

SECTION 09260

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Cementitious backing board.
- E. Gypsum wallboard.
- F. Joint treatment and accessories.

1.02 REFERENCE STANDARDS

- A. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 1999 (R2005).
- B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (R2005).
- C. ASTM C 475/C 475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2002 (Reapproved 2007).
- D. ASTM C 645 - Standard Specification for Nonstructural Steel Framing Members; 2009a.
- E. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2009a.
- F. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board; 2008.
- G. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2007.
- H. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2007.
- I. ASTM C 1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2009.
- J. ASTM C 1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cement Substrate Sheets; 2008b.
- K. ASTM C 1396/C 1396M - Standard Specification for Gypsum Board; 2009a.
- L. ASTM D 3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2000 (Reapproved 2005).
- M. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; 2005.
- N. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2010.

- O. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association; 2008.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.
- C. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- E. Test Reports: For all stud framing products that do not comply with ASTM C 645 or C 754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C 840 and GA-216.
 - 1. See PART 3 for finishing requirements.
- B. Fire Rated Assemblies: Provide completed assemblies with the following characteristics:
 - 1. Fire Rated Partitions: Rated assemblies listed on the drawings.
 - 2. Fire Rated Ceilings and Soffits: Rated assemblies listed on the drawings.

2.02 METAL FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
 - 1. Exception: The minimum metal thickness and section properties requirements of ASTM C 645 are waived provided steel of 40 ksi minimum yield strength is used, the metal is continuously dimpled, the effective thickness is at least twice the base metal thickness, and maximum stud heights are determined by testing in accordance with ASTM E 72 using assemblies specified by ASTM C 754.
 - 2. Studs: "C" shaped with flat or formed webs with knurled faces.
 - 3. Runners: U shaped, sized to match studs.
 - 4. Ceiling Channels: C shaped.
- B. Loadbearing Studs for Application of Gypsum Board: As specified in Section 05400.
- C. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.
- D. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.

2.03 BOARD MATERIALS

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
- B. Backing Board For Wet Areas:

1. Application: Surfaces behind tile in wet areas.
 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D 3273.
 3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C 1325.
 - a. Thickness: 5/8 inch.
- C. Gypsum Wallboard: ASTM C 1396/C 1396M. Sizes to minimize joints in place; ends square cut.
1. Regular Type:
 - a. Application: Use for vertical surfaces, unless otherwise indicated.
 - b. Thickness: 5/8 inch.
 - c. Edges: Tapered.
 2. Fire Resistant Type: Complying with Type X requirements; UL or WH rated.
 - a. At Assemblies Indicated with Fire-Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X.
 - b. Thickness: 5/8 inch.
 - c. Edges: Tapered.
 3. Ceiling Board: Special sag-resistant type.
 - a. Application: Ceilings, unless otherwise indicated.
 - b. Thickness: 1/2 inch.
 - c. Edges: Tapered.
- D. Water-Resistant Gypsum Backing Board: ASTM C 1396/C 1396M; ends square cut.
1. Application: Vertical surfaces in wet areas.
 2. Core Type: Regular and Type X, as indicated.
 3. Thickness: 5/8 inch.
 4. Edges: Tapered.

- E. Exterior Sheathing Board: 1/2" sheathing board.

2.04 FIBERGLASS REINFORCED BOARD MATERIALS

- A. Cementitious Backer Board: ANSI A118.9, aggregated portland cement panels with glass fiber mesh embedded in front and back surfaces, 1/2 inch thick.
- B. Glass Mat Gypsum Board: Gypsum panels with moisture-resistant core and coated inorganic fiberglass mat back surface designed to resist growth of mold and mildew, per ASTM D 3273.

2.05 ACCESSORIES

- A. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
- B. Water-Resistive Barrier: As specified in Section 07260.
- C. Finishing Accessories: ASTM C 1047, galvanized steel or rolled zinc, unless otherwise indicated.
 1. Types: As detailed or required for finished appearance.
 2. Special Shapes: In addition to conventional cornerbead and control joints, provide U-bead at exposed panel edges.
- D. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.
 1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
 2. Ready-mixed vinyl-based joint compound.

- E. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.
- F. Screws: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.
- G. Screws: ASTM C 954; steel drill screws for application of gypsum board to loadbearing steel studs.
- H. Staples: ASTM C 840.
- I. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C 754 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members at 16 inches on center.
 - 1. Level ceiling system to a tolerance of 1/600.
 - 2. Laterally brace entire suspension system.
 - 3. Install bracing as required at exterior locations to resist wind uplift.
- C. Studs: Space studs at 16 inches on center.
 - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
 - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 - 3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- E. Blocking: Install wood blocking for support of:
 - 1. Wall mounted cabinets.
 - 2. Plumbing fixtures.
 - 3. Toilet partitions.
 - 4. Toilet accessories.
 - 5. Wall mounted door hardware.
 - 6. Markerboards
 - 7. Tackboards
 - 8. Smartboards

3.03 BOARD AND GLASS MAT FACED BOARD INSTALLATION

- A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 - 1. Exception: Tapered edges to receive joint treatment at right angles to framing.

