

## SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Non-load-bearing steel framing systems for interior partitions.
2. Suspension systems for interior ceilings and soffits.

#### 1.2 ACTION SUBMITTALS

##### A. Product Data: For each type of product.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of code-compliance certification for studs and tracks.
- B. Evaluation reports for firestop tracks post-installed anchors and power-actuated fasteners.

#### 1.4 QUALITY ASSURANCE

- A. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are certified according to the product-certification program of the Certified Steel Stud Association the Steel Framing Industry Association or the Steel Stud Manufacturers Association.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E119 by an independent testing agency.

#### 2.2 FRAMING SYSTEMS

- A. Framing Members, General: Comply with ASTM C754 for conditions indicated.
  1. Steel Sheet Components: Comply with ASTM C645 requirements for steel unless otherwise indicated.
  2. Protective Coating: ASTM A653/A653M, G40 (Z120), hot-dip galvanized unless otherwise indicated.

B. Studs and Tracks: ASTM C645.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
  - a. ClarkDietrich.
  - b. MarinoWARE.
  - c. Or prior approved equal
2. Minimum Base-Steel Thickness: As required by performance requirements for horizontal deflection.
  - a. 20 ga. Typical. Coordinate with details.
  - b. 18 ga. where wall extends to structure, see partition types.
  - c. 16 ga. where wall height exceeds 15'-0"
3. Depth: As indicated on Drawings.

C. Slip-Type Head Joints: Where indicated, provide one of the following:

1. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to tracks while allowing **1-1/2-inch (38-mm)** minimum vertical movement.
  - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) ClarkDietrich.
    - 2) Marino\WARE.
2. Single Long-Leg Track System: ASTM C645 top track with **2-inch- (51-mm-)** deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top track and with continuous bridging located within **12 inches (305 mm)** of the top of studs to provide lateral bracing.
3. Double-Track System: ASTM C645 top outer tracks, inside track with **2-inch- (51-mm-)** deep flanges in thickness not less than indicated for studs and fastened to studs, and outer track sized to friction-fit over inner track.
4. Deflection Track: Steel sheet top track manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

D. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Minimum Base-Steel Thickness: **0.0329 inch (0.836 mm)**.

E. Cold-Rolled Channel Bridging: Steel, **0.0538-inch (1.367-mm)** minimum base-steel thickness, with minimum **1/2-inch- (13-mm-)** wide flanges.

1. Depth: **1-1/2 inches (38 mm)**.
2. Clip Angle: Not less than **1-1/2 by 1-1/2 inches (38 by 38 mm)**, **0.068-inch- (1.72-mm-)** thick, galvanized steel.

- F. Cold-Rolled Furring Channels: **0.053-inch (1.34-mm)** uncoated-steel thickness, with minimum **1/2-inch- (13-mm-)** wide flanges.
  - 1. Depth: As indicated on Drawings.
  - 2. Furring Brackets: Adjustable, corrugated-edge-type steel sheet with minimum uncoated-steel thickness of **0.0329 inch (0.8 mm)**.
  - 3. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, **0.062-inch- (1.59-mm-)** diameter wire, or double strand of **0.048-inch- (1.21-mm-)** diameter wire.

## 2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
  - 1. Fasteners for Steel Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C754.
  - 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.
- B. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
- C. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
- D. Install bracing at terminations in assemblies.
- E. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

### 3.2 INSTALLING FRAMED ASSEMBLIES

- A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.
- B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- C. Install studs so flanges within framing system point in same direction.
- D. Install tracks at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts that penetrate partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
  2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install track section (for cripple studs) at head and secure to jamb studs.
    - a. Install two studs at each jamb unless otherwise indicated.
    - b. Install cripple studs at head adjacent to each jamb stud, with a minimum **1/2-inch (13-mm)** clearance from jamb stud to allow for installation of control joint in finished assembly.
    - c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.
  3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
- E. Direct Furring:
1. Screw to wood framing.
  2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced **24 inches (610 mm)** o.c.
- F. Installation Tolerance: Install each framing member so fastening surfaces vary not more than **1/8 inch (3 mm)** from the plane formed by faces of adjacent framing.

END OF SECTION 09 22 16

## SECTION 09 29 00 - GYPSUM BOARD

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Interior gypsum board.
  - 2. Exterior gypsum board for ceilings and soffits.
  - 3. Tile backing panels.

#### 1.2 ACTION SUBMITTALS

- A. Product data.
- B. Shop Drawings: Show locations and installation of control and expansion joints, including plans, elevations, sections, details of components, and attachments to other work.
- C. Samples: For each texture finish indicated on same backing indicated for Work.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.

