer.

3.5 RESINOUS FLOORING SCHEDULE

- A. Resinous Flooring (EP): Where this designation is indicated, provide resinous flooring system complying with the following:
 - 1. Products: Provide one of the following:
 - a. Stonehard, Inc. Stonehard; Stoneshield HRI Tweed Trowelled mortar system (upgraded to two decorative colored quartz broadcasts); one high chemical resistant clear top coat and one additional clear Polyaspartic Finish Coat.
 - b. General Polymers Corporation; TPM#115-U1 Trowelled Mortar system upgraded to two decorative colored quartz broadcasts, one high chemical resistant clear top coat and one additional clear Polyaspartic Finish Coat.
 - c. Alliance Specialty Products; Industrial Trowelled Flooring System upgraded to receive two broadcasts of decorative colored quartz, one high chemical resistant clear top coat and one additional clear Polyaspartic Finish Coat.
 - 2. Color: Color as indicated on Finish Materials Schedule.

3. System Thickness: Minimum ¼ inch.
4. Wearing Surface: Anti-slip with a coefficient of friction of 0.7 per ASTM D-2047.
5. Base: 4-inch high integral cove base unless indicated otherwise.
6. Components: Provide manufacturer's standard components complying with requirements, unless otherwise indicated. Provide the following optional components:
 - a. Primer: As recommended by manufacturer for system indicated.
 - b. Chemical-Resistant coating (final coat of Polyaspartic (4844) resin and hardner)
 - 1) Stonehard: Clear High Performance Epoxy and Clear Polyaspartic.
 - 2) General Polymers: Clear 3744 and Clear 4844 Polyaspartic.
 - 3) Alliance Specialty Products: Clear High Performance NovaCoat and Clear Polyaspartic.
7. Physical Properties: Provide resinous flooring system with the following minimum physical property requirements when tested according to standard test methods indicated:
 - a. Compressive Strength: 11,000 psi per ASTM C 579.
 - b. Tensile Strength: 6000 psi per ASTM C 307.
 - c. Flexural Modulus of Elasticity: 250,000 per ASTM C 580
 - d. Water Absorption: 0.1% maximum per ASTM C 413
 - e. Indentation: Withstands 2000 lbs/sq. inch for 30 minutes without indentation per MIL-D-3134.
 - f. Impact Resistance: Withstand 16 ft. lbs., without cracking, delaminations, or chipping.
 - g. Resistance to Elevated Temperature: No slip or flow at 158 degrees F per MIL-D-3134.
 - h. Abrasion Resistance: 0.1 gm maximum weight loss per ASTM D 4060.
 - i. Flammability: Self-extinguishing over concrete per ASTM D 635.
 - j. Hardness: Shore D 20 per ASTM D 2240.
 - k. Bond Strength: 305 psi, 100 percent concrete failure per ACI 503R.
 - l. Heat Resistance Limitation: 140 degrees F continuous exposure, 250 degrees F intermittent spills.
8. Chemical Resistance: Test specimens of cured resinous flooring systems are unaffected when tested according to ASTM D 1308 for 50 percent immersion in the following reagents for not less than 7 days.
 - a. Ammonium Hydroxide 10 percent and concentrated.
 - b. Citric Acid 10 percent.
 - c. Coffee.
 - d. Cola.
 - e. Detergent Solution, heavy-duty.
 - f. Germicidal solution.
 - g. Glycerine.
 - h. Lactic Acid 10-50 percent.
 - i. Lard.
 - j. Mayonnaise.
 - k. Mustard.
 - l. Motor Oil.
 - m. Vegetable Oil.
 - n. Syrup.

