SECTION 09260 - GYPSUM BOARD

PART 1 - GENERAL

1.01 SUMMARY

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

B. Section Includes:

1. Interior metal stud wall framing studs, 20 gage material thickness.
2. Furred wall framing.
3. Metal channel ceiling framing.
4. Gypsum board.
5. Cementitious backer board.
6. Taped and sanded joint treatment.

1.02 SUBMITTALS

A. Submit under provisions of Section 01330.

B. Product Data: Provide data on metal framing, gypsum board, joint tape and joint compound.

C. Submit manufacturer's installation instructions for each product proposed for use.

1.03 QUALITY ASSURANCE

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

1.04 DELIVERY, STORAGE, HANDLING

A. Deliver, store, handle, and protect products in conformance with manufacturer's instructions and in accordance with Section 01600.

B. Store inside building, on sleepers, and out of water.

1.05 QUALIFICATIONS

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

1.06 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire rated assemblies.

B. Refer to Drawings for details and references to UL and GA assemblies.

PART 2 - PRODUCTS

2.01 MANUFACTURERS - GYPSUM BOARD

A. Acceptable Manufacturers: Subject to compliance with requirements indicated, provide products of one of the following:
   1. U. S. Gypsum.
   2. Georgia-Pacific Gypsum, LLC.
   3. National Gypsum.
   4. Domtar Gypsum Co.
   5. Republic Gypsum Co.

B. Substitutions: Under provisions of Section 01600.

C. Specific product references are these of U.S. Gypsum Company unless noted otherwise as a standard of quality.

2.02 GYPSUM BOARD MATERIALS

A. Fire Rated Gypsum Board: ASTM C 36; fire resistive type X or C, UL rated; 48 inch by 5/8 inch thick, maximum permissible length; ends square cut, tapered and beveled edges.

B. Moisture Resistant Gypsum Board: ASTM C 630; 48 by 5/8-inch thick, type X or C (fire-rated), maximum permissible length ends square cut, tapered edges.

C. Gypsum Backing Board: ASTM C 442; fire rated type 'X'; 5/8-inch thick; V-grooved edges, ends square cut, maximum permissible length.

D. Exterior Gypsum Sheathing shall be Fiberglass, Mat-Faced Gypsum Sheathing, Type X, Densglass Fireguard Sheathing, or equal.

2.03 MANUFACTURERS - FRAMING SYSTEMS

A. Acceptable Manufacturers: Subject to compliance with requirements indicated, provide products of one of the following:
   1. Clark Steel Framing Systems, Inc., Hinckley, OH.
   2. Consolidated Systems, Inc., Columbia, SC
   3. Dale/Incor Industries, Dearborn, MI.
   4. Delta Metal Products, Dallas, TX.
   5. Dietrich Industries, Inc., Hutchins, TX.

6. Knorr Steel Framing Systems. Salem, OR.
7. The Steel Network Inc., Raleigh, NC.
8. Unimast, Inc., Houston, TX
9. Western Metal, Riverside, CA.

B. Substitutions: Under provisions of Section 01600.

2.04 FRAMING MATERIALS

A. Studs and Tracks: ASTM C 645; galvanized sheet steel, gage as indicated on Drawings, 'ST' series shape, depths as indicated on Drawings. Provide with floor and ceiling runners, 'C' shaped galvanized, 1-1/4 inch leg.

B. Shaft Wall Studs: Galvanized finish, length and depth as required, gage as recommended by manufacturer for heights encountered to maintain a maximum deflection of L/240 with 5 pound horizontal loading.

C. Furring, Framing and Accessories: Provide in conformance with ASTM C 645, GA-216, and GA-600 and as follows:

1. Cold Rolled Channels: 3/4inch, 1-1/2 inch and 2 inches, 16 gage, prime painted.

2. Furring Channels: 7/8 inch deep x 1-1/4 inch face, 25 gage, galvanized.

3. Resilient Furring: 7/8 inch deep x 1-1/4 inch face, 25 gage, galvanized with one leg attached only.

D. Fasteners: ASTM C 514 for nails and C 1002 for screws as follows:

1. Inserts, clips, bolts, nails or other screws as recommended by manufacturer, of type and size to suit application and to rigidly secure materials in place.
2. Self-drilling, self-tapping bugle head screws for use with power drive tool.