- C. Double-Layer Non-Rated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
- D. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- E. Cementitious Backing Board: Install over steel framing members where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- F. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.
- G. Moisture Protection: Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum soffit board with sealant.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Where spacing is not indicated control joints shall be spaced not more than 30 feet apart on walls and ceilings over 50 feet long.
 - 2. At exterior soffits, not more than 30 feet apart in both directions.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.05 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use fiberglass joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C 840, as follows:
 - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - 2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Finish gypsum board in scheduled areas in accordance with levels defined in ASTM C 840.
 - 1. Above Finished Ceilings Concealed From View: Level 1.
 - 2. Utility Areas and Areas Behind Cabinetry: Level 2.
 - 3. Walls and Ceilings to Receive Flat or Eggshell Paint Finish: Level 4.
- D. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Taping, filling and sanding is not required at base layer of double layer applications.
- E. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.06 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09300

TILE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Stone thresholds.
- D. Ceramic trim.

1.02 REFERENCE STANDARDS

- A. ANSI A108 Series/A118 Series/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2009.
 - 1. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2005.
 - 2. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar; 1999 (R2005).
 - 3. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex Portland Cement Mortar; 1999 (R2005).
 - 4. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 1999 (R2005).
 - 5. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (R2005).
 - 6. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (R2005).
 - 7. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (R2005).
 - 8. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (R2005).
 - 9. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (R2005).
 - 10. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units; 1999 (R2005).
 - 11. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 1999 (R2005).
 - 12. ANSI A118.7 - American National Standard Specifications for Polymer Modified Cement Grouts for Tile Installation; 1999 (R2005).
 - 13. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (R2005).
 - 14. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile; 1999 (R2005).
 - 15. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2008.
- B. TCNA (HB) - Handbook for Ceramic Tile Installation; 2010.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
- D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 x 18 inches in size illustrating pattern, color variations, and grout joint size variations.
- E. Maintenance Materials: Furnish the following for Perkins-Tryon Public Schools's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.
 - 2. Extra Tile: 10 square feet of each size, color, and surface finish combination.

1.04 QUALITY ASSURANCE

- A. Maintain one copy of The Tile Council of North America Handbook and ANSI A108 Series/A118 Series on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum 5 years of documented experience.
- C. Installer Qualifications: Company specializing in performing tile installation, with minimum of 5 years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain ambient and substrate temperature of 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.01 TILE

- A. Ceramic Mosaic Tile: ANSI A137.1, and as follows:
 - 1. Porcelain Tile - Unglazed Colors manufactured by American Olean or approved equivalent product.
 - 2. Moisture Absorption: 0 to 0.5 percent.
 - 3. Size and Shape: 3" x 3".
 - 4. Edges: Cushioned.
 - 5. Surface Finish: Unglazed.
 - 6. Colors: As scheduled.
 - 7. Trim Units: Matching bead, cove, and surface bullnose shapes in sizes coordinated with field tile.
- B. Glazed Wall Tile: ANSI A137.1, and as follows:
 - 1. Manufactured by American Olean or approved equivalent product.
 - 2. Size and Shape: 4-1/4" x 4-1/4".
 - 3. Edges: Cushioned.
 - 4. Surface Finish: Bright and Matte glaze.

5. Colors: As scheduled.
 6. Pattern: Reference Drawings.
 7. Trim Units: Matching bead, bullnose, cove, and base shapes in sizes coordinated with field tile.
- C. Porcelain Floor Tile: ANSI A137.1, and as follows:
1. Color Blox manufactured by Crossville or approved equivalent product.
 2. Size and Shape: 12" x 12"
 3. Colors: As scheduled.
- D. Porcelain Tile Universal Cove Base: ANSI A137.1, and as follows:
1. Color Blox manufactured by Crossville or approved equivalent product.
 2. Size and Shape: 4" x 4"
 3. Colors: As scheduled.

2.02 TRIM AND ACCESSORIES

- A. Ceramic Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.
1. Applications: Use in the following locations:
 - a. Open Edges: Bullnose.
 - b. Inside Corners: Jointed.
 - c. Floor to Wall Joints: Cove base.
 2. Manufacturer: Same as for tile.
- B. Thresholds: Marble, white or gray, honed finish; minimum 2 inches wide by full width of wall or frame opening; 1/2 inch thick; beveled one long edge with radiused corners on top side; without holes, cracks, or open seams.
1. Applications: Provide at the following locations:
 - a. At doorways where tile terminates.
 - b. At open edges of floor tile where adjacent finish is a different height.

2.03 ADHESIVE MATERIALS

- A. Manufacturers:
1. Bonsal American, Inc: www.sakrete.com
 2. Bostik Inc: www.bostik-us.com.
 3. Mapei Corporation: www.mapei.com.
 4. Substitutions: See Section 01600 - Product Requirements.
- B. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.
- C. Epoxy Adhesive: ANSI A118.3, thinset bond type.
- D. Tile Setting Adhesive: Elastomeric, waterproof, liquid applied.