END OF SECTION 09671

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SECTION 09681 - CARPET TILE

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Submit Product Data for each type of carpet tile material and the following:
 - 1. Shop Drawings showing carpet tile type, color, and dye lot; type of sub-floor; pile direction; and type, color, and location of insets and borders.
 - 2. Samples of each type of carpet tile required (no larger than 12" x 12").
 - 3. Schedule of carpet tile using same room designations indicated on Drawings.
 - 4. Maintenance data for carpet tile to include in the operation and maintenance manual.
- B. Carpet Tile Surface Flammability: Class 2 Fire Rating per the ASTM E 648 Radiant Panel Test. Passes ISO6925/ASTM D 2829 Pill Test.
- C. Project Conditions: Comply with CRI 104, Section 6: "Site Conditions".
- D. Subfloor Moisture Conditions: Moisture emission rate of not more than 3 lb/1000 sq. ft./ 24 hours (14.6 kg/1000 sq. m/24 hours) when tested by calcium chloride moisture test in compliance with CRI 104, 6.2.1, with subfloor temperatures not less than 55 deg F (12.7 deg C).
- E. Subfloor Alkalinity Conditions: A pH range of 5 to 9 when subfloor is wetted with potable water and pHDrion paper is applied.
- F. Furnish extra full-size carpet tile units equal to 5 percent of amount installed, but not less than 10 sq. yd., packaged with protective covering for storage, and identified with labels clearly describing contents, before installation begins.
- G. Warranty: 3 year abrasive – carpet won't wear through to the backing.
 - 1. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
 - 2. Special Carpet Tile Warranty: Written warranty, signed by carpet tile manufacturer agreeing to replace carpet tile that does not comply with requirements or that fails within specified warranty period. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, and delamination.
- H. Substitutions: None Permitted

PART 2 - PRODUCTS

- A. Supplier: Refer to Harris Teeter National Account Contact List
- B. Carpet Tile:

1. Carpet CPT-1
 - a. Name: Dominator-LP
 - b. Style: Modular
 - c. Construction: Needle Felt
 - d. Pile Type: 100% Polypropylene
 - e. Appearance: Diagonal Pattern
 - f. Pile Weight: 33.9 oz
 - g. Tile Size: 19.69" x 19.69"
 - h. Color: Anthracite 1593 (Charcoal Black)
 - i. Total Weight: Between 125 and 131 oz.
 2. Carpet CPT-2
 - a. Name: Soft Step TF
 - b. Style: Modular
 - c. Construction: Needle Felt
 - d. Pile Type: 50% Polypropylene, 20% Nylon, 30% Polyester
 - e. Appearance: Diagonal Pattern
 - f. Pile Weight: 28 oz.
 - g. Tile Size: 19.69" x 19.69"
 - h. Color: Charcoal
 - i. Total Weight: 359 oz.
 3. Carpet CPT-3
 - a. Name: Diplomat
 - b. Style: Modular
 - c. Construction: Non Woven Hi-Lo pile
 - d. Pile Type: 100% Polypropylene
 - e. Appearance: Linear
 - f. Pile Weight: 60 oz.
 - g. Tile Size: 19.69"X 19.69"
 - h. Color: Smoke (Charcoal Grey)
 - i. Total Weight: 170 oz.
- C. Inventory – Supplier should have in stock a minimum of 15,000 square feet at all times.
- D. Concrete-Slab Primer: Non-staining type as recommended by carpet tile manufacturer.
- E. Trowel-able Underlayments and Patching Compounds: As recommended by carpet tile manufacturer.
- F. Adhesives: Water-resistant, mildew-resistant, non-staining type to suit products and subfloor conditions indicated and to comply with flammability requirements for installed carpet tile as recommended by carpet tile manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify that subfloors and conditions are satisfactory for carpet tile installation and comply with requirements specified in this Section and those of the carpet tile manufacturer.

- B. Level subfloor within $\frac{1}{4}$ inch in 10 feet (6 mm in 3 m), non-cumulative, in all directions.
 - 1. Use leveling and patching compounds to fill cracks, holes, and depressions in subfloor as recommended by carpet tile manufacturer.
- C. Remove subfloor coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone.
- D. Broom or vacuum clean subfloors to be covered with carpet tile. Following cleaning, examine subfloors for moisture, alkaline salts, carbonation, or dust.
- E. Concrete-Subfloor Preparation: Apply concrete-slab primer, according to manufacturer's directions, where recommended by carpet tile manufacturer.
- F. Protection: Comply with CRI 104, Section 15: "Protection of Indoor Installation".

