

SECTION 09255

GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes: Work of this Section consists of installing all materials furnished under this Section, including all equipment, labor, services, and incidental items required to complete work as shown on Drawings and specified in this Section.

- 1. Steel-framing members to receive gypsum board for interior walls, partitions, ceilings, and soffits.
- 2. Gypsum board screw-attached to steel framing and furring members for interior walls, partitions, ceilings, and soffits.
- 3. Cement board screw-attached to steel framing and furring members to serve as base for vertical tile (provided by Section 09330).
- 4. Trim accessories.
- 5. Gypsum board joint treatment.
- 6. Miscellaneous accessories, including:
 - a. Joint reinforcement materials.
 - b. Acoustical sealant.
 - c. Steel drive screws.
 - d. Sound attenuation blankets.

- B. Related Sections:

- 1. 05400, "Cold-Formed Metal Framing"; for steel studs at exterior walls, C-shaped steel joists for floor and roof framing, gypsum sheathing, and air infiltration barrier.
- 2. 05500, "Metal Fabrications"; for joint covers installed in gypsum assemblies.
- 3. 06100, "Rough Carpentry"; for wood framing, furring, and blocking supporting gypsum assemblies.
- 4. 07210, "Building Insulation"; for thermal insulation in walls, ceilings, and attic spaces, and vapor barrier (retarder).
- 5. 07841, "Through-Penetrations Firestop Systems"; for fire-resistive penetration and joint systems in gypsum assemblies.
- 6. 09900, "Painting"; for field-applied coating applied to gypsum board.

1.03 SUBMITTALS

- A. Product Data: Submit product data from manufacturers for each type of product specified.

- B. Shop Drawings:

- 1. Submit shop drawings for special components and installations not fully dimensioned or detailed in manufacturer's product data.

2. Include placing drawings for framing members showing size and gage designations, number, type, location, and spacing.
3. Indicate supplemental strapping, bracing, splices, bridging accessories, and details required for proper installation.
4. Provide engineering calculations indicating actual metal thickness, profile depth, and span limits.

1.04 QUALITY ASSURANCE

A. Design Criteria:

1. Fire-resistance Rating:

- a. Where indicated, provide materials and construction that are identical to those of assemblies whose fire-resistance ratings has been determined per ASTM E119 by testing and inspecting organization acceptable to authorities having jurisdiction.
- b. Provide fire-resistance-rated assemblies identical to those indicated by reference to GA File Numbers in GA Fire Resistance Design Manual or to design designations in UL Fire Resistance Directory or in listing of other testing and agencies acceptable to authorities having jurisdiction.

- ##### B. Single Source Responsibility: Obtain gypsum board products from single manufacturer or from manufacturers recommended by prime manufacturer of gypsum board.

1.05 DELIVERY, STORAGE, AND HANDLING

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

B. Storage:

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

C. Handling:

1. Handle gypsum boards to prevent damage to edges, ends or surfaces.
2. Do not bend or damage metal corner beads and trim.

1.06 PROJECT CONDITIONS

- ##### A. Environmental Conditions: Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C840 and with gypsum board manufacturer's recommendations.

