

DIVISION 9**FINISHES**

09 28 00	Fiber Reinforced Cement Board
09 29 00	Gypsum Board
09 30 00	Tile
09 51 00	Acoustical Ceilings
09 65 00	Resilient Flooring
09 68 00	Carpet
09 90 00	Painting

SECTION 09 28 00
FIBERGLASS REINFORCED TILE BACKER BOARD

PART 1 GENERAL

1.1 SUMMARY OF WORK

- A. Work in this Section includes providing fiberglass reinforced tile backer board panels where indicated on drawings.

1.2 RELATED SECTIONS

- | | |
|--------------------|------------------|
| A. Rough Carpentry | Section 06 10 00 |
| B. Gypsum Board | Section 09 29 00 |
| C. Tile | Section 09 30 00 |

1.3 STANDARDS

- A. Comply with standards specified herein and as listed in Section 01 42 19.
B. ICC/ICBO listed for required rating of assembly.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Backer Board:
1. USG -Durock Cement Board; 5/8" thick
 2. GP – DensShield Tile Backer; 5/8" thick
 3. CertainTeed GlasRoc – Diamondback Tile Backer; 5/8" thick
 4. Other approved equal.
- B. Joint Reinforcement tape:
1. Manufacturer's fiberglass joint reinforcement tape.
- C. Fasteners:
1. Corrosion resistant, bugle head "S" point screws or other as recommended by the backer board manufacturer.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Interior:
1. Install on studs with a maximum spacing of 16" o/c.
 2. Block all edges.
 3. Fasten through pre-drilled holes at a maximum spacing of 6" o/c all supports.
 4. Fill joints with mortar and embed reinforcing mesh.

END OF SECTION

**SECTION 09 29 00
GYPSUM BOARD**

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Work in this Section includes the furnishing, installation, joint taping and finishing of gypsum wallboard panels on wood, metal, and solid substrates.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Submittals Section 01 33 00
- B. Rough Carpentry Section 06 10 00
- C. Painting Section 09 90 00

1.3 STANDARDS

- A. Gypsum Board: ASTM C 1396
- B. Fasteners: ASTM C 1002, latest revision.
- C. Installation: ASTM C 840, latest revision
- D. Conform to code requirements to achieve fire rating of walls, ceilings, ceiling-floor and ceiling-roof assemblies and column and beam protection which require joint taping of gypsum board assemblies, even when finishing is not required for decorative purposes.

1.4 SUBMITTALS

- A. General: Comply with provisions of Section 01 33 00.

1.5 QUALITY ASSURANCE

- A. Standards: Comply with standards specified herein and as listed in Section 01 42 19.
- B. Moisture Content of Substrate: Do no taping or finishing of gypsum board surfaces until the moisture content of substrate is 15% or less.
- C. Temperature: Do no taping or finishing of gypsum wallboard surfaces until the interior temperature has been maintained at a minimum of 55 degrees F for a period of at least 24 hours.
- D. Temporary Heat: Temporary heat for interior work shall be provided as specified under Section 01 56 00. The heat and method shall be sufficient to allow all coats of taping and finishing compound to dry to a maximum of 15% moisture within 72 hours.
- E. Ventilation: Coordinate the work so that adequate continuous ventilation is provided, in conjunction with temporary heat to insure proper drying.
- F. Lighting: Do not proceed with the work in any room unless lighting level of 15 candlepower per square foot is available.

1.6 PROTECTION

- A. Protect adjacent surfaces that do not receive board finish.
- B. Protect all wallboard from weather exposure.

1.7 PRE-INSTALLATION CONFERENCE & MOCKUP

- A. Contractor shall provide a 36" x 36" area of all wall and ceiling textures on site or as approved by Owner in advance via sample boards, for the Owner's approval of drywall textures throughout the project. Contractor shall schedule this approval so as to not delay the project and ensure approval prior to actual finish application.

**SECTION 09 29 00
GYPSUM BOARD**

PART 2 PRODUCTS

2.1 MATERIALS

- A. Gypsum Board:
 - 1. General Wallboard: 5/8" thick, per ASTM C-1396, tapered-edge, in 48" minimum widths and in such lengths as will result in the minimum of joints.
 - 2. Fire Resistant: 5/8" thick, Type "X", per ASTM C-1396, tapered-edge, in 48" minimum widths and in such lengths as will result in the minimum of joints.
 - 3. Moisture Resistant: 1/2" thick, per ASTM C-1396, Grade MR, asphalt treated core and water repellent paper face.
- B. Joint Tape: Furnished perforated, cross-laminated, reinforced paper, per ASTM C-475.
- C. Taping Compound: Furnish specifically formulated and manufactured for use in embedding of tape at board joints compatible with the tape and substrate; do not mix vinyl-base and casein-base formulations for any one coat.
- D. Finishing Topping Compound:
 - 1. Furnish specifically formulated and manufactured for use as a finishing compound; do not mix vinyl base and casein-base formulations for any one coat.
 - 2. At textured surfaces; United States Gypsum Company, Texture XII Drywall Surfacers.
- E. All Purpose Compound: Furnish specifically designed to serve as both a taping and a finishing compound compatible with the tape and substrate.
- F. Compound Form: Furnish compounds for taping and finishing in either powder or premixed forms, of compatible chemical composition with previous and successive coats of compound applied joints, fasteners, and trim.
- G. Metal Trim
 - 1. Trims: Furnish trims for corners, expansion joints, exposed edges, edges abutting dissimilar materials and where detailed or noted on the Drawings, specifically designed for such installations, and of type to meet the requirements of the work in this Section and any code requirements for fire ratings to be achieved by the installation or system.
 - 2. Trim Features: Provide hot-dip galvanized 0.0217" nominal thickness (26 gauge).
 - 3. Fry Trim: Extruded aluminum as manufactured by Fry Reglet Co.
 - 4. Casing Beads: Channel shaped with concealed wing not less than 7/8" wide, and an exposed wing.
 - 5. Corner Beads: Provide angle shaped with wings not less than 3/4" wide. Concealed wing shall be perforated for nailing and exposed wing shall be folded flat. Exposed wing may be factory finished in a white color.
 - 6. Edge beads for use at perimeter of ceilings shall be angle-shaped with wings not less than 3/4" wide. Concealed wing shall be perforated for nailing and exposed wing shall be folded flat. Exposed wing may be factory finished in white color.
- H. Acoustical Furring: U.S.G. RC-1 channel or equal.
- I. Fasteners: Self-drilling, self-taping steel screw fasteners, type and length as recommended by the manufacturer for the application involved.

