

## SECTION 09220

### PORLAND CEMENT PLASTER

#### PART I GENERAL

##### 1.1 SUMMARY

- A. Provide Portland cement plaster for exterior applications. (Referenced "Stucco" on drawings)

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Samples: Provide as part of masonry mock-up a 2' by 2' minimum finish samples.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

##### 1.4 PROJECT CONDITIONS

- A. Do not apply adhesives and coatings if ambient temperature is below 40 degrees F, or is expected to fall below that temperature with 24 hours after application.

#### PART 2 PRODUCTS

##### 2.1 MATERIALS

- A. Portland Cement Plaster
  - 1. Cement: Portland Cement, ASTM C 150, Type I or II
  - 2. Application: 3 coats over metal lath
  - 3. Finish Coat: Job-mixed finish coat with white sand, cement and lime putty.
  - 4. Finish: Smooth troweled finish
- B. Auxiliary Materials:
  - 1. Corner beads, casing beads, and control joints.
  - 2. Bonding compounds and agents.

#### PART 3 EXECUTION

##### 3.1 INSTALLATION

- A. Install Portland cement plaster in accordance with ASTM C 926, and manufacturer's instructions.
- B. At plaster patching, prepare surface to sound substrate, apply bonding agent and patching materials in accordance with manufacturer's instructions.
- C. Install metal trims at perimeters and joints. At scratch coat form full keys. Ensure tight contact between coats. Tool edges at windows, doors, other openings to small vee to control spalling.

END OF SECTION

## SECTION 09250

### GYPSUM BOARD

#### PART I GENERAL

##### 1.1 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and Drawings are collectively applicable to this Section.
- B. Section Includes:
  - 1. Furred wall framing.
  - 2. Metal channel ceiling framing..
  - 3. Gypsum board.
  - 4. Gypsum sheathing.
  - 5. Tile backer board.
  - 6. Taped and sanded joint treatment.

##### 1.2 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Product Data: Provide data on metal framing, gypsum board, joint tape and joint compound.

##### 1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C 840, GA-201, GA-216 and GA-600.

##### 1.4 DELIVERY, STORAGE, HANDLING

- A. Deliver, store, handle, and protect products in conformance with manufacturer's instructions and in accordance with Section 01600.
- B. Store inside building, on sleepers, and out of water.

##### 1.5 QUALIFICATIONS

- A. Applicator: Company specializing in performing the work of this section with minimum 3 years documented experience.

##### 1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable code for fire rated assemblies.
- B. Refer to Drawings for details and references to UL and GA assemblies.

#### PART 2 PRODUCTS

##### 2.1 MANUFACTURERS - GYPSUM BOARD

- A. Acceptable Manufacturers: Subject to compliance with requirements indicated, provide products of one of the following:
  - 1. U. S. Gypsum.
  - 2. National Gypsum.
  - 3. Domtar Gypsum Co.
  - 4. Republic Gypsum Co.
  - 5. Georgia Pacific
- B. Substitutions: Under provisions of Section 01600.
- C. Specific product references are these of U.S. Gypsum Company unless noted otherwise as a standard of quality.

## 2.2 GYPSUM BOARD MATERIALS

- A. Regular Gypsum Board: ASTM C1396; 48 inches wide x thickness indicated, maximum practical length, tapered edge.
- B. Fire Resistant Gypsum Board: ASTM C1396, Type X; 48 inches wide x 5/8 inch thick, maximum practical length, tapered edge; apply to fire rated assemblies
- C. Tile Backing Board: ASTM C1396, 48 inches wide x thickness indicated, maximum practical length, water resistant; apply to walls to receive ceramic tile, sanitary wall panels and all walls at janitor closets and toilet rooms.

## 2.3 GYPSUM SHEATHING

- A. Glass Fiber Faced Gypsum Sheathing.
  - 1. Meeting requirements of ASTM C 1177.
  - 2. Thickness: 1/2 inch.
  - 3. Type X for fire-rated assemblies and locations where indicated, regular type at other assemblies.
  - 4. Flame Spread and Smoke Developed: 0 tested in accordance with ASTM E 84.
  - 5. Acceptable Product:
    - a. G-P Dens-Glass Gold Exterior Sheathing by Georgia-Pacific, Atlanta, GA.
  - 6. Sealant: General purpose silicone, ASTM C 920, Type S, Grade NS.
    - a. Class: 25. Joint movement range without cohesive/adhesive failure plus or minus 50 percent of joint width.
    - b. Uses: NT, M, G, A, O.
    - c. Low modulus, single component, neutral curing, non-staining, non-bleeding silicone sealant.
    - d. Color: As selected by Owner's Representative from manufacturer's standard colors.
    - e. Acceptable Products:
      - 1) 795 by Dow Corning.
      - 2) Silpruf by General Electric, Waterford, NY.
      - 3) Rhodorsil 5C, Rhone-Poulenc, Inc., Monmouth Junction, NJ.
      - 4) Substitutions: Submit in accordance with Section 01600.

## 2.4 MANUFACTURERS - FRAMING SYSTEMS

- A. Acceptable Manufacturers: Subject to compliance with requirements indicated, provide products of one of the following:
  - 1. Delta Metal Products, Dallas, TX.
  - 2. Dietrich Industries, Inc., Hutchins, TX.
- B. Substitutions: Under provisions of Section 01600.

## 2.5 FRAMING MATERIALS

- A. Studs and Tracks: ASTM C 645; galvanized sheet steel, gage as indicated on Drawings, 'ST' series shape, depths as indicated on Drawings. Provide with floor and ceiling runners, 'C' shaped galvanized, 1-1/4 inch leg.
- B. Furring and Accessories: Provide in conformance with ASTM C 645, GA-216, and GA-600 and as follows:
  - 1. Cold Rolled Channels: 3/4", 1-1/2" and 2", 16 gage, prime painted.
  - 2. Furring Channels: 7/8" deep x 1-1/4" face, 25 gage, galvanized.
  - 3. Resilient Furring: 7/8" deep x 1-1/4" face, 25 gage, galvanized with one leg attached only, Style RC-1.
- C. Fasteners: ASTM C 514 for nails and C 1002 for screws as follows:
  - 1. Inserts, clips, bolts, nails or other screws as recommended by wallboard manufacturer, of type and size to suit application and to rigidly secure materials in place.
  - 2. Self-drilling, self-tapping bugle head screws for use with power drive tool.
  - 3. Metal framing to structure: Power driven screw fasteners to withstand 190 lb. single shear resistance and 200 lb. bearing force when drive through structural head or base

- and without exceeding allowable design stress in runner, fastener, or structural support.
4. Metal to metal: 3/8", Type S or S-12, pan head screws.
  5. Gypsum board to sheet metal application: Type S screws.
  6. Gypsum board to gypsum board application: Type G screws.
- D. Adhesive: ASTM C557, "Durabond 500" or approved equal over wood framing. Utilize adhesive meeting requirements of GA-216 over metal framing.

## 2.6 ACCESSORIES

- A. U. S. Gypsum Company products specified below as a standard of quality, unless noted otherwise.
1. Acoustical Insulation: Refer to Section 07212.
  2. Acoustical Sealant and Tape: Non-hardening, non-skinning, for use in conjunction with gypsum board; manufactured by Tremco, Pecora, or USG.
  3. Corner Beads: Metal, Durabead No. 103, galvanized.
  4. Casing Beads: No. 200-A, galvanized.
  5. Control Joint: No. 093, galvanized.
  6. Joint Treatment and Texture Materials
    - a. Joint tape: ASTM C475 or FS SS-J-570, Type II, perforated tape.
    - b. Joint compound:
      - 1) ASTM C475 or FS SS-J-570, Type I.
      - 2) Acceptable product:
        - i) Taping compound: USG Durabond Joint Compound Taping.
        - ii) Topping: USG Joint Compound-All Purpose.
  6. Hanger Wire: Annealed galvanized wire, of gauges indicated (or required to suit application) to rigidly support ceiling components in place.

## PART 3 EXECUTION

### 3.1 INSPECTION

- A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on shop drawings and instructed by the manufacturer.
- B. Beginning of installation means acceptance of existing substrate.

### 3.2 WALL FURRING INSTALLATION

- A. Erect wall furring for direct attachment to concrete block walls.
- B. Erect furring channels vertically. Secure in place on alternate channel flanges at maximum 24 inches on center.
- C. Space furring channels maximum 16 inches o.c., not more than 4 inches from floor, ceiling lines and abutting walls.

### 3.3 FURRING FOR FIRE RATINGS

- A. Install furring as required for fire resistance ratings indicated.

### 3.4 CEILING FRAMING INSTALLATION

- A. Install in accordance with ASTM C754, GA-201, GA-216, and GA-600 and manufacturer's instructions.
- B. Coordinate location of hangers with other work. Use 9 gage wire for single layer wall board, and 8 gage wire for double layer. Space at maximum 48 inches on center each way, unless ceiling framing occurs at more frequent intervals.
- C. Install ceiling framing independent of walls, columns, and above-ceiling work. Locate members within 6 inches of walls. Unless shown otherwise, use 1-1/2 inch cold-rolled channels (2 inch on double layer board) at 48 inches o.c. main framing with furring channels at 24 inches on center. (16 inches on center for double layer board).

