

# DIVISION 9

## Finishes





## SECTION 09260 - GYPSUM BOARD SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract from the front of the Specification book, including General Conditions and Supplementary General Conditions, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Gypsum board shaft liner.
  - 2. Gypsum wallboard.
  - 3. Drywall finishing.
  - 4. Cementitious Backer Board.
- B. Related Sections:
  - 1. Wood framing and furring: Division 6.
  - 2. Access doors: Division 8.
  - 3. Ceramic tile: Elsewhere in Division 9.
  - 4. Painting: Elsewhere in Division 9.

#### 1.3 REFERENCES

- A. ASTM A 446/A 446M-93 -- Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality; 1993.
- B. ASTM A 641-94 -- Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 1994.
- C. ASTM A 792-93a -- Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process, General Requirements; 1993.
- D. ASTM C 36-93 -- Standard Specification for Gypsum Wallboard; 1993.
- E. ASTM C 475-93 -- Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 1993.
- F. ASTM C 514-94 -- Standard Specification for Nails for the Application of Gypsum Board; 1994.

- G. ASTM C 645-94 -- Standard Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board; 1994.
- H. ASTM C 665-91 -- Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 1991.
- I. ASTM C 754-88 -- Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum; 1988.
- J. ASTM C 840-94 -- Standard Specification for Application and Finishing of Gypsum Board; 1994.
- K. ASTM C 919-84(88) -- Standard Practice for Use of Sealants in Acoustical Applications; 1984 (Reapproved 1988).
- L. ASTM C 1002-93 -- Standard Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases; 1993.
- M. ASTM E 90-90 -- Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions; 1990.
- N. Fire Resistance Directory; Underwriters Laboratories Inc. (UL); 1994.
- O. GA-214-90 Recommended Specification: Level of Gypsum Board Finish; Gypsum Association; 1990.
- P. GA-216-93 -- Recommended Specifications for the Application and Finishing of Gypsum Board; Gypsum Association; 1993.
- Q. GA-219-89 Recommendations for Installation of Steel Fire Door Frames in Steel Stud-Gypsum Board Fire-Rated Partitions; Gypsum Association; 1989.
- R. Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute (AISI); 1986 (with 1989 Addendum and 1990 Errata).

#### 1.4 SYSTEM DESCRIPTION

- A. General Performance Requirements, Gypsum Board Shaftwall: Provide pre-engineered system produced and distributed by a single manufacturer and tested for compliance with specified performance requirements.

- B. Sound-Rated Construction: Where indicated, provide construction built in accordance with manufacturer's assemblies which have been laboratory-tested per ASTM E 90 for designated STC ratings.
  - 1. STC rating for construction other than shaftwall: 50 minimum.

#### 1.5 SUBMITTALS

- A. Refer to Assembly Schedule and provide submittals of all assemblies to be provided under this specification. Indicate all options within each assembly to be provided. For proprietary assemblies, if another manufacturer is to be provided, submit an equal assembly for the manufacturer selected. Mark assembly as a substitution for indicated assembly.
- B. Product Data: Submit manufacturer's product data for systems required, including installation instructions and data sufficient to show compliance with requirements.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Provide installation by a company specializing in work similar to that required on this project and with not less than 5 years of documented experience. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation. The individual shall have experience with multiple previous installations and competent to respond to concerns raised.
- B. Regulatory Requirements: At locations indicated on drawings, provide fire-rated assemblies tested in accordance with ASTM E 119 and acceptable to authorities for ratings required. Provide assemblies as listed in the following:
  - 1. Underwriters Laboratories Inc.'s (UL) "Fire Resistance Directory."

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original and unopened packages, containers, or bundles, with brand names and manufacturer's labels intact and legible.
- B. Store materials in dry location, fully protected from weather and direct exposure to sunlight.
- C. Stack gypsum board products flat and level, properly supported to prevent sagging or damage to ends and edges.
- D. Store corner bead and other metal and plastic accessories to prevent bending, sagging, distortion, or other mechanical damage.

## 1.8 PROJECT CONDITIONS

- A. Environmental Conditions: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 requirements or gypsum board manufacturer's recommendations, whichever are more stringent. For nonadhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg F (10 deg C) for 48 hours before application and continuously after until dry. Do not exceed 95 deg F (35 deg C) when using temporary heat sources. Ventilate building spaces as required to dry joint treatment materials. Avoid drafts during hot, dry weather to prevent finishing materials from drying too rapidly.
- B. Ventilation: Provide controlled ventilation during joint finishing operations, to eliminate excessive moisture. Avoid drafts during hot, dry weather to prevent finishing materials from drying too quickly.

## PART 2 - PRODUCTS

### 2.1 FRAMING MATERIALS

- A. General: Select size and gage of framing members and establish spacing to comply with requirements of ASTM C 754 unless otherwise specifically indicated.
  - 1. Maximum deflection:  $L/240$  at 5 lbf per square foot.
- B. Studs and Tracks: ASTM C 645, steel with protective coating.
  - 1. Nominal depths: As indicated on drawings.
- C. Furring Members: ASTM C 645, steel with protective coating.
  - 1. Where indicated as "resilient" or "acoustical," or where required for STC ratings indicated, provide manufacturer's special type designed for attachment by one flange for reduced sound transmission, RC-1.
  - 2. C-shaped studs, in locations indicated.
- D. Furring Fasteners/Connectors: Manufacturer's recommended system for specific application indicated, complying with ASTM C 754.

## 2.2 GYPSUM BOARD

- A. Manufacturers: Provide products complying with requirements of the contract documents and made by one of the following:
  - 1. Domtar Gypsum.
  - 2. Georgia-Pacific Corporation.
  - 3. Gold Bond Building Products, a National Gypsum Division.
  - 4. USG Corporation.
  
- B. Gypsum Wallboard: ASTM C 36; maximum lengths available to minimize end-to-end butt joints in each area receiving finished gypsum board.
  - 1. Fire-resistant type (Type X or equivalent), where required for fire-resistant rated assemblies.
  - 2. Edges: Tapered.
  - 3. Thickness: 5/8 inch and 1/2 inch, except as otherwise shown.
  
- C. Gypsum Moisture Resistant Wallboard (where shown and if shown): ASTM C 630 Water Resistant Gypsum Backing Board (+); maximum lengths available to minimize end-to-end butt joints in each area receiving finished gypsum board.
  - 1. Edges: Tapered.
  - 2. Thickness: 1/2 inch.
  
- D. Paperless Drywall Wallboard (where shown and if shown): ASTM D 3273 Mold Resistance; maximum lengths available to minimize end-to-end butt joints in each area receiving finished gypsum board.
  - 1. Manufacturer: G-P Gypsum, DensArmor Plus.
  - 2. Edges: Tapered.
  - 3. Thickness: 1/2 inch.
  
- E. Fire-Shield Shaftliner: a gypsum core wall panel with additives to enhance fire resistance of the core and surfaced with paper on front, back and long edges and complying with ASTM C 36 Type X
  - 1. Thickness: 1"
  - 2. Width: 2'
  - 3. Edges: Beveled.
  
- F. Exterior Gypsum Sheathing:
  - 1. DensGlass Gold.
  - 2. Thickness: 1/2 inch and 5/8" Type X.

## 2.3 MISCELLANEOUS WALLBOARD

- A. Wall Sheathing (In Shear Walls): ASTM C 208, Type IV, Grade 2 (Wall Sheathing: Structural).
  - 1. Thickness: 1/2"
  - 2. Each board shall have manufacturer's information and certification stamp.
  - 3. No substitutions.
- B. Sound Deadening Board ( In Non Shear Walls):Fiber board manufactured as Sound Deadening Board.
  - 1. Thickness: 1/2"
- C. Cementitious Board:
  - 1. Gold Bond:
    - a. 1/2" PermaBase cement Board.
  - 2. James Hardie Building Products
    - a. Hardi Backer 500 1/2" Backer Board.
  - 3. USG Corporation.
    - a. 1/2" Durock Cement Board.

## 2.4 TRIM AND ACCESSORIES

- A. General: Except as otherwise specifically indicated, provide trim and accessories by manufacturer of gypsum board materials, made of galvanized steel or zinc alloy and configured for concealment in joint compound.
  - 1. Corner Bead: No-Coat Ultra Trim Outside 90.
  - 2. Control Joints: Trim-Tex; "Hideaway Expansion" 2708 or 2710.
  - 3. Inside and Outside Angle Corner Bead: No-Coat Ultraflex 325.
  - 4. Joint at drywall edge along round columns: Trim-Tex; "Pullaway L Bead" 3108 or 3110.
  - 5. Arched corners: No-Coat Ultra Arch Outside 90.
  - 6. Drywall Clips for Steel Beams:
    - a. Claw International: The Claw.
    - b. Wagner Associates, Inc.: Grabber CB60

## 2.5 JOINT TREATMENT

- A. General: Provide products by manufacturer of gypsum boards. Comply with ASTM C 475 and with manufacturer's recommendations for specific project conditions.
- B. Joint Tape: Manufacturer's standard mesh reinforcing tape only.



- C. Drying Type Joint Compound: Vinyl-based ready-mixed type for interior use, and as follows:
  - 1. All-purpose type, for both embedding tape and as topping.
- D. Setting-Type Joint Compound for laminate compound:
  - 1. USG Durabond 20 or 45 minute.

## 2.6 MISCELLANEOUS MATERIALS

- A. General: Provide miscellaneous materials as produced or recommended by manufacturer of gypsum products.
- B. Screws: ASTM C 1002; self-drilling type; lengths as recommended by gypsum board manufacturer for project conditions.
- C. Nails: ASTM C 514; lengths as recommended by manufacturer of gypsum board for project conditions.
  - 1. Fire-rated assemblies: Provide nails of exact length and diameter specified for rated assemblies.
- D. Laminating compound: Drywall manufacturer's standard quickset drywall compound. 30 minute setting time.
- E. Acoustical Sealants: ASTM C 919; nondrying, nonhardening, nonskinning type for concealed locations; nonoxidizing, skinning type for exposed locations.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Inspection: Verify that project conditions and substrates are appropriate to begin installation of work of this section.

### 3.2 INSTALLATION OF METAL FRAMING

- A. General: Comply with provisions of ASTM C 754 and ASTM C 840 requirements that apply to framing installation except where exceeded by other requirements.
- B. Suspended Drywall Ceilings and Soffits:
  - 1. Secure furring members by means of screws, clips, or wire ties, as appropriate to substrate. Space furring members as follows:
    - a. As indicated on drawings.

