

## SECTION 09250 - GYPSUM BOARD ASSEMBLIES

### PART 1 - GENERAL

#### RELATED DOCUMENTS:

Drawings, General Conditions and Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

#### DESCRIPTION OF WORK:

##### Types of work include:

- Gypsum drywall including screw-type metal support system.
- Gypsum drywall applied to metal framing and furring.
- ~~Tile Backer Board applied to screw type metal support system.~~
- Drywall finishing (joint tape-and-compound treatment).
- Sound attenuation blankets.

Steel framing and furring are specified in Division 5.

Other insulation products specified in Division 7.

#### QUALITY ASSURANCE:

**Fire-Resistance Ratings: Where gypsum drywall systems with fire-resistance ratings are indicated, provide materials and installations which are identical with those of applicable assemblies tested per ASTM E 119 by fire testing laboratories acceptable to authorities having jurisdiction.**

Acoustical Ratings: Where sound ratings are indicated, provide materials and application procedures identical to those tested by manufacturer to achieve Sound Transmission (STC) scheduled or indicated in accordance with ASTM E90.

Gypsum Board Terminology Standard: GA-505 by Gypsum Association.

Single-Source Responsibility: Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards.

#### DELIVERY, STORAGE AND HANDLING:

Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

Store materials inside under cover and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal corner beads and trim from being bent or damaged.

#### PROJECT CONDITIONS:

Environmental Requirements, General: Comply with requirements of referenced gypsum board application standards and recommendations of gypsum board manufacturer, for environmental conditions before, during and after application of gypsum board.

Cold Weather Protection: When ambient outdoor temperatures are below 55 deg. F (13 deg. C) maintain continuous, uniform, comfortable building working temperatures of not less than 55 deg. F (13 deg. C) for a minimum period of 48 hours prior to, during and following application of gypsum board and joint treatment materials or bonding of adhesives.

Ventilation: Ventilate building spaces as required to remove water in excess of that required for drying of joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent too rapid drying.

## PART 2 - PRODUCTS

### ACCEPTABLE MANUFACTURERS:

Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

#### Metal Support Materials:

ClarkDietrich Building Systems  
Marino  
United States Gypsum Co.

#### Direct Suspension Systems:

Chicago Metallic Corp.  
United States Gypsum Co.

#### Gypsum Board and Related Products:

American Gypsum Co.  
Certaineed Gypsum Co.  
Georgia-Pacific Corp.  
Gold Bond Building Products Div.,  
National Gypsum Co.  
**United States Gypsum Co.**

### METAL SUPPORT MATERIALS:

#### Ceiling Support Materials and Systems:

General: Size ceiling support components to comply with ASTM C 754 unless otherwise indicated.

Main Runners: Steel channels cold-rolled.

Hanger Wire: ASTM A 641, soft, Class 1 galvanized.

Hanger Rods and Flats: Mild steel with zinc or equally rust inhibitive coating for rods and zinc or rust-inhibitive paint finish for flats.

Angle-Type Hangers: Not less than 7/8" x 7/8" x 16-gage galvanized steel formed angles, with bolted connections and 5/16" diameter bolts.

Hanger Anchorage Devices: Screws, clips, bolts, cast-in-place concrete inserts or other devices applicable to the indicated method of structural anchorage for ceiling hangers and whose suitability for use intended has been proven through standard construction practices or by certified test data. Size devices for 3 x calculated load supported except size direct pull-out concrete inserts for 5 x calculated loads.

Furring Members: ASTM C 645; 0.0179" min. thickness of base metal, hat-shaped.

Where shown as "Resilient", provide manufacturer's special type designed to reduce sound transmission.

Furring Members: ASTM C 645; 0.0179" min. thickness of base metal, "C"-shaped studs.

Furring Anchorages: 16 gage galvanized wire ties, manufacturer's standard wire-type clips, bolts, nails or screws as recommended by furring manufacturer and complying with C 754.

Direct Suspension Systems: Manufacturer's standard zinc-coated or painted steel system of furring runners, furring tees, and accessories designed for concealed support of gypsum drywall ceilings; of proper type for use intended.

Wall/Bulkhead/Partition Support Materials:

Studs: (Wall height - 12 foot tall and under): ASTM C 645; **24 gage** 0.0239" min. thickness of base metal unless otherwise indicated.

Studs: (Wall height - 13 foot tall and over): ASTM C 645; **20 gage** 0.0312" min. thickness of base metal unless otherwise indicated.

Depth of Section: 3-5/8" and 6", except as otherwise indicated.

Runners: 18 gage; type recommended by stud manufacturer for floor base and ceiling support of studs, and for vertical abutment of drywall work at other work.

Furring Members: ASTM C 645; **25 gage**, 0.0179" min. thickness of base metal, hat shaped.

Slotted Deflection Track: ASTM C 645; 20 gauge 0.0296 inch minimum base-steel thickness.

Backing Plate: Fire-retardant-treated wood blocking and bracing in width indicated.

Fasteners for Furring Members: Type and size recommended by furring manufacturer for substrate and application indicated.

Rated Shaft Wall Systems:

Studs: 2 ½" C-H Studs, 25 gauge at 24" on center, minimum. 1 Hour Fire-Rated Construction as Tested by USG – UL Design U415.

GYPSUM BOARD:

Gypsum Wallboard: ASTM C 1396, of types, edge configuration and thickness indicated below; in maximum lengths available to minimize end-to-end butt joints.