PART 2 - PRODUCTS

2.01 MATERIAL

A. Steel Framing Components – Suspended and Furred Ceilings:

1. General: Comply with ASTM C754 for conditions indicated using sheet steel complying with ASTM C645.

2. Wire Hangers: ASTM A641, Class 1 zinc coating, soft temper, min. 0.162 in. dia.
 3. Tie Wire: ASTM A641, Class 1 zinc coating, soft temper, 0.0625 in dia. Wire or double strand of 0.0475 dia. wire.
 4. Channels:
 - a. Cold-rolled steel, min. 0.0538 in. thickness of base (uncoated) metal and 1/2 in. wide flanges, protected with rust-inhibitive paint.
 - b. Carrying Channels: 2 in. deep.
 - c. Furring Channels: 3/4 in. deep.
 5. Steel Studs for Furring Channels: ASTM C645, Min. 0.0179 in. thickness, min. 1-5/8 in. depth.
 6. Steel Resilient Furring Channels: 1/2 in. deep members, hat-shaped, min. 0.0179 in. thick.
- B. Walls, Partitions, and Soffits:
1. Steel Studs and Runners: ASTM C645.
 - a. Walls, Partitions, and Soffits: Min. 0.027 in. thick, depth as indicated.
 - b. Fire Door Frame: Min. 0.0312 in. thick, depth as indicated, except use nested 0.0179 in. thick studs as alternate at standard weight doors.
 - c. Ceramic Tile Substrates: Min. 0.312 in. thick, depth as indicated.
 - d. Engineered framing for walls and partitions to max. L/360 limit deflection of completed assembly.
 2. Deep-Leg Deflection Track:
 - a. Provide for slip-joint at stud and top-track interface to avoid axial loading of partition for completed assembly crack control.
 - b. ASTM C645, top runner with 2 in. deep flanges; match stud thickness.
 3. Firestop Track:
 - a. Top runner to allow partition heads to expand and contract with structure movement and maintain continuity of fire-resistance-rated assembly.
 - b. Provide thickness to match studs with width as required for depth of studs.
 4. Fasteners: Provide fasteners of type, material, size, corrosion-resistance, holding power, and other properties requires to securely fasten steel framing and furring members to substrates involved; comply with recommendations of gypsum drywall manufacturer for application indicated.
- C. Gypsum Boards:
1. Regular-Type: ASTM C36, 5/8 in. thick, tapered long edges.
 2. Type X: ASTM C36, 5/8 in. thick, tapered long edges.
- D. Cementitious Backer Units:
1. ANSI A118.9, 1/2 in. thick.
 2. Product: Custom Building Products Model Wonderboard, FinPan Inc. Model Util-A-Crete Concrete Backer Board, United States Gypsum Co. Model Durock Cement Board.
- E. Trim Accessories: ASTM C1047, approved by gypsum board manufacturer.

1. Type: Galvanized steel sheet.
2. Shapes:
 - a. Corner Bead: Use at outside corners.
 - b. LC-Bead (J-Bead): Use at exposed panel edges.
 - c. Expansion (Control) Joints:

LOCATIONS	PROCEDURES
Ceilings	— Install in areas exceeding 2500 sq. ft. space max. 50 ft. o.c. — Install where ceiling framing or furring changes direction
Partitions	— Space max. 30 ft. o.c.
Furring	— Space max. 30 ft. o.c. — Install where control joints occur in base exterior wall

F. Gypsum Board Joint-Treatment Materials: Comply with ASTM C475.

G. Acoustical Sealant:

1. Nondrying, nonhardening, nonskinning, nonstaining, nongummy; synthetic rubber.
2. Product: Ohio Sealants Inc. Model Pro Series SC-170, Pecora Corp. Model BA-98, Tremco Inc. Model Tremco Acoustical Sealant.

H. Miscellaneous Materials:

1. General: Provide auxiliary materials for gypsum work of type and grade recommended by gypsum board manufacturer.
2. Sound Attenuation Blankets: Unfaced mineral fiber blanket insulation produced by combining mineral fibers manufactured from glass slag with thermosetting resins to comply with ASTM C665 for Type I (blankets without membrane facing).

PART 3 - EXECUTION

3.01 INSTALLATION

A. Steel Framing – General:

1. Steel Framing Installation Standard: Install steel framing to comply with ASTM C754 and C844 requirements that apply to framing installation.
2. Install supplementary framing, blocking, and bracing at terminations in gypsum board construction and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and recommendations of manufacturer or, if none available, with Gypsum Construction Handbook published by United States Gypsum Co.
3. Isolation:
 - a. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement, at locations indicated below to comply with details shown on Drawings.
 - b. Where edges of suspended ceiling abut building structure horizontally at ceiling perimeters or penetrations of structural elements.
 - c. Where partition and wall framing abuts overhead structure.
 - d. Provide slip- or cushioned-type joints as detailed to attain lateral support and avoid axial loading.

4. Do not bridge building expansion and control joints with steel framing or furring members; independently frame both sides of joints with framing and furring members or as indicated.

B. Steel Suspended Ceiling and Soffit Framing:

1. Install hangers plumb and free from contact with insulation or other objects with in ceiling plenum that are not of supporting structure or ceiling suspension system.
2. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other effective means.
3. Install supplemental suspension members and hangers in form of trapezes to eliminate interference with ducts or other construction.
4. Size supplemental members and hangers to support ceiling loads.
5. Installation Tolerances: Install steel framing components for suspended ceiling so cross-furring members are level to within 1/8 in. in 12 ft. as measured lengthwise on each member and transversely between parallel members.
6. Wire-tie or clip furring members to main runners and to other structural supports as indicated.
7. Install suspended components in sizes and spacing to limit deflection to L/240 with hangers and main runners max. 48 in. o.c., and furring members max. 16 in. o.c.