2. Level ceiling system to a tolerance of 1/8 inch in 12 feet, as measured both lengthwise on each member and transversely between parallel members.
3. Level soffits to a tolerance of 1/8 inch in 12 feet, as measured both lengthwise on each member and transversely between parallel members.
4. Reinforce openings and interruptions in horizontal framing system with additional furring channels.
5. Ensure that entire suspension system is laterally braced.

C. Steel Studs:

1. General: Install tracks and studs in accordance with manufacturer's recommendations and as follows:
  - a. Stud spacing: As indicated on drawings.
2. Door openings: Comply with recommendations of USG Corporation's "Gypsum Construction Handbook"; reinforce openings as required for size and weight of doors.
  - a. At openings in fire-rated partitions, comply with requirements of governing authorities for framing.
3. Partition heights: Extend studs to suspended ceiling height or to underside of floor or roof construction above, as indicated for specific locations on the drawings.
4. Partial height partitions: Extend studs to height indicated, bracing as required to assure stability.
5. Blocking and bracing: Install blocking and bracing as recommended by manufacturer for adequate support of wall-mounted items installed as work of other sections.

### 3.3 INSTALLATION OF GYPSUM BOARD

- A. General: Comply with ASTM C 840 and GA-216 except where exceeded by other requirements.
1. Wherever possible, install gypsum board to minimize butt end joints.
  2. Apply ceiling boards prior to installation of wallboards. Arrange to minimize butt end joints near center of ceiling area.
  3. Install wallboards in a manner which will minimize butt end joints in center of wall area. Stagger vertical joints on opposite sides of walls.
  4. Butt all joints loosely, with maximum of 1/16 inch between boards.
  5. Place wrapped edges adjacent to one another; do not place cut edges or butt ends adjacent to wrapped edges.
  6. Support all edges and ends of each board on framing or by solid substrate, except that long edges at right angles to framing members in non-fire-rated construction may be left unsupported.
  7. In double-layer ceiling work, apply layers as required by design rating.

8. In double-layer wall applications, apply layers as required by design rating.
- B. Control Joints: Form control joints by means of 1/4-inch space between adjacent gypsum boards, with each edge supported on separate framing member, ready to receive trim accessory, and located in the corridors and as follows:
1. Not more than 30 feet apart where walls are not intersected by other walls for 50 feet or more.
  2. In corridors with acoustical tile ceilings the control joint shall be located at the nearest upper corner of a door frame. It shall run up the wall across the ceiling and down the opposite wall.
  3. In corridors with drywall ceilings the control joints shall be located between doors. The joint shall run up the walls and across the ceiling.
- C. Sound-Rated Construction: Seal perimeter of construction with acoustical sealant, complying with ASTM C 919. Carefully seal around penetrations and at control joints and other openings.
1. At partitions shown or where required for STC ratings indicated, install sound attenuation blankets after gypsum board has been installed on one side.
- D. Installation on Wood Framing:
1. Single-layer application: Install gypsum board by the following method:
    - a. Screw attachment.
  2. Double-layer application:
    - a. Install base layer by means of screw attachment.
    - b. Install face layer by means of screw attachment.
  3. For fire-rated construction, install gypsum board in accordance with methods prescribed for the tested assembly.
- E. Installation on Metal Framing and Furring:
1. Single-layer application: Install gypsum board by means of screw attachment.
    - a. On walls and partitions, plan installation so that leading edge or end of gypsum board is attached to open end of stud flange first.
  2. For fire-rated construction, install gypsum board by means of screws as specified for the tested assembly.
- F. Installation of Moisture Resistant Drywall:
1. Install MR Drywall over fire rated drywall assembled where shown.
  2. Install fire rated drywall behind all tub and shower surrounds at fire rated walls.

- G. Installation of UL U525 assembly:
  - 1. Obtain National Gypsums installation instructions for this assembly to be installed to stud wall framing. In no case shall the quick set drywall compound be deleted.
  - 2. The following note to be provided in addition to the National Gypsum installation instructions: The vertical joints of the 1/2" Type X Drywall shall land on the studs. The joints of the inner 1/2" layer shall stagger with the 1/2" top layer. In order to stagger the joints of the 1" Shaftliner with the 1/2" layers the Shaftliner joints shall land half way between the studs. The Shaftliner is then screwed along the middle of the board to the stud it lines up with and any horizontal plates. Use grabber laminate screws along the joints of the shaftliner.

### 3.4 INSTALLATION OF TRIM AND ACCESSORIES

- A. General: Comply with manufacturer's recommendations for installation of trim items.
- B. Corner Bead: Install corner bead at all external corners.
- C. Edge Trim: Install edge trim at locations indicated and wherever edge of gypsum board otherwise would be exposed.
- D. Control Joints: Install one-piece control joints at required locations. Do not remove tape until finishing operations are complete.

### 3.5 FINISHING

- A. General: Comply with ASTM C 840 and GA-216 except where exceeded by other requirements.
  - 1. Do not mix joint compounds except as specifically recommended by manufacturer.
  - 2. For random rolled textured ceiling thin joint compound with water to allow for spay application.
- B. Finish gypsum board in accordance with the following level of finish per GA-214, except where indicated otherwise on the drawings:
  - 1. Level 3 at all walls and ceilings to be painted: Embed tape in joint compound at all joints and interior angles. Provide two separate coats of compound at all joints, angles, fastener heads, and accessories. Provide smooth surfaces free of tool marks and ridges.

- C. Joint Treatment: Tape and finish joints in accordance with manufacturer's instructions for compounds used, using proper hand tools designed for the purpose.
  - 1. Avoid raising nap of face paper when sanding; carefully sponge down any areas roughened by sanding process.
- D. Penetrations: Fill cutouts and openings around fixtures and penetrations with joint compound.

### 3.6 CLEANING

- A. Promptly remove any residual gypsum drywall materials from adjacent or adjoining surfaces, leaving spaces ready for subsequent finishing operations and decorating.

END OF SECTION 09260



## SECTION 09313 – WALL AND FLOOR TILE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Wall and floor tile.
- B. Related Sections:
  - 1. Joint Sealers: Division 7.
  - 2. Gypsum Board Systems: Division 9.

#### 1.3 REFERENCES

- A. ANSI A108.5-1985 -- Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1985.
- B. ANSI A108.10-1985 -- Installation of Grout in Tilework; 1985.
- C. ANSI A108.11-1990 -- American National Standard for Interior Installation of Cementitious Backer Units; 1990.
- D. ANSI A118.4-1985 -- American National Standard Specifications for Latex-Portland Cement Mortar; 1985.
- E. ANSI A118.6-1985 -- American National Standard Specifications for Ceramic Tile Grouts; 1985.
- F. ANSI A118.9-1990 -- American National Standard for Test Methods and Specifications for Cementitious Backer Units; 1990.
- G. ASTM C 920-87 -- Standard Specification for Elastomeric Joint Sealants; 1987.
- H. Handbook for Ceramic Tile Installation; Tile Council of America, Inc. (TCA) 1992.

#### 1.4 SUBMITTALS

- A. Product Data: Written product information which demonstrates materials to be used on the project comply with contract documents.
- B. Samples - Initial Selection: Manufacturer's color selection boards of actual tile materials including a complete selection of available tile colors and finishes for each tile type indicated. Include samples of accessory materials requiring color selection.
- C. Qualifications Documentation: Written confirmation that companies executing work in this section comply with experience requirements.

#### 1.5 QUALITY ASSURANCE

- A. Material Source: Furnish each type, finish, and color of tile product and accessory materials from a single supplier.
- B. Installer: A company with not less than 10 installations of tile work similar in size and complexity to the work of this project.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store tile products and setting materials in manufacturer's sealed packages. Protect material from damage and store in dry location.

#### 1.7 PROJECT CONDITIONS

- A. Provide temperatures in tiled areas during installation and after completion as required by referenced installation standard or manufacturer's instructions, but not less than 50 degrees F.
- B. If necessary to use temporary heaters, vent units to exterior to protect tile work from carbon dioxide accumulation.

#### 1.8 MAINTENANCE

- A. Extra Materials: None



## PART 2 - PRODUCTS

### 2.1 MATERIALS - GENERAL

- A. Materials to be provided by manufacturer's listed.
- B. Tile Installation Materials Standard: ANSI standard referenced for setting and grouting materials.
- C. Colors, Textures, and Patterns, Tile, Grout, and Other Products: Colors as selected by the architect from manufacturer's standards.
- D. Color Blending: Factory-blend tile products which have a natural color range so products taken from one box will have the same range as products from a separate box.

### 2.2 TILE PRODUCTS

- A. Ceramic Tile:
  - 1. Ceramic Floor tile:
    - a. Daltile; Porcelain.
    - b. Color: White
    - c. Finish: Matte
    - d. Floor Field Size: 2" Octagon & 1" Dot.
  - 2. Ceramic Tub Surround Wall Tile:
    - a. Subway; Iron Gate.
    - b. Color: white.
    - c. Finish: Gloss.
    - d. Size: 3"x6".
  - 3. Master Bath Ceramic Shower Floor Tile:
    - a. American Olean; A13.
    - b. Color: white.
    - c. Finish: Unglazed matte.
    - d. Size: 1"x1".
- B. Marble Tile:
  - 1. The design is based on the following product:
    - a. Carrara Marble, Bianco. Submit samples for approval.  
(1) Supplier: Shep Brown Associates. Woburn, MA.
    - b. Master Bathroom Floor Tile: 12x12 honed finish.
    - c. Master Bathroom Base: 4x12 honed finish, bull nose.
    - d. Master Bath Shower walls: 12x12 polished finish.
    - e. Master Bath Wall cap, shower threshold, shower seat and soap dish: 3/4" slab cut to fit or as shown on drawings, honed finish.

- C. Door Threshold:
  - 1. The design is based on the following product:
    - a. Venatino Marble, Bianco. Submit samples for approval.  
(1) Supplier: Shep Brown Associates. Woburn, MA.

## 2.3 SETTING MATERIALS

- A. Ceramic Tile Adhesive: Provide Pro Spec Multipurpose Thin Set Mortar.
- B. Marble Tile Adhesive: Provide marble thin set white adhesive recommended by underlayment manufacturer for marble tile installation. Grey adhesive is not permitted.

## 2.4 GROUTING MATERIALS

- A. Grout: Pro Spec Grout or equal.

## 2.5 ELASTOMERIC SEALANTS

- A. Compatibility: Provide sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates for project performance conditions. Refer to Section 07900.
- B. Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and O (for nonporous substrates) with added fungicide.
  - 1. Manufacturers: Provide products complying with requirements of the contract documents.