Type: Type X (**Typical all wall, ceiling and bulkhead surfaces**)

Edges: Tapered.

Thickness: 5/8", unless otherwise indicated.

Finish: Level 4, Typical.

CEMENTITIOUS BACKER UNITS

Provide cementitious backer units complying with ANSI 118.9, of thickness and width indicated below, and in maximum vertical lengths available to minimize end-to-end butt joints.

Thickness: 5/8", unless otherwise indicated.

Width: 32 inches (813 mm)

Available products: Subject to compliance with requirements, cementitious backer units that may be incorporated in the Work include, but are not limited to, the following:

Products: Subject to compliance with requirements, provide one of the following products:

Wonderboard Multi+Board; Custom Building Products.

DomCrete Cementitious Tile-Backer Board; Domtar Gypsum.

Util-A-Crete Concrete Backer Board; FinPan, Inc.

DUROCK Cement Board; United States Gypsum Co.

TRIM ACCESSORIES:

General: Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel unless otherwise indicated, with either knurled and perforated or expanded flanges for nailing or stapling, and beaded for concealment of flanges in joint compound. Provide corner beads, L-type edge trim-beads, U-type edge trim-beads, special L-kerf-type edge trim-beads, and one-piece control joint beads.

### JOINT TREATMENT MATERIALS:

General: ASTM C 475; type recommended by the manufacturer for the application indicated, except as otherwise indicated.

Joint Tape: Reinforced tape. (Provide joint tape recommended by the drywall manufacturer for Paperless/Moisture Resistant drywall installation.)

Joint Compound: Ready-mixed vinyl-type for interior use.

Grade: A single multi-purpose grade, for entire application. (Provide compound recommended by the drywall manufacturer for Paperless/Moisture Resistant drywall installation.)

Exterior Joint Compound: Special chemical - hardening - type for exterior application.

Water-Resistant Joint Compound: Special water-resistant type for treatment of joints, fastener heads and cut edges of water-resistant backing board.

Product: Subject to compliance with requirements, provide Sheetrock Brand W/R Compound; United States Gypsum Co.

### MISCELLANEOUS MATERIALS:

General: Provide auxiliary materials for gypsum drywall work of the type and grade recommended by the manufacturer of the gypsum board.

Laminating Adhesive: Special adhesive or joint compound specifically recommended for laminating gypsum boards.

Spot Grout: ASTM C 475, setting-type joint compound of type recommended for spot grouting hollow metal door frames.

Gypsum Board Screws: Comply with ASTM C 1002.

Gypsum Board Nails: Comply with ASTM C 514.

Sound Attenuation Blankets: See "fiberglass" Sound Insulation specified in Section 07200.

## PART 3 - EXECUTION

### PREPARATION FOR METAL SUPPORT SYSTEMS:

Ceiling Anchorages: Coordinate work with structural ceiling work to ensure that inserts and other structural anchorage provisions have been installed to receive ceiling hangers.

Furnish concrete inserts, steel deck hanger clips and similar devices to other trades for installation well in advance of time needed for coordination with other work.

### INSTALLATION OF METAL SUPPORT SYSTEMS:

General:

Metal Support Installation Standard: Comply with ASTM C 754.

Do not bridge building expansion joints with support system, frame both sides of joints with furring and other support as indicated.

Screw furring members to metal framing as indicated.

Ceiling Support Suspension Systems:

Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to inserts, clips or other anchorage devices or fasteners as indicated.

Space main runners 4'-0" o.c. and space hangers 4'-0" o.c. along runners, except as otherwise shown.

Level main runners to a tolerance of 1/4" in 12'-0", measured both lengthwise on each runner and transversely between parallel runners.

Wire-tie or clip furring members to main runners and to other structural supports as indicated.

Direct-hung Metal Support System: Attach perimeter wall track or angle wherever support system meets vertical surfaces. Mechanically join support members to each other and butt-cut to fit into wall track.

Space furring member 16" o.c., except as otherwise indicated.

Install auxiliary framing at termination of drywall work, and at openings for light fixtures and similar work, as required for support of both the drywall construction and other work indicated for support thereon.

#### Wall/Bulkhead/Partition Support Systems:

Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, and similar work to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co.

Isolate stud system from transfer of structural loading to system, both horizontally and vertically. Provide slip or cushioned type joints to attain lateral support and avoid axial loading.

Install runner tracks at ceilings and structural walls and columns where gypsum drywall stud system abuts other work, except as otherwise indicated.

Extend partition stud system through acoustical ceilings and elsewhere as indicated to the structural support or substrate above the ceiling.

Terminate partition stud system at ceilings, except where indicated to be extended to structural support or substrate above.

Space studs 16" o.c., unless otherwise indicated.

Resilient Channels manufactured from 20 gage corrosion resistant galvanized steel. Single leg resilient channels with extra-wide 1½" screw flange for added rigidity and a wider surface for easier installation of sheathing materials.

Frame door openings to comply with details indicated or if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer, or if not available, of "Gypsum Construction Handbook" published by United States Gypsum Co. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for jack studs) at head and secure to jamb studs.

Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above, unless otherwise indicated.

Frame openings other than door openings to comply with details indicated or if not indicated, in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads.

#### TILE BACKER BOARD INSTALLATION:

Install Tile Backer board behind all tile wall finishes. See Room Finish Schedule.

#### GENERAL GYPSUM BOARD INSTALLATION REQUIREMENTS:

Gypsum Board Application and Finishing Standards: ASTM C 840 and GA 216.