- D. Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 24 inches past each end of openings.
  - E. Laterally brace entire suspension system.
- 3.5 ACOUSTICAL ACCESSORIES INSTALLATION
- A. Install resilient channels at maximum 24 inches on center. Locate joints over framing members.
  - B. Place acoustical insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
  - C. Install acoustical sealant at wall perimeter of designated partitions as follows
    - 1. Metal Framing: Two beads at contact area at intersecting walls, floors and ceilings.
    - 2. Base Layer Gypsum Board: One bead.
    - 3. Seal all penetrations of partitions by conduit, pipe, ductwork, rough-in boxes, and access door frames.
- 3.6 GYPSUM BOARD INSTALLATION
- A. Install gypsum board in accordance with GA 201, GA 216, GA-600 and U.S.G. "Gypsum Construction Handbook".
  - B. Erect board vertically (except that board may be erected horizontally for curved walls) with ends and edges occurring over firm bearing. Stagger end joints to occur at different locations on opposite sides of wall. Apply board to suspended ceilings with long dimension at right angles to framing.
  - C. Erect exterior gypsum sheathing with edges butted tight and ends occurring over firm bearing. Abut boards without forcing. Neatly fit ends and edges of boards and make cuts and penetrations so that paper facing and gypsum core are not damaged.
  - D. Use screws when fastening gypsum board to metal furring or framing and nails to wood studding. Stagger fasteners opposite each other on adjacent ends and edges. Space fasteners as recommended in U.S.G., "Gypsum Construction Handbook".
  - E. Double Layer Applications: Use gypsum backing board for first layer, placed perpendicular to framing or furring members. Use fire rated gypsum backing board for fire rated partitions. Place second layer parallel to first layer. Offset joints of second layer from joints of first layer.
  - F. Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum ceiling board with sealant.
  - G. Place control joints at changes in back-up material, at maximum 20'-0" o.c. in exterior walls, and at maximum 30'-0" o.c. at interior partitions. In ceilings, install at maximum 30'-0" o.c. each way. Provide fire resistant protections behind control joints in fire rated assemblies.
  - H. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
  - I. On fire rated assemblies, seal all penetrations and make air-tight. Refer to Section 07840 for firestopping requirements and materials.
  - J. Thicken partitions to eliminate wall surface jogs for the full length of the wall within a room to conceal structural members, pipes, panels, specialty items, and accessories.
  - K. Coordinate door and other frame thicknesses as required.
  - L. Glass Fiber Faced Gypsum Sheathing: Erect horizontally with edge butted tight and ends occurring over framing member. Space framing members at not more than 16 inches on center.
    - 1. Secure to steel framing with bugle head steel screws to metal framing with screws to each support in accordance with manufacturer's recommendations but with fasteners spaced at not more than 8 inches on center vertically.
    - 2. Apply continuous bead of silicone sealant at joints and trowel flat to establish water tight condition.

### 3.7 JOINT TREATMENT

- A. Tape, fill, and sand exposed joints, edges, and corners to produce surface ready to receive finishes. The intent of this paragraph is to provide the highest quality of joint treatment work consistent with commercial construction. Leave surfaces smooth, uniform, and free of fins, depressions, ridges, cracks, and other imperfections.
- B. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.
- C. Levels of Finish:
  - 1. Comply with GA-214; italicized commentary is excluded; replace words "may" and "should" with "shall."
  - 2. Locations to receive Level 5 finish: Areas to be painted in high profile areas and where lighting (both natural and artificial) at high angles of incidence relative to plane of wall of ceiling will occur.
  - 3. Locations to receive Level 4 finish: All other areas to be painted.
  - 4. Locations to receive Level 3 finish: Areas to receive moisture resistant gypsum board used as a tile substrate.
  - 5. Locations to receive Level 2 finish: Fire-rated, sound-rated, and smoke-rated assemblies in ceiling plenums and concealed areas.
  - 6. Locations to receive Level 1 finish: Non-fire-rated, non-sound-rated, and non-smoke-rated assemblies in ceiling plenums and concealed areas.

### 3.8 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8 inch in 10 feet in any direction.

**END OF SECTION**

## SECTION 09300

### CERAMIC TILE

#### PART I GENERAL

##### 1.1 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 General Requirements, and Drawings are applicable to this Section.
- B. Section Includes:
  - 1. Ceramic and porcelain tile floor, base, and wall surfacing, installed using the thinset method, with cementitious grouted joints.

##### 1.2 SUBMITTALS

- A. Submit product data, specifications, and instructions for using mortars, adhesives and grouts.
- B. Samples:
  - 1. Submit color samples illustrating full color range of each type tile.
  - 2. Submit representative color samples of each type grout.
  - 3. Grout: Submit samples mounted in 6 inch long metal channels for each type and color specified.
- C. Closeout Submittals:
  - 1. Submit under provisions of Section 01780.

##### 1.3 QUALITY ASSURANCE

- A. Single Source Responsibility:
  - 1. Obtain each type and color tile material required from single source.
  - 2. Obtain setting and grouting materials from one manufacturer to ensure compatibility.
  - 3. Obtain elastomeric membrane from same manufacturer as setting material or from manufacturer approved by setting material manufacturer to ensure compatibility.
- B. Manufacturer Qualifications:
  - 1. Tile: Minimum 5 years experience in manufacture of tile products.
  - 2. Setting Materials: Minimum 10 years experience in manufacture of setting and grout materials specified.
  - 3. Elastomeric Membrane: Minimum 5 years experience in manufacture of membrane materials specified.
- C. Installer Qualifications: Specializing in tile work having minimum of 5 years successful documented experience with work comparable to that required for this Project.
- D. Certifications:
  - 1. Submit "Master Grade Certificate" for each type of tile in accordance with requirements of ANSI A137.1.
  - 2. Submit manufacturer's certifications that mortars, adhesives, and grouts are suitable for intended use.
- E. Conform to ANSI- Recommended Standard Specifications for Ceramic Tile - A137.1.
- F. Conform to TCA Ceramic Tile: The Installation Handbook.

##### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of Section 01600.
- B. Labeling: Comply with ANSI A137.1.
- C. Deliver materials in manufacturer's unopened containers, fully identified with name, brand, type, and grade.
- D. Protect materials from contamination, dampness, freezing, or overheating in accordance with manufacturer's instructions.
- E. Broken, cracked, chipped, stained, or damaged tile will be rejected, whether built-in or not.
- F. Protect mortar and grout materials against moisture, soiling, or staining.

## 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during, and after installation.
- B. Do not begin installation until building is completely enclosed and HVAC system is operating and maintaining temperature and humidity conditions consistent with "after occupancy" conditions for a minimum of 2 weeks.
- C. Maintain continuous and uniform building temperatures of not less than 50 degrees F during installation.
- D. Ventilate spaces receiving tile in accordance with material manufacturers' instructions.

## 1.6 WARRANTY

- A. Special Project Warranty: Submit a written warranty, executed by the Contractor, Installer, and Manufacturer, agreeing to repair or replace tile that fails in materials or workmanship within the specified warranty period.
  - 1. Warranty Period: 2 years after date of Substantial Completion.

## 1.7 EXTRA MATERIALS

- A. At completion of project, deliver to Owner extra stock of materials used on project as follows:
  - 1. One carton of each color of floor, base, and wall tile.
- B. Store in location as directed by Owner.
- C. Ensure materials are boxed and identified by manufacturer, type, and color.

## 1.8 MAINTENANCE DATA

- A. Submit maintenance data under provisions of Section 01780.
- B. Include cleaning methods, cleaning solutions recommended, stain removal methods, and polishes and waxes recommended.

## PART 2 PRODUCTS

### 2.1 TILE

- A. Acceptable Manufacturers: Subject to compliance with requirements herein, provide products from one of the following manufacturers.
  - 1. Wall Tile: Daltile, Modern Dimensions, X714 Matte Desert Gray, 2x4 inch nominal, horizontal format.
  - 2. Floor Tile: DalTile Steel Structure # CN91, 13" x 20"
- B. Static Coefficient of Friction: 0.60 minimum, ASTM C 1028.
- C. Trim Shapes: Caps, returns and other trim accessories as required; same characteristics as tile.

### 2.2 TRIMMERS

- A. Provide necessary caps, stops, returns, trimmers and other shapes to complete installation.
- B. Color and finish to match wall tile.

### 2.3 MORTAR, GROUT, AND ADHESIVE MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements herein, provide products from one of the following manufacturers.
  - 1. Custom Building Products, Seal Beach, CA.
  - 2. Mapei Corporation, Garland, TX.
  - 3. Laticrete.
  - 4. Substitutions: Submit in accordance with Section 01600.