#### 2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

#### 2.3 INTERIOR GYPSUM BOARD

- A. Gypsum Wallboard: ASTM C1396/C1396M.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

- a. CertainTeed; SAINT-GOBAIN.
  - b. [Georgia-Pacific Gypsum LLC](#).
  - c. Gold Bond Building Products, LLC provided by National Gypsum Company.
  - d. [USG Corporation](#).
2. Thickness: **5/8 inch (15.9 mm)**.
3. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
- B. Gypsum Board, Type X: ASTM C1396/C1396M.
  1. Thickness: **5/8 inch (15.9 mm)**.
  2. Long Edges: Tapered and featured (rounded or beveled) for prefilling.
- C. Gypsum Ceiling Board: ASTM C1396/C1396M.
  1. Thickness: **5/8 inch (15.9 mm)**.
  2. Long Edges: Tapered.
- D. Mold-Resistant Gypsum Board: ASTM C1396/C1396M. With moisture- and mold-resistant core and paper surfaces.
  1. Core: **5/8 inch (15.9 mm)**, Type X.
  2. Long Edges: Tapered.
  3. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

## 2.4 SPECIALTY GYPSUM BOARD

- A. Gypsum Board, Type C: ASTM C1396/C1396M. Manufactured to have increased fire-resistive capability.
  1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
    - a. [CertainTeed; SAINT-GOBAIN](#).
    - b. [Georgia-Pacific Gypsum LLC](#).
    - c. Gold Bond Building Products, LLC provided by National Gypsum Company.
    - d. [USG Corporation](#).
  2. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
  3. Long Edges: Tapered.

## 2.5 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

- A. Exterior Gypsum Soffit Board: ASTM C1396/C1396M, with manufacturer's standard edges.
  1. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
    - a. [CertainTeed; SAINT-GOBAIN](#).
    - b. [Georgia-Pacific Gypsum LLC](#).
    - c. Gold Bond Building Products, LLC provided by National Gypsum Company.
  2. Core: **5/8 inch (15.9 mm)**, Type X.

## 2.6 TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. James Hardie Building Products, Inc.
    - b. PermaBASE Building Products, LLC provided by National Gypsum Company.
    - c. USG Corporation.
  - 2. Thickness: **5/8 inch (15.9 mm).**
  - 3. Mold Resistance: ASTM D3273, score of 10 as rated in accordance with ASTM D3274.

## 2.7 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.
  - 1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
  - 2. Shapes:
    - a. Cornerbead.
    - b. Bullnose bead.
    - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
    - d. L-Bead: L-shaped; exposed long flange receives joint compound.
    - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    - f. Expansion (control) joint.
    - g. Curved-Edge Cornerbead: With notched or flexible flanges.
- B. Exterior Trim: ASTM C1047.
  - 1. Material: Hot-dip galvanized-steel sheet, plastic, or rolled zinc.
  - 2. Shapes:
    - a. Cornerbead.
    - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
    - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

## 2.8 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M.
- B. Joint Tape:
  - 1. Interior Gypsum Board: Paper.
  - 2. Exterior Gypsum Soffit Board: Paper.
  - 3. Tile Backing Panels: As recommended by panel manufacturer.

- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.
  - 1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
  - 2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
    - a. Use setting-type compound for installing paper-faced metal trim accessories.
  - 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
  - 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
  - 5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.
- D. Joint Compound for Exterior Applications:
  - 1. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
- E. Joint Compound for Tile Backing Panels:
  - 1. Cementitious Backer Units: As recommended by backer unit manufacturer.
  - 2. Mold-Resistant gypsum units, ProForm XP.

## 2.9 AUXILIARY MATERIALS

- A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- C. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
  - 1. Use screws complying with ASTM C954 for fastening panels to steel members from **0.033 to 0.112 inch** (0.84 to 2.84 mm) thick.
  - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound-Attenuation Blankets: ASTM C665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
  - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Thermal Insulation: As specified in Section 07 21 00 "Thermal Insulation."
- F. Vapor Retarder: As specified in Section 072600 "Vapor Retarders."



## PART 3 - EXECUTION

### 3.1 INSTALLATION OF PANELS

- A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- B. Comply with ASTM C840.
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide ~~1/4- to 1/2-inch-~~ (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- D. For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

### 3.2 FINISHING OF GYPSUM BOARD

- A. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- B. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- C. Gypsum Board Finish Levels: Finish panels to levels indicated below and in accordance with ASTM C840:
  - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
  - 2. Level 2: Panels that are substrate for tile.
  - 3. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
    - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
  - 4. Level 5: Where semi-gloss finishes are to be used.
    - a. Primer and its application to surfaces are specified in Section 09 91 00 "Painting."
- D. Cementitious Backer Units: Finish according to manufacturer's written instructions.

### 3.3 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 09 29 00

## SECTION 09 30 13 - PORCELAIN TILING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Porcelain floor and wall tile.
  - 2. Stone thresholds.
  - 3. Crack isolation membrane.
  - 4. Metal edge strips.