Install sound attenuation blankets as indicated, prior to gypsum board unless readily installed after board has been installed.

Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 1'-0" in alternate courses of board.

Install ceiling boards in the direction and manner which will minimize the number of end-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints at least 1'-0".

Install wall/bulkhead partition boards vertically to avoid end-butt joints wherever possible.

Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.

Located either edge or end joints over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

Spot grout hollow metal door frames for solid core wood doors, hollow metal doors and doors over 32 inches wide. Apply spot grout at each jamb anchor clip just before inserting board into frame.

Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories.

Cover both faces of steel stud bulkhead framing with gypsum board in concealed spaces (above ceilings, etc.).

Except where concealed application is required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. area, and may be limited to not less than 75% of full coverage.

Isolate perimeter of non-load-bearing drywall installations at structural abutments. Provide 1/4" to 1/2" space and trim edge with J-type semi-finishing edge trim. Seal joints with acoustical sealant.

Where sound-rated drywall work is indicated (STC rating), including double-layer work and work on resilient furring, seal the work at perimeters, control and expansion joints, openings and penetrations with a continuous bead of acoustical sealant including a bead at both faces of partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of beads, and close off sound-flanking paths around or through the work, including sealing of partitions above acoustical ceilings.

For double-layer partition systems, work above acoustical ceilings may be installed with base layer only.

Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

#### METHODS OF GYPSUM DRYWALL APPLICATION:

Single-layer Application: Install gypsum wallboard.

On ceilings apply gypsum board prior to wall/bulkhead/partition board application to the greatest extent possible.

On partitions/bulkheads/walls apply gypsum board vertically (parallel), unless otherwise indicated, and provide sheet lengths which will minimize end joints.

On partitions/walls 8'-1" or less in height apply gypsum board horizontally (perpendicular); use maximum length sheets possible to minimize end joints.

On Z-furring members apply gypsum board vertically (parallel to framing) with on end joints. Locate edge joints over furring members.

Wall Tile Base: Where drywall is base for thin-set ceramic tile and similar rigid applied wall finishes, install gypsum backing board.

In "dry" areas install gypsum backing board or wallboard with tapered edges taped and finished to produce a flat surface.

At Janitor's mop sinks, and similar "wet" areas, install water-resistant gypsum backing board to comply with ASTM C 840 and recommendations of gypsum board manufacturer.

Double-Layer Application: Install gypsum backing board for base layer and exposed gypsum board for face layer.

On ceilings apply base layer prior to application of base layer on walls/partitions; apply face layers in same sequence. Offset joints between layers at least 10 inches. Apply base layers at right angles to supports unless otherwise indicated.

On partition/walls apply base layer and face layers vertically (parallel) with joints of base layer over supports and face layer joints offset at least 10" with base layer joints.

Single-Layer Fastening Methods: Apply gypsum boards to supports as follows:

Fasten with screws.

Fasten with cadmium-plated screws, or with galvanized or aluminum nails where supports are nailable.

#### INSTALLATION OF DRYWALL TRIM ACCESSORIES:

General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges by nailing or stapling in accordance with manufacturer's instructions and recommendations.

Install metal corner beads at external corners of drywall work.

Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work is kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

Install semi-finishing trim where indicated, and where exterior gypsum board edges are not covered by applied moldings or indicated to receive trim with face flanges covered with joint compound.

#### FINISHING OF DRYWALL:

General: Apply treatment at gypsum board joints (both directions), flanges of trim accessories, penetrations, fastener heads, surface defects and elsewhere as required to prepare work for decoration. Prefill open joints and rounded or beveled edges, if any, using type of compound recommended by manufacturer.

Apply joint tape at joints between gypsum boards, except where a trim accessory is indicated.

Apply joint compound in 3 coats (not including prefill of openings in base), and sand between last 2 coats and after last coat.

#### **Typical finish shall be Level 4.**

Partial Finishing: Omit third coat (if specified) and sanding on concealed drywall work which is indicated for drywall finishing or which requires finishing to achieve fire-resistance rating, sound rating or to act as air or smoke barrier.

Refer to sections on painting, coatings and wall-coverings in Division-9 for decorative finishes to be applied to drywall work.

#### PROTECTION OF WORK:

Provide final protection and maintain conditions in a manner suitable to Installer, which ensures gypsum drywall work being without damage or deterioration at time of substantial completion.

END OF SECTION 09250



## SECTION 09510 - ACOUSTICAL CEILINGS

### PART 1 - GENERAL

#### RELATED DOCUMENTS:

Drawings, General Conditions and Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

#### SUMMARY:

Extent of each type of acoustical ceiling is shown and scheduled on drawings.

Types of acoustical ceilings specified in this section include the following: See Floor Plan and Room Finish Schedule for locations of each type.

**“Typical Type A” Interior Areas** - Acoustical ceiling tiles, - exposed suspension.  
Applications using 2'x2' grid.

#### QUALITY ASSURANCE:

Installer Qualifications: Firm with not less than three years of successful experience in installation of acoustical ceilings similar to requirements for this project and which is acceptable to manufacturer of acoustical units, as shown by current written statement from manufacturer.

Fire Performance Characteristics: Provide acoustical ceiling components that are identical to those tested for the following fire performance characteristics, according to ASTM test method indicated, by UL or other testing and inspecting agency acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate marking of applicable testing and inspecting agency.

Surface Burning Characteristics: As follows, tested per ASTM E 84.