END OF SECTION 09681

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SECTION 09912 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1.2 PROJECT CONDITIONS

- A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
- B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.
- C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
- D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- E. Upon request from Contract Administrator, Contractor is to perform painting operations during evenings, nights, or weekends due to odor generated or nature of application.

1.3 EXTRA MATERIALS

- A. Furnish extra paint materials from same production run as materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
 - 1. Quantity: 3 percent, but not less than 1 gal. or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.
- B. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. Benjamin Moore & Co. (Benjamin Moore)
2. ICI Dulux Paint Centers (ICI Dulux Paint)
3. Sherwin-Williams Co. (Sherwin-Williams)
4. Porter Plants (Porter)
5. Pratt & Lambert (P & L)

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
- C. Colors: Match colors indicated by reference to manufacturer's designation.

2.3 PREPARATORY COATS

- A. Concrete Unit Masonry Block Filler: High-performance latex block filler of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate.
- B. Interior Primer: Interior latex-based or alkyd primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
 1. Ferrous-Metal Substrates: Quick drying, rust-inhibitive metal primer.
 2. Zinc-Coated Metal Substrates: Galvanized metal primer.
 3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

2.4 INTERIOR FINISH COATS

- A. Interior Semi-gloss Acrylic Enamel:
 1. Benjamin Moore; Moorcraft Super Spec Latex Semi-Gloss Enamel No. 276.
 2. ICI Dulux Paints; 1406-XXXX Dulux Professional Acrylic Semi-Gloss Interior Wall & Trim Enamel.
 3. Sherwin-Williams; ProMar 400 Interior Latex Semi-Gloss Enamel B31W400 Series.
 4. Porter; ProMaster 2000 Semi-Gloss Interior Latex Wall and Trim Paint No. 6139.
 5. Pratt & Lambert; Z/F 4100 Series Accolade Interior Semi-Gloss.
- B. Interior Semi-gloss Alkyd Enamel:
 1. Benjamin Moore; Moorcraft Super Spec Alkyd Semi-Gloss Enamel No. 271
 2. ICI Dulux Paints; 1516-XXXX Ultra-Hide Alkyd Semi-Gloss Interior Wall & Trim Enamel.
 3. Sherwin-Williams; ProMar 400 Interior Alkyd Semi-Gloss Enamel B34W400 Series
 4. Porter; Pro-Master 2000 Interior Alkyd Semi-Gloss Enamel No. 149.

5. Pratt & Lambert; S/D 5700 Cellu-Tone Alkyd Satin Enamel.

2.5 INTERIOR WOOD STAINS AND VARNISHES

- A. Open-Grain Wood Filler:
 1. Benjamin Moore; Bentwood Paste Wood Filler No. 238.
 2. ICI Dulux Paints; none required.
 3. Sherwin-Williams; Sher-Wood Fast-Dry Filer.
- B. Clear Sanding Sealer: Fast-drying alkyd based.
 1. Benjamin Moore; Moore's Interior Wood Finishes Quick-Dry Sanding Sealer No. 413.
 2. ICI Dulux Paints; 1902-0000 WoodPride Interior Satin Polyurethane Varnish.
 3. Sherwin-Williams; Wood Classics Fast Dry Sanding Sealer B26V43.
 4. Porter; Wood Guardian Fast Drying Sanding Sealer No. 671.
 5. Pratt & Lambert; H-40 Sanding Sealer.
- C. Interior Alkyd- or Polyurethane-Based Clear Satin Varnish:
 1. Benjamin Moore; Benwood Interior Wood Finishes Polyurethane Finishes Low Luster No. 435.
 2. ICI Dulux Paints; 1902-0000 WoodPride Interior Satin Polyurethane Varnish.
 3. Sherwin-Williams; Wood Classics Fast Dry Oil Varnish, Satin A66-300 Series.
 4. Porter; Wood Guardian Satin Urethane Varnish No. 857.
 5. Pratt & Lambert; H24 38 Clear Finish.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
- C. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- D. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
 1. Provide barrier coats over incompatible primers or remove and re-prime.
 2. Cementitious Materials: Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.