2.04 GROUT MATERIALS

- A. Manufacturers:
1. Bonsal American, Inc: www.sakrete.com
 2. Bostik Inc: www.bostik-us.com.
 3. Custom Building Products: www.custombuildingproducts.com.
 4. Substitutions: See Section 01600 - Product Requirements.
- B. Standard Grout: Polymer modified cement grout, sanded or unsanded, as specified in ANSI A118.7.

2.05 ACCESSORY MATERIALS

- A. Cementitious Backer Board: ANSI A118.9; High density, cementitious, glass fiber reinforced, 1/2 inch thick; 2 inch wide coated glass fiber tape for joints and corners.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- B. The Contractor shall be responsible for the Manufacturer's Representative making slab moisture emission and pH tests results for each 1000 square feet of this flooring material, and reporting test results and condition of concrete slab to the Architect in writing prior to installing floor materials. These tests should not be conducted until the building is closed in and the HVAC equipment run sufficiently to create a temperature / humidity environment that is representative of the typical conditions the floor covering will experience.
 - 1. Floor materials shall not be installed until moisture emission and pH test results meet manufacturer's recommendations. Contractor shall be responsible for preparing floor to meet manufacturer's warranty requirements.
- C. Moisture emission and pH tests shall meet ASTM E 1907.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.
- E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

- A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1 through A108.13, manufacturer's instructions, and The Tile Council of North America Handbook recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install thresholds where indicated.
- G. Sound tile after setting. Replace hollow sounding units.

- H. Keep expansion joints free of adhesive or grout. Apply sealant to joints.
- I. Allow tile to set for a minimum of 48 hours prior to grouting.
- J. Grout tile joints. Use standard grout unless otherwise indicated.
- K. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

- A. Over interior concrete substrates, install in accordance with TCA Handbook Method F113, dry-set or latex-portland cement bond coat, with standard grout, unless otherwise indicated.
 - 1. Where waterproofing membrane is indicated, install in accordance with TCA Handbook Method F122, with latex-portland cement grout.

3.05 INSTALLATION - WALL TILE

- A. Over cementitious backer units on studs, install in accordance with The Tile Council of North America Handbook Method W244, using membrane at toilet rooms.
- B. Over interior concrete and masonry install in accordance with TCA Handbook Method W202, thin-set with dry-set or latex-portland cement bond coat.

3.06 CLEANING

- A. Clean tile and grout surfaces.

3.07 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09511

SUSPENDED ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 REFERENCE STANDARDS

- A. ASTM C 635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2009b.
- B. ASTM C 636/C 636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2008.
- C. ASTM E 580/E 580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2009a.
- D. ASTM E 1264 - Standard Classification for Acoustical Ceiling Products; 2008.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning.
- C. Product Data: Provide data on suspension system components.
- D. Maintenance Materials: Furnish the following for Perkins-Tryon Public Schools's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.
 - 2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 QUALITY ASSURANCE

- A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

- A. Manufacturers:
 - 1. Armstrong World Industries, Inc: www.armstrong.com.
 - 2. USG: www.usg.com.
 - 3. Substitutions: See Section 01600 - Product Requirements.
- B. Acoustical Units - General: ASTM E 1264, Class A.
- C. Acoustical Panels: Painted mineral fiber, ASTM E 1264 Type III, with the following characteristics:
 - 1. Mfg / Pattern: Armstrong / Fine Fissured with Humigard / White. Others as approved.
 - 2. Size: 24 x 48 inches.
 - 3. Thickness: 5/8 inches.
 - 4. Edge: Square.
 - 5. Surface Color: White.
 - 6. Suspension System: Exposed 15/16" grid.

2.02 SUSPENSION SYSTEM(S)

- A. Manufacturers:
 - 1. Same as for acoustical units.
 - 2. Substitutions: See Section 01600 - Product Requirements.
- B. Suspension Systems - General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
- C. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; intermediate-duty.
 - 1. Profile: Tee; 15/16 inch wide face @ 2' x 4' grid with square edge tile,
 - 2. Construction: Double web.
 - 3. Finish: White painted.

2.03 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Perimeter Moldings: Same material and finish as grid.
 - 1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
- C. Gypsum Board: Fire rated type; 5/8 inch thick, ends and edges square, paper faced.
- D. Acoustical Sealant For Perimeter Moldings: Specified in Section 07900.
- E. Gasket For Perimeter Moldings: Closed cell rubber sponge tape.
- F. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C 636/C 636M, ASTM E 580/E 580M, and manufacturer's instructions and as supplemented in this section.

- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- E. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- I. Do not eccentrically load system or induce rotation of runners.
- J. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
 - 2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install units after above-ceiling work is complete.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
 - 1. Make field cut edges of same profile as factory edges.
- G. Where round obstructions occur, provide preformed closures to match perimeter molding.
- H. Install hold-down clips on panels within 20 ft of an exterior door.

3.04 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 09642

HARDWOOD FLOORING - NAILED

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood strip and plank flooring, nailed.
- B. Secondary subflooring.
- C. Surface finishing.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

- A. MFMA (SPEC) - Guide Specifications for Maple Flooring Systems; Maple Flooring Manufacturers Association; current edition.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for flooring.
- C. Installation Instructions: Indicate standard and special installation procedures.
- D. Maintenance Data: Include maintenance procedures.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with MFMA (SPEC).
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing work of this section with minimum five years experience.