#### 1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples:
  - 1. Each type and composition of tile and for each color and finish required. Submit full range of colors/patterns for selection by architect.
  - 2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required.
  - 3. Stone thresholds.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Manufacturer's suggested maintenance and cleaning instructions in printed form.
- B. Deliver extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents for Owner's future use.
  - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications:

1. Installer is a member of the National Tile Contractors Association.
  2. Installer's supervisor for Project holds the International Masonry Institute's Foreman Certification.
- B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Build mockup of floor tile pattern.
  2. Build mockup of wall tile pattern.
  3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide Standard-grade tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCNA installation methods specified in tile installation schedules, and other requirements specified.

### 2.2 TILE PRODUCTS

- A. Ceramic Tile Type Unglazed porcelain tile.
1. Manufacturers: Subject to compliance with requirements, provide products by the following:
    - a. Virginia Tile, VTIL Collection
  2. Certification: Tile certified by the Porcelain Tile Certification Agency.
  3. Face Size: Nominal 12 x 24. Per Architect's layout.
  4. Thickness: 7/16 inch.
  5. Face: Plain with square or cushion edges.
  6. Dynamic Coefficient of Friction: Not less than 0.42.
  7. Tile Color and Pattern:
    - a. Waston Silver VTL, WT SI
    - b. Caesar Tiles/ Clash Spirit, CAEESP1224R Matt
  8. Grout Color: TEC Dove Gray 908
  9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
    - a. Base Cap: Surface square top edge, 6" high cove, align joints with adjacent flat floor tile.

- b. Wainscot Cap: Surface bullnose, 3", align with joints with adjoining flat tile.
- c. External Corners: Surface bullnose, module size same as adjoining flat tile.

## 2.3 THRESHOLDS

- A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.
  - 1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch (1.5 mm) above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to less than 1/2 inch above adjacent floor surface.
- B. Marble Thresholds: ASTM C 503/C 503M, with a minimum abrasion resistance of 12 according to ASTM C 1353 or ASTM C 241/C 241M and with honed finish.
  - 1. Description: Uniform, fine- to medium-grained white stone with gray veining.
  - 2. Description: Submit samples for selection by Architect.

## 2.4 SETTING MATERIALS

- A. General (Use appropriate applications noted below as project requires or is otherwise indicated): Provide setting materials in pre-packaged volumes to which water combined with liquid-latex additive is added to mix and mixed at the Project Site.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Bonsal American, an Oldcastle company.
    - b. Bostik, Inc.
    - c. C-Cure.
    - d. Laticrete International, Inc.
    - e. MAPEI Corporation.
  - 2. For wall applications, provide non-sagging mortar.
- B. Portland Cement Mortar (Thickset application) Installation Materials: ANSI A108.02.
- C. Dry-Set Portland Cement Mortar (Thinset application): ANSI A118.1.
- D. Latex-Portland Cement Mortar (Thinset): ANSI A118.4.
- E. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3
- F. Organic Adhesive: ANSI A136.1, Type I

## 2.5 GROUT MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10, consisting of white or gray cement and white or colored aggregate as required to produce color indicated.

B. Standard Cement Grout: ANSI A118.6.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. Bonsal American, an Oldcastle company.
  - b. Bostik, Inc.
  - c. C-Cure.
  - d. Laticrete International, Inc.
  - e. MAPEI Corporation.

C. Grout for Pregrouted Tile Sheets: Same product used in factory to pregrout tile sheets.

2.6 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications; exposed-edge material.
- C. Grout Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.
  1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Bonsal American, an Oldcastle company.
    - b. Summitville Tiles, Inc.
  2. Grout sealers shall comply with requirements of FloorScore certification.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
  1. Verify that substrates for setting tile are firm; dry; clean; free of coatings that are incompatible with tile-setting materials, including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
  2. Verify that concrete substrates comply with surface finish requirements in ANSI A108.01 for installations indicated.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.
- B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot (1:50) toward drains.
- C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of 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.

### 3.3 TILE INSTALLATION

- A. Comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 series "Specifications for Installation of Ceramic Tile" that are referenced in TCNA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.
  - 1. For the following installations, follow procedures in the ANSI A108 series of tile installation standards for providing 95 percent mortar coverage:
    - a. Tile floors in wet areas.
    - b. Tile floors consisting of tiles 8 by 8 inches (200 by 200 mm) or larger.
    - c. Tile floors consisting of rib-backed tiles.
- B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.
- E. Where accent tile differs in thickness from field tile, vary setting bed thickness so that tiles are flush.
- F. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.
- G. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:

1. Porcelain Tile: 1/4 inch (6.4 mm).
- H. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.
- I. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where required or suggested by TCNA standards, or as otherwise indicated because of Field Conditions. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
  1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.
- J. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless otherwise indicated.
  1. At locations where mortar bed (thickset) would otherwise be exposed above adjacent floor finishes, set thresholds in latex-portland cement mortar (thinset).
- K. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer from joints and from tile faces by wiping with soft cloth.
  1. Test with water droplets, and re-apply sealer until water "beads" and is not absorbed by grout.
- L. If required due to Field Conditions, install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to produce waterproof membrane of uniform thickness that is bonded securely to substrate.
- M. Install crack isolation membrane to comply with ANSI A108.17 and manufacturer's written instructions to produce membrane of uniform thickness that is bonded securely to substrate.