### 2.4 MORTAR MATERIALS - THIN SET BEDS

- A. Dryset and Polymer Additive:
  - 1. Description: Two component system; factory prepared second generation high bond strength dryset mortar and liquid polymer additive; complying with ANSI A118.4.
  - 2. Acceptable Products:

- a. Versabond Thinset by Custom.
- b. C-Flex Pro Thinset by Custom.
- c. Flexbond Thinset by Custom.
- d. Kerabond and Keraliastic by Mapei.

## 2.5 GROUT

### A. Unsanded Latex-Modified Grout for Wall Tile:

- 1. Description: Latex-modified, factory blended, mildew resistant, non-sanded, grout consisting of portland cement and additives; comply with ANSI A118.6.
- 2. Latex Additive: Type as recommended by latex mortar manufacturer.
- 3. Colors: as selected by Architect from manufacturer's full available range of standard and premium colors.
- 4. Acceptable Products:
  - a. Polyblend Non-Sanded Grout by Custom.
  - b. Keracolor Wall Grout by Mapei.

## 2.6 MEMBRANES

### A. Anti-Fracture Membrane:

- 1. Elastomeric membrane of chlorinated polyethylene, 30 mil thick with non-woven fabric laminated to both sides.
- 2. Acceptable Products:
  - a. NobleSeal C.I.S. by The Noble Company, Grand Haven, MI.

## 2.7 ACCESSORIES

### A. Joint Sealant: Two component polyurethane sealant, ASTM C 920, Type M (self-leveling) for horizontal joints, Type II (non-sag) for vertical joints as specified in Section 07920.

- 1. Color: Match grout.
- 2. Ensure sealant is chemically compatible with tile, mortar, and grout.
- 3. Ensure sealant can physically and chemically withstand environmental conditions normally expected at installation areas.

### B. Joint Backing: Closed cell foam polyethylene.

### C. Prefabricated Sealant Joint:

- 1. Prefabricated aluminum joint with two part, chemically curing non-sag polyurethane sealant.
- 2. Size: Height as required by tile by 8 foot lengths.
- 3. Color:
  - a. Aluminum: Clear anodized.
  - b. Sealant: To match grout.
- 4. Acceptable Products:
  - a. CTC Joint by Ceramic Tool Company, Wauwatosa, WI.
  - b. Surface Expansion Joint, Schuluter System Inc., Plattsburgh, NY.

### D. Prefabricated Edge:

- 1. Prefabricated aluminum edge.
- 2. Size: Height as required by tile by 8 foot lengths.
- 3. Aluminum : Clear anodized.
- 4. Acceptable Products:
  - a. CTC Edge, Ceramic Tool Company, Wauwatosa, WI.
  - b. Trims, Schuluter System Inc., Plattsburgh, NY.

## 2.8 MIXING MORTAR AND GROUT

- A. Mix mortars and grouts in accordance with manufacturer's instructions.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that areas to receive tile installed by thin bed method have wood float finish, are true within 1/4 inch in 10'-0", and are pitched to drains where required.

- B. Condition of Surfaces to Receive Tile:
  - 1. Firm, dry, clean and free of oily or waxy films, mortar and soil.
  - 2. Grounds, anchors, plugs, hangers, bucks, electrical and mechanical work in or behind tile installed.
- C. Air Temperature and Surfaces in Rooms to Receive Flooring: Between 60 degrees to 90 degrees F unless otherwise recommended by manufacturers of materials being installed.

### 3.2 PREPARATION

- A. Clean substrates.
- B. Wet down or wash dry, dusty surfaces and remove excess water immediately prior to application of tiles.
- C. Prepare surfaces in strict accordance with instructions of manufacturer whose setting materials or additives are being used.
- D. Acid Based Cleaners: Use not permitted.
- E. Scarify concrete substrates with blast track equipment if necessary to completely remove curing compounds or other substances that would interfere with proper bond of setting materials. Clean and maintain substrate in condition required by setting material manufacturer.
- F. Do not seal substrate unless required by manufacturer.
- G. Prime substrate when required by manufacturer.
- H. Anti-Fracture Membrane
  - 1. Install anti-fracture membrane over cracks of 1/16 inch or greater in substrates. Apply a 12 inch wide strip centered on crack. Install in accordance with manufacturer's recommendations.
- I. Apply primer-sealer to wood and plywood subfloors when recommended by setting materials manufacturer.
- J. Blending: For tile exhibiting color variations within the ranges selected during sample submittals, verify that tile has been blended in factory and packaged accordingly so that tile units taken from one package show the same range in colors as those taken from other packages and match approved samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.
- K. Field-Applied Temporary Protective Coating: Where needed to prevent adhesion or staining of exposed tile surfaces by grout, protect exposed surfaces of tile against adherence of mortar and grout by precoating them with a continuous film of temporary protective coating.

### 3.3 INSTALLATION

- A. Tile Installation, General
  - 1. Install tile materials in accordance with ANSI A137.1, other referenced ANSI and TCA specifications, and TCA "Handbook for Ceramic Tile Installation", except for more stringent requirements of manufacturer or these Specifications.
  - 2. Cut and fit tile tight to protrusions and vertical interruptions. Form corners and bases neatly.
  - 3. Work tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joint watertight, without voids, cracks, excess mortar, or grout.
  - 4. Prepare surface, fit, set, bond, grout and clean in accordance with applicable requirements of ANSI standards and Tile Council of America.
    - a. Floors
      - 1) Thin-set: TCA F113 and F115 (at epoxy grout for stone tile).
    - b. Walls
      - 1) Thinset on Gypsum Board: TCA W243.
- B. Layout
  - 1. Lay out work [to pattern indicated] so that full tile or joint is centered on each wall and no tile of less than half width need be used. Do not interrupt pattern through openings. Lay out tile to minimize cutting and to avoid tile less than half size.
  - 2. For heights stated in feet and inches, use courses of full tile to produce nearest attainable heights without cutting tile.
  - 3. No staggered joints will be permitted.

4. Align joints in tile in both directions.
  5. Align joints between floor and base tile.
  6. Make joints between sheets of tile exactly same width as joints within sheet.
  7. File edges of cut tile smooth and even.
  8. Cut and fit tile at penetrations through tile. Do not damage visible surfaces. Carefully grind edges of tile abutting built-in items. Fit tile at outlets, piping and other penetrations so that plates, collars, or covers overlap tile.
  9. Extend tile work into recesses and under or behind equipment and fixtures, to form complete covering without interruptions, except as otherwise indicated. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments.
  10. Accurately form intersections and returns.
  11. Form internal angles coved and external angles bullnosed.
- C. Thin Set Method, Floors and Walls
1. Apply mortar or adhesive with notched trowel using scraping motion to work material into good contact with surface to be covered. Maintain 90 percent coverage on back of tile and fully bed all corners.
  2. Apply only as much mortar or adhesive as can be covered within allowable windows as recommended by mortar or adhesive manufacturer or while surface is still tacky.
  3. When installing large tiles, ceramics or mosaics, trowel small quantity of mortar or adhesive onto back of each tile or sheet of tiles.
  4. Set tiles in place and rub or beat with small beating block.
  5. Beat or rap tile to ensure proper bond and also to level surface of tile.
  6. Align tile to show uniform joints and allow to set until firm.
  7. Clean excess mortar or adhesive from surface of tile with wet cheese cloth (not a sponge) while mortar is fresh.
  8. Allow face mounted tile to set until firm before removing paper and before grouting.
  9. Sound tile after setting. Replace hollow sounding tiles.
- D. Grouting
1. Allow tiles to set a minimum of 48 hours before tiling.
  2. Install in accordance with grout manufacturer's recommendations and ANSI A108.10.
  3. Pack joints full and free before mortar takes initial set.
  4. Clean excess grout from surface with wet cheesecloth as work progresses. Do not use hydrosponges.
  5. Cure after grouting by covering with 4 mil plastic for 72 hours.
  6. Install sealant in vertical wall joints at interior corners.
- E. Thresholds
1. Provide thresholds at wall or framed openings to other building areas not receiving tile.
  2. Set one piece threshold in adhesive without voids, full width of door opening.
  3. Point threshold base flush with adjoining tile floors.
  4. Cope ends to fit door frame profile.
- F. Control Joints and Other Sealant Usage
1. Install control joints where tile abuts restraining surfaces such as perimeter walls, curbs, columns, wall corners and directly over cold joints and control joints in structural surfaces conforming to architectural details.
  2. Install control joint in floors at spacings as indicated in TCA Installation Handbook, unless noted otherwise.
  3. Rake or cut control joints through setting bed to supporting slab or structure. Keep joints free of mortar.
  4. Install in accordance with TCA Installation Handbook.
  5. Fill joints with self-leveling polyurethane sealant and backing material specified in Section 07920.
  6. Fill joints around toilet fixtures with white silicone sanitary sealant. Refer to Section 07920.

### 3.4 ADJUSTING

- A. Sound tile after setting. Replace hollow sounding units.