## 2.6 MISCELLANEOUS MATERIALS

- A. Cementitious Backer Units, provide products complying with requirements of the contract documents and made by one of the following:
  - 1. Gold Bond:
    - a. 1/2" PermaBase cement Board.
  - 2. James Hardie Building Products
    - a. Hardi Backer 500 1/2" Backer Board.
  - 3. USG Corporation.
    - a. 1/2" Durock Cement Board.
- B. Floor Leveling or Sloping Underlayment: Portland based leveling underlayment permitted to be installed to a feathered, thin edge.
- C. Shower Waterproofing Membrane: Laticrete 9235 Waterproofing Membrane: Laticrete International, Inc.

- D. Tile Cleaner: Product specifically acceptable to tile manufacturer and grout manufacturer for application indicated and as recommended by National Tile Promotion Federation or Ceramic Tile Institute.

## 2.7 MIXING MORTAR AND GROUT

- A. Mix mortar and grout to comply with referenced standards and manufacturer's mixing procedures.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify with the installer that substrate areas where tile is to be installed have been prepared correctly, and that all backing materials have been installed. Correct unacceptable conditions before start of tile work.

### 3.2 PREPARATION

- A. Install Pro Spec cork underlayment under floor tile except for showers following manufacturer's installation instructions and recommendations.
- B. Install Laticrete Waterproofing membrane over floor and 4' up walls behind shower tile enclosure following manufacturer's installation instructions.
- C. Factory-Blending: Before start of installation verify that tile with an anticipated range of colors has been correctly blended to achieve a uniform color range from tile package to tile package.
- D. Review installation in model unit of Carrara Marble and match installation method used there.

### 3.3 INSTALLATION - GENERAL

- A. Tile Installation Standard: ANSI A108 series, for setting and grouting materials listed.
- B. Installation Methods: Comply with TCA "Handbook for Ceramic Tile Installation" for type of applications indicated.
- C. Install tile under or behind equipment and fixtures.
- D. Carefully cut, drill, and grind tile to fit around items projecting through tile surface, so that escutcheons or cover plates conceal cut edges.

- E. Joint Patterns: Lay out tile according to patterns indicated on drawings, or if not shown, in a grid pattern with floor joints aligning with wall and trim joints. Install joints straight and of uniform width.
- F. Sealant-Filled Joints: Install expansion, control, and isolation joints where indicated on drawings. Saw-cut joints are unacceptable.
  - 1. Expansion joint installation method: TCA EJ 171.
- G. Grout Installation Standards:
  - 1. Ceramic tile grouts (sand-portland cement, dry-set, commercial portland cement, and latex-portland cement): ANSI A108.10.
  - 2. Follow manufacturer's installation instructions.
- H. Cementitious Backer Units: Install in accordance with ANSI A108.11.

### 3.4 TILE APPLICATIONS

- A. Interior Floor, Thin-Bed:
  - 1. Installation method:
    - a. Portland Based Leveling Underlayment as required.
    - b. Bond coat: Latex-portland cement mortar, ANSI A108.5.
  - 2. Grout: Dry-set portland cement.

### 3.5 CLEANING AND PROTECTION

- A. Clean tile surfaces after installation is complete.
- B. Replace any broken, chipped, marred, or otherwise damaged tile before final acceptance.
- C. Protection: Apply neutral protective cleaner to tile after installation if recommended by tile manufacturer. Overlay completed tile installation with kraft paper for protection from subsequent construction activities.
  - 1. Remove protection, rinse, and dry tile installations before final review and acceptance.

END OF SECTION 09313

## SECTION 09330 - QUARRY TILE

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Unglazed quarry tile.
- B. Related Sections:
  - 1. Concrete subbase: Division 3.
  - 2. Floor mats and frames: Division 12.

#### 1.3 REFERENCES

- A. ANSI A108.4-1985 -- Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile Setting Epoxy Adhesive; 1985.
- B. ANSI A108.10-1985 -- Installation of Grout in Tilework; 1985.
- C. ANSI A118.3-1985 -- American National Standard Specifications for Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile Setting Epoxy Adhesive; 1985.
- D. ANSI A118.6-1985 -- American National Standard Specifications for Ceramic Tile Grouts; 1985.
- E. Handbook for Ceramic Tile Installation; Tile Council of America, Inc. (TCA) 1992.

#### 1.4 SUBMITTALS

- A. Product Data: Written product information which demonstrates materials to be used on the project comply with contract documents.
- B. Samples - Initial Selection: Manufacturer's color selection boards of actual tile materials including a complete selection of available tile colors and finishes for each tile type indicated. Include samples of accessory materials requiring color selection.

- C. Qualifications Documentation: Written confirmation that companies executing work in this section comply with experience requirements.

## 1.5 QUALITY ASSURANCE

- A. Material Source: Furnish each type, finish, and color of tile product and accessory materials from a single supplier.
- B. Installer: A company with not less than 10 installations of tile work similar in size and complexity to the work of this project.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store tile products and setting materials in manufacturer's sealed packages. Protect material from damage and store in dry location.

## 1.7 PROJECT CONDITIONS

- A. Provide temperatures in tiled areas during installation and after completion as required by referenced installation standard or manufacturer's instructions, but not less than 50 degrees F.
- B. If necessary to use temporary heaters, vent units to exterior to protect tile work from carbon dioxide accumulation.

## PART 2 - PRODUCTS

### 2.1 MATERIALS - GENERAL

- A. Tile Installation Materials Standard: ANSI standard referenced for setting and grouting materials.
- B. Colors, Textures, and Patterns, Tile, Grout, and Other Products: Match colors indicated or as selected by the architect from manufacturer's standards.
  - 1. Tile trim and accessories: Match color and finish of adjoining flat tile.
- C. Color Blending: Factory-blend tile products which have a natural color range so products taken from one box will have the same range as products from a separate box.

## 2.2 TILE PRODUCTS

- A. Unglazed Quarry Tile: Square-edged flat tile:
  - 1. The design is based on the following product:
    - a. Tile:
      - (1) Manufacturer: Daltile, Quarry Textures.
      - (2) Size: 6 inches by 6 inches by 3/8 inch.
    - b. Comparable products of other manufacturers will be considered for substitution.
  - 2. Trim units: Match color and finish of adjacent flat tile:
    - a. Shapes and sizes: Manufacturer's standard, as indicated, coordinated with size and coursing of adjacent flat tile, where applicable:
  - 3. Cove base, 5 inch by 6 inch.

## 2.3 SETTING MATERIALS

- A. Water-Cleanable, Tile-Setting Epoxy Adhesive: ANSI A118.3.

## 2.4 GROUTING MATERIALS

- A. Sand-Portland Cement Grout: ANSI A108.10.

## 2.5 MISCELLANEOUS MATERIALS

- A. Tile Cleaner: Product specifically acceptable to tile manufacturer and grout manufacturer for application indicated and as recommended by National Tile Promotion Federation or Ceramic Tile Institute.

## 2.6 MIXING MORTAR AND GROUT

- A. Mix mortar and grout to comply with referenced standards and manufacturer's mixing procedures.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify with the installer that substrate areas where tile is to be installed have been prepared correctly, and that all backing materials have been installed. Correct unacceptable conditions before start of tile work.

### 3.2 PREPARATION

- A. Factory-Blending: Before start of installation verify that tile with an anticipated range of colors has been correctly blended to achieve a uniform color range from tile package to tile package.

### 3.3 INSTALLATION - GENERAL

- A. Tile Installation Standard: ANSI A108 series, for setting and grouting materials listed.
- B. Installation Methods: Comply with TCA "Handbook for Ceramic Tile Installation" for type of applications indicated.
- C. Install tile under or behind equipment and fixtures.
- D. Carefully cut, drill, and grind tile to fit around items projecting through tile surface, so that escutcheons or cover plates conceal cut edges.
- E. Joint Patterns: Lay out tile according to patterns indicated on drawings, or if not shown, in a grid pattern with floor joints aligning with wall and trim joints. Install joints straight and of uniform width.
- F. Sealant-Filled Joints: Install expansion, control, and isolation joints where indicated on drawings. Saw-cut joints are unacceptable.
  - 1. Expansion joint installation method: TCA EJ 171.
- G. Grout Installation Standards:
  - 1. Ceramic tile grouts (sand-portland cement, dry-set, commercial portland cement, and latex-portland cement): ANSI A108.10.

### 3.4 TILE APPLICATIONS

- A. Interior Floor, Thin-Bed:
  - 1. Installation method:
    - a. Concrete subfloor: TCA F116.
    - b. Bond coat: Epoxy adhesive, ANSI A108.4.
  - 2. Grout: Sand-portland cement.



### 3.5 CLEANING AND PROTECTION

- A. Clean tile surfaces after installation is complete.
  - 1. Only clean unglazed tile with acid solutions when recommended by the tile manufacturer. If acid solution is an acceptable cleaner, wait minimum 14 days after installation to clean tile. Protect materials other than tile from the acid solution during cleaning process.
- B. Replace any broken, chipped, marred, or otherwise damaged tile before final acceptance.
- C. Protection: Apply neutral protective cleaner to tile after installation if recommended by tile manufacturer. Overlay completed tile installation with kraft paper for protection from subsequent construction activities.
  - 1. Do not allow any traffic on completed tile floors for minimum 7 days after completion.
  - 2. Remove protection, rinse, and dry tile installations before final review and acceptance.

END OF SECTION 09330



## SECTION 09511 – SUSPENDED CEILING SYSTEM

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Exposed suspension system.
  - 2. Trim and accessories.
  - 3. Acoustical lay-in panels.
  - 4. Drywall lay-in panels
- B. Related Sections:
  - 1. Gypsum board systems: Elsewhere in Division 9.
  - 2. Heating and ventilating: Division 15.
  - 3. Fire suppression systems: Division 15.
  - 4. Lighting: Division 16.

#### 1.3 REFERENCES

- A. ASTM A 641-92 -- Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 1992.
- B. ASTM C 635-91 -- Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 1991.
- C. ASTM C 636-91 -- Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 1991.
- D. ASTM E 84-91a -- Standard Test Method for Surface Burning Characteristics of Building Materials; 1991.
- E. ASTM E 1264-90 -- Standard Classification for Acoustical Ceiling Products; 1990.