3. Metal Framing to Structure: Power driven screw fasteners to withstand 190 pound single shear resistance and 200 pound bearing force when drive through structural head or base and without exceeding allowable design stress in runner, fastener, or structural support.

4. Metal to Metal: 3/8 inch, Type S or S-12, pan head screws.

5. Gypsum Board to Sheet Metal Application: Type S screws.

6. Gypsum Board to Gypsum Board Application: Type G screws.

7. Vertical Deflection Connection (required under all steel beams where the top metal track is tied into the steel beam): Provide VertiClip® or VertiTrack™ deflection-accommodating anchorage devices, by The Steel Network Inc. Products shall conform to the following material properties and performance criteria:

    a. Code Criteria:

        1. Meet required head of wall connection criteria as required by applicable referenced code for cyclic wall movement.

    b. Material Composition: Meeting ASTM A653/A, SS grade 50, class 1, 50 ksi minimum yield strength, 65 ksi minimum tensile strength, G-60 hot dipped galvanized coating.

    c. Material Thickness: 0.036 inch thick for VertiClip SLD series.

    d. Clips shall be designed for positive attachment to structure and stud web using step-bushing technology to provide frictionless vertical movement.

    e. Provide clips with attached bushing and screw of the series, size, and configuration as recommended by manufacturer.

    f. Friction-fit deep-leg track assemblies and tracks relying on steel flexure to perform are unacceptable.

    g. Substitutions: Must comply with the following:

        1. Meets ASTM A653/A, SS Grade 50, class 1 50 ksi minimum yield strength, 65 ksi minimum tensile strength, G-60 hot dipped galvanized coating.

        2. Certified for use in UL 2079-approved assemblies for cyclic movement.

        3. Structural testing performed per AISI requirements.

2.05 ACCESSORIES

A. U. S. Gypsum Company products specified below as a standard of quality, unless noted otherwise.

    1. Acoustical Insulation: Refer to Section 07210.

    2. Acoustical Sealant and Tape: Non-hardening, non- skinning, for use in conjunction with gypsum board; manufactured by Tremco, Pecora, or USG.

    3. Corner Beads: Metal, equal to USG Durabead No. 103, galvanized.

4. Casing Beads: Equal to USG No. 200-A, galvanized. 5.

5. Control Joint: Equal to USG No. 093, galvanized.

6. Hanger Wire: Annealed galvanized wire, of gauges indicated (or required to suit application) to rigidly support ceiling components in place.

B. Joint Treatment and Texture Materials

1. Joint Tape:

a. ASTM C 475 or FS SS-J-570, Type II, perforated tape.

b. Joint compound:

1. ASTM C 475 or FS SS-J-570, Type I.

2. Acceptable Product:

i) Taping compound: USG Durabond Joint Compound Taping.

ii) Topping: USG Joint Compound-All Purpose.

C. Reveal Moldings

1. Extruded aluminum, 6063 T5 alloy, clear anodized unless otherwise noted, in profiles as indicated on the Drawings, as made by Pittcon or Fry Reglet.

PART 3 - EXECUTION

3.01 INSPECTION

A. Verify that site conditions are ready to receive work and opening dimensions are as indicated on shop drawings and instructed by the manufacturer.

B. Beginning of installation means acceptance of existing substrate.

3.02 METAL STUD INSTALLATION

A. Follow recommendations of U.S. Gypsum Co., "Gypsum Construction Handbook".

B. Install studding in accordance with ASTM C 754, GA-201, GA- 216, and GA-600.

C. Metal Stud Spacing: 16 inches on center, unless otherwise noted in schedule or on Drawings. Locate studs maximum of 2 inches from door frames, abutting partitions, corners, and other construction features.

D. Stud to Structure: Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above. Provide vertical deflection accommodating devices where each stud connects to structural members above.

E. Stud to Ceiling: Refer to Drawings for indication of partitions extending to finished ceiling only and for partitions extending through the ceiling to the structure above.

F. Door Opening Framing: Install double studs at door frame jambs. Install stud tracks on each side of opening, at frame head height, and between studs and adjacent studs.

G. Blocking: Screw wood blocking to studs. Bolt or screw steel channels to studs. Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, shelving, toilet accessories, and hardware.