Flame Spread: 25 or less.

Smoke Developed: 50 or less.

Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" or "FM Approval Guide", for assemblies in which acoustical ceilings function as a fire protective membrane; tested per ASTM E 119.

Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other work supported by, or penetrating through, ceilings, including light fixtures, HVAC equipment, fire-suppression system components (if any), and partition system (if any).

#### SUBMITTALS:

Product Data: Manufacturer's product specifications and installation instructions for each acoustical ceiling material required, and for each suspension system, including certified laboratory test reports and other data as required to show compliance with these specifications.

Include manufacturer's recommendations for cleaning and refinishing acoustical units, including precautions against materials and methods which may be detrimental to finishes and acoustical performances.

Samples: Set of 6" x 4" square samples for each acoustical unit required, showing full range of exposed color and texture to be expected in completed work.

DELIVERY, STORAGE, AND HANDLING:

Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination or other causes.

Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

PROJECT CONDITIONS:

Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

PART 2 - PRODUCTS

ACOUSTICAL CEILING UNITS, GENERAL:

Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration indicated which are prepared for mounting method designated and which comply with ASTM E1264 requirements, including those indicated by reference to type, form, pattern, grade (NRC or NIC' as applicable), light reflectance coefficient (LR), edge detail, and joint detail (if any).

Colors, Textures, and Patterns: Provide products to match appearance characteristics indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors, surface textures, and patterns available for acoustical ceiling units and exposed metal suspension system members of quality designated.

ACOUSTICAL PANELS:

**“Typical Type A Ceiling Tile” – typical**

Type III, Form 2:

Pattern CDE Medium-Textured Panel, NRC .70, CAC 35, Panel Size 24" x 24" x 3/4"

Use: **Typical** acoustical suspended ceiling where shown on Room Finish Schedule (**typical**).

Color: White.

Fire-Resistance Rated Panels:

Radar *ClimaPlus* High NRC, High CAC, Square Edge (SQ) with Grid Option “A”  
United States Gypsum Co., or equal.

METAL SUSPENSION SYSTEMS, GENERAL:

Standard for Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable ASTM C 635 requirements.

Finishes and Colors: Provide manufacturer's standard finish for type of system indicated, unless otherwise required. For exposed suspension members and accessories with painted finish, provide color indicated or white if not otherwise indicated.

Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.

Concrete Inserts: Inserts formed from hot-dipped galvanized sheet steel and designed for attachment to concrete forms and for embedment in concrete, with holes or loops for attachment at hanger wires.

Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, prestretched, Class 1 coating, sized so that stress at 3-times hanger design load (ASTM C 635, Table 1, Direct Hung), will be less than yield stress of wire, but provide not less than 12 gage.

Edge Moldings and Trim: Metal or extruded plastic of types and profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling which fits with type of edge detail and suspension system indicated.

Available Manufacturers: Subject to compliance with requirements, manufacturers offering suspension systems which may be incorporated in the work include, but are not limited to, the following:

Manufacturer: Subject to compliance with requirements, provide suspension systems of one of the following:

Manufacturers of Steel Exposed Suspension Systems:

Same as acoustical unit manufacturer.  
Chicago Metallic Corp.  
Donn Corp.  
National Rolling Mills, Inc.  
Roper Eastern.

EXPOSED METAL DIRECT-HUNG SUSPENSION SYSTEMS:

Fire-Rated Single Web Steel Suspension System: ( **Typical** )

Structural Classification: As required per for rated systems.

Finish: Painted, white.

Uses: Typical suspension system unless noted otherwise.

Fire-Rated Single Web **Aluminum** Suspension System: ( **All Toilets** )

Structural Classification: As required per for rated systems.

Finish: Painted, white.

Uses: Toilet area suspension system unless noted otherwise.

MISCELLANEOUS MATERIALS:

Tile Adhesive: Comply with ASTM D 1779 or FS MMM-A-00150, type recommended by tile manufacturer, bearing UL label for Class 0 - 25 flame spread.

Tile Fasteners: Cadmium plated, type recommended by tile manufacturer, but for not less than 1/2" penetration of substrate.

PART 3 - EXECUTION

PREPARATION:

Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

Provide and install fasteners in wood joists, rafters, and/or trusses to support hanging loads in shear and not in tension (i.e. attach to sides of supporting structure, not bottoms of supporting structure).

Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

INSTALLATION:

General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire resistance rating requirements as indicated, and Cisca standards applicable to work.

Arrange acoustical units and orient directionally-patterned units (if any) in manner shown by reflected ceiling plans.

Install tile with pattern running in alternating directions to form "checkerboard" layout.

Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers not less than 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.

Install hangers plumb and free from contact with insulation or other objects within ceiling plenum which are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal force by bracing, countersplaying or other equally effective means.

Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

Install hold-down clips in areas indicated, and in areas where required by governing regulations or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

ADJUST AND CLEAN:

Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

EXTRA STOCK:

Deliver stock to maintenance material to Owner. Furnish maintenance material matching products installed, packaged with protective covering for storage and identified with appropriate labels.

Acoustical Ceiling Units: Furnish quantity of full size units equal to **2.0%** of amount installed.

Exposed Suspension-Components: Furnish quantity of each exposed component required for actual installation equal to **1.0%** of amount installed.

End of SECTION 09510

## SECTION 09650 - RESILIENT FLOORING

### PART 1 - GENERAL

#### RELATED DOCUMENTS:

Drawings, General Conditions and Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

#### DESCRIPTION OF WORK:

Extent of resilient flooring and accessories is shown on drawings and in schedules.