### 3.4 INTERIOR CERAMIC TILE INSTALLATION SCHEDULE

- A. Interior Floor Installations, Concrete Subfloor:
  1. Ceramic Porcelain Tile Installation: TCNA F113 (TCNA F115 if using epoxy grout); thinset mortar.
- B. Interior Wall Installations, Wood or Metal Studs or Furring:
  1. Ceramic Porcelain Tile Installation TCNA W244C or TCNA W244F; thinset mortar on cementitious tile backer units or fiber-cement backer board
  2. Ceramic Porcelain Tile Installation: TCNA W245 or TCNA W248; thinset mortar on water-resistant gypsum board (base only where no tile is above)..

END OF SECTION 09 30 13

## SECTION 09 51 13 - ACOUSTICAL PANEL CEILINGS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes acoustical panels and exposed suspension systems for ceilings.
- B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

#### 1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified, 6 inches (150 mm) in size.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

#### 1.9 MAINTENANCE & EXTRA MATERIALS

- A. Maintenance Instructions: Provide manufacturers standard maintenance and cleaning instructions for all finishes provided.
- B. Extra Materials: Deliver to Owner extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents. Only typical system components are included with attic stock.
  - 1. Acoustical Panels: Full-size units equal to five percent (5 %) of amount installed.
  - 2. Ceiling Suspension System Components: Quantity of each grid and exposed component equal to five percent (5 %) percent of amount installed.

#### 1.5 FIELD CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.



1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
  2. Smoke-Developed Index: 50 or less.

### 2.2 ACOUSTICAL PANELS, GENERAL

- A. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system from single source from single manufacturer.
- B. Glass-Fiber-Based Panels: Made with binder containing no urea formaldehyde.
- C. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.
- D. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
  1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

### 2.3 ACOUSTICAL PANELS (Reference "Room Finish Schedule")

- A. Ceiling "ACT": 1" thick mineral fiber, smooth, unperforated face, angled tegular; standard or fire-rated 15/16" exposed grid as required; 24" x 24" panels; Class A, 0-25 Flame Spread per ASTM E84.
  1. Basis of Design: Armstrong Calla, white
- B. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
  1. Type and Form: Type A, Form A2.2
  2. Pattern: G

### 2.4 METAL SUSPENSION SYSTEM

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Basis-of-Design Product: Armstrong Prelude XL 15/16". Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1. Basis of Design: Armstrong World Industries, Inc.

## 2.5 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
  1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners unless otherwise indicated.
  2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

### 3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
  1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
  2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
  4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts,

eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.

5. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
  6. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
  7. Do not attach hangers to steel deck tabs.
  8. Do not attach hangers to steel roof deck. Attach hangers to structural members.
  9. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.
  10. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.
  2. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
1. Arrange directionally patterned acoustical panels as follows:
    - a. As indicated on reflected ceiling plans.
  2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
  3. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
  4. For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension-system surfaces and panel faces flush with bottom face of runners.
  5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.

### 3.4 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 51 13

## SECTION 09 65 13 - RESILIENT BASE AND ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Thermoset-rubber base.

#### 1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified.

### PART 2 - PRODUCTS

#### 2.1 THERMOSET-RUBBER BASE

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

1. Johnsonite; a Tarkett company., Dura-Cove

B. Product Standard: ASTM F1861, Type TS (rubber, vulcanized thermoset), Group I (solid, homogeneous).

1. Style and Location:

- a. Style A, Straight: Provide in areas with carpet.
- b. Style B, Cove: Provide in areas with resilient floor coverings.

C. Thickness: 0.125 inch (3.2 mm).

D. Height: 6 inches.

E. Lengths: Coils in manufacturer's standard length.

F. Outside Corners: Preformed.

G. Inside Corners: Job formed.

H. Colors: 50 White.

#### 2.2 RUBBER MOLDING ACCESSORY

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

1. Johnsonite; a Tarkett company., Dura-Cove

- B. Description: Rubber carpet edge for glue-down applications and transition strips.
- C. Color: As selected from manufacturer's full range.