PART 3 EXECUTION

**SECTION 09 29 00
GYPSUM BOARD**

3.1 GYPSUM BOARD INSTALLATION

- A. General Use Schedule: See Drawings for specific locations.
 - 1. Non-wet walls and ceilings: General Wallboard.
 - 2. Wet walls and ceilings (all walls with plumbing fixtures within four feet or otherwise susceptible to repeated moisture, restroom/bathroom walls and ceilings, commercial/institutional kitchen walls, shower/dressing rooms, mechanical and electrical rooms): Moisture Resistant Wallboard.
 - 3. Walls receiving Ceramic or stone tiles: Moisture Resistant Wallboard.
- B. Gypsum Board-General:
 - 1. Install in conformance with ASTM C840. At all locations listed as fire rated assemblies, install gypsum board in strict conformance with assembly listing using proper board layout, fasteners, and finishing specified by the listing.
 - 2. Install the gypsum board with the separate boards in moderate contact with each other but not forced into place.
 - 3. At internal and external corners, conceal the edges of the board by overlapping covered edges of the abutting boards.
 - 4. Stagger the boards so that corners of any four boards will not meet at a common point except in vertical corners.
 - 5. Place boards perpendicular to framing wherever practical.
 - 6. Install gypsum boards on ceiling first, then on walls.
- C. Ceilings:
 - 1. Install the gypsum board to ceilings with the long dimension of the board at right angles to the supporting members, except that board may be installed with the long dimension parallel to supporting members that are spaced 16" on center, or less, when attachment members are provided at end joints.
 - 2. At fire rated ceiling assemblies, provide a continuous fire rated assembly. At recessed fixtures and equipment, fire rated assembly shall maintain continuity by jogging up and over all fixtures and equipment.
 - 3. Install control joints in continuous ceilings at 50 feet on center maximum.
 - 4. See 3.2 for air sealing measures.
- D. Walls:
 - 1. Install the gypsum board at right angles to the furring or framing members. Make end joints, where required, over furring or framing members.
 - 2. Stagger end joints in successive corners. Place end joints on opposite sides of partitions on different studs.
 - 3. Drive fasteners in field of panel first, working toward ends and edges.
 - 4. At fire rated exterior walls and interior bearing walls, install gypsum board full height from floor to floor or ceiling structure above, including in floor/ceiling and attic spaces.
 - 5. Install control joints in continuous walls at 30 feet on center maximum.
 - 6. See 3.2 for air sealing measures.
- E. Attaching:
 - 1. Drive the specified screws with clutch-controlled power screwdrivers, spacing the screws a minimum of 12" on centers at ceilings and 12" on centers at walls unless noted otherwise.
 - 2. Provide attachment in strict conformance with listing at all fire rated assemblies.

3.2 AIR SEALING MEASURES

**SECTION 09 29 00
GYPSUM BOARD**

- A. Install air-sealing measures as required to create an air barrier system. The following items are general guidance to achieving an air barrier system.
 - 1. Prior to installation of wall board at all exterior walls and party/common walls, apply a bead of sealant to top and bottom plates.
 - 2. After installation of wall board at all exterior walls and party/common walls, air-seal around all penetrations per Section 07 90 00.
 - 3. After installation of ceiling board, air-seal around all penetrations per Section 07 90 00.

3.3 FINISHING

- A. Unfinished Walls and Ceilings, PDCA Level 1:
 - 1. Tape embed joints and interior angles in joint compound, panel surfaces free of excess joint compound.
 - 2. Tool marks and joint compound ridges are acceptable.
- B. Ceramic Tile Finished Walls, PDCA Level 2:
 - 1. Tape embed joints and interior angles in joint compound with one separate coat of joint compound applied over joints, angles, fastener heads, and accessories.
 - 2. Panel surfaces free of excess joint compound.
 - 3. Tool marks and joint compound ridges are acceptable.
- C. Wall Covering and Paneling Finished Walls, PDCA Level 3:
 - 1. Tape embed joints and interior angles in joint compound with two separate coats of joint compound applied over joints, angles, fastener heads, and accessories.
 - 2. Finish joint compound smooth and free of tool marks and joint compound ridges.
- D. Painted Walls in Closet, Janitor, Storage, Mechanical, and Electrical Rooms and walls receiving finish texture, PDCA Level 4:
 - 1. Tape embed joints and interior angles in joint compound with 3 separate coats of joint compound applied over joints angles, fastener heads, and accessories.
 - 2. Finish joint compound smooth and free of tool marks and joint compound ridges.
- E. Painted Walls and Ceiling in All Other Rooms, PDCA Level 4:
 - 1. Tape embed joints and interior angles in joint compound with 3 separate coats of joint compound applied over joints angles, fastener heads, and accessories.
 - 2. Finish joint compound smooth and free of tool marks and joint compound ridges.

3.4 CLEANING UP

- A. In addition to the requirements of Division 1 of these Specifications, use all necessary care during execution of this portion of the work to prevent scattering of gypsum board scraps and dust and to prevent tracking of joint and finishing compound onto floor surfaces. At completion of each segment of installation in a room or space, promptly pick up and remove from the working area all scraps, debris, and surplus material of this Section.

END OF SECTION

SECTION 09 30 00
TILE

PART 1 GENERAL

1.1 DESCRIPTION

- A. Work in this Section includes furnishing and installation of vertically and horizontally set tile.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Submittals Section 01 33 00
- B. Interior Membrane Waterproofing Section 07 14 00
- C. Sealants Section 07 90 00
- D. Fiberglass Reinforced Cement Board Section 09 28 00
- E. Gypsum Wallboard Section 09 29 00

1.3 STANDARDS

- A. Handbook for Ceramic Tile Installation published by the Tile Council of America.
- B. ANSI Standard Specifications for Ceramic Tile.

1.5 SUBMITTALS

- A. General: Comply with provisions of Section 01 33 00.
- B. Submit product data for each type of tile type.
- C. Submit product samples of each product type.

1.6 QUALITY ASSURANCE

- A. Standards: Comply with standards specified herein and as listed in Section 01 42 19.

PART 2 PRODUCTS

2.1 MANUFACTURERS, MODELS, COLOR

- A. See Drawings - Finish Materials Schedule
- B. Manufacturer's and/or Suppliers to verify all materials specified meet the following standard specifications.

2.2 TILE:

- A. Ceramic Tile:
 - 1. Standard grade, glazed ceramic tiles meeting ANSI A 137.1.
 - 2. Standard grade, unglazed ceramic tiles meeting ANSI A 137.1.
 - 3. Standard grade, unglazed porcelain tiles meeting ANSI A137.1.
 - 4. See Drawings.
- B. Trims:
 - 1. Full range of inside/outside corner, bullnose top and edge, and transition radius trims. No field fabricated transition or edge pieces allowed. See Drawings for required trim profiles.

2.3 EDGING AND TRANSITIONS:

- A. Metal edge trims and/or reducer strips shall be SchluterSystems as appropriate for material and condition. All edging and transitions to be ADA compliant.
 - 1. Tile to Concrete: Schluter; RENO-U
 - 2. Tile to Resilient: Schluter; RENO-U
 - 3. Tile to Carpet (lower thickness) Schluter; RENO-TK
 - 4. Tile to Carpet (same thickness) Schluter; SCHIENE
 - 5. Tile wall perimeter edging: Schluter; SCHIENE

SECTION 09 30 00
TILE

- B. Material/Finish: Aluminum / Clear anodized.
- C. Thickness of finish flooring materials and edging/transition model to be coordinated by the Contractor.

2.4 WATERPROOFING & CRACK ISOLATION

- A. See Section 07 14 00.