\*Existing Tile and Rubber Base to be Removed – See Drawings

\*Solid Vinyl Tile - Luxury Vinyl Tile (LVT)

Rubber Wall Base.

Rubber Transition (as required)

Rubber Treads (for use over concrete filled metal pan treads)

#### QUALITY ASSURANCE:

Manufacturer: Provide each type of resilient flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds.

Fire Test Performance: Provide resilient flooring which complies with the following fire test performance criteria as determined by an independent testing laboratory acceptable to authorities having jurisdiction.

Flame Spread: Not more than 75 per ASTM E 84.

Smoke Developed: Not more than 450 per ASTM E 84.

Critical Radiant Flux: 0.45 watts per sq. cm. or more per ASTM E 648.

Smoke Density: Less than 450 per ASTM E 662.

#### SUBMITTALS:

Product Data: Submit manufacturer's technical data for each type of resilient flooring and accessory.

Samples required for approval if not those specified in Color Schedule: Submit manufacturer's standard color charts in form of actual sections of resilient flooring, including accessories, showing full range of colors and patterns available, for each type of resilient flooring required.

#### PROJECT CONDITIONS:

Maintain minimum temperature of 70 degrees F (21 degrees C) in spaces to receive resilient flooring for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. Store resilient flooring materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 degrees F (13 degrees C) in areas where work is completed.

Install resilient flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have been cured and are sufficiently dry to achieve bond with adhesive as determined by manufacturer's recommended bond and moisture test.

### PART 2 - PRODUCTS

#### ACCEPTABLE MANUFACTURERS:

Manufacturer: Subject to compliance with requirements, provide products of one of the following:

**Manufacturers of Solid Vinyl Tile (LVT)**

Armstrong World Industries, Inc.  
Mannington Tile Co.  
Shaw Industries.

**Manufacturers of Rubber Wall Base:**

Roppe Rubber Corp.  
Johnson Rubber Co., Inc.  
Armstrong World Industries, Inc.

**RESILIENT FLOORING COLORS AND PATTERNS:**

Color and Patterns: Manufacturer's standard colors as selected and approved by Architect.

**FLOOR TILE:**

Solid Vinyl Tile: A layered construction consisting of a tough, clear, vinyl wear layer protecting a high-fidelity print layer on a solid vinyl backing. Protected by a UV-cured polyurethane finish, the wear surface is embossed with different textures to enhance each of the printed visuals. Colors are insoluble in water and resistant to cleaning agents and light.

Luxury Solid Vinyl Tile shall conform to the requirements of ASTM F 1700, 'Standard Specification for Solid Vinyl Tile', Class III, Type B - Embossed Surface.

Thickness: 0.125 inches  
Wear Layer Thickness: 0.020 inches  
Finish: UV-cured Polyurethane  
Size: **size of tile to be determined.**

Product/Manufacturer: Basis of Design: **Natural Creations** by Armstrong Commercial Flooring

**ACCESSORIES:**

Wall Base: Provide base complying with FS SS-W-40; Type I rubber, with matching end stops and preformed or molded outside corner units, and as follows:

Manufacturer: Roppe  
Height: 4".  
Thickness: 1/8" inch.  
Style: Standard top-set cove.  
Finish: Matte.  
**Color: as selected and approved by Architect from manufacturer's standard, premium and custom colors.**

Rubber Transition: VC Tile to Carpet.

Manufacturer: Roppe  
Height: ADA compliant.  
Thickness: ADA compliant.  
Finish: Matte.  
**Color: as selected and approved by Architect from manufacturer's standard, premium and custom colors.**

Adhesives (Cement): Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.

Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.

Leveling Compound: Latex type as recommended by flooring manufacturer.

### PART 3 - EXECUTION

#### EXAMINATION:

General: Require Installer to inspect subfloor surfaces to determine that they are satisfactory. A satisfactory subfloor surface is defined as one that is smooth and free from cracks, holes, ridges, coatings preventing adhesive bond, and other defects impairing performance or appearance.

Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

Slab substrates are dry and free of curing compounds, sealers, hardeners and other materials whose presence would interfere with bonding of adhesive. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by tile manufacturer.

Finishes of subfloors comply with tolerances and other requirements specified in Division 3 Section "Cast -In-Place Concrete" for slabs receiving resilient flooring.

Subfloors are free of cracks, ridges, depressions, scales and foreign deposits of any kind.

Do not allow resilient flooring work to proceed until subfloor surfaces are clean, dry, and free of all particles which could translate through tile.

#### PREPARATION:

Prepare subfloor surfaces as follows:

Use leveling and patching compounds as recommended by resilient flooring manufacturer for filling small cracks, holes and depressions in subfloors.

Remove coatings from subfloor surfaces that would prevent adhesive bond, including curing compounds incompatible with resilient flooring adhesives, paint, oils, waxes and sealers.

Broom clean, vacuum, wet mop, and dry surfaces to be covered. Inspect subfloor for small particles which would translate through tile. Repeat preparation of subfloor until all particles are removed.

Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

#### INSTALLATION:

##### GENERAL:

Install resilient flooring using method indicated in strict compliance with manufacturer's printed instructions. Extend flooring into toe spaces, door reveals, and into closets and similar openings.

Scribe, cut, and fit resilient flooring to permanent fixtures, built-in furniture and cabinets, pipes, outlets and permanent columns, walls and partitions.

Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.

Tightly cement resilient flooring to subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections. Hand roll resilient flooring at perimeter of each covered area to assure adhesion.

##### INSTALLATION OF TILE FLOORS:

Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.

Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped, or deformed tiles are not acceptable.

Lay tile in pattern with respect to location of colors, patterns and sizes as indicated on Drawings.

Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer's directions.

#### INSTALLATION OF ACCESSORIES:

Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable, with preformed corner units, or fabricated from base materials with mitered or coped inside corners. Tightly bond base to substrate throughout length of each piece, with continuous contact at horizontal and vertical surfaces.

On masonry surfaces, or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.

Apply resilient accessories to stairs as indicated and in strict accordance with manufacturer's installation instructions.

Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

#### CLEANING AND PROTECTION:

Perform following operations immediately upon completion of resilient flooring:

Sweep or vacuum floor thoroughly.

Do not wash floor until time period recommended by resilient flooring manufacturer has elapsed to allow resilient flooring to become well-sealed in adhesive.

Damp mop floor being careful to remove black marks and excessive soil.

Remove any excess adhesive or other surface blemishes, using appropriate cleaner recommended by resilient flooring manufacturers.

Protect flooring against damage during construction period to comply with resilient flooring manufacturer's directions.

Apply protective floor polish to resilient flooring surfaces free from soil, excess adhesive or surface blemishes. Use commercially available metal cross-linked acrylic product acceptable to resilient flooring manufacturer.

Cover resilient flooring with undyed, untreated building paper until inspection for substantial completion.

Clean resilient flooring not more than 4 days prior to date scheduled for inspections intended to establish date of substantial completion in each area of project. Clean resilient flooring by method recommended by resilient flooring manufacturer.

Strip protective floor polish, which was applied after completion of installation, prior to cleaning.

Reapply floor polish after cleaning.

#### EXTRA STOCK:

Deliver stock of maintenance materials to Owner. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

Tile Flooring: Furnish not less than one box for each 50 boxes or fraction thereof, for each type, color, pattern and size installed.

END OF SECTION 09650



## SECTION 09911 - EXTERIOR PAINTING

### PART 1 - GENERAL

#### RELATED DOCUMENTS

Drawings, General Conditions and Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

#### SUMMARY

This Section includes surface preparation and the application of paint systems on the following exterior substrates:

- **Coating of entire Existing Metal Roof System.**
- Steel
- Wood.

Related Sections include the following:

- Division 5 Sections for shop priming of metal substrates with primers specified in this Section.
- Division 6 Sections for shop priming carpentry with primers specified in this Section.
- Division 9 Section "Interior Painting" for surface preparation and the application of paint systems on interior substrates.

#### SUBMITTALS

Product Data: For each type of product indicated.

Samples for Initial Selection: For each type of topcoat product indicated.

Samples for Verification: For each type of paint system and each color and gloss of topcoat indicated.

- Submit Samples on rigid backing, 8 inches (200 mm) square.
- Step coats on Samples to show each coat required for system.
- Label each coat of each Sample.
- Label each Sample for location and application area.

Product List: For each product indicated, include the following:

- Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
- Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

#### QUALITY ASSURANCE

MPI Standards:

- Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."
- Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

#### DELIVERY, STORAGE, AND HANDLING

Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

- Maintain containers in clean condition, free of foreign materials and residue.
- Remove rags and waste from storage areas daily.

### PROJECT CONDITIONS

Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

### EXTRA MATERIALS

Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

- Quantity: Furnish an additional 1 unopened gallon of each material and color applied.

### PART 2 - PRODUCTS

#### MANUFACTURERS

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

- Benjamin Moore & Co.
- Duron, Inc.
- ICI Paints.
- PPG Architectural Finishes, Inc.
- Sherwin-Williams Company (The).

#### PAINT, GENERAL

Material Compatibility:

- Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

Colors: As selected by Architect from manufacturer's full range

#### METAL PRIMERS

Alkyd Anticorrosive Metal Primer: MPI #79.

- VOC Content: E Range of **E2**

#### WOOD PRIMERS

Exterior Alkyd Wood Primer: MPI #5.

VOC Content: E Range of [E2] [E3]

### EXTERIOR LATEX PAINTS

Exterior Latex (Gloss) for Wood substrates: MPI #119 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

- VOC Content: E Range of [E1] [**E2 or** ] [E3].

### EXTERIOR ALKYD PAINTS

Exterior Alkyd Enamel (Gloss) For metal substrates: MPI #9 (Gloss Level 6).

VOC Content: E Range of [E1] [E2].

## PART 3 - EXECUTION

### EXAMINATION

Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

- Concrete: 12 percent.
- Masonry (Clay and CMU): 12 percent.
- Wood: 15 percent.
- Plaster: 12 percent.
- Gypsum Board: 12 percent.

Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### PREPARATION

Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.

Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

- After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

See MPI Maintenance Repainting Manual for renovation or restoration work.

- Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

Clay Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content of surfaces or alkalinity of mortar joints to be painted exceed that permitted in manufacturer's written instructions.

Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.

Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

Aluminum Substrates: Remove surface oxidation.

Wood Substrates:

- Scrape and clean knots, and apply coat of knot sealer before applying primer.
- Sand surfaces that will be exposed to view, and dust off.
- Prime edges, ends, faces, undersides, and backsides of wood.
- After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

Plastic Trim Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

Plaster Substrates: Do not begin paint application until plaster is fully cured and dry.