H. Coordinate installation of bucks, anchors, blocking, electrical and mechanical work placed in or behind partition framing.

I. Stud Connections: Secure studs to runners with screws at door and window frames, partition intersections and corners. Where required for additional height, splice studs by nesting a minimum lap of 18 inches and attach flanges together with 2 screws in each flange. Prevent structural loading of stud systems.

J. Restroom Chase Wall Studs: Position double row of studs vertically in runners so that studs are opposite each other in pairs with flanges pointed in same direction. Space at 16 inches on center unless otherwise noted. Anchor each stud to runner flanges with screws. Cross brace between rows of studs with wallboard, 12 inches by chase width, screw attached to stud webs at quarter points in partition height, with 1 inch screws spaced 8" off center in each stud web.

K. Seismic Requirements: Provide lateral bracing and other measures in accordance with seismic requirements of applicable codes and regulations.

3.03 WALL FURRING INSTALLATION

A. Erect wall furring for direct attachment to concrete block and concrete walls.

B. Erect furring channels vertically. Secure in place on alternate channel flanges at maximum 24 inches on center.

C. Space furring channels maximum 16 inches off center, not more than 4 inches from floor, ceiling lines and abutting walls.

D. Erect free-standing metal stud framing tight to concrete and concrete masonry walls, attached by adjustable furring brackets in accordance with manufacturer's instructions.

3.04 FURRING FOR FIRE RATINGS

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

3.05 SHAFT WALL INSTALLATION

A. Shaftwall Framing: In accordance with manufacturer's installation instructions. Space studs at 16 inches on center. Cut so that studs are no more than 1/2 inch shorter than rough opening.

3.06 CEILING FRAMING INSTALLATION

A. Install in accordance with ASTM C 754, GA-201, GA-216, and GA-600 and manufacturer's instructions.

B. Coordinate location of hangers with other work. Use 9 gage wire for single layer wall board, and 8 gage wire for double layer. Space at maximum 48 inches on center each way, unless ceiling framing occurs at more frequent intervals.

C. Install ceiling framing independent of walls, columns, and above-ceiling work. Locate members within 6 inches of walls. Unless shown otherwise, use 1-1/2 inch cold-rolled channels, 2 inch on double layer board, at 48 inches off center main framing with furring channels at 24 inches on center, 16 inches on center for double layer board.

D. Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing. Extend bracing minimum 24 inches past each end of openings.

E. Laterally brace entire suspension system.

3.07 ACOUSTICAL ACCESSORIES INSTALLATION

A. Install resilient channels at maximum 24 inches on center. Locate joints over framing members.

B. Place acoustical insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.

C. Install acoustical sealant at wall perimeter of designated partitions as follows:

1. Metal Framing: Two beads at contact area at intersecting walls, floors and ceilings.

2. Base Layer Gypsum Board: One bead.

3. Seal penetrations of partitions by conduit, pipe, ductwork, rough-in boxes, and access door frames.

3.08 GYPSUM BOARD INSTALLATION

A. Install gypsum board in accordance with GA 201, GA 216, GA-600 and U.S.G. "Gypsum Construction Handbook".

B. Erect interior board horizontally if space is small so as to avoid end butt joint; otherwise install gypsum board vertically, with ends and edges occurring over firm bearing. Stagger end joints to occur at different locations on opposite sides of wall. Apply board to suspended ceilings with long dimension at right angles to framing.

C. Erect exterior gypsum sheathing horizontally, with edges butted tight and ends occurring over firm bearing. Abut boards without forcing. Neatly fit ends and edges of boards and make cuts and penetrations so that paper facing and gypsum core are not damaged.

D. Use screws when fastening gypsum board to metal furring or framing and nails to wood studding. Stagger fasteners opposite each other on adjacent ends and edges. Space fasteners as recommended in U.S.G., "Gypsum Construction Handbook". Do not attach gypsum board to top track on partitions extending from floor to structure above.

E. Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum ceiling board with sealant.

F. Place control joints at changes in back-up material, at maximum 20'-0" off center in exterior walls , and at maximum 30'- 0" off center at interior partitions. In ceilings, install at maximum 30'-0" off center each way. Provide fire resistant protections behind control joints in fire rated assemblies.

G. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.

H. On fire rated assemblies, seal penetrations and make air-tight. Refer to Section 07840 for firestopping requirements and materials.

I. Thicken partitions to eliminate wall surface jogs for the full length of the wall within a room to conceal structural members, pipes, panels, specialty items, and accessories.

J. Coordinate door and other frame thicknesses as required.

3.09 JOINT TREATMENT

A. Tape, fill, and sand exposed joints, edges, and corners to produce surface ready to receive finishes. The intent is to provide the highest quality of joint treatment work consistent with commercial construction. Leave surfaces smooth, uniform, and free of fins, depressions, ridges, cracks, and other imperfections.

B. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.

C. Levels of Finish:

1. Comply with GA-214; italicized commentary is excluded; replace words "may" and "should" with "shall."

2. Locations to receive Level 4 finish: Areas to be painted.

3. Locations to receive Level 3 finish: Areas to receive moisture resistant gypsum board used as a tile substrate.

4. Locations to receive Level 2 finish: Fire-rated, sound-rated, and smoke-rated assemblies in ceiling plenums and concealed areas.

5. Locations to receive Level 1 finish: Non-fire-rated, non-sound-rated, and non-smoke-rated assemblies in ceiling plenums and concealed areas.

3.10 TOLERANCES

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

END OF SECTION

SECTION 09511 - SUSPENDED ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.01 Work Included

A. Suspended metal grid ceiling system.

B. Acoustical tile panels.

1.02 Related Work

A. Air diffusion devices in ceiling system.

B. Light fixtures in ceiling system.

1.03 References

A. ASTM C635 - Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM C636 - Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.

C. UL - Underwriter's Laboratories System Ratings.

1.04 Quality Assurance

A. Manufacturer: Company specializing in the manufacture of ceiling suspension system and ceiling tile panels, three years minimum experience.

B. Installer: Company shall have experience installing the approved manufacturer.

1.05 Regulatory Requirements

A. Conform to applicable code for fire rated assembly where required.

1.06 Submittals

A. Submit shop drawings and product data for review.

B. Indicate on shop drawings, grid layout and related dimensioning, junctions with other work or ceiling finishes, interrelation of mechanical and electrical items related to system.

C. Provide product data on metal grid system components, and acoustic units.

D. Submit samples to Owner and Architect for review.

E. Submit manufacturer's installation instruction.

1.07 Environmental Requirements

A. Maintain uniform temperature of minimum 60 degree F (16 degrees C), and humidity of 20 to 40 percent prior to, during, and after installation.

1.08 Sequencing/Scheduling

A. Do not install acoustical ceilings until building is enclosed, sufficient heat is provided, dust generating activities have terminated and overhead work is completed, tested, and approved.

B. Schedule installation of acoustic units after interior work is dry.

1.09 Extra Stock

A. Provide one carton [of each type used] extra tile panels to Owner.

PART 2 - PRODUCTS

2.01 Manufacturer - Suspension System

A. Suspension system shall be from the same manufacturer as acoustic units.

2.02 Suspension System

A. Armstrong "15/16" Prelude ML" exposed tee system for square lay-in units, or an approved equal.

B. Grid Finish: White

C. Support Channels and Hangers: Size and type to suit application, to rigidly secure acoustic ceiling system including integral mechanical electrical components with maximum deflection of 1/360.

2.03 Acoustic Units

A. Armstrong "Fine Fissured" #1713, 24"x24"x¾", square lay-in, color: white, Certain Teed, or approved equal.

Specifications:

1. Composition: . . . . . Wet-formed mineral fiber
2. Light Reflectance: 0.85
3. NRC : 0.55
4. CAC : 33
5. Classification: . . . . . ASTM E1264, Type III, Form 2, Pattern CE
6. Fire Resistance: . . . . . Class A

PART 3 - EXECUTION

3.01 Inspection

A. Verify that existing conditions are ready to receive work.

B. Verify that layout of hangers will not interfere with other work.

C. Beginning of installation means acceptance of existing conditions.

3.02 Installation

A. Install system in accordance with ASTM C636 manufacturer's instructions and as supplemented in this Section.

B. Install system capable of supporting imposed loads to a deflection of 1/360 maximum.

C. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.