2.5 MORTARS

- A. Thin Set Dry Set Portland Cement Mortar: per ANSI A118.1.
 - 1. Ardex X4, Laticrete 253, Custom VersaBond, or approved equal.
- B. Latex Portland Cement Mortar: per ANSI A118.4 and A118.11.
 - 1. Ardex X5, Laticrete 4 XLT, Custom VersaBond Flex, or approved equal.
- C. Polymer-Modified Fiber Reinforced Thin Set Mortar: per ANSI A118.4.
 - 1. Ardex X 77, Laticrete 254/255, Custom Mega Flex Prolite Complete Contact, or approved equal.

2.6 GROUTS

- A. Polymer Modified Grout: per ANSI A118.7.
 - 1. Color: To be selected from manufacturer's standard color range.
 - 2. Ardex FL, Laticrete 1500 Permacolor, Custom Prism, or approved equal.
- B. Epoxy Grout: per ANSI A118.3.
 - 1. Color: To be selected from manufacturer's standard color range.
 - 2. Ardex WA, Laticrete Spectralock, Custom CEG-Lite, or approved equal.

2.7 SEALERS & RELEASING AGENTS

- A. StoneTech Professional Grout Release
- B. StoneTech Professional Grout Sealer for Ceramic Tile

2.8 RELATED ACCESSORIES

- A. Spacers and clips - as recommended by tile manufacturer.
- B. Metal edge trims and/or reducer strips per part 2.3 above.

PART 3 EXECUTION

3.1 PREPARATION FOR INSTALLATION

- A. Coordination: Properly coordinate with all other trades as required to ensure adequate provision for anchorage of the work of this Section and for proper interface with the work of all other trades.
- B. Inspection: Examine the areas and conditions under which work of this Section will be installed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.
- C. Condition of Surfaces:
 - 1. Surfaces shall be clean, free of cracks, films, oils and curing compounds.
 - 2. Maximum variation of surfaces to receive tile shall be:
 - a. Floors: 1/4" in 10 feet from required plane.
 - b. Walls: 1/4" in 8 feet from required plane.
- D. Coordinate and level Floor with mortar or compatible leveling compound as required to provide flush transitions between abutting materials of varying thickness.
- E. Establish and coordinate the location of expansion and/or control joints.

SECTION 09 30 00
TILE

3.2 SUBSTRATE

- A. Verify conformance of substrate per the following general schedule. See also Drawings.
1. Floor tile: Concrete structural slab or fiberglass reinforced cement board per Section 09 28 00.
 2. Wall tile: Fiberglass reinforced cement board per Section 09 28 00 and/or moisture resistant gypsum wallboard.

3.3 EXPANSION JOINTS

- A. Provide expansion joints at:
1. Interior (dry areas): 24' to 36' in each direction.
 2. Interior (wet areas): 12' to 16' in each direction.
 3. Where tile abuts restraining surfaces such as perimeter walls, dissimilar floors, curbs, columns or pipes.
 4. Directly over control/expansion joints in structural substrate.
 5. As shown on Drawings.

3.4 INSTALLATION

- A. Tile - General
1. Install tiles in full pieces, center and balance in areas unless specifically dimensioned otherwise on Drawings.
 2. Grout Joints: See Drawings.
 3. For partial tiles, cut, do not split.
 4. Mix all mortar and grouts in strict conformance with manufacturer's printed instructions.
- B. Setting and Grouting: Install in accordance with the following listed specifications:
1. Walls:
 - a. Over MRGWB: TCA Assembly W243.
 - b. Over cement backer board: TCA Assembly W244.
 2. Floors - Ceramic tile:
 - a. Over concrete slab: TCA Assembly F113.
 - b. Over cement backer board: TCA Assembly F144.
 - c. Over poured gypsum: TCA Assembly F200.
 3. Exterior Walks - Ceramic tile:
 - a. Over concrete slab: TCA Assembly F101.
- C. Compatibility of all grout with tile product shall be the responsibility of the contractor. Grout selection shall be as follows:
1. Polymer modified grout shall be used at all general, non-wet locations, restroom/bathroom walls, and all locations other than those listed below.
 2. Epoxy grout shall be used at all kitchen floors, kitchen walls, restroom/bathroom floors, and locations as indicated on the Drawings.
- D. Cleaning: Clean all grout and setting materials from face of tile while materials are still workable.
- E. Provide Releaser prior to grouting.

3.5 PROTECTION

- A. Cover tile with visqueen and plywood to protect while performing adjacent construction work or related activities.
- B. Protect adjacent surfaces when installing and cleaning tile.

3.6 SEALER

- A. Provide grout sealer at all tile.

**SECTION 09 30 00
TILE**

END OF SECTION

**SECTION 09 51 00
ACOUSTICAL CEILINGS**

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Work Included: Provide acoustical ceiling system complete and in place, including all associated hardware, as shown on Drawings, specified herein, and needed for a complete and proper installation. Provide required seismic bracing wires, struts and accessories per IBC.
- B. Work in this Section includes bidder designed and engineered components.
 - 1. Bidder designed and engineered components include: all components.
 - 2. Manufacturer shall provide all engineering required; for final sizing to meet specifications, and code requirements of permit jurisdiction, and that system components are appropriate for intended application.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Submittals Section 01 33 00
- B. Bidder Designed and Engineered Systems Section 01 33 50
- C. Gypsum Board Section 09 29 00
- D. Fire Sprinklers Division 21
- E. Mechanical Division 23
- F. Electrical Division 26

1.3 STANDARDS

- A. Acoustical Ceiling Tile
 - 1. Federal Specification SS-S-118B, Class A, latest revision, U.L. 25 or less.
 - 2. Fire Hazard Rating: ASTM E 84-79c, (0-25)
- B. Suspension System - by hierarchy:
 - 1. 2014 OSSC
 - 2. ASTM C635, ASTM C636, ASTM E 580/E 580M
 - 3. ASCE 7-05, Section 13.5.6
 - 4. CISCA - Guidelines for seismic restraint for direct hung suspended ceiling assemblies - Seismic ones 3 & 4. May 2004.
 - 5. NWCB Field technical bulletin 401- 12/13.
- C. Suspended Ceiling Load Criteria:
 - 1. Vertical: 4 psf.
 - 2. Lateral: Per Structural Drawings.
 - 3. IBC T1604.5 Occupancy Category: II
 - 4. Duty Classification: Heavy, per ASTM C-635.
 - 5. Cross Runner Deflection: L/360 max.

1.4 SUBMITTALS

- A. General: Comply with provisions of Section 01 30 00.
- B. Product data: Submit the following:
 - 1. Complete materials list and samples of all items proposed to be furnished and installed under this Section.
 - 2. Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
 - 3. Manufacturer's recommended installation procedures.
 - 4. Manufacturer's warranty.