## 2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.
- C. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient stair-tread manufacturer.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.
- B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F710.
  - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
  - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
  - 3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
  - 4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m), and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
    - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
    - b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

- D. Do not install resilient products until materials are the same temperature as space where they are to be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

### 3.2 RESILIENT BASE INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient base.
- B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.
- D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch resilient base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.
- G. Preformed Corners: Install preformed corners before installing straight pieces.

### 3.3 RESILIENT ACCESSORY INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient accessories.
- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

### 3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.
- B. Floor Polish: Remove soil, adhesive, and blemishes from resilient stair treads before applying liquid floor polish.
  - 1. Apply three coat(s).
- C. Cover resilient products subject to wear and foot traffic until Substantial Completion.

END OF SECTION 09 65 13

## SECTION 09 68 13 - TILE CARPETING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes modular carpet tile.

#### 1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For carpet tile installation, plans showing the following:
  - 1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
  - 2. Carpet tile type, color, and dye lot.
  - 3. Type of subfloor.
  - 4. Type of installation.
  - 5. Pattern of installation.
  - 6. Pattern type, location, and direction.
  - 7. Pile direction.
  - 8. Type, color, and location of insets and borders.
  - 9. Type, color, and location of edge, transition, and other accessory strips.
  - 10. Transition details to other flooring materials.
- C. Samples: For each exposed product and for each color and texture required.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Sample warranty.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.



## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Certified by the International Certified Floorcovering Installers Association at the Commercial II certification level.

## 1.7 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.

- 1. Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 CARPET TILE: CT-1

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:

- 1. Shaw Industries Group, Inc.; Berkshire Hathaway Company., Color Frame Tile 5T081

- B. Color: Mystic Grey 81515.

- C. Pattern: ¼ turn.

- D. Fiber Content: 100 percent nylon 6, 6

- E. Fiber Type: Ecosolution Q100 Nylon

- F. Pile Characteristic: Multi-Level Pattern Loop.

- G. Tufted Weight: 18 **oz./cu. yd.**

- H. Finished Pile Thickness: 0.090 inch for finished carpet tile.

- I. Stitches: 10.5 **per inch.**

- J. Gage: 1/12 in.

- K. Primary Backing: Synthetic

- L. Secondary Backing: Ecoworx.

- M. Size: **24 by 24 inches.**

- N. Applied Treatments: SSP Shaw Soil Protection

- O. Performance Characteristics:

- 1. Wear Rating: Heavy, 3.0 minimum according to ASTM D5252.

2. Electrostatic Propensity: Less than 3.5 kV according to AATCC 134.

## 2.2 CARPET TILE: CT-2

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
  1. Interface, Harmonize
- B. Color: Pewter 104044
- C. Pattern: as directed by owner
- D. Fiber Content: **100 percent nylon 6, 6**
- E. Fiber Type: Nylon 6/6.
- F. Pile Characteristic: Tufted Textured Loop.
- G. Density: 5,236 **oz./cu. yd.**
- H. Stitches: 8 **per inch** .
- I. Gage: 1/12 **per inch**.
- J. Size: 9.845 in x 39.38 in.
- K. Applied Treatments:
  1. Soil-Resistance Treatment: Manufacturer's standard treatment.
- L. Performance Characteristics:
  1. Appearance Retention Rating: **Heavy traffic, 3.0** minimum according to ASTM D7330.
  2. Dry Breaking Strength: Not less than **100 lbf (445 N)** according to ASTM D2646.
  3. Dimensional Tolerance: Within **1/32 inch (0.8 mm)** of specified size dimensions, as determined by physical measurement.
  4. Dimensional Stability: 0.2 percent or less according to ISO 2551 (Aachen Test).
  5. Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 165.
  6. Colorfastness to Light: Not less than 4 after **60 AFU** (AATCC fading units) according to AATCC 16, Option E.

## 2.3 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.
- B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

#### A. Concrete Slabs:

1. Moisture Testing: Perform tests so that each test area does not exceed **1000 sq. ft. (304.8 sq. m)**, and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
  - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of **3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m)** in 24 hours.
  - b. Relative Humidity Test: Using in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
  - c. Perform additional moisture tests recommended in writing by adhesive and carpet tile manufacturers. Proceed with installation only after substrates pass testing.

### 3.2 PREPARATION

- A. General: Comply with CRI's "CRI Carpet Installation Standards" and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions **1/8 inch (3 mm)** wide or wider, and protrusions more than **1/32 inch (0.8 mm)** unless more stringent requirements are required by manufacturer's written instructions.
- C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.
- D. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

### 3.3 INSTALLATION

- A. General: Comply with CRI's "CRI Carpet Installation Standard," Section 18, "Modular Carpet" and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: As recommended in writing by carpet tile manufacturer.
- C. Maintain dye-lot integrity. Do not mix dye lots in same area.
- D. Maintain pile-direction patterns recommended in writing by carpet tile manufacturer.