#### 1.4 SUBMITTALS

- A. Refer to Assembly Schedule and provide submittals of all assemblies to be provided under this specification. Indicate all options within each assembly to be provided. For proprietary assemblies, if another manufacturer is to be provided, submit an equal assembly for the manufacturer selected. Mark assembly as a substitution for indicated assembly.
- B. Product Data: Submit data for each distinct suspension system and acoustical unit type indicated.
- C. Samples: Submit the following:
  - 1. Selection samples:
    - a. Acoustical units: Minimum 6-inch-square samples of acoustical units meeting the requirements of the specification for each type specified.
    - b. Exposed suspension and trim elements: Manufacturer's standard color and texture selection samples of finishes, on minimum 6-inch-long pieces of specified substrate.

#### 1.5 QUALITY ASSURANCE

- A. Fire Performance Characteristics:
  - 1. Surface burning characteristics: Provide products having the following characteristics when tested in accordance with ASTM E 84:
    - a. Maximum flame spread: 25.
    - b. Maximum smoke developed: 50.

#### 1.6 PROJECT CONDITIONS

- A. Coordination Data: Prepare and distribute to affected installers, data necessary for coordination with related work. Include setting diagrams showing placement of attachment devices for acoustical ceiling hangers.
- B. Coordinate ceiling system installation with work of other sections as required, including the following:
  - 1. Light fixtures.
  - 2. HVAC equipment.
  - 3. Fire suppression system components.
  - 4. Smoke detection system.

- C. Within each space to receive specified products, do not begin installation until the following conditions are met:
  - 1. Work above ceilings has been finished, tested, and approved.
  - 2. Space to receive ceiling system is properly enclosed and protected from weather.
  - 3. Any wet work within the space is dry.
- D. Do not begin installation of ceiling system until building's normal operating temperature and humidity levels have been reached and will be maintained.

## 1.7 MAINTENANCE

- A. Extra Materials: None.

## PART 2 - PRODUCTS

### 2.1 ACOUSTICAL CEILING UNITS - GENERAL

- A. Standard for Acoustical Ceiling Units: Provide units conforming to applicable requirements of ASTM E 1264 for Class A materials.

### 2.2 CEILING SUSPENSION SYSTEMS - GENERAL

- A. Provide suspension systems conforming to specified requirements and to requirements of ASTM C 635.
- B. Colors: Provide indicated colors. Where color is not indicated, provide colors as selected by the architect from manufacturer's complete set of standard colors.
- C. Finishes: Manufacturer's standard shop-applied finishes.
- D. Attachment Devices for Suspension System:
  - 1. Anchors and intermediate support members: Provide sizes capable of sustaining 5 times the load-carrying capabilities shown in ASTM C 635, Table 1, "Direct Hung" column.
  - 2. Hanger wire: Zinc-coated (galvanized) carbon steel wire, ASTM A 641, soft temper, with Class 1 coating, minimum 12 gage (0.106 inch diameter).

- E. Edge Moldings and Trim:
  - 1. Extruded metal; provide molding for edges and ceiling penetrations indicated. Provide profiles suited to edge profiles of acoustical units and suspension members.
- F. Manufacturer: Provide products complying with requirements of the contract documents and made by one of the following:
  - 1. Exposed steel suspension system:
    - a. Armstrong World Industries, Inc.
    - b. Chicago Metallic Corporation.
    - c. USG Corporation.

### 2.3 SUSPENDED LAY-IN CEILING SYSTEM

- A. Common Area Suspended Acoustical Panels: Armstrong World Industries, Inc., Dune, Second Look, #2712.
  - 1. Size: 24 by 48 inches.
  - 2. Edge profile: Angled Tegular.
  - 3. Color: White.
- B. Suspended Acoustical Ceiling Grid System: Formed steel with painted finish.
  - 1. Profile: Single-web tee, 15/16 inch wide.
  - 2. Structural classification (ASTM C 635): Intermediate-Duty System.
  - 3. Color and texture: White color to match ceiling panels; standard smooth texture.
  - 4. Acceptable product: "Prelude"; Armstrong World Industries, Inc.

### 2.4 SUSPENDED DRYWALL CEILING SYSTEM

- A. Grid for drywall ceiling: Formed steel.
  - 1. Acceptable product: Chicago Metallic; 660 System

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions under which products of this section are to be installed and verify that the work properly may commence.

### 3.2 PREPARATION

- A. Layout: Position ceiling components to maximize use of full-sized acoustical units and to provide border units which are equal in size and shape at opposing ceiling edges. Use of acoustical units which are smaller than 1/2 full-width is prohibited at ceiling perimeters. Conform to reflected ceiling plans to greatest extent possible.

### 3.3 SUSPENSION SYSTEM INSTALLATION

- A. General:
  - 1. Conform to the requirements of ASTM C 636, manufacturer's installation instructions, and governing regulations.
  - 2. Install hangers plumb and supported solely by building structure or carrying channels. Do not allow hangers to contact any objects or materials in ceiling plenum which are not actual components of ceiling system.
    - a. Splay hangers only where necessary to avoid obstacles. Provide countersplaying, bracing, or other acceptable devices to compensate for lateral stresses caused by splayed hangers.
  - 3. Space hangers at not more than 48 inches on center and within 6 inches of ends of each direct-hung runner or carrying channel, unless indicated otherwise.
  - 4. Loop and tie wire hangers securely to building's structural members; to attachment devices indicated; or, where not indicated, to devices suitable for substrate and capable of permanently supporting ceiling weight without failure or deterioration.
  - 5. Level ceiling suspension system to tolerance of 1/8 inch in 12 feet, with cumulative tolerance not to exceed 1/4 inch. Bending or kinking of hangers is not allowed.
- B. Exposed (Lay-in) Grid Installation: Install grid members square, with ends of members securely interlocked. Remove and replace dented, bent, or kinked members.

### 3.4 TRIM INSTALLATION

- A. Install edge moldings and trim units at acoustical ceiling borders, at locations indicated, and where required to cover acoustical unit edges.
  - 1. Molding and trim attachment: Space screws not more than 16 inches on center and within 3 inches of ends of each trim-piece being installed. Install moldings and trim level with suspension system and within tolerance specified for suspension system.
  - 2. Miter corners and align butt joints carefully to form tight hairline joints.

3. Face-riveting of trim and moldings is not allowed.

### 3.5 LAY-IN PANEL INSTALLATION

- A. Panel Installation: Install acoustical panels for accurate fit with suspension system and trim members. Scribe and cut panels at ceiling perimeter and at obstructions to provide neat, precise fit.
  - 1. Square-edge panel installation: Provide installation with panel edges which are hidden from view, by suspension members or trim.

### 3.6 ADJUST AND CLEAN

- A. Use ceiling manufacturer's recommended methods and materials to clean and touch-up exposed components of ceiling system.
- B. Replace ceiling system components which are discolored or damaged in any way, in a manner which results in the ceiling system showing no evidence of replacement work.

END OF SECTION 09511



## SECTION 09640 – WOOD PLANK

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. NOFMA certified solid wood plank flooring.
  - 2. The Flooring Contractor shall provide all labor, materials, tools and services to furnish, deliver and install a complete wood floor system from the sub floor through the sanding and finishing, plus the installation of wood thresholds.

#### 1.3 RELATED SECTIONS

- A. Section 09900 – Paint.

#### 1.4 REFERENCES

- A. NOFMA: The Wood Flooring Manufacturers Association:
  - 1. Installation Manual

#### 1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors and finishes available for flooring.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed flooring similar in material, design, and extent to that indicated for this Project and whose work has resulted in flooring installations with a record of successful in-service performance.

- B. Source Limitations: Obtain each type of material and product from one source with resources to provide materials and products of consistent quality in appearance and physical properties.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver flooring materials in unopened cartons or bundles.
- B. Protect flooring from exposure to moisture. Do not deliver flooring until after concrete, masonry, plaster, ceramic tile, and similar wet-work is complete and dry.
- C. Store flooring materials in a dry, warm, well-ventilated, weathertight location.

#### 1.8 PROJECT CONDITIONS

- A. Conditioning: Maintain relative humidity planned for building occupants and an ambient temperature between 65 and 75 deg F (18 and 24 deg C) in spaces to receive flooring for at least seven days before installation, during installation, and for at least seven days after installation. After post-installation period, maintain relative humidity and ambient temperature planned for building occupants.
- B. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by flooring and finish manufacturers.
- C. The General Contractor shall provide a sub floor, smooth and level to a tolerance of 1/8" on a 10'0" radius.

#### 1.9 MAINTENANCE STOCK

- A. None.

#### 1.10 WARRANTY

- A. Warrant the material to be free from defects in materials and workmanship for a period of one year and the flooring installer warrants the installation of the flooring to be free of defects in materials and workmanship for a period of one year. The exclusive remedy under this warranty shall be replacement of defective material supplied or correction of defective installation by the flooring installer. All implied warranties of merchantability or fitness for intended use are limited to the period of this warranty. This warranty excludes consequential damages.

## PART 2 - PRODUCTS

### 2.1 CONVENTIONAL WOOD PLANK FLOORING

- A. Provide the following.
  - a. Wood Species: Hard Maple.
  - b. NOFMA Certified Grade: 2<sup>ND</sup> Clear.
  - c. Grain/Cut Classification: Plain Sawn
  - d. Size: 1x3 (Actual 25/32" x2 1/4").
  - e. Profile: Tongue & Groove.
  - f. Edge: Square
  - g. Finish: Paint System J in Section 09900.

### 2.2 ACCESSORIES

- A. Fasteners as recommended by "NOFMA Installing Hardwood Flooring."
- B. Provide matching wood transition strips at carpet.
- C. Provide related items as recommended by manufacturer for proper installation.

## PART 3 - EXECUTION

### 3.1 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with NOFMA product data, including:
  - 1. Product technical bulletins:
    - a. NOFMA Behavior of Flooring.
    - b. NOFMA Key to Wood Flooring Performance.
- B. Product catalog instructions.
  - 1. NOFMA Installing Hardwood Flooring.
- C. Product carton instructions.
  - 1. NOFMA Safeguards.
- D. Comply with instructions as supplied by the wood flooring manufacturer.

### 3.2 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements, installation tolerances, and other conditions affecting performance of flooring. Proceed with installation only after unsatisfactory conditions have been corrected.
  - 1. Follow "NOFMA Installing Hardwood Flooring."
- B. Sub Floors: Verify that sub floors comply with manufacturers requirements.
  - 1. Verify that sub flooring is dry according to test methods recommended by flooring manufacturer.
  - 2. Grind high spots and fill low spots to provide a maximum 1/4-inch (6-mm) deviation in any direction when checked with a 10-foot (3-m) straight edge.