PART 2 PRODUCTS

**SECTION 09 51 00
ACOUSTICAL CEILINGS**

2.1 MATERIALS:

- A. System A:
 - 1. Suspension System:
 - a. Suspension System: Shall be a 15/16" exposed tee system.
 - b. Material: Double-web electrogalvanized steel.
 - c. Face Dimension: 15/16" x 24" x 24" and 48" exposed tee face.
 - d. Profile: Exposed tee surface and edge angles.
 - e. Color: White, Baked polyester paint.
 - f. Duty rating: Heavy duty system.
 - g. Manufacturer: USG, Armstrong or other approved equal.
 - 2. Acoustical Ceiling Tile:
 - a. 24"x24" and 24"x48" acoustical panels.
 - b. Manufacturer / Model: See Drawings
 - c. Layout/Configurations: See Drawings

PART 3 EXECUTION

3.1 SUSPENSION - GRID INSTALLATION GENERAL REQUIREMENTS

- A. Install ceiling system per referenced standards.
- B. Main runners shall be installed 48 inches on center, and be directly suspended by not less than 12 gage galvanized steel wire spaced 48 inches on center along the main runners. Hanger wires shall be wrapped tightly at least 3 full turns.
- C. Main runners shall be interconnected by cross tees at 24" centers for 24" x 48" modules. Proper length cross tees shall also be installed adjacent to all recessed light fixtures or supply and return diffusers on each side not supported by a main runner.
- D. Wall angle moldings shall be installed wherever suspension components meet vertical surfaces.
- E. Provide extra hanger wires at each corner of light fixtures and at all points where tees are interrupted by light fixtures.
- F. Attachment devices to be of an approved type capable of carrying 5 times the ceiling load (50#).
- G. Hangers to be plumb or counter splayed and not press against pipe or duct insulation.
- H. Deflection shall be limited to 1/360 or .133" (1/8") in a 4' span. If the fixture causes a deflection in excess of the 1/8", the fixture shall be independently supported or the grid shall be supplementally supported within 6" of each corner with a #12 wire.
- I. A fixture installation shall not cause the runners to rotate more than 2° from the vertical (this is the equivalent of a 1/32" out of horizontal for a standard 1" tee).
- J. Carrying channels and main runners are to be level within 1/8" in 12 feet; leveling is to be performed with hangers taut; kinks or bends are not to be used as a way of leveling.

3.2 SUSPENSION - GRID INSTALLATION LATERAL BRACING REQUIREMENTS: (FOR STANDARD TEE BAR GRIDS WHEN NOT SUPPORTING PARTITIONS)

- A. Hangers to be a minimum of #12 gage, galvanized, soft annealed mild steel wire @ 4' o.c. each way. Hangers to be attached to suspension members and to the support above with a minimum of three turns. Hangers shall not attach to or

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ACOUSTICAL CEILINGS**

- bend around other material or equipment and shall not be more than 1 in 6 out of plumb without being counter splayed.
- B. All connection devices shall be of an approved type capable of supporting 100#'s and be secured to the building structure.
 - C. A trapeze or equivalent shall be used where obstructions preclude direct attachment to the structure. Trapeze suspension shall be a minimum of back to back 1-1/4" cold rolled channels where spans exceed 48".
 - D. All runners shall be independently supported at the perimeter within 8" of the wall or ceiling discontinuity; the wall angle or closure strip shall not be allowed for this purpose.
 - E. Within 4' of the walls at 12' o.c. in each direction, 4-#12 ga. wires shall be connected within 2" of an intersection of a main runner with a cross runner and splayed 90° from each other at an angle not exceeding 45° from the plane of the ceiling.
 - 1. A strut fastened to the main runner shall be extended to and fastened to the structural members supporting the roof or floor above. The strut shall be adequate to resist the vertical component induced by the wires.
 - 2. Lateral force bracing members shall be spaced a minimum of 6 inches from all horizontal piping or duck work that is not provided with bracing restraints for horizontal forces. Bracing wires shall be attached to the grid and to the structure in such a manner that they can support a design load of not less than 200 pounds or the actual design load, whichever is greater, with a safety factor of 2.
 - F. Members perpendicular to the wall shall be tied together (stabilized) to prevent their spreading. This shall be done immediately adjacent and parallel to the wall. The wall or closure angle shall not be used for this purpose, although to facilitate installation, runners may be attached to the closure angle at two adjacent walls with clearances between the wall and the runner being maintained at the other two walls.
 - G. All light fixtures shall be positively attached to the suspension system. The attachment device shall have a capacity of 100% of the fixture weight in any direction.
 - H. Only intermediate-duty and heavy-duty suspension systems shall be used to support light fixtures.
 - I. With intermediate-duty suspension systems, the grid members shall have supplemental support within 3" of each corner of the fixture with a #12 ga. hanger. Where heavy-duty suspension systems are used, supplemental support is not required.
 - J. In addition to the above, fixtures or other equipment weighting more than 20# but less than 56# shall have two #12 ga. wires from the housing to the structure above or to other hanger wires. These wires may be slack. Fixtures or other equipment weighing in excess of 56# shall be independently supported with #12 ga. wire at each corner to the structure above. Pendant hung fixtures shall be independently supported with a minimum of one #9 ga. wire.

3.3 LAY-IN PANEL INSTALLATION

- A. Center and balance areas of tile, if possible.
- B. An excessive number of cuts shall not be made. Usually, no cuts smaller than half size should be made. Make all cuts on the outer edges of the field.
- C. Install the tile without jagged or flaked edges. No visible cut edges allowed.
- D. Fit tile closely where edges will be covered by trim, escutcheons or other similar

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ACOUSTICAL CEILINGS**

devices.

- E. Install whole tiles wherever possible. The splitting of tile is expressly prohibited except where no alternative is possible.
- F. Make cutouts for all penetrations of lights, mechanical and fire sprinkler systems.
- G. At tegular type panels, field cuts shall be cut to a matching tegular profile. Field paint tegular profile to match factory edges.

3.4 EXTRA STOCK

- A. Furnish an additional 5% of each tile color, size, style and pattern for Owner's use.

3.5 ADJUSTMENT AND CLEANING

- A. Leave all tile clean and free of dust or discoloration. Replace damaged or discolored units at no additional cost to the Owner.

END OF SECTION

**SECTION 09 65 00
RESILIENT FLOORING**

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Work in this Section includes furnishing and installation of all resilient base as indicated on the Drawings, specified herein, or otherwise needed for a complete and proper installation of the work of this Section.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Submittals Section 01 33 00
B. Special Requirements Section 01 61 16

1.3 STANDARDS

- A. ASTM REFERENCES, FEDERAL REFERENCES
1. Solid Vinyl Sheet Flooring: ASTM F 1303
 2. Base: F.S. SS-W-40a, Type I Rubber.
- B. Flame Spread, Smoke Developed
1. F.S. less than 75 per ASTM E-84.
 2. Smoke density less than 450.
 3. N.B.S. Floor Radiant Panel - Critical Radiant Flux - 7.5.
 4. U.L. tunnel test 992.