D. Supply hangers or inserts for installation of mechanical and electrical if metal deck is not supplied with hanger tabs, coordinate the installation of hanger clips during steel deck erection. Provide additional hangers and inserts as required.

E. Hang system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts are other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers (and related carrying channels) to span the extra distance.

G. Center system on room axis leaving equal border units, unless otherwise directed by reflected ceiling plan.

H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

I. Do not eccentrically load systems, or produce rotation of runners.

J. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.

K. Form expansion joints as required.

L. Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.

M. Install acoustic units level, in uniform plane, and free from twist, warp and dents.

3.03 Tolerances

A. Variation from flat and level surface: 1/8 inch in 10 ft.

End of Section

SECTION 09650 - RESILIENT FLOORING

PART 1 - GENERAL

1.01 SUMMARY

A. Extent of resilient flooring and accessories as shown on Drawings and Specified herein.

Work includes:
1. Vinyl Cove Base
2. Resilient Edge Strips

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's technical data and installation instructions for resilient flooring and accessories in accordance with Section 01300.

B. Samples: Submit, for verification purposes, samples of each type, color and pattern of resilient flooring and accessory required, indicating full range of color/pattern variation.

C. Maintenance Instructions: Submit copies of manufacturer's recommended maintenance practices for each type of resilient flooring required to Owner.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of standard quality of manufacturers as specified. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Provide materials and adhesives which do not contain asbestos.

PART 2 - PRODUCTS

2.01 MATERIALS

Refer to Finish Schedule on Drawings for styles and colors of specified materials.

A. Vinyl Cove Base, 4" high x .080 thickness set-on type, as manufactured by Johnsonite, Mannington, or approved equal, and furnished in 120' long rolls meeting the requirements of ASTM F1861, Type TV, Group 1 and ASTM E-648/NFPA 253, Class 1.

B. Resilient Edge Strips: ADA compliant, homogeneous vinyl or rubber transition strips as required where change of flooring types occur. Color to match flooring or as selected by Architect from standard colors available.

C. Adhesives: As recommended by flooring manufacturer to suit material and substrate conditions.

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

E. Leveling Compound: As recommended by flooring manufacturer.

PART 3 - EXECUTION

3.01 INSPECTION

A. Make a thorough examination of surfaces to receive resilient flooring. If surfaces are defective and will not permit a proper finished installation, immediately notify the Architect in writing, or assume responsibility for and rectify any resulting unsatisfactory condition.

B. Inspect floor for holes, cracks and smoothness. Test for dryness. Do not proceed with laying until subfloors are dry and smooth, holes and cracks filled.

3.02 PROJECT CONDITIONS

A. Substrate Conditions: The installer shall verify in writing to the Owner, a minimum of 30 days prior to scheduled resilient flooring installation, the following substrate conditions:
   1. Moisture: Initial emission rate, as tested with a calcium chloride test kit.
   2. Alkalinity: pH range of 6-8. Must not exceed pH of 10.

B. After application (by others) of the concrete sealer, the installer shall perform a second calcium chloride test. These second test results will be compared with the previous results. Final results shall not exceed resilient flooring manufacturer's allowable emission rate.

C. Maintain minimum temperature of 68°F (20°C) in spaces to receive resilient flooring for at least 72 hours prior to installation, during installation and for not less than 48 hours after installation. Subsequently, maintain minimum temperature of 68°F (20°C) in areas where work is completed.

D. Install resilient flooring and accessories after they have the same temperature as the space and after other finishing operations, including painting, have been completed. Moisture content and alkalinity level of concrete slabs, as well as environmental conditions, must be within limits recommended by manufacturer of products being installed.

3.03 PREPARATION

A. Broom clean or vacuum surfaces to be covered, and inspect subfloor. Start of flooring installation indicates acceptance of subfloor conditions and full responsibility for completed work.

B. Use leveling compound as recommended by flooring manufacturer for filling small cracks, holes and depressions in subfloor.

C. Perform moisture tests on concrete slabs to determine that concrete surfaces are sufficiently cured dry as well as to ascertain presence of curing compounds, and ready to receive flooring.