C. Steel Wall and Partition Framing:

1. Install runner (tracks) at floors, ceiling, and structural walls and columns where veneer plaster stud system abuts other construction.
2. Where studs are installed directly against exterior walls, install foam gasket strips between studs and wall.
3. Installation Tolerances: Install each steel framing and furring member so fastening surfaces do not vary more than 1/8 in. from plane of faces of adjacent framing.
4. Extend partition framing full-height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceiling.
5. Continue framing over frames for doors and openings, and frame around ducts penetrating partitions above ceiling to provide support for gypsum base.
6. Terminate partition framing at suspended ceiling where indicated.
7. Steel Studs and Furring:
 - a. Install in sizes and at spacing indicated, but not less than that required by referenced steel framing installation standard.
 - b. Single Layer Construction: 16 in. o.c.
 - c. Install steel studs so flange point in same direction and gypsum base can be installed in direction opposite to that of flange.
8. Door Openings:
 - a. Frame door openings to comply with details indicated or, if none indicated, in same manner as required for door openings.
 - b. Attach vertical studs at jambs with screws directly to frames or to jamb anchor clips on door frames.
 - c. Install runner track section (for cripple studs) at head and secure to jamb studs.
 - d. Extend vertical jamb studs through suspended ceilings, attach to underside of floor or roof structure above.
9. Openings Other Than Door Openings:
 - a. Frame to comply with details indicated or, if not indicated in same manner as required for door openings.

- b. Install framing below sills of openings to match framing required above door heads.

D. Gypsum Board Application and Finishing – General Requirements:

1. Gypsum Board Application and Finishing Standards: ASTM C840.
2. Install sound attenuation blankets as indicated before gypsum board, unless readily-installed after board has been installed.
3. Locate exposed end-butt joints as far from center of walls and ceiling as possible and stagger min. 24 in. in alternate courses of board.
4. Ceiling Boards:
 - a. Install ceiling boards across framing to minimize number of end-butt joints and avoid end joints in central area of each ceiling.
 - b. Stagger end joints min. 24 in.
5. Attach gypsum board to steel studs so leading edge or end of each board is attached to open (unsupported edge of stud flange first).
6. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.
7. Hollow Metal Door Frames:
 - a. Spot-grout hollow metal door frames for solid-core wood doors, hollow-metal doors, and doors over 32 in. wide.
 - b. Apply spot-grout at each jamb anchor clip just before inserting board into frame.
8. Space fasteners in gypsum boards in accordance with referenced standards and manufacturer's recommendations, except as otherwise indicated.

- E. Drywall Trim Accessories: Where feasible, use same fasteners to anchor trim accessory flanges as required to fasten gypsum board to supports or fasten flanges to comply with manufacturer's recommendations.

F. Drywall Finishing:

1. General:
 - a. Treat joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration.
 - b. Remove residual joint compound from adjacent surfaces as work progresses.
 - c. Prefill open joints and damaged surface areas.
 - d. Apply tape over joints, except at trim having flanges not intended for tape.
2. Ridging and Beading:
 - a. If ridging or beading at joints is visible with strong low-angle lighting (side lighting), lightly sand ridge down, taking care not to damage embedded joint reinforcing tape.
 - b. Fill surface over joint with taping compound as wide as necessary to create essentially plane surface.
 - c. After 24 hours of drying, lightly sand, as required, to feather edges and remove trowel marks.
 - d. If examination of joint with strong low-angle lighting reveals ridge is not concealed, apply additional feathering coats of joint compound until joint is acceptable to Architect.

- e. If ridging or beading is still visible after feathering, apply skim coat of joint compound over entire surface to eliminate effect of ridging or beading.
3. Gypsum Board Finish Levels: Finish gypsum board to levels indicated according to ASTM C840.
 - a. Level 1: Embed tape at joints in ceiling plenum areas and concealed areas, unless higher level finish is required for fire-resistance- rated assemblies and sound – rated assemblies.
 - b. Level 2: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where panels are substrate for tile (provided by Section 09300)
 - c. Level 3: Embed tape and apply separate first and fill coats of joint compound to tape, fasteners, and trim flanges for surfaces receiving medium- or heavy-texture finishes before painting where lighting conditions are not critical.
 - d. Level 4: Embed tape and apply separate first, fill and finish coats of joint compound to tape, fasteners, and trim at panel surfaces exposed-to-view and receiving flat or eggshell paint.
 - e. Level 5: Embed tape and apply separate first, fill and finish coats of joint compound to tape, fasteners, and trim flanges, and apply skim coat of joint compound over entire surface for surfaces receiving gloss and semigloss paint.