### 3.5 CLEANING

- A. Clean excess mortar from surface with water as work progresses. Perform cleaning while mortar is fresh and before it hardens on surfaces.
- B. Sponge and wash tile diagonally across joints. Polish with clean dry cloth.
- C. Remove grout haze following recommendation of mortar additive manufacturer. Do not use acids for cleaning.
- D. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to brick and grout manufacturer. Trap and remove coating to prevent it from clogging drains.

### 3.6 PROTECTION

- A. Prohibit traffic from floor finish for 72 hours after installation.
- B. Where temporary use of new floors is unavoidable, supply large, flat boards or plywood panels for walkways over kraft paper.
- C. Protect work so that it will be without any evidence of damage or use at time of acceptance.

**END OF SECTION**

## SECTION 09510

### SUSPENDED ACOUSTICAL CEILINGS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and Drawings are collectively applicable to this Section.
- B. Section Includes:
  - 1. Suspended metal grid ceiling system and perimeter trim.
  - 2. Acoustical panels.
  - 3. Non-fire rated assembly

##### 1.2 SYSTEM DESCRIPTION

- A. Installed System: Conform to UL rating for ceiling/floor and ceiling/roof assembly, as follows:
  - 1. Fire Hazard Classification
    - a. Maximum Flame Spread: UL (ASTM E84): 25.
    - b. Smoke Developed: 10.
- B. Suspension system to rigidly secure acoustical ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.

##### 1.3 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacture of ceiling suspension system and ceiling tile with 10 years minimum experience.
- B. Installer: Company with 3 years minimum experience.

##### 1.4 REGULATORY REQUIREMENTS

- A. Conform to applicable building code for referenced fire rated assembly and combustibility requirements for materials.

##### 1.5 SUBMITTALS

- A. Provide product data on metal grid system components, acoustic units.
- B. Submit samples under provisions of Section 01330.
- C. Submit 2 samples, 8 by 12 inches in size, illustrating material and finish of each acoustic units.
- D. Submit 2 samples each, 12 inches long, of suspension system main runner, cross runner, edge trim.
- E. Submit manufacturer's installation instructions under provisions of Section 01330.

##### 1.6 ENVIRONMENTAL REQUIREMENTS

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

##### 1.7 DELIVERY, STORAGE AND HANDLING

- A. Store tile and panel cartons open at each end to stabilize moisture content.

##### 1.8 PROJECT CONDITIONS

- A. Do not install acoustical ceilings until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Schedule installation of acoustic units after interior wet work is dry.
- C. Humidity: 20-40 percent prior to, during, and after installation.
- D. Temperature: 61 degrees F minimum, prior to, during, and after installation.

##### 1.9 EXTRA STOCK

- A. Provide extra quantity of acoustic units under provisions of Section 01780.

- B. Provide extra panels equal to 2 percent of total for each type used.
- C. Store in designated location as directed by Owner.

#### 1.10 COORDINATION

- A. Coordinate installation with other trades and make provisions for their work to prevent cutting and patching.

#### 1.11 GUARANTEE

- A. The installation of the acoustical material shall be guaranteed to be tight and remain in place for 2 years after final acceptance of the building. Any loose or falling materials shall be replaced by Contractor at his own expense.

### **PART 2 PRODUCTS**

#### 2.1 MANUFACTURERS - SUSPENSION SYSTEM

- A. Acceptable Manufacturers: Subject to compliance with requirements indicated, provide products of one of the following:
  - 1. Chicago Metallic.
  - 2. Donn /USG Metal Products.
  - 3. Armstrong World Industries.
  - 4. Celotex Corporation.
- B. Substitutions: Under provisions of Section 01600.
- C. Products specified herein are those of Armstrong as a standard of quality.

#### 2.2 SUSPENSION SYSTEM MATERIALS

- A. Standard Exposed Tee Grid
  - 1. Intermediate duty system, complying with ASTM C 635
  - 2. Commercial quality hot dipped galvanized steel.
  - 3. Acceptable product:
    - a. Armstrong Silhouette XL 1/4 inch reveal – 9/16 inch bolt-slot system.
- B. Grid Accessories: Stabilizer bars, furring clips, splices, edge moldings hold down clips and closure strips as necessary to complete and complement suspended ceiling grid system.
- C. Support Channels and Hangers: Galvanized steel; size and type to suit application, to rigidly secure acoustic ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.

#### 2.3 MANUFACTURERS - ACOUSTIC UNITS

- A. Acceptable Manufacturers: Subject to compliance with requirements herein, provide products from one of the following:
  - 1. Armstrong World Industries.
  - 2. USG Company.
- B. Substitutions: Under provisions of Section 01600.

#### 2.4 ACOUSTIC UNIT MATERIALS

- A. Acoustical Panels:
  - 1. Acceptable Product: Armstrong Ultima – Beveled Tegular 24 inch x 48 inch tile

#### 2.5 ACCESSORIES

- A. Hanger Wire: Minimum 12 gage, galvanized, self-annealed, mild steel wire.
- B. Touch-up Paint: Type and color to match acoustical and grid units.

### **PART 3 EXECUTION**

#### 3.1 EXAMINATION

- A. Verify that existing conditions are ready to receive work.
- B. Verify that layout of hangers will not interfere with other work.
- C. Beginning of installation means acceptance of existing conditions.

### 3.2 INSTALLATION - LAY-IN GRID SUSPENSION SYSTEM

- A. Install system in accordance with ASTM C 636, manufacturer's instructions and as supplemented in this Section, to produce a ceiling true to lines and levels, free from warp and soiled or damaged grid or panels.
- B. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- C. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.
- D. Hang system independent of walls, columns, ducts, pipes and conduit. Hang wires directly from structure (not from fireproofing, fireproofing suspension members, bridging or roof decks). Locate first hanger 6 inches from wall and space 4'-0" along carrying channel. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- E. 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.
- F. Center system on room axis leaving equal border units, unless shown otherwise on the drawings. Do not leave tiles less than 1/2 length or width.
- G. Do not support fixtures or other components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches of each corner; or support components independently.
- H. Do not eccentrically load system, or produce rotation of runners.
- I. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions. Field rabbett panel edges. Where round obstructions occur, provide preformed closers to match edge molding. Provide prefabricated radius edge moldings around radius wall corners. Use maximum lengths, straight, true to line, and level.

### 3.3 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Lay directional patterned units one way with pattern parallel to shortest room axis. Fit border neatly against abutting surfaces.
- D. Install units after above ceiling work is complete.
- E. Install acoustic units level, in uniform plane, and free from twist, warp and dents.
- F. Cut panels to fit irregular grid and perimeter edge trim.
- G. Lay acoustic insulation for a distance of 48 inches both sides of acoustic partitions where so designated.
- H. Install hold-down clips to retain panels tight to grid system within feet of an exterior door.

### 3.4 TOLERANCES

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

### 3.5 ADJUSTING AND PATCHING

- A. Replace damaged members of exposed suspension system. Replace ceiling board and tile that is damaged, installed improperly, or shows visible signs of sagging.

### 3.6 CLEANING

- A. Clean soiled areas of ceiling material with mild soap and water. Replace ceiling board and tile damaged by improper cleaning.

**END OF SECTION**

## SECTION 09521

### ACOUSTICAL PANEL SYSTEM

#### PART I GENERAL

##### 1.1 Scope

- A. Stretched Fabric Panel
- B. Framework
- C. Core Material
- D. Specified Fabric
- E. Installation

##### 1.2 Description

- A. Wall/ceiling mounted polymer extrusions attached directly to substrate or furring strips. Polymer extrusions to be continuous perimeter, midwall, inside/outside corner extrusions, as selected to meet design requirements.
- B. Fabric shall be stretched over core material and tucked into polymer extrusions. Replacement and removal of fabric from individual panels shall be achieved without removal of the extrusions or disturbing adjacent panels. Fabric shall not be held in place by mechanical fasteners of any type, finish nails and/or adhesive tape.
- C. Hinged or self-locking types of polymer extrusions and prefabricated panels do not meet the intent of this specification.

##### 1.3 Submittals

- A. Samples
  - 1. Sample size: 12" x 12" for core, memo of fabric and 6" length of extrusion, as required.
  - 2. Substitutions MUST submit a mock-up panel utilizing the specified edge, midwall, core and fabric requirements.
- B. Quality Assurance
  - 1. Installing company shall submit a list of not less than 5 most recent installations representing similar scope and complexity to project requirements. Nationwide project lists by track manufacturer will not be accepted. Listing shall include:
    - a) Project name and address
    - b) Name of architect
    - c) Date of completion
- C. Warranty
  - 1. Installing company to submit written warranty for the workmanship of the stretched fabric system. Stretched fabric system shall be warranted for a minimum of 1 year from date of substantial completion.

##### 1.4 Delivery, Storage and Handling

- A. Protect system components from excessive moisture in shipment, storage and handling. Deliver in unopened bundles and store in a dry area with adequate air circulation.
- B. Do not deliver material to building until all "wet conditions" such as concrete, plaster, paint and adhesives have been completed and cured to a condition of equilibrium.