3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
 - c. If transparent finish is required, back-prime with spar varnish.
 - d. Back-prime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
 - e. Seal tops, bottoms, and cutouts of un-primed wood doors with a heavy coat of varnish or sealer immediately on delivery.
- E. Material Preparation:
 1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
- F. Exposed Surfaces: Include areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
 1. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 2. Paint interior surfaces of ducts with a flat, non-specular black paint where visible through registers or grilles.
 3. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 5. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
- G. Sand lightly between each succeeding enamel or varnish coat.
- H. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 1. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is uniform finish, color, and appearance.
- I. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
- J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.

- K. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- L. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- M. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has been prime coated by others. Re-coat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- N. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- O. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
- P. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

3.2 CLEANING AND PROTECTING

- A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
- B. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.
- C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
 - 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCAP1.

3.3 INTERIOR PAINT SCHEDULE

- A. Concrete Unit Masonry:
 - 1. Acrylic Finish: Two finish coats over a block filler.
 - a. Block Filler: Concrete unit masonry block filler.
 - b. Finish Coats: Interior semi-gloss acrylic enamel.
- B. Gypsum Board:
 - 1. Acrylic Finish: Two finish coats over a primer.
 - a. Primer: Interior gypsum board primer.
 - b. Finish Coats: Interior semi-gloss acrylic enamel.

C. Wood and Hardboard:

1. Acrylic-Enamel Finish: Two finish coats over a primer.
 - a. Primer: Interior wood primer for acrylic-enamel and semi-gloss alkyd-enamel finishes.
 - b. Finish Coats: Interior semi-gloss acrylic enamel.
2. Alkyd-Enamel Finish: Two finish coats over a primer.
 - a. Primer: Interior wood primer for acrylic-enamel and semi-gloss alkyd-enamel finishes.
 - b. Finish Coats: Interior semi-gloss alkyd enamel.

3.4 INTERIOR STAIN NATURAL

- A. Natural-Varnish Finish: Two finish coats of varnish over a sealer coat and a filler coat.
 1. Filler Coat: Open-grain wood filler.
 2. Sealer Coat: Clear sanding sealer.
 3. Finish Coats: Interior alkyd- or polyurethane-based clear satin varnish.

END OF SECTION 09912

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SECTION 09960 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes surface preparation and field application of high-performance coating systems.

1.2 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1.3 PROJECT CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 45 and 95 deg F.
- B. Contractor shall engage an independent testing agency to determine the moisture content of exterior concrete masonry unit walls to be painted. Results of the CMU wall moisture tests shall be sent to the paint manufacturer's technical representative and written approval of substrate received prior to application of any paint materials. Copies of test results and manufacturer's approval shall sent to and approved by the Harris teeter project manager prior to application of paint materials. Unless waived by the Harris Teeter project manager, walls shall be re-tested and re-approved after rain events.
- C. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
 - 1. Allow wet surfaces to dry thoroughly before proceeding with or continuing coating operation.

1.4 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. High-Performance Coatings: Full, unused containers equal to 3 percent of each material and color applied, but not less than 1 gal. or 1 case, as appropriate.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
1. Products: Subject to compliance with requirements, provide one of the products specified.
- B. Products of the following manufacturers are listed in other Part 2 articles and use the abbreviated names shown in parentheses:
1. ICI Dulux Paints; Devoe Coatings (ICI).
 2. Moore, Benjamin & Co. (Moore).
 3. PPG

2.2 MATERIALS, GENERAL

- A. Material Compatibility: For each finish indicated, provide separate component coat materials of one manufacturer that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality material for each coating material specified.
- C. Colors: As indicated by manufacturer's designations.
- D. Block Filler: Acrylic or epoxy block filler of topcoat manufacturer.
- E. Primer: Acrylic or epoxy primer of topcoat manufacturer recommended in writing by manufacturer for use with intermediate and topcoats and substrate indicated under environmental conditions indicated.
- F. Intermediate Coat: Epoxy intermediate coat of topcoat manufacturer recommended in writing for use with primer, and topcoat, and substrate indicated under environmental conditions indicated.