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

3.04 INSTALLATION

A. Place flooring with adhesive cement in strict compliance with manufacturer's recommendations. Butt tightly to vertical surfaces, thresholds, nosings, and edgings. Scribe around obstructions to produce neat joints, laid tight, even, and straight. Extend flooring into toe spaces, door reveals, and into closet and similar openings.

B. 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 nonpermanent-marking device.

C. Install flooring on covers for telephone and electrical ducts, and other such items as occur within finished floor areas.

D. Maintain overall continuity of color and pattern with pieces of flooring installed in these covers. Tightly cement edges to perimeter of floor around covers and to covers.

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

F. Tile Floors
   1. 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 ½ tile at room perimeters.
      a. Lay tile square to room axis, unless otherwise shown.
      b. Lay tile in "checkerboard" fashion with grain quarter-turned in adjacent tiles unless recommended otherwise by manufacturer.
      c. Follow Floor Tile Patterns as indicated on Drawings where required.

   2. Match tile 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.

   3. Adhere tile flooring to substrates using full spread of adhesive applied in accordance with flooring manufacturer's recommendations.

G. Accessories: Apply resilient 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 backing throughout length of each piece, with continuous contact at horizontal and vertical surfaces.

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

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

3. Apply butt type metal edge of flooring where shown on drawings, and prior to resilient flooring. Secure units to substrate with countersunk stainless steel anchors, complying with manufacturer's recommendation.

3.05 CLEANING AND PROTECTION

A. Immediately upon completion of the resilient flooring remove any excess adhesive or other surface blemishes, using neutral type cleaners as recommended by flooring manufacturer.

1. Do not wash or machine scrub linoleum for at least 3-5 days after installation.
2. Do not strip factory finish from linoleum sheet flooring per Manufacturer recommendations.

B. Protect installed flooring with heavy Kraft paper or other covering.

C. Finishing: After completion of project and just prior to final inspection of work, thoroughly clean all floors and accessories.

1. Apply waxes to vinyl composition tile flooring, where applicable, as recommended by the Manufacturer (2 coats minimum) and buff prior to Owner's occupancy and/or final completion of the project.

3.06 EXTRA STOCK

A. Provide the Owner with the following: one (1) unopened carton of each tile selection specified on this project.

End of Section

SECTION 09900 - PAINTING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Extent of painting work is shown on drawings and schedules, and as herein specified.

B. The work includes painting and finishing of interior and exterior exposed items and surfaces throughout Project, except as otherwise indicated.

1. Surface preparation, priming, and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

C. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coats.

D. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors as designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.

E. Do not paint over any code-required labels such as Underwriters Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.02 QUALITY ASSURANCE

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer on published product data pages, and use only within recommended limits.

B. Coordination of Work: Review other sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used. Test existing surfaces scheduled to receive new paint or epoxy coating to insure compatibility of new primer and paint system.

C. Employ only experienced and competent mechanics.

D. Field Quality Control: Prepare and finish a sample area or room as directed. Finish in accordance with specification requirements for Architect’s approval of materials, color and workmanship. Approved area or room shall serve as Project Standard.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

B. Provide Owner at completion of job, one gallon of paint of each color selected. Provide original unopened labeled containers with color sample and list of room numbers where used.

1.04 DELIVERY AND STORAGE

A. Deliver materials to job site in original, new, and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material.
2. Federal Specification number, if applicable.
3. Manufacturer's stock number and date of manufacturer.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color name and number.

B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue.

1. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing, and application of paints.

1.05 JOB CONDITIONS

A. Coordinate with other trades to insure adequate ventilation and dust-free environment during application and drying of paint.

B. Maintain temperature and humidity within Manufacturer’s recommended tolerances.

C. Do not apply paint in snow, rain, fog, or mist; or when humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by paint manufacturer's printed instructions.

1. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

D. Painting Contractor shall provide stand mounted, high intensity, portable lighting for their use during painting to provide adequate illumination.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide paint products of one of the following or an approved equal:
   1. Glidden Professional
   2. Porter Paints
   3. PPG
   4. Benjamin Moore and Co.
   5. The Sherwin-Williams Company

2.02 MATERIALS

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.
   1. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

PART 3 - EXECUTION

3.01 INSPECTION

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.02 SURFACE PREPARATION

A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

   1. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.