1.06 FIELD CONDITIONS

- A. Do not install wood flooring until wet construction work is complete and ambient air at installation space has moisture content stabilized at maximum moisture content of 40 percent.
- B. Provide heat, light, and ventilation prior to installation.
- C. Store materials in area of installation for minimum period of 24 hours prior to installation.
- D. Maintain minimum room temperature of 65 degrees F for a period of two days prior to delivery of materials to installation space, during installation, and after installation.

1.07 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Wood Strip Flooring:
 - 1. Species: White Hard Maple.
 - 2. Grade: First.

3. Cut: Flat grain.
 4. Moisture Content: 7 to 9 percent.
 5. Actual Thickness: 25/32 inch.
 6. Actual Width: 3-1/2 inches.
 7. Edge: Square.
 8. End: End matched.
 9. Length: Random, minimum of 9 inches.
 10. Treatment: Acrylic Impregnated.
- B. Flooring Nails: Type recommended by flooring manufacturer.
 - C. Secondary Subflooring: 23/32 inch thick plywood, APA Rated Sheathing, Span Rating of 24" with tongue and groove edges; Exposure 1, sanded, preservative treated.
 - D. Sheathing Paper: Plain building paper.

2.02 ACCESSORIES

- A. Floor Finish: Water borne urethane, to achieve satin sheen surface; type recommended by flooring manufacturer.
- B. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify wood subfloor is properly secured, smooth and flat to plus or minus 1/4 inch in 10 feet.

3.02 PREPARATION

- A. Secondary Subflooring: Place one layer plywood subflooring over framing.
- B. Prepare substrate to receive wood flooring in accordance with manufacturer's and MFMA instructions.
- C. Broom clean substrate.

3.03 INSTALLATION

- A. Sheathing Paper: Place over wood subfloor; lap edges and ends 2 inches, staple in place.
- B. Wood Flooring:
 1. Install in accordance with manufacturer's, MFMA, and NOFMA instructions; predrill and blind nail to wood sub-floor.
 2. Lay flooring parallel to width of room areas. Verify alignment as work progresses.
 3. Arrange flooring with end matched grain set flush and tight.
 4. Install edge strips at unprotected or exposed edges, and where flooring terminates.
 5. Secure edge strips before installation of flooring with stainless steel screws.
 6. Provide 1/4 inch expansion space at fixed walls and other interruptions.
- C. Install base at floor perimeter to cover expansion space in accordance with manufacturer's instructions. Miter inside and outside corners.
- D. Finishing:
 1. Mask off adjacent surfaces before beginning sanding.
 2. Sand flooring to smooth even finish with no evidence of sander marks. Take precautions to contain dust. Remove dust by vacuum.

3. Apply finish in accordance with floor finish manufacturer's instructions.
4. Apply first coat, allow to dry, then buff lightly with steel wool to remove irregularities. Vacuum clean and wipe with damp cloth before applying succeeding coat.
5. Lightly buff between coats with steel wool and vacuum clean before applying succeeding coat.
6. Apply last coat of finish.

3.04 CLEANING

- A. Clean and polish floor surfaces in accordance with manufacturer's instructions.

3.05 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.
- B. Place protective coverings over finished floors; do not remove coverings until Substantial Completion.

END OF SECTION

SECTION 09650

RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 REFERENCE STANDARDS

- A. ASTM F 1066 - Standard Specification for Vinyl Composition Floor Tile; 2004.
- B. ASTM F 1861 - Standard Specification for Resilient Wall Base; 2008.
- C. FS RR-T-650 - Treads, Metallic and Nonmetallic, Skid Resistant; Federal Specifications and Standards; Revision E, 1994.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for LWPB Architecture's initial selection.
- D. Maintenance Materials: Furnish the following for Perkins-Tryon Public Schools's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.
 - 2. Extra Flooring Material: One unopened box of the field color.
 - 3. Extra Wall Base: One complete roll.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Protect roll materials from damage by storing on end.

1.05 FIELD CONDITIONS

- A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 TILE FLOORING

- A. Vinyl Composition Tile / Type 1: Homogeneous, with color extending throughout thickness, and:
 - 1. Minimum Requirements: Comply with ASTM F 1066, of Class corresponding to type specified.
 - 2. Size: 12 x 12 inch.
 - 3. Thickness: 0.125 inch.
 - 4. Pattern: Quarter turn.

5. Manufacturers:
 - a. Armstrong:
 - 1) Pattern: Standard Excelon, Imperial, Multi Color, and Rave
 - 2) Colors: As scheduled
 - b. Substitutions: See Section 01600 - Product Requirements.