#### PART 2 PRODUCTS

##### 2.1 Acceptable Installers

- A. AEC, Inc.  
3360 Wiley Post Rd.  
Suite 150  
Carrollton, TX 75006  
Website: [www.aeccorp.com](http://www.aeccorp.com)  
Barbara O'Toole  
Phone: 972.488.1066  
Fax: 972.488.0554
- B. Substitutions
  - 1. Architect shall determine acceptability of proposed substitutions by reviewing information required for submittals.

## 2.2 Materials

### A. Framework and Core

1. Panel Size: As indicated on drawings
2. Framework: Extruded polymer track as manufactured by Whisper Walls® and distributed by AEC, Inc.
  - a) Edge Configuration: 7/8" straight edge
  - b) Midwall Configuration: 7/8" abutted midseam
3. Core
  - a) Semi-rigid fiberglass board
    - 1) Density: 6 # density sanded face
    - 2) Thickness: 3/4" to allow fabric to float over the fiberglass
  - b) Custom – N/A
4. Fire Resistance: ASTM E84
  - a) Complete panel assembly including: framework, midwall support, mounting devices, core and fabric shall have a Class A rating.
    - 1) Flame Spread Index: 10 "Class 0-25" (Class A)
    - 2) Smoke Developed Index: 5

### B. Fabric: See Fabric Selection Guidelines

1. Specify fabric: \$30 / lineal yard allowance
2. Patterned fabric to align at all horizontal and vertical seams
3. Provide additional stock fabric: Fabric amount to accommodate two full drops/runs of fabric based on the longest run.

## PART 3 EXECUTION

### 3.1 Examination

#### A. Site Verification of Conditions

1. Examine substrate and spaces in which work is to be performed. Notify the contractor in writing of any unsatisfactory conditions.
2. Do not begin installation until unsatisfactory conditions have been corrected in a manner satisfactory to the installer.

### 3.2 Installation

#### A. Framework

1. Install rigid polymer extrusions to the surfaces scheduled to receive fabric system.
2. Install polymer extrusions shimmed, plumbed and scribed to align with adjacent surfaces.
3. Provide framing around outlet boxes, duplex receptacles, thermostats, etc., that occur within fabric panel area.

#### B. Core Material

1. Material shall be installed in a continuous manner, flush to the shoulder of the polymer extrusion.

#### C. Fabric

1. Cut fabric from each roll maintaining sequence of drops and matching direction of weave for sequential and uniform installation.
2. Fabric shall be stretched and secured in the polymer extrusion. Utilizing nails, glue or adhesive tapes shall not be permitted. Ensure the fabric surface is free of wrinkles, flaws and other defects.

### 3.3 Cleaning

- A. Clean exposed surfaces of fabric system. Repair or replace work that cannot be easily cleaned.
- B. Advise contractor of required protection, including soiling from other trades and dust control, so fabric system will be without damage and deterioration at time of acceptance by owner.
- C. Remove surplus materials, rubbish and debris from the area.

**END OF SECTION**

## SECTION 09651

### RESILIENT BASE AND ACCESSORIES

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and Drawings are collectively applicable to this Section.
- B. Section Includes:
  - 1. Installation of Contractor furnished resilient base.

##### 1.2 REGULATORY REQUIREMENTS

- A. Conform to applicable building code for flame! fuel!smoke rating requirements in accordance with ASTM E 84.

##### 1.3 SUBMITTALS

- A. General: Submit in accordance with Section 01330.
- B. Product Data: Submit product data for each product.
  - 1. Include information for accessories and other required components.
  - 2. Include color charts for finish indicating manufacturer's full range of colors available for selection.
- C. Samples: Provide three samples to illustrate style, color, and size.

##### 1.4 QUALITY ASSURANCE

- A. Single Source Responsibility: Obtain each type and color of resilient products from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- B. Installer Qualifications: Acceptable to manufacturer with documented experience on at least 5 projects of similar nature in past five years.
- C. Regulatory Requirements: Comply with local regulations controlling use of volatile organic compounds for installation products.
- D. Certifications: Submit following:
  - 1. Manufacturer's certification that products furnished for project meet or exceed specified requirements.
  - 2. Manufacturer's certification attesting that Installer is trained and approved for application of materials.

##### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with Section 01600.
  - 1. Deliver materials to job site in manufacturer's unopened containers clearly marked with manufacturer's name, brand, size, thickness, grade, and color.
  - 2. Store materials in accordance with manufacturer's requirements.

##### 1.6 PROJECT CONDITIONS

- A. Environmental Requirements: Maintain minimum air and surface temperature required by adhesive manufacturer in spaces to receive products for at least 72 hours prior to installation, during installation, and for not less than 48 hours after installation.
  - 1. Store products in spaces where they will be installed for at least 72 hours before beginning installation to achieve temperature stability.
  - 2. Do not install products until they are at same air and surface temperature as space where they are to be installed.
  - 3. After installation, maintain minimum air and surface temperature of 55 F in areas where work is completed.

## 1.7 MAINTENANCE

- A. Extra Materials: Furnish in accordance with Section 01780.
  - 1. Furnish resilient base in quantity equal to 2 percent of total material furnished but not less than:
    - a. 50 feet of each type and color base installed.
    - b. Six of outside molded corners matching base.
    - c. Provide in roll form of each different composition and color installed.
  - 2. Store at job site where directed. Ensure boxes are identified by manufacturer, pattern, style, and color.
  - 3. Submit cleaning and maintenance data under provisions of Section 01780.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Trim Component Manufacturers:
  - 1. Flexco Company, Tuscumbia, AL.
  - 2. Johnsonite, Division of Duramax, Chagrin Falls, OH.
  - 3. Mercer Plastics Co., Inc., Eustis, FL.
  - 4. Roppe, Fostoria, OH.
  - 5. Bently.
- B. Substitutions: Submit in accordance with Section 01600.

### 2.2 MATERIALS

- A. Resilient Base:
  - 1. ASTM F 1861.
  - 2. Type: TR (Thermoplastic Rubber).
  - 3. Style: Coved type.
  - 4. Group: Solid/ homogenous.
  - 5. Thickness: 0.125 inch nominal.
  - 6. Height: 4 inches nominal.
  - 7. Provide in roll form to accommodate installation with minimum seaming.
  - 8. Color: To be selected from manufacturer's full color range.

### 2.3 ACCESSORIES

- A. Primers and Adhesives: Waterproof.
  - 1. Materials required by resilient product manufacturer for particular product and substrate moisture content and condition.
  - 2. Removable adhesive with antimicrobial additive; approved by resilient product manufacturer.
  - 3. Volatile Organic Compound: 3 g/L, maximum.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine conditions and proceed with work in accordance with Section 01450.
  - 1. Site Verification of Conditions: Verify that surfaces are free of substances which may adversely affect adhesive and resilient materials.

### 3.2 PREPARATION

- A. Prepare Substrate:
  - 1. Remove ridges, bumps, trowel marks and protrusions from substrate.
  - 2. Fill depressions, low spots, cracks, joints, holes, indentations, and other defects with leveling and patching compounds.
  - 3. Clean substrate to remove paint, dirt, oil, grease, sealers, release agents, hardening compounds, curing compounds, residual adhesives, and harmful substances which could impair performance of adhesive materials used with resilient products.
  - 4. Vacuum clean substrate.
  - 5. Prime substrate in accordance with manufacturer's requirements.

6. Unroll rolled products minimum 24 hours before installation, unless not required by manufacturer.

### 3.3 INSTALLATION

- A. General: Comply with Section 01600.
  1. Adhesive: Apply with notched trowel at rate and in pattern required by manufacturer.
    - a. Gun application is not permitted.
    - b. Apply to provide continuous bond between resilient material and substrate. Do not allow adhesive to bleed through joints.
    - c. Spread only enough adhesive to permit installation of materials before adhesive's initial set.
    - d. Allow solvent to flash off and adhesive to become tacky in accordance with manufacturer's requirements before applying resilient product.
  2. Scribing: Produce tight hairline joints.
    - a. Scribe to walls, columns, cabinets, floor outlets, floor penetrations, and other appurtenances.
    - b. Scribe, cut and fit exposed edges at adjoining construction and neatly abut.
- B. Resilient Base: Use longest lengths possible; pieces less than 10 feet long are not permitted. Seams are not permitted between wall corners spaced less than 10 feet apart.
  1. Fit joints straight, tight, and vertical.
  2. Install on solid substrate backing.
  3. Bond tight to wall and floor surfaces.
  4. Scribe to door frames and other interruptions.
  5. Outside Corners: Use corner units.
  6. Inside Corners: Butt and cope, or mitered.
    - a. Do not wrap base around inside corners.
  7. Align tops of adjacent sections.
  8. Change from cove base to straight base at flooring transition strips.

### 3.4 CLEANING

- A. Cleaning: Clean in accordance with Section 01740.
  1. Immediately remove excess adhesive from surfaces without damage.
  2. Replace scuffed, scratched, broken, and discolored products.
  3. Re-install loose products.
  4. Clean surfaces in accordance with manufacturer's requirements. Do not use materials and methods which may damage finish [surface] and surrounding construction.