### 3.3 PREPARATION

- A. Prepare surfaces as indicated in "NOFMA Installing Hardwood Flooring" to achieve the best result for substrate and conditions indicated.

### 3.4 INSTALLATION

- A. Install flooring in accordance with "NOFMA Installing Hardwood Flooring."
- B. Pattern: Lay planks in pattern as directed by Architect.
- C. Provide blind nailing.

### 3.5 FLOOR SANDING

- A. Use coarse, medium and fine grade sandpaper.
- B. After sanding with drum sander, buff entire floor using 100 grit screenback or equal grit sandpaper, with a heavy-duty buffing machine.
- C. Vacuum or tack floor before first coat of finish.
- D. Floor shall present a smooth surface without drum stop marks, gouges, streaks or shiners.

### 3.6 FINISHING

- A. Inspect entire area of floor to ensure that the surface is acceptable for finishing, completely free from sanding dust and perfectly clean.
- B. Provide Paint System J for Hardwood as indicated in Section 09900 except final coat to be gloss. Apply seal and finish per manufacturer's instructions.
- C. Screenback or steel wool and vacuum or tack between each coat after it dries.

### 3.7 PROTECTION

- A. Establish and maintain environmental conditions at occupancy levels.
- B. Cover installed flooring to protect it from damage or deterioration, before and after finishing, during remainder of construction period. Use heavy kraft-paper or other suitable covering. Do not use plastic sheet or film that could cause condensation.
- C. Repair or replace damaged products prior to Substantial Completion.

### 3.8 CLEANING

- A. Clean floor as recommended by manufacturer prior to substantial completion.

END OF SECTION 09640



## SECTION 09660 - RESILIENT TILE FLOORING AND ACCESSORIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract from the front of the Specification book, including General Conditions and Supplementary General Conditions, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Resilient tile flooring.
    - a. Vinyl composition tile.
  - 2. Resilient base.
  - 3. Transition Strips.

#### 1.3 REFERENCES

- A. FS SS-T-312B -- Tile, Floor: Asphalt, Rubber, Vinyl, and Vinyl Composition; 1974 (Amendment-1(YD) 1979 and Reapproved 1990).
- B. FS SS-W-40A -- Wall Base: Rubber, and Vinyl Plastic; 1966 (Amended 1970 and Corrected 1974).

#### 1.4 SUBMITTALS

- A. Product Data: Submit technical data from each manufacturer of resilient products required.
- B. Initial Samples: Submit manufacturer's standard color selection samples for resilient products required, including all available colors and patterns.
- C. Maintenance Procedures: Submit manufacturer's published instructions for care and cleaning of resilient flooring products specified.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer: For each type of product required, including adhesives, cleaning compounds, and other accessories, provide the same product by one manufacturer throughout the project.

## 1.6 PROJECT CONDITIONS

- A. Environmental Requirements: At least 48 hours prior to beginning work, move resilient flooring materials to areas of installation and maintain at minimum 70 degrees F until 48 hours after completing installation and at minimum 55 degrees F thereafter.
- B. Sequencing: Do not begin installation of resilient flooring products until painting has been completed for each area.
- C. Existing Conditions: Do not install resilient flooring on concrete substrates until testing has been conducted to assure that moisture levels are acceptable.

## 1.7 MAINTENANCE

- A. Extra Materials: None.

## PART 2 - PRODUCTS

### 2.1 TILE FLOORING MATERIALS

- A. Vinyl Composition Tile:
  - 1. Manufacturer: "Standard Excelon" Imperial Texture; Armstrong World Industries, Inc.
    - a. Alternate manufacturers: The Architect will be the sole judge of equivalence.
  - 2. Size and gage: 12 inches by 12 inches, 1/8 inch thickness.

### 2.2 RESILIENT BASE MATERIALS

- A. Vinyl Wall Base: FS SS-W-40a, Type TV, Group 1 (solid) and as follows:
  - 1. Manufacturers: Provide products complying with requirements of the contract documents and made by the following:
    - a. Johnsonite.
    - b. Height: 4 inches.
    - c. Thickness: 1/8 inch.
    - d. Provide in 100' or 120' rolls.
    - e. Style: Standard toe base for resilient tile flooring installations.
    - f. Corners: Preformed or molded units matching base in color and finish.
    - g. Finish: Dull, or matte.



## 2.3 VINYL TRANSITION STRIPS

- A. Manufacturer: Johnsonite, Inc.
- B. Provide corresponding manufacturer's recommended receiver.
- C. Standard Unit VCT to Carpet with pad: CD-XX-B.
  - 1. Color: To match adjacent resilient base material.
- D. Standard Unit Direct Glue Down Carpet to Carpet with pad: CE-XX-C.
  - 1. Color: To match adjacent resilient base material.
- E. HC Unit Ceramic Tile to Direct Glue Down Carpet: CTA-XX-L.
  - 1. Color: To match adjacent resilient base material.
- F. Direct Glue Down Carpet to Direct Glue Down Carpet: CD-XX.
  - 1. Color: To match adjacent resilient base material.
- G. Direct Glue Down Carpet to VCT: CE-XX-A.
  - 1. Color: To match adjacent resilient base material.
- H. Carpet with pad to Ceramic Tile: CD-XX-A.
  - 1. Color: To match adjacent resilient base material.
- I. Vestibules Tile to Entry Mat: CD-XX-A.
- J. Color: To be selected from manufacturer's standard selection.

## 2.4 MISCELLANEOUS ACCESSORIES

- A. Adhesive: Type recommended by manufacturer of resilient product for specific substrate conditions.
- B. Primer: Type recommended by manufacturer of resilient product for application to concrete substrates.
- C. Patching Compound: Latex leveling and patching compound acceptable to manufacturer of resilient flooring product.
- D. Neutral detergent solution cleaner and high quality commercial floor polish as recommended by manufacturer.

## 2.5 COLORS AND PATTERNS

- A. Provide colors and patterns of resilient flooring materials as selected by the architect from manufacturer's standard product line.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. General: Inspect substrates and conditions of installation to verify that work may properly commence. Do not proceed with the work until unsatisfactory conditions have been corrected.
- B. Concrete Substrates: Perform manufacturer's recommended moisture tests before beginning installation, to verify that concrete surfaces have cured sufficiently to allow adhesive bond to resilient flooring.

### 3.2 PREPARATION

- A. Substrates: Fill minor depressions, cracks, and other irregularities with patching compound.
  - 1. Remove paint, curing compounds, and other materials that could interfere with adhesion of resilient products.
  - 2. Sweep or vacuum clean substrate immediately prior to beginning installation in each area.
  - 3. Apply primer to concrete substrates prior to application of adhesive, following manufacturer's printed instructions.

### 3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Comply with manufacturer's published recommendations for installation in each area, extending resilient flooring into spaces which are partially concealed. Cut and fit tightly to fixtures, pipes, and other obstructions, as well as to walls and partitions.
- B. Tightly adhere resilient flooring to substrate with no open joints or cracks, and without raised or blistered areas. Spread adhesive evenly, so that final installation will be without telegraphed markings from adhesive or substrate.

### 3.4 TILE INSTALLATION

- A. Layout: Establish center of each space and lay tile from center point, so tiles at each edge will be not less than 1/2 tile and equal in width.
- B. Matching: In each space, use tiles from same production run, and lay tiles in same sequence as removed from cartons. Discard broken, chipped, or otherwise damaged tiles.
  - 1. Lay tile square to room axis.
  - 2. In apartment units lay tile with pattern in all tiles oriented with grain parallel to corridor wall.

3. In common area or public rooms lay tile with pattern in adjacent tiles oriented in opposite directions.

C. Installation: Apply adhesive with notched trowel, following manufacturer's instructions. Install tile only after adhesive has developed sufficient tack, firmly butting tiles to achieve hairline joints. Roll each area of installation at regular intervals, to assure firm bonding of tiles to substrate.

### 3.5 INSTALLATION OF RESILIENT BASE

A. Apply base securely in locations indicated, using maximum lengths available to minimize joints. Adhere to substrate with full spread of adhesive, assuring continuous contact with vertical and horizontal surfaces. Provide preformed corner units at 90 degree intersections.

1. At irregular vertical surfaces where top edge of resilient base does not make continuous contact, fill voids with manufacturer's recommended adhesive compound.

### 3.6 INSTALLATION OF MISCELLANEOUS ACCESSORIES

A. Resilient Edge Strips: At locations shown on drawings, or where otherwise required to protect edge of resilient flooring, install resilient edge strips securely with recommended adhesive, to achieve tightly butted joint.

### 3.7 CLEANING

A. Initial Cleaning: Remove excess and waste materials promptly, and sweep or vacuum clean resilient flooring as soon as installation has been completed in each area. After adhesive has had adequate time to set, mop each area with damp mop and mild detergent.

B. Final Cleaning: Remove scuff marks, excess adhesive, and other foreign substances, using only cleaning products and techniques recommended by manufacturer of resilient products.

C. Install three coats of floor polish on all areas of resilient tile installations following manufacturer's installation instructions.

### 3.8 PROTECTION

A. Construction Period: Cover traffic routes across completed resilient flooring with plywood, hardboard, or other durable material to protect against damage from loaded dollies and other construction traffic.

- B. Final Protection: Cover resilient floor surface with nonstaining building paper until substantial completion in each area.

END OF SECTION 09660

## SECTION 09665 - RESILIENT SHEET FLOORING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Resilient sheet flooring.
    - a. Proprietary sheet product.
- B. Related Sections:
  - 1. Finish of concrete substrate for resilient flooring installation: Division 3.
  - 2. Carpet: Elsewhere in Division 9.

#### 1.3 REFERENCES

- A. ASTM F-1861-98, Standard Specifications for Resilient Wall Base.
- B. FS SS-W-40A -- Wall Base: Rubber, and Vinyl Plastic; 1966 (Amended 1970 and Corrected 1974).
- C. ASTM F-1344-93, Standard Specifications for Rubber Floor Tile.

#### 1.4 SUBMITTALS

- A. Product Data: Submit technical data from each manufacturer of resilient products required.
- B. Initial Samples: Submit manufacturer's standard color selection samples for resilient products required, including all available colors and patterns.
- C. Maintenance Procedures: Submit manufacturer's published instructions for care and cleaning of resilient flooring products specified.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer: For each type of product required, including adhesives, cleaning compounds, and other accessories, provide the same product by one manufacturer throughout the project.
- B. Installer: Manufacturer-certified for acceptable performance in installation of vinyl flooring with heat-welded seams.