2.02 STAIR COVERING

- A. Stair Tread (RST): Rubber; full width and depth of stair tread in one piece; tapered thickness; nosing not less than 1-5/8 inch deep.
 1. Minimum Requirements: Comply with FS RR-T-650 requirements corresponding to type specified.
 2. Nominal Thickness: 0.1875 inch.
 3. Nosing: Round.
 4. Style: Contrasting color abrasive grit strips full width.
 5. Color: Solid.
 6. Manufacturers:
 - a. Johnsonite, Inc: www.johnsonite.com.
 - b. Substitutions: See Section 01600 - Product Requirements.
- B. Stair Risers: Full height and width of tread in one piece, matching treads in material and color:
 1. Thickness: 0.080 inch.
 2. Manufacturers:
 - a. Johnsonite, Inc: www.johnsonite.com.
 - b. Color: As scheduled
 - c. Substitutions: See Section 01600 - Product Requirements.

2.03 RESILIENT BASE

- A. Resilient Base: ASTM F 1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove, and as follows:
 1. Height: 4 inch. Reference Drawings for location of each.
 2. Thickness: 0.125 inch thick.
 3. Finish: Satin.
 4. Length: Roll.
 5. Color: As scheduled.
 6. Accessories: Premolded external corners and end stops.
 7. Manufacturers:
 - a. Johnsonite, Inc: www.johnsonite.com.
 - b. Substitutions: See Section 01600 - Product Requirements.

2.04 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Transition and Edge Strips: Match rubber cove base.
- D. Filler for Coved Base: Plastic.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. The Contractor shall be responsible for the Manufacturer's Representative making slab moisture emission and pH tests results for each 1000 square feet of this flooring material, and reporting test results and condition of concrete slab to the Architect in writing prior to installing floor materials. These tests should not be conducted until the building is closed in and the HVAC equipment run sufficiently to create a temperature / humidity environment that is representative of the typical conditions the floor covering will experience.
 - 1. Floor materials shall not be installed until moisture emission and pH test results meet manufacturer's recommendations. Contractor shall be responsible for preparing floor to meet manufacturer's warranty requirements.
- C. Moisture emission and pH tests shall meet ASTM E 1907.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare sub-floor surfaces as recommended by flooring and adhesive manufacturers.
- B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is cured.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install in accordance with manufacturer's instructions.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Fit joints tightly.
- E. Set flooring in place, press with heavy roller to attain full adhesion.
- F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 - 1. Resilient Strips: Attach to substrate using adhesive.
- H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- I. Install flooring in recessed floor access covers, maintaining floor pattern.
- J. At movable partitions, install flooring under partitions without interrupting floor pattern.
- K. Install feature strips where indicated.

3.04 TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless manufacturer's instructions say otherwise.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.

3.05 RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Install base on solid backing. Bond tightly to wall and floor surfaces.
- C. Scribe and fit to door frames and other interruptions.

3.06 STAIR COVERINGS

- A. Install stair coverings in one piece for full width and depth of tread.
- B. Adhere over entire surface. Fit accurately and securely.

3.07 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's instructions.

3.08 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09685

CARPET TILE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered.

1.02 REFERENCE STANDARDS

- A. ASTM D 2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2006.
- B. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2009a.
- C. ASTM F 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2008.
- D. CRI (CIS) - Carpet Installation Standard; Carpet and Rug Institute; 2009.
- E. CRI (GLA) - Green Label Testing Program - Approved Adhesive Products; Carpet and Rug Institute; Current Edition.
- F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; National Fire Protection Association; 2011.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- C. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing carpet approved by manufacturer.

1.05 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

1.06 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Provide one full un-opened box (approximately five yards of carpet tile).

PART 2 PRODUCTS

2.01 MATERIALS

- A. Carpet Tile 2:, manufactured in one color dye lot.
 - 1. Product: Traverse manufactured by Mannington.
 - 2. Tile Size: 24 x 24 inch, nominal.
 - 3. Construction: Tip-sheared loop
 - 4. Face Fiber: Type 6,6 Nylon
 - 5. Dye Method: Solution / Yarn
 - 6. Gauge: 5/32
 - 7. Stitches Per Inch: 9
 - 8. Pile Thickness: .142 inches
 - 9. Finished Yarn Weight: 38 ounces per square yard
 - 10. Density: Average Density = 9,633; Weight Density = 366,084
 - 11. Primary Backing: 100% Woven Synthetic
 - 12. Primary Precoat: 100% Non-aqueous closed cell polymer, providing lifetime warranty against stain wick-back
 - 13. Secondary Backing: Infinity RE modular reinforced composite closed cell polymer with recycled content
 - 14. Warranty: Lifetime limited warranty
 - 15. Color: To be selected.
 - 16. Installation Pattern: Quarter Turn.
 - a. Administration: Install all in same direction
 - b. Media Center: Install with quarter turn.
 - 17. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E 648 or NFPA 253.
 - 18. Surface Flammability Ignition: Pass ASTM D 2859 (the "pill test").