- E. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- F. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.
- H. Install pattern parallel to walls and borders.
- I. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 09 68 13

## SECTION 09 91 00 – PAINTING

### PART 1 - GENERAL

#### 1.1 DESCRIPTION OF WORK

- A. The extent of painting work is shown on drawings and schedules, and as herein specified.
- B. The work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.
  - 1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.
- C. The work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated.
- D. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime intermediate or finish coats.
- E. Paint exposed surfaces whether or not colors are designated in "schedules", except where natural finish of material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint same as adjacent similar materials or areas. If color or finish is not designated, Architect will select these from standard colors available for materials systems specified.
- F. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as (but not limited to) toilet enclosures, prefinished partition systems, acoustic materials, architectural woodwork and casework, finished mechanical and electrical equipment including light fixtures, switchgear and distribution cabinets, elevator entrance frames, doors and equipment.
- G. Concealed Surfaces: Unless otherwise indicated, such as back priming of all exterior wood trim, painting is not required on surfaces such as walls or ceiling in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.
- H. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting, unless otherwise indicated.
- I. Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting, unless otherwise indicated. Do not paint over any code-required labels, such as Underwriters Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature panels.
- J. Refer to Section 03 35 43 Polished Concrete for staining and finishing of concrete floor.

## 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.
- B. Schedule of painting systems for each condition and substrate material.
- C. Samples: Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample. Include indication of all coats specified.
  - 1. On 12"x 12" representative of actual material to be painted, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.
- D. Coating Maintenance Manual: Upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touchup procedures, and color samples of each color and finish used.

## 1.3 DELIVERY AND STORAGE

- A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information.
- B. Name or title of material. Color name and number.

## 1.4 JOB CONDITIONS

- A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C.) And 90 Degrees F (32 degrees C.) Unless otherwise permitted by paint manufacturer's printed instructions.
- B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C.) And 95 degrees F (35 degrees C.), unless otherwise permitted by paint manufacturer's printed instruction.
- C. DO NOT APPLY PAINT in snow, rain, fog or mist; or when relative humidity exceeds 85% or damp or wet surfaces: Unless otherwise permitted by paint manufacturer's printed instructions. Painting may be continued during inclement weather if areas and surfaces to be painted are closed-in and heated within temperature limits specified by paint manufacturer during application and drying periods.
- D. Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these specification in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

## PART 2 - PRODUCTS

### 2.1 MATERIAL QUALITY

- A. Provide best quality grade of various types of coating as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.
  - 1. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.
  - 2. Federal Specifications establish minimum acceptable quality for paint materials. Provide written certification from paint manufacturer that materials provided meet or exceed these minimums.
  - 3. Manufacturer's products which comply with coating qualitative requirements of applicable Federal Specifications, yet differ in quantitative requirements, may be considered for use when acceptable to Architect. Furnish material data and manufacturer's certificate of performance to Architect for any proposed substitutions.
- B. Provide undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
- C. Paint Coordination: Provide finish coats which are compatible with prime
- D. A "Schedule of Paint Systems" is at the end of this section.

### 2.2 MAINTENANCE MATERIALS

- A. Provide minimum of one unopened gallon, for each type and color of paint used in the project.

## PART 3 -EXECUTION

- 3.1 INSPECTION: Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator's acceptance of surfaces and conditions within any particular area. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable, homogeneous paint film.

### 3.2 SURFACE PREPARATION

- A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified for each particular substrate condition. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection sheeting prior to surface preparation and painting operations. Remove, if necessary, items within space for unencumbered painting of each space or area; reinstall removed items when operations are complete. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning so that will not fall onto wet, newly-painted surfaces.
- B. Cementitious Materials: Prepare Cementitious surfaces of concrete and fiber-cement board to be painted by removing efflorescence, chalk, dust, dirt, grease, oils and by roughening as required to remove glaze. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint.

Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

- C. Clean concrete floor surfaces scheduled as "Sealed Concrete" with commercial solution of muriatic acid, or other etching cleaner. Flush floor with clean water to neutralize acid, and allow to thoroughly dry before painting.
- D. Prepare concrete floor surface scheduled as "Painted Concrete"  
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3.  
Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.
- E. Wood:
  - 1. Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required.
  - 2. Sandpaper smooth those finished surfaces exposed to view, and wipe dust from surface. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.
  - 3. Prime, stain or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces-undersides, and backsides of such wood, including cabinets, counters, cases, paneling.
  - 4. When transparent finish is required, use spar varnish for back-priming.
  - 5. Back-prime paneling on interior partitions only where masonry plaster, or other wet wall construction occurs on backside.
  - 6. Seal tops, bottoms, and cut-outs of un-primed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.
- F. Galvanized Surfaces: Clean surfaces with non-petroleum based solvent to be free of oil, laitance and surface contamination.