2.3 EXTERIOR HIGH-PERFORMANCE TOPCOATS

- A. Semi-Gloss Latex 100% Acrylic
1. Product:
 - a. PPG Sun-Proof 78 Series Exterior House and Trim Semi-Gloss Latex 100% Acrylic
- B. Semi-Gloss Polyurethane: Semi-gloss, aliphatic polyurethane enamel
1. Products:
 - a. ICI; Devthane 378 Aliphatic Urethane Semi-Gloss Enamel.
 - b. Moore; M73/M75 Aliphatic Acrylic Urethane Semi-Gloss.
 - c. Acrilon 218 B65W651

2.4 INTERIOR HIGH-PERFORMANCE TOPCOATS

A. Alkyd Enamel: For use on primed metal deck and primed structure.

1. Product:
 - a. Moore; 151 Sweep Up Spray Alkyd Enamel Flat
 - b. ICI Dulux: 1582-1200 Eggshell
 - c. PPG Industries 6-161 Eggshell

B. Acrylic Enamel: For use on galvanized metal deck and primed structure.

1. Product:
 - a. Moore; 153 Sweep Up Spray Alkyd Enamel Flat
 - b. ICI Dulux: 1482-1200 Eggshell
 - c. PPG Industries 6-715 Flat

PART 3 - EXECUTION

3.1 APPLICATION

A. General: Application of coatings indicates Applicator's acceptance of surfaces and conditions.

B. Coordination of Work: Review other Sections in which primers or other coatings are provided to ensure compatibility of total systems for various substrates. On request, furnish information on characteristics of specified finish materials to ensure compatible primers.

1. If a potential incompatibility of primers applied by others exists, obtain the following from primer Applicator before proceeding
 - a. Confirmation of primer's suitability for expected service conditions.
 - b. Confirmation of primer's ability to be top-coated with materials specified.
2. Notify Architect about anticipated problems before using coatings specified over substrates primed by others.

C. Preparation:

1. Remove plates, machined surfaces, and similar items already in place that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.
 - a. After completing coating operations, re-install items that were removed; use workers skilled in the trades involved.
2. Cleaning: Before applying high-performance coatings, clean substrates of substances that could impair bond of coatings. Remove oil and grease before cleaning.
3. Provide barrier coats over incompatible primers or remove primers and re-prime substrates.
4. Cementitious Substrates: Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods to prepare surfaces.
 - a. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
 - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and

burn, correct this condition before application. Do not coat surfaces if moisture content exceeds that permitted in manufacturer's written instructions.

5. Ferrous-Metal Substrates: Clean un-galvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC recommendations.
 - a. Touch up bare areas and shop-applied prime coats that have been damaged. Solvent clean and touch up with same primer as the shop coat.
6. Non-ferrous Metal Substrates: Clean non-ferrous surfaces.

D. Material Preparation:

1. Maintain containers used in mixing and applying coatings in a clean condition, free of foreign materials and residue.
2. Stir materials before applying to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into the material. Remove film and, if necessary, strain coating material before using.
3. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

E. Coating Application:

1. Do not apply high performance coatings over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to forming a durable coating film.
2. Apply coatings to exposed surfaces, including areas visible when permanent or built-in fixtures, convector covers, grilles, covers for finned-tube radiation, and similar components are in place, and maintain system integrity and provide desired protection.
 - a. Coat surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
 - b. Coat back sides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

F. Scheduling Coating: Apply first coat to surfaces that have been cleaned, pre-treated, or otherwise prepared for coating as soon as practicable after preparation and before subsequent surface deterioration.