1.4 QUALITY ASSURANCE

- A. Qualifications of manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.
- B. Qualifications of installers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.5 SUBMITTALS

- A. General: Comply with provisions of Section 01 33 00
- B. Product data: Submit the following:
1. Complete materials list and samples of all items proposed to be furnished and installed under this Section.
 2. Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
 3. Manufacturer's recommended installation procedures.
 4. Manufacturer's warranty.
- C. Submit product samples of each product type.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Resilient Vinyl Sheet Flooring:
1. Minimum overall thickness: 0.080" (2.0 mm).
 2. Minimum wear layer thickness: 0.080" (2.0 mm).
 3. Manufacturer / Style / Color:
 - a. See Drawings
 4. Adhesives:

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RESILIENT FLOORING**

- a. Per manufacturer's recommendations.
 - b. All adhesives shall meet VOC requirements of Section 01 61 16.
 - 5. Heat Welding Rods:
 - a. Mannington color-matched welding rod.
 - B. Rubber Base shall be 4" top set cove or straight base, as shown on Drawings, in maximum lengths.
 - 1. Rubber; refer to References section of this specification for grade and type.
 - 2. Manufacturer / Style / Color:
 - a. Armstrong, Roppe, Flexco, or Burke Mercer. Color to be selected from Manufacturer's standard color range.
 - 3. Base Adhesive and Finishes:
 - a. Adhesives shall be a waterproof and stabilized type as recommended by the manufacturer of the approved resilient material. Asphalt emulsions and other non-waterproofed types will not be accepted.
 - b. Adhesives and finishes shall meet VOC requirements of Section 01 61 16.
 - C. Concrete slab primer shall be a non-staining type as recommended by the manufacturer of the resilient material to be applied over it.
 - D. Concrete slab vapor reduction coating: Koster VAP I 2000
- 2.2 EDGING AND TRANSITIONS:
- A. Metal edge trims and/or reducer strips shall be SchluterSystems as appropriate for material and condition. All edging and transitions to be ADA compliant.
 - 1. Resilient to Concrete: Schluter; RENO-U
 - 2. Resilient Carpet: See Section 09 68 00, if applicable.
 - 3. Resilient to Tile: See Section 09 30 00, if applicable.
 - 4. Resilient to Resilient: None
- 2.3 OTHER MATERIALS
- A. All other materials not specifically described but required for a complete and proper installation of the work of this Section, shall be as recommended by the manufacturer of the resilient materials used, and as approved by the Architect.

PART 3 EXECUTION

3.1 INSPECTION

- A. General: Examine the areas and conditions under which resilient flooring and/or base is to be placed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Surface shall be smooth, level, at the required finish elevation, without more than 1/8" in 10'-0" variation from level or slopes shown.

3.2 PREPARATION (Concrete Substrates)

- A. Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with patching and leveling compound as recommended by the flooring manufacturer.
- B. Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as

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RESILIENT FLOORING**

indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents.

- C. Perform subfloor Calcium Chloride Tests (and Bond Tests) as described in manufacturer's installation guide to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring.
- D. Vacuum clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

3.3 EDGING AND TRANSITIONS

- A. Provide edging and transition strips at all carpet edges where a change in finish flooring material or thickness occurs.
- B. Install per manufacturer's recommendations.

3.4 INSTALLATION

- A. General: Install all materials provided under this Section in strict conformance with manufacturer's printed installation specifications and details. Where manufacturer's instructions conflict with other requirements herein, notify architect for resolution prior to application.
- B. Install material only after all finishing operations, including painting, have been completed and permanent heating system is operating. Moisture content of concrete slabs, building air temperature and relative humidity must be within limits recommended by flooring manufacturer.
- C. Resilient Sheet Flooring:
 - 1. Cut material in lengths and sizes required, minimizing number of seams.
 - 2. Match pattern between adjacent abutting edges and double cutting if recommended by manufacturer. Do not reverse sheets.
 - 3. Lay sheets flat and allow to acclimate prior to adhesive work.
 - 4. Install flooring using the exact system recommended by the resilient flooring manufacturer.
 - 5. Install sheets tight to floor with butt joints less than 1/100" in width.
 - 6. At butt joints between two different thicknesses of material, install paper shim per manufacturer's instructions to bring finished surfaces flush with each other to provide a smooth transition.
 - 6. Heat weld seal seams using products and equipment recommended by manufacturer.
 - 7. At locations scheduled as "Self Cove", provide 6" high self-coves using 7/8" radius wall base fillet strip to form the cove. Terminate the exposed top edge of the cove with a metal binding set in adhesive. Outside and inside corners shall be formed without using metal trim pieces. Adhere cove and cap strike by manufacturer's recommended method.
 - 8. Use necessary floor trim pieces to provide a finish edge and protect edge.
- D. Resilient Base:
 - 1. Install base to walls, columns, cabinets and permanent fixtures.
 - 2. Install base in maximum lengths available. Notch as required to neatly fit around trims at door jambs.
 - 3. Install continuous around outside corners using a v-notch tool on the back side. Apply heat to help form the base around the corner.
 - 4. Install continuous around inside corners using a straight blade tool on the back side. Apply heat to help form the base around the corner.
 - 5. Install base per manufacturer's installation instructions. Ensure a positive fit

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RESILIENT FLOORING**

against the wall and floor surfaces.

6. Where base is installed at a wet location, set base in a bed of sealant to prevent moisture passage beneath.

3.5 CLEANING, FINISHING AND PROTECTION

A. Cleaning:

1. Remove excess adhesive or other surface blemishes from flooring and/or base, using neutral type cleaners recommended by the flooring or base manufacturer.

B. Protection:

1. Protect installed flooring and/or base from damage until acceptance by the Owner.

3.6 ADJUSTMENTS

A. Contractor shall inspect and make necessary adjustments within one month of the time that heat is supplied continuously in finished areas.

B. All material that has not been seated in a level plane with surrounding adjacent material shall have heat supplied locally and be quickly rolled to the surrounding level of floor material.

C. All materials showing broken corners, minor breaks, or fracture lines across surface shall be removed, and new materials substituted.

D. All materials showing evidence of debris, not removed prior to installation, shall be removed and new material substituted after cleaning of the sub-surface.

3.7 EXTRA STOCK

- A.** Furnish the Owner with 20 feet of each color of rubber base used.

END OF SECTION

**SECTION 09 68 00
CARPETING**

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Work in this Section includes the furnishing and installation of carpeting including all labor, adhesives, and accessories necessary to completely install all carpet materials in locations shown on Drawings.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- | | |
|-------------------------|------------------|
| A. Submittals | Section 01 33 00 |
| B. Special Requirements | Section 01 61 16 |
| C. Rough Carpentry | Section 06 10 00 |
| D. Resilient Flooring | Section 09 65 00 |

1.3 QUALITY ASSURANCE

- A. The manufacturer's recommended installation procedures, when reviewed by the Architect, will become the basis for inspecting and accepting or rejecting actual installation procedures used on the Work.
- B. **Moisture testing:** For flooring to be installed on concrete slab, provide the following:
1. Prior to installation, the flooring installer, under authorization of the flooring manufacturer will perform slab testing to determine moisture retention in the concrete.
 2. Moisture emission is not to exceed the following limits as tested using the Calcium Chloride test method recommended by the Rubber Manufacturers Association:
 - a. Woven backing: 5 lbs. of water per 1000 sq.ft. per 24 hours.
 - b. Solid rubber backing: 3 lbs. of water per 1000 sq.ft. per 24 hours.
 3. Installation of the flooring will signify acceptance by the installer and manufacturer that the substrate is sufficiently dry to allow proper performance of the flooring in place.