G. Texture Finish:

1. Surface Preparation and Primer:
 - a. Prepare and prime drywall and other surfaces in strict accordance with texture finish manufacturer's instructions.
 - b. Apply primer to all surfaces to achieve texture finish.
2. Finish Application: Mix and apply finish to drywall and other surfaces indicated to receive finish in strict accordance with manufacturer's instructions to produce uniform texture matching Architect's sample without starved spots or other evidence of thin application, and free of application patterns.
3. Remove any texture droppings or overspray from door frames, windows, and other adjoining construction.

END OF SECTION 09255

SECTION 09511
ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 WORK INCLUDED

- A. Provide suspended acoustical ceilings as indicated on Drawings and as specified. Work of this Section includes, but not limited to:
 - 1. Acoustical panel lay-in ceiling with exposed suspension system.

1.03 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that relate directly to work of this Section include, but are not limited to:
 - 1. Section 09255 GYPSUM BOARD ASSEMBLIES; Gypsum drywall ceilings and acoustical batt insulation.
 - 2. Division 15 MECHANICAL and Division 16 ELECTRICAL; Mechanical and electrical fixtures and appurtenances at acoustical ceilings, including independent suspension.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product data, specifications, standard details, installation instructions, use limitations and recommendations for each material used. Provide certifications that materials comply with specified requirements.
- B. Shop Drawings: Submit shop drawings of ceiling system including all components and special conditions including soffit construction and perimeter molding.
- C. Initial Selection Samples: Submit samples showing complete range of colors, textures and finishes available for each material used.
- D. Verification Samples: Submit representative samples of each material that is to be exposed in the finish work, showing full range of color and finish work showing full range of color variations expected. Provide minimum 12 in. x 12 in samples of each panel type. Provide minimum 12 in long samples of each exposed suspension systems.
- E. Test Reports: Submit certified reports of tests required.
- F. Fire Rated Assemblies: Where UL design assemblies are indicated as part of floor/ceiling or roof ceiling construction, provide substantiating data and certificates from the ceiling manufacturer that the acoustical ceiling system components provided as part of that assembly have been tested and meet the requirements contained in UL Fire Resistance Directory or are otherwise suitable as part of the indicated Design Assembly..

1.05 QUALITY ASSURANCE

- A. Comply with governing laws and building codes and the requirements of CISCA Handbook and ASTM C 636.

- B. Installer: A firm with minimum three years experience in work of type required by this Section, and which is authorized, certified or licensed by the manufacturers of the primary materials.
- C. Source: For each type of material required for the work of this Section, provide primary materials which are the products of a single manufacturer. Provide secondary materials which are acceptable to the manufacturer of the primary materials.
- D. All Ceiling panels will be from the same run at production facility and shall be manufactured within acceptable tolerances for color consistency.

1.06 TESTS

- A. Fire-Resistance: Where fire-resistance ratings are indicated or required by authorities having jurisdiction, provide materials and construction which are identical to assemblies whose fire resistance ratings have been tested in compliance with ASTM E 119 by independent agencies acceptable to the Architect and authorities having jurisdiction.
- B. Surface-Burning Characteristics: Provide materials whose surface-burning characteristics when tested in compliance with ASTM E 84 for Class A.
- C. Noise Reduction Coefficient (NRC): Where NRC ratings are indicated or required by authorities having jurisdiction, provide materials and construction which are identical to assemblies whose NRC ratings have been tested in compliance with ASTM C 423 by independent agencies acceptable to the Architect and authorities having jurisdiction.
 - 1. All acoustical ceiling systems shall provide a NRC of 0.70 or higher.
- D. Ceiling Attenuation Class (CAC): Where CAC ratings are indicated or required by authorities having jurisdiction, provide materials and construction which are identical to assemblies whose CAC ratings have been tested in compliance with ASTM E 1414 by Underwriters Laboratories, Inc.
- E. Light Reflectance (LR): Where LR rating is indicated or required by authorities having jurisdiction, provide materials and construction which are identical to assemblies whose LR rating has been tested in compliance with ASTM C 523 by independent agencies acceptable to the Architect and authorities having jurisdiction.