   2. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

3. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease in accordance with SSPC SP-1, prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

B. Cementitious Materials: Prepare cementitious surfaces of concrete, concrete block, to be painted by removing efflorescence, chalk, dust, dirt, grease, oils in accordance with ASTM D 4258/D 4259/D 4261 (CMV).

1. Determine alkalinity and moisture content of surfaces to be painted by performing ASTM D 4262. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

C. Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

1. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, paneling.

2. When transparent finish is required, use spar varnish for backpriming.

3. Seal tops, bottoms, and cut-outs of unprimed wood doors with a heavy coat of varnish or equivalent sealer immediately upon delivery to job.

D. Ferrous Metals: Clean ferrous surfaces which are not galvanized or shop-coated of oil, grease, dirt, loose mill scale, and other foreign substances by solvent or mechanical cleaning in accordance with SSPC SP-1.

1. Touch up shop-applied prime coats wherever damaged or bare, where required by other sections of these specifications.
   a. Clean and touch-up with same type shop primer.

E. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent such as Great Lakes Laboratories “Clean N’ Etch”, TSP, or an approved equal.

3.03 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.04 APPLICATION

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Paint colors, surface treatments, and finishes are indicated in "Schedules" of the Contract Documents.

2. Provide finish coats which are compatible with prime paints used.

3. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint, until paint film is of uniform finish, color, and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces. Dry film thickness will be measured according to SSPC PA-2.

4. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.

5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat non-specular black paint such as Sherwin-Williams: PM 400 Black, B30 or B400, Glidden Flat Black, or an approved equal.

6. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.

7. Finish exterior doors on tops, bottoms, and side edges same as exterior faces unless otherwise indicated.

8. Sand lightly between each succeeding enamel or varnish coat.

9. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted unless otherwise indicated.

B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer. Dry film thickness will be measured according to SSPC PA-2.

D. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in mechanical equipment rooms and in occupied spaces, and exposed exterior work that is not factory finish painted.

E. Prime Coats: Apply prime coat of material which is required to be painted or finished, and which has not been prime coated by others.

1. Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

F. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

G. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats unless otherwise indicated.

H. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.05 CLEAN-UP AND PROTECTION

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans, and rags at end of each work day.

1. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

B. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

1. Provide “Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

2. At the completion of work of other trades, touch up and restore all damaged or defaced painted surfaces.

3.06 ADJUST AND CLEAN

A. Clean surfaces of spills, splatters, drips and stains from painting application.

B. Replace and adjust finish hardware, accessories, fixtures and similar items removed from work.

C. Touch-up damaged paint surface prior to acceptance of building by the Owner. Mix or thin touch-up paint as recommended by the Manufacturer and blend into existing paint.

3.07 PAINT SYSTEMS

A. Paints listed are those of Glidden Professional unless noted otherwise, Sherwin-Williams, or an approved equal.
Painting subcontractor wishing to use other products must submit their "or equal" for review during the bidding process. Please note that ***colors have been selected***.

B. Exterior Coating Systems (Coating systems by manufacturers listed in part 2.01.A, or approved equal, shall be standard as systems specified below):

1. Ferrous Metals

Primer: 4160-1000 Devguard Multi-Purpose Tank & Structural Primer 2-2.5 DFT
1st Coat: 4160-1000 Devguard Multi-Purpose Tank & Structural Primer @ 2.0-2.5 mils dft
2nd Coat: 4308-0100 Devguard Alkyd Industrial Enamel @ 2.0-2.5 mils dft per coat
3rd Coat: 4308-0100 Devguard Alkyd Industrial Enamel @ 2.0-2.5 mils dft per coat

a. Typical Applications: Overhead doors and frames, steel doors and frames, piping, pipe railing, miscellaneous metals.