- B. Carpet Tile 1: manufactured in one color dye lot
 - 1. Product: Elemental Neutrals manufactured by Mannington
 - 2. Color: 8213 Nitrogen
 - 3. Face Fiber: Type 6,6 Nylon
 - 4. Secondary Backing: Mannington modular backing system with non-woven fiberglass stabilizing layer
 - 5. Machine Gauge: 1/10 in
 - 6. Pile Thickness: .096
 - 7. Stitches: 13.66/in
 - 8. Pile Density: 4,125
 - 9. Size: 24" x 24"
 - 10. Primary Backing: 100% Synthetic
 - 11. Primary Precoat: 100% Non-Aqueous Polymer, Providing 15 year warranty against stain wick-back
 - 12. Installation Pattern: Quarter Turn
 - 13. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E 648 or NFPA 253.
 - 14. Surface Flammability Ignition: Pass ASTM D 2859 (the "pill test").
 - 15. Radiant Panel (ASTM E-648): Class I (Direct Glue)
 - 16. Smoke Chamber (ASTM-E-662: Less than 450 (Flaming Mode)

2.02 ACCESSORIES

- A. Sub-Floor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Edge Strips: Rubber, As selected color.

- C. Adhesives: Acceptable to carpet tile manufacturer, compatible with materials being adhered; maximum VOC of 50 g/L; CRI Green Label certified; in lieu of labeled product, independent test report showing compliance is acceptable.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.
- C. The Contractor shall be responsible for the Manufacturer's Representative making slab moisture emission and pH tests results for each 1000 square feet of this flooring material, and reporting test results and condition of concrete slab to the Architect in writing prior to installing floor materials. These tests should not be conducted until the building is closed in and the HVAC equipment run sufficiently to create a temperature / humidity environment that is representative of the typical conditions the floor covering will experience.
 - 1. Floor materials shall not be installed until moisture emission and pH test results meet manufacturer's recommendations. Contractor shall be responsible for preparing floor to meet manufacturer's warranty requirements.
- D. Moisture emission and pH tests shall meet ASTM E 1907.
- E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions and CRI Carpet Installation Standard.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Locate change of color or pattern between rooms under door centerline.
- G. Fully adhere carpet tile to substrate.
- H. Trim carpet tile neatly at walls and around interruptions.
- I. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09850

ACOUSTICAL PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cementitious wood fiber plank acoustical wall panel system.
- B. Installation accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C 423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2009a.
- B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2010.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed data sheets for products specified.
- C. Shop Drawings: Fabrication and installation details, panel layout, and fabric orientation.
- D. Selection Samples: Manufacturer's color charts for fabric covering, indicating full range of fabrics, colors, and patterns available .
- E. Maintenance Materials: Furnish the following for Perkins-Tryon Public Schools's use in maintenance of project.
 - 1. See Section 01600 - Product Requirements, for additional provisions.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company with not less than 5 years of experience in manufacturing acoustical products similar to those specified.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect acoustical panels from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until panels are needed for installation.
- B. Store panels flat, in dry, well-ventilated space; do not stand panels on end.
- C. Protect panel edges from damage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustical Panels:
 - 1. Tectum Inc. www.tectum.com
- B. Substitutions: See Section 01600 - Product Requirements.

2.02 ACOUSTICAL WALL PANELS

- A. Tectum Finale Wall Panels:
 - 1. Material: Aspen wood fibers bonded with inorganic hydraulic cement.
 - a. Thickness: 1 inch (25.4 mm).

- b. Edge: All edge beveled.
- c. Width: as indicated on drawings.
- d. Length: as indicated on drawings.
- e. Color: Custom Color.
 - 1) PT #14 & PT #4 (as indicated on drawings)
- f. Mounting Style: "A". screw attached to suitable substrate.

2.03 FABRICATION

- A. General: Fabricate panels to sizes and configurations indicated, with fabric facing installed without sagging, wrinkles, blisters, or visible seams.

2.04 ACCESSORIES

- A. Provide accessories as follows:
 - 1. Prefinished Painted Head Drywall Screws:
 - a. Material: Steel.
 - b. Length: As required for mounting conditions.
 - c. Color: Custom.
 - 2. Touch-Up Paint:
 - a. Color: Custom.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates for conditions detrimental to installation of acoustical panels. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install acoustical panels in locations indicated, following installation recommendations of panel manufacturer. Align panels accurately, with edges plumb and top edges level. Scribe to fit accurately at adjoining work and penetrations.
- B. Screw head to be flush with panel surface.
- C. Securely affix wall panels by means of splines attached vertically to smooth wall or furring strips. Engage vertical kerfs on the edges of the wall panels with splines. Apply adhesive or use Velcro hook and loop fastening where necessary.
- D. Install panels to construction tolerances of plus or minus 1/16 in for the following:
 - 1. Plumb and level.
 - 2. Flatness.
 - 3. Width of joints.

3.03 CLEANING

- A. Clean fabric facing upon completion of installation from dust and other foreign materials, following manufacturer's instructions.
- B. Remove surplus materials, trimmed portions of panels, and debris resulting from installation.

3.04 PROTECTION

- A. Provide protection of installed acoustical panels until completion of the work.
- B. Replace panels that cannot be cleaned and repaired to satisfaction of the LWPB Architecture.

END OF SECTION

SECTION 09900

PAINTS AND COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.
- C. Surfaces to be finished are indicated in this section and on the Drawings.