### 3.3 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Store materials which are not in actual use in tightly covered containers. Maintain used containers in storage. Mixing of paint must be in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film if necessary and strain material before using.

### 3.4 APPLICATION

- A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
  - 1. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
  - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently-fixed equipment or furniture with prime coat only before final installation of equipment.
  - 3. Paint interior surfaces of ducts, where visible through registers or grilles, with flat, non-specular black paint.



4. Paint access panels, and removable or hinged covers to match exposed surfaces.
5. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.
6. Sand lightly between each succeeding enamel or varnish coat.
7. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.
- B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
- C. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- D. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.
- E. Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.
- F. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat to assure a finish coat with no burn-through or other defects due to insufficient sealing.
- G. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, color spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.
- H. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs brush marks, orange peel, nail holes, or other surface imperfections.
- I. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish or repaint work not in compliance with specified requirements.
- J. Stained or clear sealed finished wood:
  1. Apply sanding sealer to raise grain and sand smooth to produce flat and smooth surface.
  2. Apply successive coats of polyurethane varnish, allow to completely dry before light sanding to produce smooth, flat surface, free of sanding marks, scratches, etc.

### 3.5 FIELD QUALITY CONTROL

- A. The right is reserved by Owner to invoke material testing procedure at any time, and any number of times during period of field painting.

### 3.6 CLEAN-UP AND PROTECTION

- A. Clean-Up: During progress of work remove from site discarded paint materials, rubbish, cans and rags at end of each work day.
- B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping using care not to scratch or otherwise damage finished surfaces.
- C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing or work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
- D. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- E. At the completion of work of other trades, touch-up and restore all damaged or defaced

Painted surfaces.

### 3.7 EXTERIOR PAINT SCHEDULE

- A. General: Provide the following paint systems for the various substrates, as indicated.
- B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated or comparable product by one of the following:
  - 1. Sherwin-Williams (S-W)
  - 2. Pittsburg Paints (PPG).
  - 3. Master Coating Technologies, Inc. (Scuffmaster)
- C. FERROUS GALVANIZED METAL (Door Frames & Miscellaneous Metal):  
High Performance Urethane Modified Alkyd Semi-Gloss Finish: 2 Finish coats over primer.  
  
1<sup>st</sup> Coat: S-W: Pro Industrial Pro-Cryl Universal Acrylic Primer, B66W00310.  
PPG: Pitt-Tech Plus Interior Exterior DTM Industrial Primer, 90-912  
  
2<sup>nd</sup> Coat: S-W: Pro Industrial Waterbased Alkyd Urethane SG Finish, B53-1150 Series.  
PPG: SpeedHide Int/Ext Urethane Modified Gloss Oil, 6-270 Series.  
  
3<sup>rd</sup> Coat: S-W: Pro Industrial Waterbased Alkyd Urethane SG Finish, B53-1150 Series.  
PPG: SpeedHide Int/Ext Urethane Modified Gloss Oil, 6-270 Series.
- D. EXPOSED EXTERIOR BEAMS and/or COLUMNS  
High Performance Acrylic Semi-Gloss Finish 2 finish coats over primer.  
1<sup>st</sup> Coat: S-W: Pro-Cryl Universal Primer, B66W310.  
PPG: Pitt-Tech Plus Interior Exterior DTM Industrial Primer, 90-912  
2<sup>nd</sup> Coat: S-W: SherCryl HPA Acrylic S.G. Finish, B66W351.  
PPG: Pitt-Tech Plus S/G, 90-1210 Series.  
3<sup>rd</sup> Coat: S-W: SherCryl HPA Acrylic S.G. Finish, B66W351.  
PPG: Pitt-Tech Plus S/G, 90-1210 Series.
- E. FIBER-CEMENT BOARDS or PANELS (if not Factory-Finished)  
High Performance Acrylic Low Sheen Finish: 2 Finish coats over primer.  
1<sup>st</sup> Coat: S-W: Loxon Concrete & Masonry Primer, A24W8300 (8 mils wet, 3.2 dry)  
PPG: Perma-Crete Interior/Exterior Alkali Resistant Primer, 4-603.  
2<sup>nd</sup> Coat: S-W: Pro Industrial High Performance Acrylic – Eg-Shel B66-660 series  
PPG: Pitt-Tech Plus Satin, 90-1110 Series.  
3<sup>rd</sup> Coat: S-W: Pro Industrial High Performance Acrylic – Eg-Shel B66-660 series  
PPG: Pitt-Tech Plus Satin, 90-1110 Series.
- D. POLY-ASH SIDING AND TRIM  
High Performance Acrylic Low Sheen Finish: 2 Finish coats over primer.  
1<sup>st</sup> Coat: S-W: Loxon Concrete & Masonry Primer, A24W8300 (8 mils wet, 3.2 dry)  
PPG: Perma-Crete Interior/Exterior Alkali Resistant Primer, 4-603.  
2<sup>nd</sup> Coat: S-W: Pro Industrial High Performance Acrylic – Eg-Shel B66-660 series  
PPG: Pitt-Tech Plus Satin, 90-1110 Series.  
3<sup>rd</sup> Coat: S-W: Pro Industrial High Performance Acrylic – Eg-Shel B66-660 series  
PPG: Pitt-Tech Plus Satin, 90-1110 Series.
- E. CONCRETE MASONRY UNITS/FACE BRICK  
1<sup>ST</sup> Coat: S-W Loxon Masonry Primer, LX2W50  
PPG: PermaCrete High Build 100% Acrylic Primer, 4-2 Series