2. Zinc Coated Metals

Primer: 4160-1000 Devguard Multi-Purpose Tank & Structural Primer @ 2.0-2.5 mils dft
1st Coat: 4308-0100 Devguard Alkyd Industrial Enamel @ 2.0-2.5 mils dft per coat
2nd Coat: 4308-0100 Devguard Alkyd Industrial Enamel @ 2.0-2.5 mils dft per coat

3. Concrete Block

Provide clean and dulled surface for application of new paint as recommended by paint manufacturer.
1st Coat: 4000-1000 Bloxfil 4000 Heavy Duty Block Filler @ 7.0-14.5 mils dft
2nd Coat: 4206-0100 Devflex Interior/Exterior Waterborne Acrylic Semi-Gloss @ 1.5-2.0 mils dft
3rd Coat: 4206-0100 Devflex Interior/Exterior Waterborne Acrylic Semi-Gloss @ 1.5-2.0 mils dft

C. Interior Coating Systems (Coating systems by manufacturers listed in part 2.01.A, or approved equal, shall be standard as systems specified below):

1. Interior Ferrous Metal: Door Frames, Miscellaneous Metals: 2 coats of an all purpose industrial enamel, over a fast drying, rust inhibitive alkyd enamel.

   1st Coat: 4160-1000 Devguard Multi-Purpose Tank & Structural Primer @ 2.0-2.5 mils dft
   2nd Coat: 4308-0100 Devguard Alkyd Industrial Enamel @ 2.0-2.5 mils dft per coat
   3rd Coat: 4308-0100 Devguard Alkyd Industrial Enamel @ 2.0-2.5 mils dft per coat

2. Interior Gypsum Drywall (semi-gloss): 2 coats of an interior waterborne acrylic semi-gloss, durable and non-yellowing, over an interior vinyl acrylic latex wall primer.

   1st Coat: 1000-1200 Prep & Prime Interior Latex Wall Primer Sealer @ 1.2-1.5 mils dft
   2nd Coat: 1406-0100 Dulux Pro Premium Semi-Gloss Interior Enamel @ 1.5 mils dft
   3rd Coat: 1406-0100 Dulux Pro Premium Semi-Gloss Interior Enamel @ 1.5 mils dft

3. Interior Gypsum Drywall (flat): 2 coats of an interior latex flat, durable and non-yellowing, over an interior latex wall primer.
   Primer: 1000-1200 Prep & Prime Interior Latex Wall Primer Sealer @ 1.2-1.5 mils dft
   1st Coat: 1200-0100 Dulux Pro Premium Interior Flat Latex Finish @ 1.4-2.0 mils dft
   2nd Coat: 1200-0100 Dulux Pro Premium Interior Flat Latex Finish @ 1.4-2.0 mils dft

4. Interior Gypsum Drywall (eggshell): 2 coats of an interior latex eggshell, durable and non-yellowing, over an interior latex wall primer.

   Primer: 1000-1200 Prep & Prime Interior Latex Wall Primer Sealer @ 1.2-1.5 mils dft
   1st Coat: 1402-0100 Dulux Pro Premium Eggshell Enamel Finish @ 1.5 mils dft
   2nd Coat: 1402-0100 Dulux Pro Premium Eggshell Enamel Finish @ 1.5 mils dft

5. Galvanized Metal: 2 coats of an interior waterborne acrylic semi-gloss, durable and non yellowing
   1st Coat: 4020-0100 Deflex DTM Flat Interior/Exterior Primer & Finish @ 2.2-3.5 mils dft
   2nd Coat: 4216-0100 Devflex HP Waterborne Acrylic Semi-Gloss @ 1.5-4.0 mils dft

6. Aluminum: 2 coats of an interior waterborne acrylic semi-gloss, durable and non yellowing.
   1st Coat: 4216-0100 Devflex HP Waterborne Acrylic Semi-Gloss @ 1.5-4.0 mils dft
   2nd Coat: 4216-0100 Devflex HP Waterborne Acrylic Semi-Gloss @ 1.5-4.0 mils dft

7. Wood-Closed Grain: Stained: 2 coats of a satin waterborne polyurethane over an interior oil based stain.

   1st Coat: 1700-0000 WoodPride Interior Oil Wood Stain
   2nd Coat: 1802-0000 WoodPride Interior Aquacrylic Satin Varnish
   3rd Coat: 1802-0000 WoodPride Interior Aquacrylic Satin Varnish

8. Concrete Floors: 2 coats of waterbased coating, clear finish – #3214 Groundworks waterbased concrete sealer by Glidden Professional.
   Note: Concrete must cure 45 days. Smooth-troweled concrete must be etched with muriatic acid prior to finishing. Do not apply to areas scheduled to receive flooring.

END OF SECTION