1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers or bundles bearing manufacturer's name, brand names, type of material and contents.
- B. Store materials in interior spaces, above floors, under cover, away from sweating walls and other damp surfaces. Provide ventilation.

1.08 PROJECT CONDITIONS, SEQUENCING AND SCHEDULING

- A. Environmental: Perform work only when temperature and humidity conditions are within the limits established by manufacturers of the materials and products used.
- B. Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.
 - 1. Proceed with installation of ceiling only when construction above ceilings and penetrating work is complete. Delay installation of ceiling tiles or panels until neat time of Substantial Completion.

2. Perform work of this Section coordinated with the layout of light fixtures, HVAC equipment and fixtures, fire suppression system components and all other related work. In general, every penetration shall occur at the center of a ceiling tile or panel.

1.09 EXTRA MATERIALS

- A. Provide packaged, wrapped and labeled maintenance stock equal to 2% of the actual quantity installed (minimum of one box of panels) for the following items of work:
 1. Each Type of Ceiling Panel.
 2. Each Type of Suspension System Component.
 3. Each Type of Trim Component.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Acoustical Ceiling Suspension System: Provide products of the following manufacturer that meet or exceed requirements specified:
 1. Armstrong World Industries, Inc. (Armstrong).
 2. Chicago Metallic Corp.
 3. USG Interiors, Inc. (USG).
- B. Acoustical Ceiling Panels: Provide products of the following manufacturer that meet or exceed requirements specified:
 1. Armstrong World Industries, Inc. (Armstrong).
 2. USG Interiors, Inc. (USG).
 3. Certainteed

2.02 SUSPENSION SYSTEM

- A. Provide ceiling suspension system of the following manufacturer that meet or exceed requirements specified, or approved equal from one of the specified manufacturers:
 1. Armstrong
- B. Exposed Suspension Systems – General
 1. Where a fire rated assembly is indicated, provide a fire rated ceiling suspension system manufactured by one of the above named manufacturers.
 2. Provide grid modules to match ceiling panel sizes.
 3. Unless otherwise indicated, provide manufacturer's standard white baked enamel finish on steel exposed surfaces.
- C. Suspension System Types: Provide the following suspension system types:
 1. Suspension System for Acoustical Ceiling ACT: 15/16-inch hot dipped galvanized steel suspension system with Aluminum Cap, 2ft x 4 ft equal to Armstrong Prelude Plus XL Suspension System., manufactured by Armstrong as approved by the Architect.
 - a. Suspension system shall comply with ASTM C 635 for "Intermediate-Duty System".
 - b. Provide manufacturer's baked enamel finish on exposed surfaces; color shall be "White".

- D. Attachment Devices: Provide attachment devices sized for five times design load indicated by ASTM C 635, Table 1, for Direct Hung.
- E. Hanger Wire: ASTM A 641 galvanized, soft temper, prestretched, Class 1 coating, minimum 12 gage. Size wire so that stress at 3 times hanger design load given ASTM C 635, Table 1, Direct Hung will be less than yield stress of wire.
- F. Moldings and Trim: Provide manufacturer's standard profiles to suit edge conditions, panel profile and penetrations.
 - 1. At ceiling perimeters provide Armstrong's 'Shadow Molding' matching suspension system finish.

2.03 ACOUSTICAL PANEL

- A. Provide ceiling panel products of the following manufacturer that meet or exceed requirements specified, or approved equal from one of the specified manufacturers:
 - 1. Acoustical Ceiling Panel Type 1: 24 inch x48 inch panel x 5/8 in thick, lay in wet formed mineral fiber panel with DuraBrite acoustically transparent membrane and fine texture, equal to Armstrong World Industries "Cortega", Armstrong Item No. 761, or approved equal. Panel shall have the following characteristics:
 - a. Light Reflectance: LR 0.82 according to ASTM E 1477..
 - b. Flame Spread Rating: Class A (UL Labeled) according to ASTM E 84.
 - c. Noise Reduction Coefficient (NRC): 0.55 according to ASTM C 423.
 - d. CAC: 35.
 - e. Color: White.

PART 3 - EXECUTION

3.01 INSPECTION

- A. The Installer shall examine substrates, supports, and conditions, under which this work will be performed and notify Contractor in writing, of conditions detrimental to proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work means Installer accepts substrates and conditions.