Exterior Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth.

## APPLICATION

Apply paints according to manufacturer's written instructions.

- Use applicators and techniques suited for paint and substrate indicated.
- Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### FIELD QUALITY CONTROL

Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:

### CLEANING AND PROTECTION

At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### EXTERIOR PAINTING SCHEDULE

**Coating of entire Existing Metal Roof System** – including but not limited to Metal Roof Panel, Valley, Ridge Cap, Flashing, Flush Wall Panels, Fascia Panels, Cladding, Trim, Gutters, etc.

Air-Dry fluoropolymer Finish for repair of factory applied coil and extraction finishes.

A One-Component solvent based coating system for use over properly prepared, painted aluminum building components, with performance characteristics comparable to factory-applied PVDF Finishes.

Density: 8.45 +/- 0.30 lbs / gal.

Volume Solids: 18% +/- 1%

Weight Solids: 33% +/- 1%

Package Viscosity: 10-30 sec #3 Zahn @ 77F

Basis of Design: DURANAR ADS (Air Dry System) by PPG Industrial Coatings

*See Alternate #2 for demo/replacement of Metal Roof System.*

Steel Substrates: (any & all exposed steel substrates - including but not limited to Steel Bollards, Steel Gates, HM Doors and Frames, and Lintels)

Alkyd System: MPI EXT 5.1D.

Prime Coat: Alkyd anticorrosive metal primer.

Intermediate Coat: Exterior alkyd enamel matching topcoat.

Topcoat: Exterior alkyd enamel (**gloss**).

Wood Panel Substrates:

Latex Over Alkyd Primer System: MPI EXT 6.4G.

Prime Coat: Exterior alkyd wood primer.

Intermediate Coat: Exterior latex matching topcoat.

Topcoat: Exterior latex [(gloss.)].

END OF SECTION 09911

## SECTION 09912 - INTERIOR PAINTING

### PART 1 - GENERAL

#### RELATED DOCUMENTS

Drawings, General Conditions and Supplementary General Conditions and other Division-1 Specification Sections, apply to this Section.

#### SUMMARY

This Section includes surface preparation and the application of paint systems on the following interior substrates:

- Concrete masonry units (CMU).
- Steel.
- Wood.
- Gypsum board.
- Wood Stains

Related Sections include the following:

- Division 5 Sections for shop priming of metal substrates with primers specified in this Section.
- Division 8 Sections for factory priming windows and doors with primers specified in this Section.
- Division 9 Section "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.

#### SUBMITTALS

Product Data: For each type of product indicated.

Samples for Initial Selection: For each type of topcoat product indicated.

Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.

- Submit Samples on rigid backing, 8 inches (200 mm) square.
- Step coats on Samples to show each coat required for system.
- Label each coat of each Sample.
- Label each Sample for location and application area.

Product List: For each product indicated, include the following:

- Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
- Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

#### QUALITY ASSURANCE

MPI Standards:

Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

Mockups: Apply benchmark samples of each paint and stain system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

Wall and Ceiling Surfaces: Provide samples of at least 16 sq. ft. (9 sq. m).

Other Items: Architect will designate items or areas required.

Apply benchmark samples after permanent lighting and other environmental services have been activated.

Final approval of color selections will be based on benchmark samples.

If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

### DELIVERY, STORAGE, AND HANDLING

Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

Maintain containers in clean condition, free of foreign materials and residue.

Remove rags and waste from storage areas daily.

### PROJECT CONDITIONS

Apply paints/stains only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

Do not apply paints/stains when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

### EXTRA MATERIALS

Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

Quantity: Furnish an additional 2 unopened gallons of each material and color applied.

## PART 2 - PRODUCTS

### MANUFACTURERS

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

- Benjamin Moore & Co.
- Duron, Inc.
- ICI Paints.
- PPG Architectural Finishes, Inc.
- Sherwin-Williams Company (The).

### PAINT, GENERAL

#### Material Compatibility:

Systems could fail if paints used for individual coats are incompatible. MPI's paint systems match primers and topcoats and take compatibility into consideration.

- Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

Chemical Components of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions; these requirements do not apply to primers or finishes that are applied in a fabrication or finishing shop:

- Flat Paints and Coatings: VOC content of not more than 50 g/L.
- Nonflat Paints and Coatings: VOC content of not more than 150 g/L.
- Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
- Restricted Components: Paints and coatings shall not contain any of the following:
  - Acrolein.
  - Acrylonitrile.
  - Antimony.
  - Benzene.
  - Butyl benzyl phthalate.
  - Cadmium.
  - Di (2-ethylhexyl) phthalate.
  - Di-n-butyl phthalate.
  - Di-n-octyl phthalate.
  - 1,2-dichlorobenzene.
  - Diethyl phthalate.
  - Dimethyl phthalate.
  - Ethylbenzene.
  - Formaldehyde.
  - Hexavalent chromium.
  - Isophorone.
  - Lead.
  - Mercury.
  - Methyl ethyl ketone.
  - Methyl isobutyl ketone.
  - Methylene chloride.
  - Naphthalene.
  - Toluene (methylbenzene).
  - 1,1,1-trichloroethane.
  - Vinyl chloride.

Colors: As selected by Architect from manufacturer's full range

#### BLOCK FILLERS

Interior/Exterior Latex Block Filler: MPI #4.  
VOC Content: E Range of **E2 or E3.**



### PRIMERS/SEALERS

Interior Latex Primer/Sealer: MPI #50.