1.02 REFERENCES

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; current edition, www.paintinfo.com.
- C. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Master Painters and Decorators Association; 2004.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of all products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. MPI product number (e.g. MPI #47).
 - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system (copy of relevant MPI Manual page is acceptable).
 - 4. Manufacturer's installation instructions.
- C. Samples: Submit three paper "drop" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, submit each color in each sheen available.
 - 3. Where custom color / stain match is required, submit each color to Architect for approval before installation of paints and coatings.
- D. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum five years experience.
- B. Maintain one copy of relevant portions of MPI Architectural Painting Specification Manual on project site at all times.
- C. Material Safety Data Sheets: At project site maintain file of MSDS sheets for each product used; become familiar with and follow manufacturer's stated application and safety requirements.

1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.07 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Supply 2 gallons of each color; store where directed.
- C. Label each container with color in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Provide all paint and coating products from the same manufacturer to the greatest extent possible.
- C. Paints: Acceptable manufacturers are limited to the following:
 - 1. Pittsburgh.
 - 2. Others as approved
- D. Transparent Finishes: Acceptable manufacturers are limited to the following:
 - 1. Pittsburgh.
 - 2. Others as approved
- E. Stains: Acceptable manufacturers are limited to the following:
 - 1. Pittsburgh.
 - 2. Others as approved
- F. Substitutions: See Section 01600 - Product Requirements.

2.02 MATERIALS - GENERAL

- A. Volatile Organic Compound (VOC) Content:
 - 1. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Architectural coatings VOC limits of State in which the project is located.

2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- B. Chemical Content: The following compounds are prohibited:
1. Aromatic Compounds: In excess of 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
 2. Acrolein, acrylonitrile, antimony, benzene, butyl benzyl phthalate, cadmium, di (2-ethylhexyl) phthalate, di-n-butyl phthalate, di-n-octyl phthalate, 1,2-dichlorobenzene, diethyl phthalate., dimethyl phthalate, ethylbenzene, formaldehyde, hexavalent chromium, isophorone, lead, mercury, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, naphthalene, toluene (methylbenzene), 1,1,1-trichloroethane, vinyl chloride.
- C. Paints and Coatings: Provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI Categories, except as otherwise indicated.
1. Provide ready mixed paints and coatings, except field-catalyzed coatings.
 2. Provide materials 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.
- D. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
- E. Patching Material: Latex filler.

2.03 PAINT SYSTEMS

- A. Provide Premium Grade systems (2 top coats) as defined in MPI Architectural Painting Specification Manual, except as otherwise indicated.
- B. Where a specified paint system does not have a Premium Grade, provide Custom Grade system.
- C. Where sheen is not specified or more than one sheen is specified, sheen will be selected later by Architect from the manufacturer's full line.
- D. Provide colors as directed by Architect.
 1. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
 2. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.04 EXTERIOR FINISHES

- A. Enamel on Ferrous Metals: Louvers, Exposed structural steel lintels, Exposed Items above Roof, I.e., Rooftop Units, Vents, Stacks, Hoods, Covers, Etc., and Miscellaneous Items:
 1. One Coat Pro-Cryl Universal Waterbased primer B66-310
 2. Two Coats Sher-Cryl HPA High Performance Acrylic B66-300.
- B. Enamel on Exterior Door Frames and Doors:
 1. Shop Coats by Others - Touch up as Required.
 2. Two Coats SW Industrial Enamel, B54 series FS TT-E-489.
- C. Enamel on Galvanized Sheet Metal:
 1. One Coat SW Galvite HS B50WZ30
 2. Two Coats SW DTM Acrylic Coating B66 series

2.05 INTERIOR FINISHES

- A. Enamel on Metal: All Miscellaneous and Ornamental Metal Items Which Are Left Exposed, Hollow Metal Doors and Frames,
 - 1. Shop Coat by Others - Touch up as Required.
 - 2. Two Coats SW Industrial Enamel, B54 series
- B. Enamel on Concrete Block:
 - 1. One Coat SW Loxon Surfacers for pH up to 13
 - 2. Two Coats SW Promar 400 Latex Semi-gloss Enamel, FS TT-E-508.
- C. Epoxy on Concrete Block
 - 1. One Coat SW Kem Cati-Coat Epoxy Filler Sealer B42 series
 - 2. Two Coats SW Water-based Tile-Clad B73 series
- D. Epoxy on Gypsum Board Walls and Ceilings:
 - 1. One Coat SW Preprite 400 Interior Latex Primer B28W400
 - 2. Two Coats SW Water-based Catalyzed Epoxy B70-200 series
- E. Enamel on Gypsum Board Walls and Ceilings:
 - 1. Wall Texture: an Unaggregated Texture Finish Compound for Hand Tool or Spray Application, to Receive Paint as Final Finish; Similar to United States Gypsum Multi-purpose Texture Material.
 - 2. One Coat SW PrepRite 400 Interior Latex Primer B28W400
 - 3. Two Coats SW Promar 400 Latex Semi-gloss Enamel, B31-400 FS TT-E-508.
 - 4. NOTE: Accent colors will be specified on the Finish Material Color Schedule to be prepared during construction. This will not include "super graphics". This WILL include different colors on accent walls as selected by the Architect.
- F. Concrete Sealer
 - 1. Acceptable Manufacturers:
 - a. A-H 3 Way Sealer, Anti-Hydro
 - b. Sealtight TIAH, WR Meadows
 - c. Others approved by Architect
- G. Paint on Exposed Structure, Deck, and Ducts, Including Miscellaneous Brackets, Conduit, and Other Items Located in These Areas:
 - 1. One Coat SW Kem Bond HS Universal Primer B50 series (for touch-up of factory-primed ferrous metal).
 - 2. Two Coats SW Waterborne Acrylic Dryfall Flat B42 series