3.02 PREPARATION AND INSTALLATION - GENERAL

- A. General: Strictly comply with manufacturer's recommendations and instructions.
- B. Conditioning: Condition acoustical ceiling materials to temperature and humidity conditions which approximate those that will be present when spaces are occupied by unpackaging and separating material at least 24 hours prior to installation.
- C. Exterior doors and windows shall be in place and glazed prior to ceiling installation. Cleaning, concrete, masonry. Plaster and other "wet work" shall be complete and dry. A minimum temperature of 65°F shall be maintained before, during and after the installation of acoustical work.
- D. Coordination: Coordinate installation with other work to ensure proper locations of related work such as light fixtures, mechanical fixtures, fire protection systems and the like.
- E. Layout: Measure each area and layout ceilings to balance panel widths on opposite edges of each ceiling in both directions. Avoid use of less-than-half-width ceiling units whenever possible.

- F. Suspension Installation: Erect suspension system in accordance with ASTM C 636, supported only from building structure. Level main suspension members to within tolerance of 1/8 inch in 10 foot. Splay hangers only where necessary and countersplay to balance resulting horizontal forces. Cross brace suspension to prevent lateral sway and displacement during full seismic loads prescribed by code.
- G. Install acoustical ceiling units flush and level with joints in perfect alignment. Maintain direction of pattern and "mill-run" of acoustical units in one direction.
- H. Finish acoustical ceilings and decorative trim shall be level to within 1/8 inch in 10 ft with total accumulated error not to exceed 1/2 in or L/960 of overall ceiling dimension, whichever is smaller, in any room or area.
- I. Use white, clean gloves when handling ceiling materials.

3.03 INSTALLATION OF SUSPENDED EXPOSED "TEE" LAY-IN PANEL SYSTEM

- A. Install exposed "Tee" suspension system where indicated, in accordance with ASTM C 635.
- B. Secure hanger anchors to structure above areas to receive "Tee" suspension grid, locating the hangers in rows directly above exposed main "Tees". Install main "Tees" at proper elevations with manufacturer's recommended ties. Install cross "Tees" 2 ft. on center, developing a 2 ft x 4 ft grid as indicated. Install wall moldings at perimeter walls and columns where main or cross "tees" do not occur, or as otherwise called for on the Drawings. Miter corners where wall molding intersect or install corner caps.
- C. Perimeter Molding: Install Shadow Molding at perimeter as indicated in accordance with manufacturer's recommendations.
- D. After installation of the exposed "Tee" suspension system, install acoustical panels flush and level, with panel grain in single direction. Where field cuts are made, cut panel to match factory edge and touch-up panel edge with manufacturer's supplied coating to match factory sealing panel finish.

3.04 CLEANING

- A. Protect the work of other trades and work this Section already installed against soiling and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged or soiled.

END OF SECTION 09511

SECTION 09650
RESILIENT FLOORING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 WORK INCLUDED

- A. Provide resilient flooring and related items, as indicated on Drawings and as specified herein. Work of this Section includes, but is not limited to:
 - 1. Vinyl composition tile flooring at scheduled floors
 - 2. Vinyl wall base as scheduled.
 - 3. Mastics and leveling compounds.

1.03 RELATED WORK

- A. Examine Contract Documents for requirements that affect Work of this Section.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's printed product data, specifications, standard details, installation instructions, use limitations and recommendations for each material used. Provide certifications that materials and systems comply with specified requirements.
 - 1. Certification by tile manufacturer that products supplied for tile installation comply with local regulations controlling use of volatile organic compounds (VOC's).
- B. Initial Selection Samples: Submit samples showing complete range of colors, textures and finishes available for each material used.
- C. Verification Samples: Submit representative samples of each material that is to be exposed in the completed work. Show full range of color and finish variations expected. Provide samples having minimum size of 144 sq. in.
- D. Provide certificates, in lieu of laboratory test reports when permitted by Architect, signed by manufacturer certifying that each product complies with requirements.
- E. Maintenance data for resilient flooring and base, to include in Operating and Maintenance Manual specified in Section 01770, CLOSEOUT PROCEDURES.
- F. Submit results of moisture and bond tests of concrete slab substrates.

1.05 QUALITY ASSURANCE

- A. Single-Source Responsibility for Resilient Flooring: Obtain each type, color and pattern of sheet vinyl from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of Work.
- B. Fire Performance Characteristics: Provide resilient flooring with the following fire performance characteristics as determined by testing products per ASTM test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Critical Radiant Flux: 0.45 watts per sq. cm or more per ASTM E 648.