1.4 REFERENCE STANDARDS AND REQUIREMENTS

- A. Installations shall comply with Carpet and Rug Institute (CRI), Standard No. 105, "Standard Reference Guide for Installation of Residential Textile Floor Covering Materials" and per manufacturer's installation instructions.
1. Carpet must carry a CRI Green Label Certification.
 - a. All carpet shall be eligible for recycling by the supplying mill or fiber producer to an existing operational third party certified recycling center.
- B. Flammability: Carpet, Pad, and accessories shall comply with ethenamine Pill Test DOC-FF-1-70 and/or ASTM D 2859-d76, "Standards for the Surface Flammability of Carpets".
- C. Flooring Radiant Panel Test: ASRM E 648-78 and/or NFPA 253, Carpet shall have a minimum critical radiant flux of 0.22 watts per square centimeter.
- D. Smoke Density Test: NFPA 258 and/or ASTM E 662-83, Carpet shall have a specific optical density (SM) of 450 or less (Flaming).
- E. Fade Resistance: AATCC 16E-1982, Dark Color: Gray scale rating of 4 or better after 180 standard fading hours as compared to AATCC gray scale for evaluation change in color. Ozone and gas: AATCC 129-1298 rating 3 or better per color AATCC transference scale.

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CARPETING**

- F. Static Resistance: Provide carpet construction to provide minimum of 3.0 KV resistance for 20 percent relative humidity at 70 degrees F, AATCC 134.
- G. Tuft Bind: Carpet shall have an average face yarn tuft bind of 20 pounds for the life of the carpet, as tested per ASTM D 1335-67 method. Tuft bind shall not be rendered insufficient by normal cleaning or accidental spillage of water causing a flooded carpet condition.
- H. Delamination: Primary and secondary backings shall be able to stand up to an average of 8.3 pounds per square inch resistance to separation, as certified by independent testing.
- I. Stain Resistance: Carpet shall be of a permanent stain resistant fiber and not only by surface treatments. Carpet shall pass testing of AATCC 175, and be certified to comply with that standard.
- J. Edge Ravel: When installed with or without edge sealer, carpet shall have no evidence of edge ravel.
- K. Nylon Fiber Construction: Continuous filament nylon shall be high bulk or textured carpet type yarn with average filament size of 12 denier or coarser. Staple nylon shall be carpet type fiber with an average fiber size of 12 denier or coarser, and of specified fiber length. For level loop carpet, the staple length shall be a minimum of 6 inches.
 - 1. Solution dyed.

1.5 SUBMITTALS

- A. General: Comply with provisions of Section 01 33 00
- B. Product data: Submit the following:
 - 1. Complete materials list and samples of all items proposed to be furnished and installed under this Section.
 - 2. Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
 - 3. Manufacturer's recommended installation procedures.
 - 4. Manufacturer's warranty.
- C. Submit product samples of each product type.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Broadloom:
 - 1. Carpet: See Drawings.
 - 2. Walk-Off Carpet: See Drawings.
- B. Modular Tile:
 - 1. See Drawings.

2.2 EDGING AND TRANSITIONS:

- A. Metal edge trims and/or reducer strips shall be SchluterSystems as appropriate for material and condition. All edging and transitions to be ADA compliant.
 - 1. Carpet to Concrete: Schluter; RENO-U
 - 2. Carpet to Resilient: Schluter; RENO-U
 - 3. Carpet to Tile: See Section 09 30 00, if applicable.
 - 4. Carpet to Carpet (same thickness) None
 - 5. Carpet to Carpet (lower thickness) Schluter; RENO-TK
- B. Material/Finish: Aluminum / Clear anodized.
- C. Thickness of finish flooring materials and edging/transition model to be coordinated

**SECTION 09 68 00
CARPETING**

by the Contractor.

2.3 ACCESSORIES

- A. Adhesives:
 - 1. Adhesive for direct glue-down: waterproof type as recommended by carpet manufacturer.
 - 2. Seam adhesive shall be carpet seaming adhesive, or an equal recommended for the purpose by the manufacturer of the approved carpet.
 - 3. Adhesive shall meet VOC requirements of Section 01 61 16.
- B. Primers:
 - 1. Provide substrate primers as required for proper installation of carpet. Installer shall verify primer compatibility between carpet requirements and substrate.
- C. Concrete slab vapor reduction coating: Koster VAP I 2000
- D. Provide other accessories and materials required to complete installation.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions under which work of this Section will be installed. Do not proceed until any unsatisfactory conditions have been corrected.

3.2 PREPARATION (Concrete Substrates)

- A. Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with patching and leveling compound as recommended by the flooring manufacturer.
- B. Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents.
- C. Perform subfloor Calcium Chloride Tests (and Bond Tests) as described in manufacturer's installation guide to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring.
- D. If concrete slab vapor emissions exceed the specified maximum value, apply vapor reduction coating per manufacturer's instructions.
- E. Vacuum clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

3.3 EDGING AND TRANSITIONS

- A. Provide edging and transition strips at all carpet edges where a change in finish flooring material or thickness occurs.
- B. Install per manufacturer's recommendations.

3.4 INSTALLATION (Broadloom)

- A. The Contractor shall install carpeting where indicated. Installation shall be direct glue-down.
- B. Carpet shall be installed in accordance with the recommendations of the manufacturer and shall be laid in continuous matching pattern, square with the lines

**SECTION 09 68 00
CARPETING**

of the room. All seams shall be smoothly and continuously joined utilizing an approved steam-type adhesive backing tape. The final installation shall provide a carpeted surface that is smooth, lays completely flat, without wrinkles, ripples, or surface irregularities. All finished seams shall not be noticeable under normal visual observation.

3.5 INSTALLATION (Tile)

- A. The Contractor shall install carpeting where indicated. Installation shall be direct glue-down.
- B. Carpet shall be installed in accordance with the recommendations of the manufacturer and shall be laid in a pattern **as directed by the Architect**, square with the lines of the room. The final installation shall provide a carpeted surface that is smooth, lays completely flat, without wrinkles, ripples, or surface irregularities. All finished seams shall not be noticeable under normal visual observation.

3.6 CLEAN-UP

- A. Thoroughly clean all carpet surfaces prior to final acceptance of the carpeted areas by Owner, and inspectors.
- B. Installed carpet shall be free of spots, dirt or soil, and shall be without tears, frays or pulls.
- C. Any damage to paint, walls, woodwork, doors, etc., during installation shall be the responsibility of the carpet contractor to repair.
- D. No installation will be accepted until inspected by representatives of the Owner and carpet installer.
- E. All carpeted areas shall be adequately ventilated after installation to assure the elimination of odors from carpet or associated installation materials.

3.7 PROTECTION

- A. Provide a heavy non-staining paper or plastic walkway as required over carpeting in direction of foot traffic, maintaining intact until carpeted space is accepted by Owner.

3.8 EXTRA STOCK

- A. Furnish the Owner with 20 square feet of each flooring type and color used.

END OF SECTION

**SECTION 09 90 00
PAINTING**

PART 1 GENERAL

1.1 DESCRIPTION

- A. The work described in this section describes the requirements for applying paint, stain, or other emulsions on designated surfaces.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Priming and finishing of certain surfaces are specified to be factory performed or installer performed under pertinent other Sections.
- B. Submittals Section 01 33 00
- C. Special Requirements Section 01 61 16
- D. Metal Fabrications Section 05 50 00
- E. Finish Carpentry Section 06 20 00
- F. Sealants Section 07 90 00
- G. Doors and Windows Division 8

1.3 WORK NOT INCLUDED

- A. Do not include painting which is specified under other Sections to be completed by those trades.
- B. Unless otherwise indicated, painting is not required on surfaces in concealed areas and inaccessible areas such as furred spaces, pipe spaces, and duct shafts.
- C. Pre-finished metal surfaces of forged steel, anodized aluminum, stainless steel, chromium plate, brass, copper, bronze, and similar finished materials will not require painting under this Section except as may be specified herein.
- D. Do not paint any moving parts of operating units; mechanical or electrical parts such as valve operations, linkages, sinkages, sensing devices, and motor shafts, unless otherwise indicated.
- E. Do not paint over any required labels or equipment identification, performance rating, name, or nomenclature plates.