VOC Content: E Range of **E2 or E3**.

Environmental Performance Rating: **EPR 2 minimum**.

### METAL PRIMERS

Rust-Inhibitive Primer (Water Based): MPI #107.

VOC Content: E Range of **E2 or E3**.

Environmental Performance Rating: **EPR 2 minimum**.

### WOOD PRIMERS

Interior Latex-Based Wood Primer: MPI #39.

VOC Content: E Range of **E2**

Environmental Performance Rating: **EPR 2**

### LATEX PAINTS

Interior Latex (Flat): (Offices)

VOC Content: E Range of E2

Interior Latex (Eggshell): MPI #52 (Gloss Level 3). (Typical)

VOC Content: E Range of E2

Institutional Low-Odor/VOC Latex (Eggshell): MPI #145 (Gloss Level 3). (Stairwells, Lobby, Hallways, toilets, restrooms, Kitchens)

VOC Content: E Range of E3.

Environmental Performance Rating: EPR 4.5.

### WOOD STAINS:

Interior Wood Stain (Satin):

VOC Content: E Range of [E2] [E3].

Wood Filler Paste: MPI#91.

VOC Content: E Range of **E3**.

Interior Stain (Semi-transparent): MPI#90

VOC Content: E Range of **E2**.

Interior Varnish (Satin): MPI#75 Gloss Level 4, alkyd type.

VOC Content: E Range of **E2 or E3**.

## PART 3 - EXECUTION

### EXAMINATION

Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

- Concrete: 12 percent.
- Masonry (Clay and CMU): 12 percent.
- Wood: 15 percent.

- Gypsum Board: 12 percent.
- Plaster: 12 percent.

Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.

- Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### PREPARATION

Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

- After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.

Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

Clay Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content of surfaces or alkalinity of mortar joints to be painted exceed that permitted in manufacturer's written instructions.

Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer. **(or shop-primed).**

Wood Substrates:

Scrape and clean knots, and apply coat of knot sealer before applying primer.

Sand surfaces that will be exposed to view, and dust off.

Prime edges, ends, faces, undersides, and backsides of wood.

After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

Gypsum Board Substrates: Do not begin paint application until finishing compound is dry and sanded smooth. Repair all surface blemishes, dust dirt, or other foreign material is removed.

### APPLICATION

Apply paints according to manufacturer's written instructions.

Use applicators and techniques suited for paint and substrate indicated.

Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:

Mechanical Work:

- Uninsulated metal piping.
- Uninsulated plastic piping.
- Pipe hangers and supports.
- Tanks that do not have factory-applied final finishes.
- Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
- Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
- Mechanical equipment that is indicated to have a factory-primed finish for field painting.

Electrical Work:

- Electrical equipment that is indicated to have a factory-primed finish for field painting.

FIELD QUALITY CONTROL

Testing of Paint Materials: Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:

CLEANING AND PROTECTION

At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

## INTERIOR PAINTING SCHEDULE

### CMU Substrates:

Latex System: MPI INT 4.2A.

Institutional Low-Odor/VOC Latex System: MPI INT 4.2E.

Prime Coat: Interior/exterior latex block filler.

Intermediate Coat: Institutional low-odor/VOC interior pre-catalyzed water based epoxy matching topcoat.

Topcoat: Institutional low-odor/VOC interior pre-catalyzed water based epoxy (eggshell)

### Steel Substrates:

Institutional Low-Odor/VOC Latex System: MPI INT 5.1S.

Prime Coat: Rust-inhibitive primer (water based).

Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.

Topcoat: Institutional low-odor/VOC interior latex (**semigloss**).

Dressed Lumber Substrates: Including architectural woodwork, doors where indicated to be painted.

Latex System: MPI INT 6.3T.

Prime Coat: Interior latex-based wood primer.

Intermediate Coat: Interior latex matching topcoat.

Topcoat: Interior latex (**semigloss**).

### Gypsum Board Substrates:

Latex System: MPI INT 9.2A.

Prime Coat: Interior latex **primer/sealer** matching topcoat. **Use this paint system on Interior offices and Rooms.**

Intermediate Coat: Interior latex matching topcoat.

Topcoat: Interior latex (**flat @ painted ceilings & Offices; eggshell typical on walls**).

Institutional Low-Odor/VOC Latex System: MPI INT 9.2M. **Use this paint system at all interior Corridors, Foyer, Lobby, Toilets, Restrooms, and Kitchens.**

Prime Coat: One Coat - Interior Latex primer/sealer.

*Basis of Design:* S-W Pro Mar 200 Zero VOC Interior Latex Primer #B28W2600

Finish Coat: Two Coats – Interior pre-catalyzed water based epoxy

*Basis of Design:* S-W Pre-Catalyzed Waterbased Epoxy #K45-150 Series

## INTERIOR WOOD STAINING SCHEDULE:

Stained Woodwork: Provide low VOC, Class A stain finish products by single manufacturer.

Stained – Varnished Rubbed Finish: 3 Finish coats over stain plus filler in open grain wood.

Stain Coat: Interior Oil Stain: Note stains shall be applied in different staining strengths/coats on wood substrates to conceal differing grains or wood specie type The

objective is to finish the wood panels, trim moldings and doors with one uniform consistent stain coloration.

First Coat: Bleached Shellac.

Filler Coat on Open Grain Wood: Paste Wood Filler.

Second and Third Coats: Oil Rubbing Varnish, Satin finish.

END OF SECTION 09912