## 1.6 PROJECT CONDITIONS

- A. Environmental Requirements: At least 48 hours prior to beginning work, move resilient flooring materials to areas of installation and maintain at minimum 70 degrees F until 48 hours after completing installation and at minimum 55 degrees F thereafter.
- B. Sequencing: Do not begin installation of resilient flooring products until painting has been completed for each area.
- C. Existing Conditions: Do not install resilient flooring on concrete substrates until testing has been conducted to assure that moisture levels are acceptable.

## 1.7 MAINTENANCE

- A. Extra Materials: None.

## PART 2 - PRODUCTS

### 2.1 SHEET FLOORING MATERIALS

- A. Type Resilient Sheet:
  - 1. Manufacturer: Mannington, Vega II.
  - 2. Roll width: manufacturer's standard.

### 2.2 SEAM MATERIALS

- A. Double cut method with manufacturer's standard heat weld.

### 2.3 MISCELLANEOUS ACCESSORIES

- A. Adhesive: Type recommended by manufacturer of resilient product for specific substrate conditions.
- B. Primer: Type recommended by manufacturer of resilient product for application to concrete substrates.

- C. Patching Compound: Latex leveling and patching compound acceptable to manufacturer of resilient flooring product.
  - 1. Neutral detergent solution cleaner and high quality commercial floor polish as recommended by manufacturer.

## 2.4 COLORS AND PATTERNS

- A. Provide colors and patterns of resilient flooring materials as selected by the architect from manufacturer's standard product line.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. General: Inspect substrates and conditions of installation to verify that work may properly commence. Do not proceed with the work until unsatisfactory conditions have been corrected.
- B. Concrete Substrates: Perform manufacturer's recommended moisture tests before beginning installation, to verify that concrete surfaces have cured sufficiently to allow adhesive bond to resilient flooring.

### 3.2 PREPARATION

- A. Substrates: Fill minor depressions, cracks, and other irregularities with patching compound.
  - 1. Remove paint, curing compounds, and other materials that could interfere with adhesion of resilient products.
  - 2. Sweep or vacuum clean substrate immediately prior to beginning installation in each area.
  - 3. Apply primer to concrete substrates prior to application of adhesive, following manufacturer's printed instructions.

### 3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Comply with manufacturer's published recommendations for installation in each area, extending resilient flooring into spaces which are partially concealed. Cut and fit tightly to fixtures, pipes, and other obstructions, as well as to walls and partitions.
- B. Tightly adhere resilient flooring to substrate with no open joints or cracks, and without raised or blistered areas. Spread adhesive evenly, so that final installation will be without telegraphed markings from adhesive or substrate.

- C. Layout seams to be in an existing line of the pattern selected to maintain flooring pattern across seam.

### 3.4 RESILIENT SHEET FLOORING INSTALLATION

- A. Layout and Matching: Establish optimum use of material with minimum number of seams in each space. Match patterns carefully at seams, following manufacturer's directions.
- B. Flooring: Follow manufacturer's directions for application of adhesive, using full spread method unless perimeter bonding technique is specifically recommended by manufacturer for substrate condition. Apply recommended adhesive or sealant at seams, and roll in accordance with manufacturer's recommendations to achieve flat, blister-free installation.
- C. Chemical Welding: Follow manufacturer's recommendations to achieve flat, seamless installation.

### 3.5 INSTALLATION OF MISCELLANEOUS ACCESSORIES

- A. Resilient Edge Strips: At locations shown on drawings, or where otherwise required to protect edge of resilient flooring, install resilient edge strips securely with recommended adhesive, to achieve tightly butted joint.

### 3.6 CLEANING

- A. Initial Cleaning: Remove excess and waste materials promptly, and sweep or vacuum clean resilient flooring as soon as installation has been completed in each area. After adhesive has had adequate time to set, mop each area with damp mop and mild detergent.
- B. Final Cleaning: Remove scuff marks, excess adhesive, and other foreign substances, using only cleaning products and techniques recommended by manufacturer of resilient products.
- C. Install three coats of floor polish on all areas of resilient tile installations following the manufacturer's installation instructions.

### 3.7 PROTECTION

- A. Construction Period: Cover traffic routes across completed resilient flooring with plywood, hardboard, or other durable material to protect against damage from loaded dollies and other construction traffic.
  - 1. Polish: Apply protective polish to clean resilient flooring surfaces, unless manufacturer of resilient product recommends otherwise.



- B. Final Protection: Cover resilient floor surface with nonstaining building paper until substantial completion in each area.

END OF SECTION 09665



## SECTION 09680 - CARPET

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Broadloom carpet.
  - 2. Carpet cushion.
  - 3. Carpet accessories.
- B. Related Sections:
  - 1. Resilient flooring: Division 9.
  - 2. Resilient base: Elsewhere in Division 9.

#### 1.3 REFERENCES

- A. 16 CFR, Chapter 11, Part 1630 - Standard for the Surface Flammability of Carpets and Rugs (FF 1-70); Code of Federal Regulations; 1988.
- B. ASTM D 2859-76 -- Standard Test Method for Flammability of Finished Textile Floor Covering Materials; 1976.
- C. FS L-C-001676 (GSA-FSS) -- Cushion, Carpet and Rug, Prime Urethane; 1970 (Amended 1971).
- D. Use of Materials Bulletin No. 44d-1986 -- HUD Building Product Standards and Certification Program for Carpet and Carpet with Attached Cushion; U.S. Department of Housing and Urban Development; 1986.

#### 1.4 SUBMITTALS

- A. Product Data: Submit technical data for each distinct type of carpeting material and accessory indicated.
  - 1. Include information which specifically details physical properties and performance characteristics.
  - 2. Include information which details installation methods for substrates indicated.

- B. Shop Drawings:
  - 1. For broadloom, show the following:
    - a. Carpet direction, seaming plan, edge strip placement.
    - b. Other details as necessary to clearly indicate arrangement of carpeting materials.
  - 2. Include details for the following:
    - a. Seam locations for all common areas and typical unit layouts.
- C. Initial Selection Samples: For each carpet type indicated, submit manufacturer's standard samples showing full range of colors, textures, and patterns available.
- D. Certification:
  - 1. Submit manufacturer's certification that materials furnished comply with requirements indicated. Include official results from independent testing agency which establish that materials meet or exceed test requirements indicated.
  - 2. Submit manufacturer's certification that materials furnished comply with requirements of "Use of Materials Bulletin No. UM-44D" (U.S. Department of Housing and Urban Development), that they are presently included in a Certified Carpet Directory (published by a HUD-approved testing agency), and that backing of carpet will be clearly imprinted with HUD-approval mark.
- E. Maintenance Instructions: Submit manufacturer's instructions for maintaining appearance and condition of installed products. Include information on cleaning materials which could damage carpet.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Firm regularly engaged in manufacture of products specified in this section, whose products have been in satisfactory use, under similar service conditions, for not less than 5 years.
- B. Installer's Qualifications: Firm regularly engaged in installation of products specified in this section, with a minimum of 5 years of experience.

## 1.6 PERFORMANCE CHARACTERISTICS

- A. Fire Performance: Provide carpet materials capable of meeting the following requirements when tested in accordance with methods indicated, by UL (Underwriters Laboratories Inc.) or other independent testing agency acceptable to governing authorities.
  - 1. Methenamine pill test (ASTM D 2859): Passes.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Take measures as required to ensure materials are not damaged or deformed. Store products in flat position in properly ventilated, dry space. Use suitable means to prevent materials from lying in direct contact with the ground.
- B. Allow carpet materials to reach room temperature or minimum temperature recommended by manufacturer before installation.

## 1.8 SEQUENCING AND SCHEDULING

- A. Coordinate work of this section with other work to ensure that installed carpeting materials are not damaged or soiled.

## 1.9 WARRANTY

- A. Submit a written warranty signed by the manufacturer, installer, and the contractor, guaranteeing to correct failures in carpeting which occur within 2 years after substantial completion, without reducing or otherwise limiting any other rights to correction which owner may have under the contract documents. Failures are defined to include faulty workmanship or faulty materials. Correction may include repair or replacement.

## 1.10 MAINTENANCE MATERIALS

- A. Extra Materials: Provide 24 square yards of Carpet B.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Single Source Responsibility: Obtain all of each different material from a single manufacturer.

### 2.2 MATERIALS

- A. Carpet A :
  1. Location: As indicated on the drawings.
  2. Manufacturer/Style: Shaw 19299, Awakening, Color 701
  3. Alternate manufacturers: The Architect shall be the sole judge of equivalence. Mohawk carpet is not an approved equal.
  4. Color/texture/pattern: To be selected from manufacturer's standards.
  5. Installation method: Action Back, Stretch application w/ pad; Unitary Back, Direct Glue Down unless not recommended by manufacturer.
  6. Edge guard: Vinyl or rubber.

- B. Carpet B :
  - 1. Location: As indicated on the drawings.
  - 2. Manufacturer/Style: Shaw Contract, "Turn Key" 24-28 oz.
  - 3. Alternate Manufacturer/Style: J&J Commercial, Link 28 oz, Mannington, Game Time/Half Time.
  - 4. Alternate manufacturers: The Architect shall be the sole judge of equivalence. Mohawk carpet is not an approved equal.
  - 5. Color/texture/pattern: To be selected from manufacturer's standards.
  - 6. Installation method: Action Back, Stretch Application w/ pad; Unitary Back, Direct Glue Down unless not recommended by manufacturer.
  - 7. Edge guard: Vinyl or rubber.
  
- C. Cushion: Provide mildew resistant cushion which is capable of passing ASTM D 2859 [16 CFR, Chapter 11, Part 1630 (FF 1-70)] flammability test.
  - 1. Shaw "Endurance II" 7011, synthetic fiber cushion, 32 oz.
  - 2. Traffic designation: I - Moderate.
  - 3. Minimum density: 8.9 pounds per cubic foot.
  - 4. Thickness: .30 inch.

### 2.3 ACCESSORIES

- A. Provide accessories recommended by carpet manufacturer.
  
- B. Carpet Gripper: Water-resistant plywood strips with projecting pins designed to grip carpet, thickness suitable for carpet and cushion installed.
  - 1. Provide commercial stripping with a minimum of 3 rows of projecting pins in areas where carpet width exceeds 20 feet and in areas which will receive heavy traffic.
  
- C. Vinyl or Rubber Edge Guard: Minimum width of anchorage flange 2 inches, size and shape indicated, colors selected by the architect from manufacturer's standards.
  