### 3.5 PROTECTION

- A. Protect in accordance with Section 01500.
  1. Protect work from damage from subsequent construction operations so there will be no indication of use and damage at time of acceptance.

**END OF SECTION**

## SECTION 09653

### RESILIENT FLOORING

#### PART I GENERAL

##### 1.1 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and Drawings are collectively applicable to this Section.

##### 1.2 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for 3 days prior to installation in area of installation to achieve temperature stability.
- B. Maintain ambient temperature required by adhesive manufacturer three days prior to, during, and 24 hours after installation of materials.
- C. Do not begin installation until building is completely enclosed and HVAC system is operating and maintaining temperature and humidity conditions consistent with "after occupancy" conditions for a minimum of 2 weeks.
- D. Substrate Moisture and pH Testing:
  - 1. Perform pre-installation testing of the concrete slab by a calcium chloride test, or as otherwise required by flooring manufacturer, prior to the application of flooring products in accordance with ASTM F 1869 – 98.
  - 2. Perform testing by qualified personnel.
  - 3. Determine the change in weight of moisture-absorbing anhydrous calcium chloride and represent the amount of moisture transmitting out of the concrete slab area.
  - 4. Express the value in pounds as the equivalent weight of water that is emitted from a 1,000 square foot concrete slab surface area in a 24 hour period of time.
  - 5. Provide pH testing of substrate.
  - 6. Provide a diagram of the building verifying each testing location with its results.
  - 7. Provide 3 tests per 1000 square feet of floor area plus one additional test for each 1000 square feet thereafter. Locate tests in various parts of the floor area including the center of the floor and sites of potential moisture such as the perimeter of the floor, joints, or cracks.
  - 8. Acceptable Product: Concrete Vapor and pH Testing Kits as manufactured by Vaprecision Testing Systems, 800-449-6194 or as otherwise approved by flooring and adhesive manufacturer.

##### 1.3 STORAGE AND HANDLING

- A. Store and handle materials in accordance with the requirements of Sections 01600.
- B. Store flooring materials in original containers in enclosed space at minimum of 70 degrees F for 3 days prior to installation.

#### PART 2 PRODUCTS

##### 2.1 TILE FLOORING MATERIALS

- A. Sheet Linoleum
  - 1. Linoleum sheet flooring, type 1 with jute backing
  - 2. Size: 79" widths, 1/10" thickness.
  - 3. Acceptable Product: Forbo Marmoleum Real, color to be selected by Architect from manufacturer's full range of colors.

##### 2.2 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.

- C. Resilient Flooring Reducer Strips:
  1. Material: Homogeneous vinyl or rubber composition.
  2. Width: 1 inch, minimum.
  3. Align flush with top of resilient flooring on side of strip.
  4. Tapered or bullnose edge on side opposite of resilient flooring.
  5. Colors: Selected by Architect from manufacturer's full range of colors.
  6. Acceptable products:
    - a. Tile Reducer Strip #92, Flexco.
    - b. RRS-XX-C Series, Johnsonite.
    - c. Tile Reducer #633, Mercer.
    - d. Reducer Strip #172, Roppe.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that surfaces are smooth and flat with maximum variation of 1/4 inch in 10 feet, and are ready to receive Work. Verify that subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- B. Air temperature and surfaces in rooms to receive flooring shall be within tolerance range as determined by flooring and adhesive manufacturers
- C. Examine substrates, areas, and conditions where installation of resilient products will occur, with Installer present, for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified.
  1. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
    - a. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by floor covering manufacturer.
    - b. Submit floor covering and adhesive manufacturers written acceptance of the concrete floor substrate as represented by moisture and pH testing.
    - c. If test results indicate concrete subfloor is not within manufacturers' acceptable range, consult with Architect for appropriate remedial action.
- D. Do not proceed with installation until unsatisfactory conditions have been corrected.
- E. Beginning of installation means acceptance of existing substrate and site conditions.

### **3.2 PREPARATION**

- A. Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.
- B. Apply, trowel, and float filler to leave a smooth, flat, hard surface.
- C. Prohibit traffic from area until filler is cured.
- D. Vacuum clean substrate.
- E. Apply primer to surfaces as recommended by manufacturer.

### **3.3 INSTALLATION - MATERIAL**

- A. Install in accordance with manufacturers' instructions.
- B. Mix tile from container to ensure shade variations are consistent.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Joints shall be tight butt joints, true to line.
- E. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar.
- F. Install edge strips at unprotected or exposed edges, and where flooring terminates.
- G. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- H. Install edge strips wherever flooring abuts another floor finish or where it stops at a raw concrete edge.

3.4 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.
- B. Repair or replace damaged surfaces that are soiled or scarred in a manner acceptable to Owner.

3.5 CLEANING

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

**END OF SECTION**

## SECTION 09682

### CARPET TILES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section Includes:
  - 1. Carpet tiles.
  - 2. Edgings.
- B. Related Sections:
  - 1. Division 1: Administrative, procedural, and temporary work requirements.

##### 1.2 REFERENCES

- A. ASTM International (ASTM ) F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- B. National Fire Protection Association (NFPA) 253 - Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

##### 1.3 SUBMITTALS

- A. Submittals for Review:
  - 1. Samples:
    - a. Carpet tile: Full size samples in each color and pattern.
    - b. Edgings: 4 inch long samples showing available colors.
- B. Quality Control Submittals:
  - 1. Certificates of Compliance: Certification from an independent testing laboratory that carpet tiles meet fire hazard classification requirements.

##### 1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum 2 years documented experience in work of this Section.
- B. Fire Hazard Classification: Class I rated, tested to NFPA 253.

##### 1.5 PROJECT CONDITIONS

- A. Do not begin installation until painting and finishing work have been completed.
- B. Environmental Requirements:
  - 1. Temperature of spaces and subfloor between 65 and 90 degrees F.
  - 2. Humidity in spaces to receive carpet tiles between 20 and 65 percent.

##### 1.6 MAINTENANCE

- A. Extra Materials: 100 square feet of each color and pattern.

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

- A. Carpet Tiles: **refer to allowance (section 01210). Product described is a general reference only. Actual selection will be made by Architect and allowance rectified contractually.**
- B.
  - 1. Source: Borneo tile by Shaw Group.
  - 2. Construction: multilevel pattern loop.
  - 3. Face yarn: Eco solution q nylon.
  - 4. Weight: 30 ounces per square yard.
  - 5. Backing: Ecoworx tile.
  - 6. Size: 24 x 24

##### 2.2 ACCESSORIES

- A. Adhesive: Waterproof, latex based cement formulated specifically for installing carpet tiles; recommended by carpet tile manufacturer.
- B. Edgings: Preformed rubber, profile required to suit conditions, color to be selected from

- manufacturer's full color range.
- C. Leveling Compound: Premixed, latex based.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Verify that concrete floors have cured a minimum 28 days and do not exhibit negative alkalinity, carbonization, or dusting.

#### **3.2 PREPARATION**

- A. Substrate:
  - 1. Remove loose and foreign matter.
  - 2. Fill cracks, voids, and depressions with leveling compound.
  - 3. Grind ridges and high spots smooth.
- B. Test substrate for moisture content to ASTM F1869; do not install carpet tiles until moisture emission level is acceptable to carpet tile manufacturer.

#### **3.3 INSTALLATION OF CARPET TILES**

- A. Install carpet tile and adhesive in accordance with manufacturers' instructions.
- B. Blend carpet tiles from different cartons to ensure minimal variation in color match.
- C. Lay out each room or area to minimize tiles less than one half size.
- D. Cut tile clean. Fit tiles tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile to manufacturer's recommended pattern, with tile set parallel to building lines.
- F. Locate change of color or pattern between rooms under door centerline.
- G. Fully adhere carpet tiles to substrate.

#### **3.4 INSTALLATION OF EDGINGS**

- A. Install strips where carpet tiles abut dissimilar flooring materials; secure to subfloor.
- B. Center strips under doors where carpet tiles terminate at door openings.
- C. Install in longest practical lengths; butt ends tight.
- D. Scribe to abutting surfaces.

#### **3.5 CLEANING**

- A. Clean spots as recommended by carpet tile manufacturer.
- B. Cut off loose threads flush with top surface.
- C. Clean with commercial vacuum cleaner.

**END OF SECTION**

## SECTION 09685

### SHEET CARPET - GLUE DOWN

#### PART I GENERAL

##### 1.1 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 - General Requirements, and Drawings are collectively applicable to this Section.
- B. Section Includes:
  - 1. Surface preparation.
  - 2. Installation of glue down carpeting on floor surfaces.
  - 3. Accessories, including edge strips.

##### 1.2 SUBMITTALS

- A. Submit shop drawings under provisions of Section 01330.
- B. Clearly indicate the location of seams, method of joining seams, direction of carpet, type of adhesive to be used, and method of integrating edge strips with carpet.
  - 1. Provide seaming layout for Contractor's quantity take-off.
- C. Provide product data on specified products, describing physical and performance characteristics, sizes, patterns, colors available and method of installation.
- D. Submit samples under provisions of Section 01330.
- E. Submit 4 inch long sample of each type of edge stripping to be used.