1.4 DEFINITIONS

- A. The term "paint", as used herein, means all coating systems materials including primers, emulsions, epoxy, enamels, stains, sealers, fillers, and other applied materials whether used as prime, intermediate or finish coats.

1.5 QUALITY ASSURANCE

- A. Architectural Specification Manual as published by Painting Contractors of America (PDCA).
- B. Qualifications of manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.
- C. Qualifications of Workmen:
 - 1. Provide at least one person who shall be present at all times during the execution of the work of this Section, who shall be thoroughly familiar with the specified requirements of the materials and the methods needed for their execution, and who shall direct all work performed under this Section.
 - 2. Provide adequate numbers of workmen skilled in the necessary crafts and properly informed of the methods and materials to be used.
 - 3. In acceptance or rejection of the work of this Section, the Architect will make no allowance for lack of skill on the part of the workmen.
- D. Transparent Finished Interior Woodwork: Shall be finished to the standards of

**SECTION 09 90 00
PAINTING**

American Woodwork Institute (AWI) Section 5, Finishing, Premium grade, regardless of where actually finished.

- E. **Paint Coordination**
 - 1. Provide finish coats which are compatible with the prime coats used.
 - 2. Review other Sections of these Specifications as required, verifying the prime coats to be used and assuring compatibility of the total coating system for the various substrata.
 - 3. Provide additional primers, sealers or fillers, depending on substrate to be finished, as required for proper application of finish coat specified, whether listed herein or not.
 - 4. Upon request, furnish information on the characteristics of the specific finish materials to ensure that compatible prime coats are used.
 - 5. Provide barrier coats over non-compatible primers, or remove the primer and re-prime as required.
 - 6. Notify the Architect in writing of anticipated problems in using the specified coating systems over prime coating supplied under other Sections.

- 1.6 **LOW VOC COMPLIANCE**
 - A. When available, all products used under this Section shall meet the following limitations for emission of Volatile Organic Compounds (VOC).
 - 1. See Section 01 61 16 – Special Requirements – Sustainable Building Practices.

- 1.7 **PRODUCT HANDLING**
 - A. **Delivery of Materials:** Deliver paint materials to the job site in sealed, original labeled containers, each bearing manufacturer's name, type of paint, brand name, color designation and instructions for mixing and/or reducing.
 - B. **Storage of Materials:** Provide proper storage to prevent damage to, and deterioration of, paint materials.

- 1.8 **PROTECTION**
 - A. Adequately protect other surfaces from paint and damage caused by this Work. Make good any damage caused by failure to provide suitable protection, but not any damage caused by other trades.
 - B. **Removal of Flammable Rubbish:** Place cotton waste, cloths and material which may constitute a fire hazard in closed metal containers and daily remove from site.
 - C. Coordinate the work with other trades that they remove all miscellaneous hardware prior to starting work under this Section.

- 1.9 **SUBMITTALS**
 - A. **General:** Comply with provisions of Section 01 33 00.
 - B. **Products List:** Before ordering, submit detailed list of materials proposed for use on work.
 - C. **Drawdowns:**
 - 1. Submit drawdowns prepared with type of paint and application specified, samples not less than 8-1/2" x 12" in size.
 - D. **Finish material samples:**
 - 1. Provide actual finished material samples of transparent finished wood.
 - E. **Furnish additional samples as required until colors, finishes and textures are approved. Retain approved samples to be used as the quality standard for final finishes.**

**SECTION 09 90 00
PAINTING**

PART 2 PRODUCTS

2.1 GENERAL

- A. All painting products applied under this Section shall comply with VOC limits as required in Section 01 61 16.

2.2 PAINT MATERIALS

- A. Design is based on use of paint products by manufacturers listed below and other materials of those manufacturers are named in the Painting Schedule.
- B. General: Provide the best quality grade of the various types of coatings as regularly manufactured by paint materials manufacturers. Materials not displaying the manufacturer's identification as a standard best-grade product will not be acceptable.
- C. Durability: Provide paints of durable and washable quality. Do not use paint materials which will not withstand normal washing as required to remove pencil marks, ink ordinary soil, and similar material without showing discoloration, loss of gloss, staining, or other damage.
- D. Colors and Glosses: See the Finish Materials Schedule on the Drawings. The architect has selected the colors to be used in the various types of paint specified and will be the sole judge of acceptability of the various glosses obtained from the materials proposed to be used in the Work.
- E. Undercoats and Thinners: Provide undercoat paint produced by the same manufacturer as the finish coat. Use only the thinners recommended by the paint manufacturer, and use only to the recommended limits. Insofar as practicable, use undercoat, finish coat, and thinner material as parts of a unified system.
- F. Standards
1. Provide paint materials which meet or exceed the standards listed for each application in the Painting Schedule in Part 2 of this Section.
 2. Furnish coatings ready-mixed unless otherwise specified, except field mix coatings which are in paste or powder form, or to be field catalyzed, in accordance with the directions of its manufacturer.

2.3 MANUFACTURERS

- A. Paints (General): Benjamin Moore, Sherwin-Williams, Miller, Rodda, Coronado, Pittsburgh, Corotech, Tnemec, or approved substitution.
- B. Stains and Sealers (General): Sherwin-Williams, Olympic, Cabots, Penofin, Messmer's, Sansin, Lenmar, SharkSkin, Wood-Kote, Timber Pro, or approved substitution.
- C. Gypsum board primer (over tape joints and patches) and over patches on other walls: pigmented shellac or pigmented PVA.

2.4 PAINT TYPES SCHEDULE

- A. Exterior Coatings
1. Concrete and CMU Walls:
 - 1st Coat: Acrylic Primer/Filler as required by substrate
 - 2nd Coat: Acrylic based, weatherproofing colored coating. Minimum 40 perms per ASTM E 96, wet cup method. No cracking per ASTM C 1305. 14-18 wet mils. Velvet (MPI Gloss Level 2)
 - 3rd Coat: Acrylic based, weatherproofing colored coating. Minimum 40 perms per ASTM E 96, wet cup method. No cracking per