2. Smoke Density: Less than 450 per ASTM E 662.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver resilient flooring, and installation accessories to Project site in original manufacturer's unopened cartons and containers each bearing names of product and manufacturer, Project identification and shipping and handling instructions.
- B. Store flooring materials in dry spaces protected from the weather with ambient temperatures maintained between 50 deg F and 90 deg F.
- C. Store resilient flooring on flat surfaces. Move floor materials and installation accessories into spaces where they will be installed at least 48 to 72 hours in advance of installation.

1.07 PROJECT CONDITIONS

- A. Maintain a minimum temperature of 70 deg F in spaces to receive tiles for at least 48 hours prior to installation, and not less than 48 hours after installation. After this period, maintain a temperature of not less than 55 deg F.
- B. Do not install resilient flooring materials until they are at the same temperature as the space where they are to be installed.
- C. Maintain relative humidity in spaces to receive resilient flooring before, during and after installation within the range recommended by manufacturer.
- D. Close spaces to traffic during resilient flooring installation.

1.08 COORDINATING, SEQUENCING AND SCHEDULING

- A. Coordinate work of this Section with work of other Sections affecting, or affected by, this work, as necessary to ensure completion of work of the Contract on schedule.
- B. Install resilient flooring and accessories after other finishing operations, including painting, have been completed.
- C. Do not install flooring over concrete slabs until the slabs have cured and are sufficiently dry to bond with adhesive as determined by the tile manufacturer's recommended bond and moisture test.

1.09 EXTRA MATERIALS

- A. Deliver extra materials to Owner. Furnish extra materials matching products installed as described below, packaged with protective covering for storage and identified with labels clearly describing contents.
 1. Furnish not less than one box of each 50 boxes or fraction thereof, of each class, wearing surface, color, pattern and size of resilient floor tile products installed.
 2. Furnish not less than one box of each 50 boxes or fraction thereof, of each class, wearing surface, color, pattern and size of resilient wall base installed.

1.10 WARRANTY

- A. Provide manufacturer's warranty against excessive wear in accordance with the following:
 1. Vinyl Composition Tile Flooring: Five year limited warranty
 2. Vinyl Wall Base: Two year limited warranty.

PART 2 - PRODUCTS

2.01 GENERAL MATERIAL REQUIREMENTS

- A. Resilient materials shall be uniform in thickness and size.
- B. Resilient material shall be cut accurately with square, true edges.
- C. Plain colors shall be uniform throughout.
- D. Variegated colors and patterns shall be reasonably uniform so as not to mar appearances of floor.
- E. Except as otherwise indicated or specified, all colors shall be selected by the Architect from the full range of manufacturer's standard colors.
- F. Resilient materials shall be free of objectionable odors, blisters, cracks, objectionable foreign material, or other physical defects affecting appearance or serviceability.

2.02 VINYL WALL BASE

- A. Acceptable Manufacturer: Provide products of the following manufacturers that meet or exceed specified requirements:
 - 1. Johnsonite.
- B. Vinyl Wall Base: Provide vinyl wall base conforming to ASTM F 1861, with matching end stops, and premolded corner units, and as follows:
 - 1. Height: Base height shall be 4 inch.
 - 2. Thickness: 1/8 inch.
 - 3. Style: Top-set cove type.
 - 4. Finish: Matte.
- C. Vinyl Base Types: Refer to Drawings.