##### 1.3 STORAGE AND HANDLING

- A. Handle and store carpet materials in accordance with the requirements of Sections 01600.
- B. Receive carpet covered with original mill protective wrapping with register number properly marked on each package. Store flat in dry protected well ventilated areas. Protect against damage and soiling.
- C. Store materials for 3 days prior to installation in the areas of installation to achieve temperature stability.

##### 1.4 ENVIRONMENTAL REQUIREMENTS

- A. Do not commence with carpet installation until painting and finishing work is complete and ceilings and overhead work, tested, approved, and completed.
- B. Maintain room temperature at minimum 70 degrees F and relative humidity at approximately that at which the area is to be maintained for at least 24 hours prior to, during, and for 24 hours after installation.
- C. Provide sufficient lighting.
- D. Substrate Moisture and pH Testing:
  - 1. Perform pre-installation testing of the concrete slab by a calcium chloride test, or as otherwise required by flooring manufacturer, prior to the application of flooring products in accordance with ASTM F 1869 – 98.
  - 2. Perform testing by qualified personnel.
  - 3. Determine the change in weight of moisture-absorbing anhydrous calcium chloride and represent the amount of moisture transmitting out of the concrete slab area.
  - 4. Express the value in pounds as the equivalent weight of water that is emitted from a 1,000 square foot concrete slab surface area in a 24 hour period of time.
  - 5. Provide pH testing of substrate.
  - 6. Provide a diagram of the building verifying each testing location with its results.
  - 7. Provide 3 tests per 1000 square feet of floor area plus one additional test for each 1000 square feet thereafter. Locate tests in various parts of the floor area including the center of the floor and sites of potential moisture such as the perimeter of the floor, joints, or cracks.

8. Acceptable Product: Concrete Vapor and pH Testing Kits as manufactured by Vaprecision Testing Systems, 800-449-6194 or as otherwise approved by flooring and adhesive manufacturer.

#### 1.5 QUALITY ASSURANCE

- A. Installer: Company with three years minimum documented experience in carpeting installations of similar scope.

### **PART 2 PRODUCTS**

#### 2.1 MATERIALS

- A. Carpet: nylon, 12 foot widths.
- B. Color/style: refer to allowance

#### 2.2 ACCESSORIES

- A. Sub Floor Filler: White premixed latex; type recommended by carpet manufacturer.
- B. Adhesive: Waterproof, of type recommended by carpet manufacturer to suit application and expected service.

### **PART 3 EXECUTION**

#### 3.1 PREPARATION

- A. Clean floors of dust, dirt, solvents, oil, grease, paint, plaster, and other substances detrimental to proper performance of adhesive and carpet.
- B. Ensure floors are level, with maximum surface variation of 1/4 inch in 10 feet non-cumulative. Inspect subflooring for cracks, holes, abrasions, rough spots, ridges, or other conditions that will adversely affect execution and quality of work.
- C. Ensure concrete floors are free from scaling and irregularities and exhibit neutrality relative to acidity and alkalinity.
- D. Use an approved filler to patch cracks, small holes, and for leveling.
- E. Verify that surfaces are smooth and flat with maximum variation of 1/4 inch in 10 feet, and are ready to receive Work. Verify that subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- F. Air temperature and surfaces in rooms to receive flooring shall be within tolerance range as determined by flooring and adhesive manufacturers
- G. Examine substrates, areas, and conditions where installation of resilient products will occur, with Installer present, for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified.
  1. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
    - a. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by floor covering manufacturer.
    - b. Submit floor covering and adhesive manufacturers written acceptance of the concrete floor substrate as represented by moisture and pH testing.
    - c. If test results indicate concrete subfloor is not within manufacturers' acceptable range, consult with Architect for appropriate remedial action.
- H. Do not proceed with installation until unsatisfactory conditions have been corrected.
- I. Beginning of installation means acceptance of existing substrate and site conditions.

### 3.2 INSTALLATION

- A. Lay out rolls of carpet full for Architect approval.
- B. Check matching of carpet before cutting and ensure there is no visible variation between dye lots.
- C. Cut carpet, where required, in manner to allow proper seam and pattern match. Ensure cuts are straight and true and not frayed.
- D. Seams
  - 1. Install in accordance with approved seam layout using a minimum of seams. Where possible and practical, locate seams in areas of least amount of traffic.
  - 2. Do not use small carpet fill strips.
  - 3. Do not place seams perpendicular to doors or entries.
  - 4. Cross joints necessary due to layout of areas shall be at absolute minimum and shall be indicated on shop drawings.
  - 5. Cross joints necessary due to length of rolls received shall be placed, in the cutting, to avoid occurrence at conspicuous locations, near doors or at pivot points, and shall be approved prior to seaming.
  - 6. Join seams in recommended manner so as not to detract from the appearance of the carpet installation and decrease its life expectancy. Ensure seams are straight, not overlapped or peaked and free of gaps.
- E. Vacuum clean substrate. Spread adhesive in quantity recommended by manufacturer after primer application to ensure proper adhesion over full area of installation. Apply only enough adhesive to permit proper adhesion of carpet before initial set.
- F. Lay carpet on floors with the run of the pile in same direction of anticipated traffic. Lay carpet on stairs with run of the pile in opposite direction of anticipated traffic to avoid peeking of backing at nosing.
- G. Do not change run of pile in any one room or from one room to the next where run is continuous through a wall opening.
- H. Cut and fit carpet neatly around projections through floor and to walls and other vertical surfaces.
- I. Fit carpet snugly to walls or other vertical surfaces where no base is scheduled, leaving no gaps.
- J. Do not place heavy objects such as furniture on carpeted surfaces for minimum of 24 hours or until adhesive is set.
- K. Entire carpet installation is to be laid tight and flat to subfloor, well fastened at edges, and present a uniform pleasing appearance. Ensure monolithic color, pattern, and texture match within any one area.
- L. Install edging strips where carpet terminates at other floor coverings. Use full length pieces only. Butt tight to vertical surfaces. Where splicing cannot be avoided, butt ends tight and flush.
- M. Adhere carpet tight to treads and risers of stairs.

### 3.3 CLEANING

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

### 3.4 PROTECTION

- A. Prohibit traffic from carpet areas for 24 hours after installation.

**END OF SECTION**

## SECTION 09910

### PAINTS

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Related Documents: General and Supplementary Conditions of the Contract, Division 1 General Requirements, and Drawings are applicable to this Section.
- B. Section Includes:
  - 1. Complete interior and exterior surface preparation and finishing for field application of latex based coatings, and requirements for field finishing mechanical and electrical equipment.
  - 2. Examine specifications for various other trades and their provisions regarding their painting. Surfaces that are left unfinished by other sections of specifications, shall be painted or finished as a part of this Section.
  - 3. Colors, including deep tones, will be selected by the Architect. Number of colors to be used on job will be determined by Architect. Assume 20% of all paint applied will be accent colors.

##### 1.2 SURFACES NOT TO RECEIVE FIELD FINISHING

- A. Do not paint copper, bronze, chrome plated items, nickel, stainless steel, Monel metal, lead, face brick, prefinished wall, ceiling, and floor coverings, items with factory applied final finish (except where exposed on roofs and in finished spaces), elevator shafts, crawl spaces, chases, and plenums above suspended ceilings unless otherwise specified or scheduled.

##### 1.3 DEFINITIONS

- A. Conform to ASTM D16 for interpretation of terms used in this Section.

##### 1.4 QUALITY ASSURANCE

- A. Product Manufacturer: Company specializing in manufacturing quality paint and finish products with 3 years experience.
- B. Applicator: Company specializing in commercial painting and finishing with 2 years experience.
- C. Product Labels: Include manufacturer's name, type of paint, stock number, color and label analysis on label of containers.

##### 1.5 REGULATORY REQUIREMENTS

- A. Conform to applicable building code for flame spread/fuel contribution/smoke development rating requirements for finishes.
- B. Comply with applicable city, county, state, and federal requirements and ordinances regarding maximum VOC (Volatile Organic Compound) content of all coatings.

##### 1.6 TESTS

- A. Provide periodic testing with Wet Film Thickness gage to verify that proper thickness of finish coatings are being applied.

##### 1.7 SUBMITTALS

- A. Submit product data under provisions of Section 01330.
- B. Provide product data describing physical performance criteria and composition on all finishing products.
- C. Submit color selection samples under provisions of Section 01330.
- D. Submit 2 samples, 12 by 12 inches in size illustrating range of colors and textures selected for each surface finishing product scheduled.

## 1.8 FIELD SAMPLES

- A. Provide field samples under provisions of Section 01450.
- B. Provide field sample panel, 96 inches long by 96 inches wide, illustrating each coating color, texture, and finish intended for use.
- C. Locate where directed.
- D. Accepted sample may remain as part of the Work.

## 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptance.
- B. Container labeling to include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.
- C. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in well ventilated area, unless required otherwise by manufacturer's instructions.
- D. Take precautionary measures to prevent fire hazards and spontaneous combustion.