- D. Carpet Installation Adhesive: Manufacturer's recommended water-resistant adhesive manufactured for use with type of carpet and substrates indicated, and complying with fire performance requirements indicated for carpet.
  
- E. Carpet Seaming Cement and Tape: Carpet manufacturer's recommended products manufactured for use with type of carpet indicated.
  
- F. Cushion Adhesive: Provide cushion manufacturer's recommended mildew-resistant product for carpet cushion and application indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. General: Verify that substrates are completely dry, free of harmful substances, and in satisfactory condition to receive carpeting materials.
- B. Notify the architect in writing of unsatisfactory conditions. Do not begin installation until these conditions have been satisfactorily corrected.
- C. Start of installation work constitutes acceptance of substrate conditions and full responsibility for the completed work.
- D. Perform moisture and acidity tests on concrete surfaces where recommended by carpet manufacturer.

### 3.2 PREPARATION

- A. General: Follow carpet manufacturer's recommendations to ensure that each substrate is properly prepared to receive carpeting. Fill all cracks, gaps, and depressions using carpet manufacturer's recommended materials and methods.
  - 1. Stretch-in installation: Maximum variation in substrate 1/4 inch in 10 feet.
  - 2. Glue-down installation: Maximum variation in substrate 1/8 inch in 10 feet.
- B. Level off all high spots or ridges to prevent uneven carpet wear.
- C. Determine whether substrates are susceptible to dusting. Apply sealer where required to prevent formation of dust.
- D. Vacuum-clean substrates thoroughly, just prior to beginning installation.
- E. Maintain temperature of floor and relative humidity of rooms where carpet materials are to be installed at levels and for periods recommended by carpet manufacturer before, during, and after installation.

### 3.3 INSTALLATION - GENERAL

- A. Perform installation in accordance with manufacturer's instructions, except where more stringent requirements are shown or specified, and except where project conditions require extra precautions or provisions to ensure satisfactory performance of the work.
  - 1. Maximize consistency of carpet appearance, particularly in terms of lay of pile and its direction. Follow manufacturer's recommendations for placement of seams.
  - 2. Continue carpet into recessed spaces such as closets, and underneath obstacles with open bases.
  - 3. Follow manufacturer's instructions for cutting carpet, using tools designed to cut type of carpet materials being installed.
- B. Provide noncombustible carpet separator wherever carpet materials are to be installed on both sides of a fire door.
- C. At door openings, orient carpet seam perpendicular to traffic direction; doorway seam must be located directly underneath door in closed position.
- D. At stairs, provide safe, wear-resistant installation; maximize consistency of appearance between carpet at stairway and adjacent carpet; conceal carpet edges.

### 3.4 INSTALLATION - STRETCH-IN CARPET

- A. Install carpet gripper at perimeter of each area to receive carpet, at cutouts, and where carpeting abuts obstacles with closed bases. Anchor gripper using non-staining adhesive, mechanical fasteners, or both if necessary to provide secure attachment.
- B. Install carpet cushion at location indicated. Orient cushion seams perpendicular to carpet seams; install with correct surface in upward position. If recommended by the carpet manufacturer, attach cushion to substrate using cushion manufacturer's recommended adhesive. Tape seams using cushion manufacturer's recommended tape.
- C. Seams: Using carpet manufacturer's recommended procedures, form secure seams capable of sustaining expected stresses without failure for the life of the installation.
  - 1. Seams: Conform to submitted seaming plan.



- D. Stretch carpet in strict accordance with carpet manufacturer's instructions; do not overstretch.
- E. Install edge guards at exposed carpet edges unless indicated otherwise; provide secure attachment to substrate.
- F. Securely bind carpet edges not covered by edge guards or similar installation accessories.

### 3.5 INSTALLATION - GLUE-DOWN CARPET

- A. Before applying adhesive to substrate, prefit carpet in areas where it is to be installed. Where cutting is necessary, provide properly prepared, straight, and unfrayed edges.
  - 1. Seams: Conform to submitted seaming plan.
- B. Apply even layer of adhesive to substrate, using trowel of carpet manufacturer's recommended notch size.
- C. Install prefitted carpet; butt edges snugly at seams and against vertical obstructions.
  - 1. Stretch carpet tightly over substrate, so that it lies flat, is uniformly smooth, and free of bulges.
  - 2. Apply seaming cement to butted edges.
- D. Install edge guards at exposed carpet edges unless indicated otherwise; provide secure attachment to substrate.
- E. After installation, lightly roll carpet as recommended by carpet manufacturer.
- F. Immediately remove adhesive from surface of carpet by method which will not damage carpet.

### 3.6 CLEANING

- A. Remove carpet remnants which are not usable; comply with owner's instructions for final disposition of usable remnants.
- B. Use commercial-quality vacuum cleaner to thoroughly clean installed carpeting; trim loose yarns where required.
- C. Eliminate stains; contractor shall pay for and replace carpet from which stains cannot be eliminated using carpet manufacturer's recommended products and methods.

### 3.7 PROTECTION

- A. Protect installation with a nonstaining building paper. Do not use a moisture barrier such as plastic film.
- B. Do not permit foot traffic or place furniture on glued-down carpet for a minimum of 48 hours after installation.
  - 1. Do not wet-clean any glued-down carpet within 60 days of installation.
- C. Ensure that carpet will be clean and without deterioration or damage at date of substantial completion.

END OF SECTION 09680

## SECTION 09900 - PAINTING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract from the front of the Specification book, including General Conditions and Supplementary General Conditions, apply to this Section.

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Painting and finishing of exposed exterior items and surfaces.
  - 2. Painting and finishing of exposed interior items and surfaces.
- B. Section does not include:
  - 1. Factory finishing of manufactured products.
  - 2. Painting of concealed surfaces, unless specifically indicated.
  - 3. Prefinished metal surfaces.
  - 4. Moving parts of equipment.
- C. Related Sections:
  - 1. Shop priming of ferrous metal: Division 5.
  - 2. Shop priming of metal doors and frames: Division 8. Shop priming of wood doors: Division 8.
  - 3. Painting of mechanical work: Division 15.
  - 4. Painting of electrical work: Division 16.

#### 1.3 DEFINITIONS

- A. DFM (dry film mils): Thickness, measured in mils, of a coat of paint in the cured state.

#### 1.4 SUBMITTALS

- A. Product Data: Manufacturer's technical data sheets for each coating.
  - 1. Material analysis including vehicle type and percentage by weight and by volume of vehicle, resin, and pigment.
  - 2. Application instructions including mixing, surface preparation, compatible primers and topcoats, recommended wet and dry film thickness, recommended application methods.

## 1.5 QUALITY ASSURANCE

- A. Materials:
  - 1. All coating materials required by this section shall be provided by a single manufacturer, unless otherwise required or approved.
- B. Applicator: Firm with not less than 3 years of successful experience in painting work similar in scope to work of this project.
  - 1. Maintain throughout duration of the work a crew of painters who are fully qualified to satisfy requirements of the specifications.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original containers bearing coating name and color, material composition data, date of manufacture, legal notices if applicable, and mixing, thinning, and application instructions.
- B. Storage:
  - 1. Store materials in an orderly fashion and in clean, well-closed containers with labels intact.
  - 2. Maintain above 40 degrees F. Do not allow materials to freeze.

## 1.7 PROJECT CONDITIONS

- A. Apply coatings only under the following environmental conditions:
  - 1. Air and surface temperatures are between 50 and 100 degrees F, unless otherwise recommended by manufacturer.
  - 2. Surface temperature is at least 5 degrees F above dew point.
  - 3. Relative humidity is less than 85 percent.
- B. Do not apply coatings during inclement weather except within enclosed, conditioned spaces.
  - 1. Provide temporary lighting to achieve a well-lit surface with a level of at least 80 footcandles measured mid-height.
  - 2. Provide continuous ventilation and heating to prevent accumulation of hazardous fumes and to maintain surface and ambient temperatures above 45 degrees F for 24 hours before, during, and for 48 hours after application of finishes, or longer if required to obtain full cure as indicated by manufacturer's instructions.

## 1.8 COORDINATION

- A. General: Perform work in proper sequence with work of other trades to avoid damage to finished work.

- B. Coordination: Where special coatings will be applied over shop coatings specified in other sections, coordinate work of such other sections to ensure that only approved, compatible primers are applied.
  - 1. Furnish the architect with product data on both coatings demonstrating coating compatibility.

## 1.9 MAINTENANCE STOCK

- A. Paint: At time of completing application, deliver stock of maintenance material to the owner. Furnish not less than one properly labeled and sealed 1-gallon can of each type of finish coat of each color, taken from lots furnished for the work.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. The brand-name products listed in the schedule at the end of this section and made by the following manufacturer are the basis of the contract documents:
  - 1. Sherwin Williams Company.
- B. Products made by one of the following manufacturers will be considered in accordance with standard substitution procedures:
  - 1. The Glidden Company.
  - 2. Benjamin Moore & Company.
  - 3. PPG Industries, Inc./Pittsburgh Paints.

### 2.2 PRODUCTS

- A. Colors:
  - 1. For multicoat systems, apply each coat using a successively darker tint or shade, unless approved otherwise. Provide primer tinted 1/2 shade of top coat color selected.
  - 2. Top coat colors: As selected during construction. Allow for 5 colors of each sheen.
- B. Lead Content:
  - 1. Not permitted.

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Verify that surfaces and conditions are ready for work in accordance with coating manufacturer's recommendations.

- B. Prior to commencement of work, examine surfaces scheduled to be finished.
  - 1. Report any unsatisfactory conditions in writing.
  - 2. Do not apply coatings to unsatisfactory substrates.
  - 3. Beginning painting work on an area will be deemed construed acceptance of surfaces in that area.

### 3.2 SURFACE PREPARATION

- A. Apply coatings to surfaces that are clean and properly prepared in accordance with manufacturer's instructions and as herein specified. Remove dirt, dust, grease, oils, and foreign matter. Prepare surface for proper texture necessary to optimum coating adhesion and intended finished appearance. Plan cleaning, preparation, and coating operations to avoid contamination of freshly coated surfaces.
  - 1. Do not apply coatings to labels that identify equipment, fire-resistance ratings, etc.
  - 2. Remove hardware, cover plates, and similar items before applying coatings.
  - 3. Provide protection for non-removable items not scheduled for coating. After application of coatings, install removed items. Use only skilled workmen for removal and replacement of such items.
  - 4. Protect surfaces not scheduled for coating. Clean, repair, or replace to the satisfaction of the architect any surfaces inadvertently spattered or coated.
  