PART 3 EXECUTION

3.01 SCOPE -- SURFACES TO BE FINISHED

- A. Paint all exposed surfaces except where indicated not to be painted or to remain natural; the term "exposed" includes areas visible through permanent and built-in fixtures when they are in place.
- B. Paint the surfaces described in PART 2, indicated on the Drawings, and as follows:
 - 1. If a surface, material, or item is not specifically mentioned, paint in the same manner as similar surfaces, materials, or items, regardless of whether colors are indicated or not.
 - 2. Paint surfaces behind movable equipment and furnishings the same as similar exposed surfaces.
 - 3. Paint surfaces to be concealed behind permanently installed fixtures, equipment, and furnishings, using primer only, prior to installation of the permanent item.

4. Paint back sides of access panels and removable and hinged covers to match exposed surfaces.
 5. Paint interior surfaces of air ducts and convector and baseboard heating cabinets with flat, nonspecular black paint where visible through registers, grilles, or louvers.
 6. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
- C. Do Not Paint or Finish the Following Items:
1. Items fully factory-finished unless specifically noted; factory-primed items are not considered factory-finished.
 2. Items indicated to receive other finish.
 3. Items indicated to remain naturally finished.
 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.

3.02 EXAMINATION

- A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials; report incompatible primer conditions and submit recommended changes for Architect's approval.

3.03 PREPARATION

- A. Prepare surfaces as specified in MPI Architectural Painting Specification Manual and as follows for the applicable surface and coating; if multiple preparation treatments are specified, use as many as necessary for best results; where the Manual references external standards for preparation (e.g. SSPC standards), prepare as specified in those standards; comply with coating manufacturer's specific preparation methods or treatments, if any.
- B. Coordinate painting work with cleaning and preparation work so that dust and other contaminants do not fall on newly painted, wet surfaces.
- C. Surface Appurtenances: Prior to preparing surfaces or finishing, remove electrical plates, hardware, light fixtures, light fixture trim, escutcheons, machined surfaces, fittings, and similar items already installed that are not to be painted.
 1. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before preparation and finishing.
 2. After completing painting in each space or area, reinstall items removed using workers skilled in the trades involved.
- D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- E. Marks: Seal with shellac those which may bleed through surface finishes.
- F. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

3.04 APPLICATION

- A. Apply products in accordance with manufacturer's instructions and as specified or recommended by MPI Manual, using the preparation, products, sheens, textures, and colors as indicated.
 1. Remove, refinish, or repaint work not complying with requirements.

- B. Do not apply finishes over dirt, rust, scale, grease, moisture, scuffed surfaces, or other conditions detrimental to formation of a durable coating film; do not apply finishes to surfaces that are not dry.
- C. Use applicators and methods best suited for substrate and type of material being applied and according to manufacturer's instructions.
 - 1. Brush Application: Use brushes best suited for the type of material applied; use brush of appropriate size for the surface or item being painted; produce results free of visible brush marks.
 - 2. Roller Application: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 - 3. Spray Application: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
 - 4. Where application method is listed in the MPI Manual for the paint system that application method is required; otherwise any application method recommended by manufacturer for material used and objects to be painted is acceptable.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate; provide total dry film thickness of entire system as recommended by manufacturer.
 - 1. Number of coats and film thickness required are the same regardless of application method.
 - 2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.
 - 3. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent to that of flat surfaces.
- E. Apply finish to completely cover surfaces with uniform appearance without brush marks, runs, sags, laps, ropiness, holidays, spotting, cloudiness, or other surface imperfections.
 - 1. Before applying finish coats, apply a prime coat of material recommended by manufacturer, unless the surface has been prime coated by others; where evidence of suction spots or unsealed areas in first coat appear, recoat primed and sealed surfaces to ensure finish coat with no burn through or other defects due to insufficient sealing.
 - 2. Apply first coat to surface that has been cleaned, pretreated, or otherwise prepared as soon as practical after preparation and before subsequent surface deterioration.
 - 3. Do not apply succeeding coats until the previous coat has cured as recommended by manufacturer.
 - 4. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat will not cause the undercoat to lift or lose adhesion.
 - 5. If manufacturer's instructions recommend sanding to produce a smooth, even surface, sand between coats.
 - 6. Before applying next coat vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

3.05 CLEANING AND PROTECTION

- A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from site.
- C. Protect other work, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting as approved by Architect.

- D. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
- E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in MPI Manual.

END OF SECTION