## 1.10 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the ranges required by paint manufacturer.
- B. Provide continuous ventilation and heating facilities to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and 48 hours after application of finishes, unless required otherwise by manufacturer's instructions.
- C. Do not apply exterior coatings during rain or snow, or when relative humidity is above 75 percent, unless required otherwise by manufacturer's instructions.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Minimum Application Temperature for Varnish and Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
- F. Provide lighting level of 80 ft candles measured mid- height at substrate surface.

## 1.11 EXTRA STOCK

- A. Provide a 5 gallon container of each color to Owner.
- B. Label each container with color, color number, texture, and room locations, in addition to the manufacturer's label.
- C. Furnish under provisions of Section 01780.

## 1.12 SCAFFOLDS AND PROTECTION

- A. Provide adequate safe ladders, scaffolds, and stages necessary to complete work.
- B. Protect completed finish and paint work, and protect adjacent finish surfaces from paint splatter, spills and stains. Use adequate drop cloths and masking procedures during progress of work.

## 1.13 PRECAUTIONS

- A. Do not store paints, oils, thinners and other flammable items inside the building and shall be stored in approved containers when not in actual use during the painting job. The fire hazard shall be kept at a minimum.
- B. Precaution shall be taken to protect the public and construction workers during the progress of the work.
- C. Furnish a temporary fire extinguisher of suitable chemicals and capacity, located near flammable materials.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements indicated, provide products of one of the following:

1. Sherwin-Williams.
  2. P.P.G. Industries.
  3. ICI Dulux.
  4. Benjamin Moore.
  5. Kelley Moore.
- B. Substitutions: Under provisions of Section 01600.
- C. Materials selected for coating systems for each type surface shall be product of a single manufacturer unless otherwise specified. Secondary products such as linseed oil, turpentine and shellacs shall be first quality products of a reputable manufacturer.
- D. Products specified in Schedule are those of Sherwin-Williams as a standard of quality unless otherwise noted.

## 2.2 MATERIALS

- A. Coatings: Ready mixed. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating with good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
- C. Patching Materials: Latex filler.

## 2.3 FINISHES

- A. Refer to schedule at end of Section for finish schedule.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that surfaces and substrate conditions are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report to Architect any condition that may potentially affect proper application.
- C. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums
  1. Plaster and Gypsum Wallboard: 12 percent.
  2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
  3. Interior Located Wood: 15 percent, measured in accordance with ASTM D2016.
  4. Exterior Located Wood: 15 percent, measured in accordance with ASTM D2016.
  5. Concrete Floors: 8 percent.
- D. Test shop applied primers for compatibility with subsequent cover materials.
- E. Beginning of installation means acceptance of existing surfaces and substrate.

### 3.2 PREPARATION

- A. Remove electrical plates, hardware, light fixture trim, and fittings prior to preparing surfaces or finishing.
- B. Correct minor defects and clean surfaces which affect work of this Section. Remove existing coatings which exhibit loose surface defects.
- C. Shellac and seal marks which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- F. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.
- G. Concrete Floors: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- H. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.
- I. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

- J. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- K. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- L. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- M. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- N. Aluminum with Alodine Finish: Clean by lightly scuff with sandpaper. Remove all dust.
- O. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- P. Interior Wood Items Schedule to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.
- Q. Exterior Wood Scheduled to receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied.
- R. Exterior Wood Scheduled to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior caulking compound after sealer has been applied.
- S. Shop Finished Items: Finish in accordance with AWI standards and guide lines.
- T. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.
- U. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

### 3.3 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.
- B. Repair damage to other surfaces caused by work of this Section.
- C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.
- D. Remove empty paint containers from site.

### 3.4 APPLICATION

- A. The intent of these Specifications is to produce the highest quality appearance of paint and finish surfaces. Employ skilled mechanics only. The proper preparation of all surfaces will be strictly enforced and wherever finished surfaces show any defects due to improper preparation, workmanship, etc., the defects shall be removed and the work refinished at the expense of the Contractor.
- B. Apply products in accordance with manufacturer's instructions. Final finish coats shall have visual evidence of solid hiding and uniform appearance, and shall be free and smooth of brush marks, streaks, sags, runs, laps, or skipped areas.
- C. Do not apply finishes to surfaces that are not dry.
- D. Apply each coat to uniform finish and thickness.
- E. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- F. Sand lightly between coats on wood and metal items to achieve required finish.
- G. Allow applied coat to dry before next coat is applied.
- H. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

- I. Prime back surfaces of interior and exterior woodwork scheduled to be painted with primer paint.
- J. Prime back surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.
- K. Edges of paint adjoining other materials or colors shall be sharp and clean with no overlapping.

### 3.5 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Paint all shop primed equipment. Paint shop prefinished items where exposed to view in finished spaces. In mechanical rooms, repair shop pre-finished coatings which have been scratched or otherwise damaged with identical touch-up paint. Sand prior to touching up as required.
- B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- C. Paint all grilles, registers, diffusers, and speaker grilles to match adjacent wall and ceiling surfaces, except that factory pre-finished items need not be painted if installed in a suspended acoustical ceiling system where the acoustical panels match the mechanical or electrical item color.
- D. In all finished spaces, prime and paint exposed pipes, conduit, boxes, ducts, hangers, brackets, collars and supports. Paint to match adjacent surfaces.
- E. Repair or replace identification markings on mechanical or electrical equipment when painted accidentally.
- F. Paint interior surfaces of air ducts and convectors that are visible through grilles and louvers with one coat of flat black paint, to limit of sight line. Paint dampers exposed behind louvers, grilles, and convector to match face panels.
- G. Paint all surfaces of plywood backboards for electrical and telephone equipment before installing equipment.
- H. Replace electrical plates, hardware, light fixture trim, and fittings removed prior to finishing.
- I. Paint exposed air handlers, roof ventilators, goose necks, exhaust fans and other items on the roof with 2 coats exterior enamel. Prepare surfaces in accordance with the base metal or primer as specified herein.
- J. Paint concrete support bases with gray floor deck enamel.
- K. Pipe hangers and other supports need not be painted except where installed in crawl spaces, where they shall be painted with a thick coat of asphaltic paint.

### 3.6 CLEANING/TOUCH-UP

- A. As Work proceeds, promptly remove paint where spilled, splashed, or spattered.
- B. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.
- C. Collect cotton waste, cloths, and material which may constitute a fire hazard, place in closed metal containers and remove daily from site.
- D. Spot painting will be allowed to correct soiled or damaged paint surfaces only when touch-up spot will blend into surrounding finish and is invisible to normal viewing (as determined by the Architect). Otherwise, re-coat entire section to corners or visible stopping point.

### 3.7 V.O.C. (VOLATILE ORGANIC COMPOUND) COMPLIANCE

- A. Products listed in following schedule and/or substitutes proposed for use by Contractor must be formulated to meet all applicable ordinances and regulations regarding maximum V.O.C. content. Utilize products which have been specially formulated to need such requirements.

### 3.8 SCHEDULE

- A. Interior Surfaces - Field Finished
  - 1. Wood – Clear (AWI TR-1)
    - a. Sher-Wood Hi-Bild Lacquer Sanding Sealer.
    - b. Two coats Sher-Wood Hi-Bild Lacquer, Satin.
  - 2. Gypsum Board - Satin
    - a. One coat roller applied latex texturing compound.

- b. One coat ProMar 200 Latex Wall Primer, 1.1 mils DFT.
    - c. Two coats Duration Home Interior Latex
  - 3. Ferrous Metal Items:
    - a. Touch up shop primer as required.
    - b. First Coat: Sherwin-Williams, DTM Acrylic B66W1.
    - c. Second Coat: Same as first.
  - 4. Galvanized Metal Items:
    - a. Primer: Sherwin-Williams, Galvite Paint No. B50W3.
    - b. Second Coat: Sherwin-Williams, DTM Acrylic B66W1.
    - c. Third Coat: Same as second.
  - 5. Miscellaneous Items Exposed to View and Not Otherwise Scheduled: Finish with compatible paint to match adjacent surface finish and color.
- B. Exterior Surfaces - Field Finished
  - 1. Ferrous Metal Items: Note G-90 Bonderized metal facias, flashings and panels are not to be painted.
    - a. Touch up shop primer as required.
    - b. First Coat: Sherwin-Williams, DTM Acrylic B66W1.
    - c. Second Coat: Same as first.
  - 2. Galvanized Metal Items:
    - a. Primer: Sherwin-Williams, Galvite Paint No. B50W3.
    - b. Second Coat: Sherwin-Williams, DTM Acrylic B66W1.
    - c. Third Coat: Same as second.
  - 3. Wood Items:
    - a. Sherwin-Williams, DeckScapes Exterior Waterborne Semi-transparent Stain, brush or roller applied. (FENCE) Color selected from standard range.
- C. Shop Finishes: Refer to individual sections.
- D. Colors: to be selected by Architect.

**END OF SECTION**