- B. Wood: Scrape and remove any sap or pitch deposits from surface and clean with mineral spirits. Seal any knots and pitch pockets with a suitable product recommended by the coating manufacturer. Sand rough spots. Remove dust.
  - 1. After first coat has dried, fill holes, cracks, or depressions with a suitable wood filler recommended by the coating manufacturer. Sand filler when dry.
  - 2. Sand surfaces lightly between successive coats. Remove dust.
  
- C. Ferrous Metal:
  - 1. Clean and prepare surface profile in accordance with the applicable SSPC specifications for hand tool or power tool cleaning.
  - 2. Intricate fabricated shapes may be pickled in lieu of hand or power tool cleaning.
  - 3. Before hand or power tool cleaning, remove visible oil, grease, soluble welding residue, and salts by solvent cleaning. After hand or power tool cleaning, reclean surfaces if necessary.

4. Before touching up coatings damaged by handling or welding, reprepare damaged surfaces.
- D. Gypsum Board:
1. Latex-fill minor defects.
  2. Spot-prime defects after repair.
- E. Plaster:
1. Fill hairline cracks, small holes, and imperfections with latex patching plaster.
  2. Make smooth and flush with adjacent surfaces.
  3. Wash and neutralize high-alkali surfaces.
- F. Mildew:
1. Remove mildew by scrubbing with solution of trisodium phosphate and bleach.
  2. Rinse with clean water and allow surface to dry.
- G. Existing surfaces:
1. Prepare surfaces following manufacturer's installation instructions.

### 3.3 MIXING AND THINNING

- A. Remove and discard any skin formed on surface of coatings in containers. Discard any containers where skin comprises 2 percent or more of the remaining material. Do not add thinner except as specifically recommended (not merely permitted) by the coating manufacturer for proper coating application under the circumstances prevailing at the project site when application equipment recommended by the coating manufacturer is employed. Use only the quantities and the types of thinner recommended.
- B. Mix materials using mechanical mixers in accordance with coating manufacturer's instructions. Agitate mixed materials during application if recommended by manufacturer.
- C. Combine multi-component paints in quantities needed for use within the manufacturer's recommended pot life at the anticipated application temperatures. Discard remaining mixed material after pot life has expired.
- D. Strain pigmented coatings after mixing except where mechanical application equipment is provided with effective strainers.

- E. Tinting: Except where coating materials cannot be tinted, tint each successive coat of paint a sufficiently contrasting tone to facilitate identification of complete coating coverage.

### 3.4 APPLICATION

#### A. General:

1. Apply coatings in accordance with coating manufacturer's instructions and using application method best suited for obtaining full, uniform coverage of surfaces to be coated.
2. Employ only application equipment that is clean, properly adjusted, in good working order, and of the type recommended by the coating manufacturer.
3. Apply successive coats after adequate cure of the preceding coat and within the recommended recoating time.
4. Apply each coat to achieve the dry film thickness per coat recommended by the coating manufacturer. Application rates in excess of those recommended and fewer numbers of coats than specified will not be accepted.
5. Completed coatings shall be free of defects such as runs, sags, variations in color, lap or brush marks, holidays, and skips.
6. Apply coatings according to the schedule at the end of this section and as otherwise indicated. Coat all similar surfaces not specifically mentioned unless specifically exempted.
  - a. Ensure that all surfaces receive a dry film thickness equivalent to those of flat surfaces.
7. Coat front and back of miscellaneous items such as covers, access panels, and grilles. Apply fully finish coats behind movable items of furniture and equipment before installation. Apply prime coat only behind non-movable items of furniture and equipment before installation.
8. Sand gloss coats before applying subsequent coatings.

- B. Remove coatings not in compliance with this specification, reclean and re-prepare surfaces as specified, and apply coatings to comply with the contract documents.

#### C. Scheduling:

1. Apply first coat of material to properly prepared surfaces without delay.
  - a. Apply successive coats within the time limits recommended by the manufacturer.



### 3.5 PRIME COATS

#### A. General:

1. Field apply bottom coats scheduled except where the contract documents require shop coating of ferrous metals.
2. Where first coat shows signs of suction spots or poorly sealed areas, reapply first coat material to adequately seal surface before proceeding with successive coats.
3. Ferrous metals that have not been shop primed shall be field primed promptly after arrival at the site or shall be stored away from the effects of weather.
4. Reprepare and retouch damaged prime coats using approved, compatible primer.

#### B. Primers for Wood and Wood Products:

1. Apply first coat to wood upon receipt at the site and before wood is exposed to sun or rain.
2. Before installation, prime both concealed and exposed surfaces of interior wood, including cut ends.
3. Finish tops, bottoms, edges, and cutouts of exterior wood doors as scheduled for exterior face.
4. Backprime concealed surfaces and cut edges of exterior wood trim prior to installation.
5. Prime edges and ends, including cut surfaces, of exterior plywood prior to installation.

### 3.6 FINISH COATS

#### A. Number of Coats and Minimum Coating Thickness:

1. Apply not less than the number of coats indicated.
2. Apply each coat to achieve not less than the dry film thicknesses indicated per coat.
3. Apply additional coats at no additional cost to the owner when necessary to achieve complete hiding, uniform texture, or uniform sheen and appearance.

### 3.7 CLEANING AND PROTECTION

#### A. Cleaning:

1. Clean work area on a daily basis; dispose of spent materials and empty containers. If requested, turn over to the architect all empty coatings containers used during the course of each day.

2. Remove all trace of coatings from adjacent surfaces not scheduled to be coated. Remove by appropriate methods that do not damage surfaces.

B. Protection:

1. Protect work against damage until fully cured. Provide signs identifying wet surfaces until surfaces are adequately cured.
2. Shortly before final completion of the project, examine surfaces for damage to coatings and restore coatings to new, undamaged condition.
3. Touch-up of minor damage will be acceptable where result is not visibly different from surrounding surfaces. Where result is different either in color, sheen, or texture, recoat entire surface.

3.8 SCHEDULE OF COATINGS FOR EXTERIOR SURFACES (Refer to Room Finish Schedule and Door Schedule for paint application.)

A. Wood, Fiberglass and PVC – Trim, Casing, Doors and Columns

1. Latex, Satin
  - a. Bottom coat (unfinished fiberglass and wood only): A-100 Exterior Latex Primer B42W41.
  - b. Intermediate coat: Same as top coat.
  - c. Top coat: Super Paint Exterior Latex Satin A89 Series.

B. Ferrous Metal:

1. Latex, gloss.
  - a. Bottom coat: ProCryl Universal Metal Primer B66W310.
  - b. Intermediate coat: Same as top coat.
  - c. Top coat: DTM Acrylic Gloss Coating B66-100 Series.

K. Pressure Treated Decks (Refer to Room Finish Schedule):

1. Solid Stain.
  - a. Bottom coat: Same as Top Coat.
  - b. Top coat: Cabot Solid Color Decking Stains #1800 Series.

L. Pressure Treated Decks, Hardwood Decks and Wood Fences(Refer to Room Finish Schedule):

1. Clear Stain.
  - a. One Top coat: Cabot Decking Stain #7400 Series.

N. Fiber Cement Siding and Trim:

1. Latex, Satin
  - a. Bottom coat: Factory primed.
  - b. Intermediate coat: Shop applied Color Plus.
  - c. Top coat: Field applied Super Paint Exterior Latex Satin A89 Series.

### 3.9 SCHEDULE OF COATINGS FOR INTERIOR SURFACES

- C. Wood, Fiberglass & Urethane Trim, Casing and Molding :
  - 1. Latex Semi-Gloss.
    - a. Bottom coat: ProGreen 200 Latex Primer B28W600.
    - b. Intermediate coat: Same as top coat.
    - c. Top coat: ProGreen 200 Low VOC Int. Latex Semi-Gloss B31-600 Series.
  
- D. Ferrous Metal, Handrails, Doors and Frames:
  - 1. Latex, Semi-gloss.
    - a. Bottom coat: ProCryl Universal Metal Primer B66W310.
    - b. Intermediate coat: Same as top coat.
    - c. Top coat: DTM Acrylic Semi-Gloss Coating B66-200 Series.
  
- E. Gypsum Wallboard & Plaster Walls (Not noted in Paint System F Below):
  - 1. Latex, Egg-Shell.
    - a. Bottom coat: ProGreen 200 Latex Primer B28W600.
    - b. Intermediate coat: Same as top coat.
    - c. Top coat: ProGreen 200 Low VOC Interior Latex Eg-Shel B20-600 Series.
  
- F. Gypsum Wallboard Walls (Bathrooms, Laundry and Mechanical):
  - 1. Latex, Satin.
    - a. Bottom coat (paperless drywall): Builders Solution Latex Primer/Surfacer.
    - b. Bottom coat (paper drywall): ProGreen 200 Latex Primer B28W600.
    - c. Intermediate coat: Same as top coat.
    - d. Top coat: Bath Paint Satin Finish A57 Series.
  
- G. Gypsum Wallboard & Plaster Ceilings(Not noted in Paint System H Below):
  - 2. Latex, flat.
    - a. Bottom coat: ProGreen 200 Latex Primer B28W600.
    - b. Intermediate coat: Same as top coat.
    - c. Top coat: ProGreen 200 Low VOC Interior Latex Flat, B30-600 Series.
  
- H. Gypsum Wallboard Ceilings (Bathrooms, Laundry and Mechanical):
  - 3. Latex, Satin.
    - a. Bottom coat (paperless drywall): Builders Solution Latex Primer/Surfacer.
    - b. Bottom coat (paper drywall): ProGreen 200 Latex Primer B28W600.
    - c. Intermediate coat: Same as top coat.
    - d. Top coat: Bath Paint Satin Finish A57 Series.

- J. Hardwood Wood Floor, Trim, Handrails or Doors:
  - 1. Varnish, satin (filled and stained wood).
    - a. Filler: Sher-Wood Natural Filler D70T1 Series (open grain wood)
    - b. Stain: Minwax 250 Wood Finish Stain.
    - c. Intermediate coats: Same as Top Coat.
    - d. Second Intermediate coats: Same as Top Coat.
    - e. Top coat: Wood Classics Polyurethane Satin A67 Series.
  
- M. Masonry and Concrete Surfaces:
  - 1. Alkyd, flat.
    - a. Bottom coat: Heavy Duty Block Filler; 10.0 – 18.0 DFM.
    - b. Intermediate coat: Same as top coat.
    - c. Top coat: Waterborne Acrylic Dry Fall Eg-Shel White; B42-W1.

END OF SECTION 09900