2nd Coat: S-W Superpaint Exterior Latex Acrylic, Satin, A89 Series.

PPG: Sun Proof Exterior 100% Acrylic Satin – 76-45Xi

3rd Coat: S-W Superpaint Exterior Latex Acrylic, Satin, A89 Series.

PPG : Sun Proof Exterior 100% Acrylic Satin – 76-45Xi

### 3.8 INTERIOR PAINT SCHEDULE

General: Provide the following paint systems for the various interior substrates:

- A. DRYWALL (Typical)
  - 1st Coat: S-W: ProMar 200 Zero VOC Interior Latex Primer, B28W02600  
PPG: Speedhide 6 Series Acrylic Primer
  - 2nd Coat: S-W: Pro Industiral Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series  
PPG: Pitt-Glaze 16-901/902 Series Acrylic Epoxy
  - 3rd Coat: S-W: Pro Industiral Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series  
PPG: Pitt-Glaze 16-901/902 Series Acrylic Epoxy
- B. DRYWALL (Corridors) Two-component polyurethane-fortified coating and cross-linker.
  - 1<sup>st</sup> Coat: Primer - S-W: ProMar 200 Zero VOC Interior Primer, B28W2600 Series
  - 2<sup>nd</sup> Coat: Base - S-W: ProMar 200 Zero VOC, Interior Latex EgShel, B20 Series
  - 3<sup>rd</sup> Coat: Finish - S-W: ProMar 200 Zero VOC, Interior Latex EgShel, B20 Series
- C. CONCRETE MASONRY UNITS with  
Epoxy Finish over block filler/primer
  - 1<sup>st</sup> Coat - Block Filler/primer:  
S-W: Prep-Rite Interior/Exterior Block Filler B25W25  
PPG:Aquapon 97-685 (20.0 mils WFT)
  - 2<sup>nd</sup> Coat: S-W: Water Based Catalyzed Epoxy S/G B70 Series  
PPG: Aquapon 97-130
  - 3<sup>rd</sup> Coat: S-W: Water Based Catalyzed Epoxy S/G B70 Series  
PPG: Aquapon 97-130
- D. FERROUS GALVANIZED METAL  
High Performance Acrylic Semi-Gloss Finish over primer.
  - 1<sup>st</sup> Coat: S-W: Pro-Cryl Universal Primer, B66W310.  
PPG: Pitt-Tech Plus Interior Exterior DTM Industrial Primer, 90-912
  - 2<sup>nd</sup> Coat: S-W: Pro Industrial Waterbased Alkyd Urethane SG Finish, B53-1150 Series.  
PPG: SpeedHide Int/Ext Urethane Modified Gloss Oil, 6-270 Series.
  - 3<sup>rd</sup> Coat: S-W: Pro Industrial Waterbased Alkyd Urethane SG Finish, B53-1150 Series.  
PPG: SpeedHide Int/Ext Urethane Modified Gloss Oil, 6-270 Series.
- E. INTERIOR WOOD - PAINTED  
Water-Based Eg Shell Epoxy Finish: 2 Finish coats over primer.
  - 1<sup>st</sup> Coat: S-W: Premium Wall & Wood Primer, B28W8111  
PPG: Seal Grip Primeline Wood Undercoat,17-9517.
  - 2<sup>nd</sup> Coat: S-W: Pro Industiral Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series  
PPG: Pitt-Glaze 16-901/902 Series Acrylic Epoxy
  - 3<sup>rd</sup> Coat: S-W: Pro Industiral Waterbased Catalyzed Epoxy Eg-Shel, B73-360 Series  
PPG: Pitt-Glaze 16-901/902 Series Acrylic Epoxy

F. CONCRETE FLOOR SEALER

(opaque where noted "Sealed Concrete on Finish Schedule"):

1<sup>st</sup> Coat: S-W: Armorseal Rexthane I, Clear, Gloss.

2<sup>nd</sup> Coat: S-W: Armorseal Rexthane I, Clear, Gloss.

END OF SECTION 09 91 00