1. Omit primer on metal surfaces that have been shop primed and touch-up painted.
2. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
3. Where manufacturer's written instructions require sanding, sand between applications to produce a smooth, even surface.
4. Allow sufficient time between successive coats to permit proper drying. Do not re-coat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat does not cause undercoat to lift or lose adhesion.
5. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance. Give special attention to edges, corners, crevices, welds, exposed fasteners, and similar surfaces to ensure that they receive a dry film thickness equivalent to that of flat surfaces.

G. Application Procedures: Apply coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brush Application: Use brushes best suited for material applied and of appropriate size for the surface or item being coated.
 - a. Apply primers and first coats by brush unless manufacturer's written instructions permit using roller or mechanical applicators.
 - b. Brush out and work brush coats into surfaces in an even film.
 - c. Eliminate cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Neatly draw glass lines and color breaks.
 2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for the material and texture required.
 3. Spray Equipment: Use mechanical methods to apply coating if permitted by manufacturer's written instructions and governing regulations.
 - a. Use spray equipment with orifice size recommended by manufacturer for material and texture required.
 - b. Apply each coat to provide the equivalent hiding of brush-applied coats.
 - c. Do not double back with spray equipment building-up film thickness of two coats in one pass, unless recommended by manufacturer.
- H. Minimum Coating Thickness: Apply each material no thinner than manufacturer's recommended spreading rate Provide total dry film thickness of the entire system as recommended by manufacturer.
- I. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- J. Prime Coats: Before applying topcoats, apply a prime coat of material, as recommended by manufacturer, to material required to be coated or finished that has not been prime coated by others.
 1. Recoat primed and sealed substrates if there is evidence of suction spots or unsealed areas in first coat, to ensure a topcoat with no burn-through or other defects caused by insufficient sealing.
- K. Completed Work: Match approved Samples for colors, texture, and coverage. Remove, refinish, or recoat work that does not comply with specified requirements.
- L. Clean-up: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
 1. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- M. Protect work of other trades, whether being coated or not, against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
 1. Provide "Wet Paint" signs to protect newly coated finishes. After completing coating operations, remove temporary protective wrappings provided by others to protect their work.
 2. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces. Comply with procedures specified in PDCA P1.

3.2 HIGH-PERFORMANCE COATING SCHEDULE

A. Exterior Surfaces:

1. Concrete Masonry Units: Provide the following finish systems over exterior concrete masonry units.
 - a. First Coat: PPG Perma-Crete Series 4-100 LTC Concrete Block & Masonry Surface/Filler, applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 9.3 mils.
 - b. Second Coat: PPG Perma-Crete Pitt-Flex Elastomeric Coating Series 4-110, applied at a spreading rate recommended by the manufacturer to achieve a dry film thickness of not less than 5.4 mils.
 - c. Third Coat: PPG Sun-Proof 78 Series Exterior House and Trim Semi-Gloss Latex 100% Acrylic, applied at a spreading rate recommended by the manufacturer to achieve a dry film thickness of not less than 1.2 mils.
2. Ferrous Metal:
 - a. First Coat: Primer formulated for severe to moderate environment
 - b. Second Coat: Intermediate coat.
 - c. Topcoat: Semi-gloss polyurethane
3. Non-ferrous Metal:
 - a. First Coat: Primer formulated for severe to moderate environment.
 - b. Second Coat: Intermediate coat.
 - c. Topcoat: Semi-gloss polyurethane.

B. Interior Surfaces:

1. Concrete Masonry Units:
 - a. First Coat: Block Filler
 - b. Second Coat: Primer formulated for severe to moderate environment.
 - c. Third Coat: Intermediate coat.
 - d. Topcoat: Semi-gloss Cycloaliphatic Amine Epoxy
2. Ferrous Metal:
 - a. First Coat: Primer formulated for moderate to mild environment.
 - b. Second Coat: Intermediate coat.
 - c. Topcoat: Eggshell, alkyd enamel.
3. Non-ferrous Metal:
 - a. First Coat: Primer formulated for moderate to mild environment.
 - b. Second Coat: Intermediate coat.
 - c. Topcoat: Eggshell, alkyd enamel.

END OF SECTION 09960

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