**SECTION 09 90 00
PAINTING**

- ASTM C 1305. 14-18 wet mils. Velvet (MPI Gloss Level 2)
2. Painted Metal - Galvanized:
 - 1st Coat: Acrylic Metal Primer
 - 2nd Coat: Exterior Alkyd DTM Enamel - Satin (MPI Gloss Level 4)
 - 3rd Coat: Exterior Alkyd DTM Enamel - Satin (MPI Gloss Level 4)
 3. Painted Wood and/or Fiber Cement:
 - 1st Coat: Acrylic Primer/Filler as required by substrate
 - 2nd Coat: 100% Exterior Acrylic Latex - Velvet (MPI Gloss Level 2)
 - 3rd Coat: 100% Exterior Acrylic Latex – Velvet (MPI Gloss Level 2)
- B. Interior Coatings:**
1. General wall paint:
 - 1st Coat: Pigmented Shellac or PVA sealer
 - 2nd Coat: Acrylic Latex - Satin (MPI Gloss Level 4)
 - 3rd Coat: Acrylic Latex - Satin (MPI Gloss Level 4)
 2. General ceiling paint:
 - 1st Coat: Pigmented Shellac or PVA sealer
 - 2nd Coat: Acrylic Latex - Flat (MPI Gloss Level 1)
 - 3rd Coat: Acrylic Latex - Flat (MPI Gloss Level 1)
 3. Epoxy Enamel wall and ceiling paint: (Restroom, Kitchen & Wet locations)
 - 1st Coat: Pigmented Shellac or PVA sealer
 - 2nd Coat: Epoxy Enamel - Semi Gloss (MPI Gloss Level 5)
 - 3rd Coat: Epoxy Enamel - Semi Gloss (MPI Gloss Level 5)
 4. Opaque finished wood:
 - 1st Coat: Waterborne Interior Alkyd Primer
 - 2nd Coat: Waterborne Interior Alkyd – Satin (MPI Gloss Level 4)
 - 3rd Coat: Waterborne Interior Alkyd – Satin (MPI Gloss Level 4)
 5. Transparent Finish Wood:

Oil-based stain (when indicated)

AWI System 11, Catalyzed Polyurethane, Satin (MPI Gloss Level 4).
 6. Painted metal:
 - 1st Coat: Acrylic Metal Primer
 - 2nd Coat: Interior Acrylic DTM Enamel - Satin (MPI Gloss Level 4)
 - 3rd Coat: Interior Acrylic DTM Enamel - Satin (MPI Gloss Level 4)
 7. Stainless Steel and Aluminum: No coating.
- C. Coverage:**
1. The intent of the above coating schedule is to provide a thorough, uniform, durable coating of the specified paint. It is the responsibility of the applicator to install each product at rates appropriate to the substrate and in conformance with the manufacturer's recommendations to provide good coverage. The above schedule shall be considered the minimum application required.

PART 3 EXECUTION

3.1 ENVIRONMENTAL CONDITIONS

- A. Do no exterior work if surface moisture from any source is present or expected before applied paints can cure.
- B. Do no work if temperature extremes are in excess of those recommended by manufacturers. In no case below minimum temperature of 45° F.
- C. Do no work on surfaces receiving less than 15 candlepower per square foot lighting

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PAINTING**

levels.

- D. Provide adequate ventilation to materials receiving coatings per manufacturer's requirement for proper drying.

3.2 SURFACE CONDITIONS

- A. Before starting work in this Section, inspect all surfaces to receive coatings and verify their condition is suitable to receive work under this Section.
- B. Report any unsatisfactory conditions to the Architect. Commencement of work will signify acceptance of existing conditions.

3.3 PROTECTION

- A. Prior to beginning work, mask or otherwise protect adjacent finished surfaces.
- B. Maintain pedestrian access and required egress paths during all phases of work.

3.4 PREPARATION OF NEW SURFACES

- A. Prepare surfaces to receive scheduled work under this Section as hereinafter set forth, and as supplemented by the Painting Specification Manual, latest edition.
- B. Interior Wood:
 - 1. AWI Section 5.
 - 2. Surfaces are to have been cleaned of dirt and contamination by other trades. Wipe off dust and minor grit prior to prime and subsequent coats.
 - 3. Fill all nail holes and fine cracks with filler prior to sanding.
- C. Gypsum Board (Walls and Ceilings)
 - 1. Surfaces are to be crack-free, properly finished, textured where required and left clean by other trades.
 - 2. Remove any minor subsequent contamination, dust and dirt.
 - 3. If surface defects appear after prime coating, have defects repaired by the drywall trade; after defects are corrected, proceed with finish painting again using primer over repaired areas.
- D. Steel and Iron
 - 1. At areas not shop primed or at shop primed surfaces field welded:
 - a. Grind smooth all welds. Remove all rust and scale by power tool clean to bare metal [SSPC-SP 11], or abrasive blasting to SSPC-SP5 commercial grade of cleanliness.
 - 2. Galvanized or Zinc Coated metal surfaces: Remove surface contamination, wash metal with phosphoric acid or approved solution, or apply one coat of etching type primer.
- E. Mechanical and Electrical Work:
 - 1. Prepare metal surfaces as specified above for "Steel" and "Galvanized Surfaces" and as applicable to type of material scheduled to be painted.
 - 2. Prepare pre-finished surfaces of electrical panel boards as specified above for "Steel".
- E. Concrete:
 - 1. Prepare concrete surfaces per manufacturer's printed instructions and in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI Technical Guidelines.
 - 2. Provide slab moisture testing prior to application. Moisture vapor transmission should not exceed three (3) lbs. per 1,000 sq ft in a 24 hour period.

3.5 PREPARATION OF PRE-PAINTED SURFACES

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- A. Metal:
 - 1. Remove all loose, peeling, flaking or scaling paint by scraping, chipping and sanding.
 - 2. Feather back all rough paint edges and weathered wood to sound surfaces by sanding.
 - 3. In extreme cases, remove old paint completely and treat as new.
 - 4. Spot-prime bare areas as though they were new.
 - 5. Remove the gloss from old painted surfaces, sand with proper grade sandpaper, use a wire brush, or use a liquid deglossing compound.

3.6 APPLICATION

- A. Apply paint or finish by methods generally accepted by the trade to achieve approved finishes, in strict accordance with manufacturer's printed instructions.
- B. In multiple coat work, provide each coat of paint of slightly different color than preceding coat.
- C. Sand lightly between coats to achieve required finish.
- D. Do not apply finishes on surfaces that are not sufficiently dry.
- E. Make sure each coat of finish is dry and hard before a following coat is applied unless the manufacturer's directions state otherwise.
- F. Tint filler to match stain where clear finishes are specified; work filler well into grain and, before it has set, working perpendicularly to the grain, wipe the excess from the surface.
- G. To achieve the minimum dry thickness the following formula will be accepted:
 - 1. If coating "Volume Solids" (as specified by product manufacturer) is 100% then one gallon will cover 1,600 square feet at one mil dry film thickness (DFT), or 800 square feet at two mils DFT, or 400 square feet at four mils DFT. Reduced volume solids will reduce coverage proportionately to achieve same dry film thickness.
 - 2. On average, minimum of two to four mils thickness per coat is required.

3.7 COLOR SCHEDULE:

- A. See Drawings. When colors are not listed on the drawings, submit manufacturer's color selection chart to Architect for color selection.
- B. Actual paint color selection subject to change. Final selection to be determined during submittal process per part 1.9 above.

3.8 EXTRA STOCK

- A. Submit, in original unopened containers, one gallon of each top coat for touch up purposes. Label for positive identification. Store where directed.

3.9 CLEAN-UP/TOUCH-UP

- A. Touch up any blemishes on painted surface. Sand surface and refinish per specifications if necessary.
- B. Clean adjacent surfaces (or replace finish materials if necessary) of all paint materials or blemishes that resulted during execution of Work in this Section.

END OF SECTION