2.03 ADHESIVES, MASTIC UNDERLAYMENTS, CRACK FILLERS AND PRIMERS

- A. Adhesives shall be water resistant type and brand recommended by manufacturer for each of the various conditions and flooring materials. Where manufacturer lists more than one recommended adhesive, manufacturer's "preferred choice" shall be used.
- B. Mastic underlayment for use at concrete floors shall be as recommended by flooring manufacturer.
 - 1. Mastic underlayment for flooring shall be latex-modified Portland-cement based formulation equal to allied "Lev-L-Astic Underlayment and Patching Compound", manufactured by Minwax Construction Products Division; Armstrong "S-180 Latex Underlayment"; Selby, Battersby & Co. "Levelite-Latex"; or approved equal as approved by the Architect.
- C. Crack filler shall be as recommended by flooring manufacturer, and equal to Armstrong "S-190", or Amtico "Crack Filler", as approved by the Architect.
- D. Primers for use for all the various conditions and materials shall be non-staining type as recommended by manufacturer of each specific material for each specific application.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. General: Examine areas where installation of resilient flooring will occur, with installer present, to verify that substrates and conditions are satisfactory for resilient flooring installation and comply with flooring manufacturer's requirements and those specified in this Section.
- B. Inspect subfloor surfaces to receive resilient flooring to determine if they are free of cracks, holes, ridges, coatings preventing adhesive bond, and other defects impairing performance or appearance.
- C. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
 - 1. 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 by performing bond and moisture tests recommended by flooring manufacturer.
 - 2. Finishes of subfloors comply with tolerances and other requirements of resilient flooring manufacturer.
 - 3. Subfloors are free of cracks, holes, ridges, depressions, scale and foreign deposits of any kind.
- D. Perform alkalinity, bond, and moisture tests on concrete subfloors to determine sufficient curing and drying and to ascertain presence of curing compounds. Tests shall be performed simultaneously and test areas shall not be concentrated but located in various parts of the installation area. One unit shall be placed in the center and others at the perimeter but no closer than 5 feet from the edge of the area. There shall be one test for the first 2,000 sq. ft. and one test for each additional 1,000 sq. ft.
 - 1. Test concrete subfloors using the manufacturer's moisture detection test kit and in accordance with manufacturer's recommendations and ASTM F 1869. The concrete subfloors may also be tested using the Quantitative Calcium Chloride (RMA) Moisture Test in accordance with the manufacturer's instructions. Maximum acceptable moisture emission level shall be 3.0 pounds per 1,000 square feet per 24 hours.
 - 2. Perform alkalinity tests using pH Paper Test or the Phenolphthalein Test. Acceptable readings are 5 to 9 on the pH scale. If pH readings are above 9, neutralize the subfloor following flooring manufacturer's instructions.
 - 3. Perform bond tests in accordance with manufacturer's recommendations. Curing and parting compounds used on the subfloor shall be removed and a primer shall be applied following the flooring manufacturer's instructions. Comply with the requirements of ASTM F 710.
- E. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION OF SURFACES

- A. Initial Preparation Under Other Sections:
 - 1. Surfaces to receive resilient materials shall be level, plumb, true and clean, free of projections, ridges and waves and free of loose dirt, grease, oil and other deleterious materials such as resin type curing compounds, paint, glue and similar materials, ready to receive work of this Section. Filling of cracks with crack filler, as required, however, will be included as part of this Section.
 - 2. Surfaces of concrete floor slabs to which resilient flooring is to be applied shall be finished to tolerance recommended by resilient flooring manufacturer.

3. When variation in finished surface exceeds allowable amount specified therein, it shall be brought within the allowable tolerance with latex type underlayment applied in strict accordance with manufacturer's instructions.
- B. Inspection of Surfaces and Final Preparation under this Section:
1. Thoroughly examine all surfaces to receive work of this Section, and notify the Architect in writing of all conditions which would adversely affect this work. Do not commence work in any area where such notice of adverse conditions has been sent until corrective work has been completed or waived. Start of work in any area without issuance of such notice shall constitute acceptance of conditions in the area as suitable to properly receive the work of this Section.
 2. Fill all cracks, control joints, etc., in sub-surfaces, using approved Crack Filler in accordance with manufacturer's published instructions. Do final cleaning of surfaces just prior to installation, removing all dust, dirt and other loose particles which may have accumulated since initial cleaning.
 3. Allow concrete slabs to dry adequately before commencing application of flooring materials, checking the moisture content, if necessary, by means of primer tests, relative humidity tests or mat moisture and bonding tests, all such tests being at the option of the Contractor, although the Architect may require any such tests to be done by the Contractor at the Contractor's expense, if he wished to verify or record the moisture conditions.
- C. General: Comply with manufacturer's installation specifications to prepare substrates indicated to receive resilient flooring.
- D. Use trowelable leveling and patching compounds per tile manufacturer's directions to fill cracks, holes, and depressions in substrates.
- E. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil or silicone by using a terrazzo or concrete grinder, a drum sander or a polishing machine equipped with a heavy-duty wire brush.
- F. Broom or vacuum clean substrates to be covered by tiles immediately before tile installation. Following cleaning, examine substrates for moisture, alkaline salts, carbonation or dust.
- G. Apply concrete slab primer, if recommended by flooring manufacturer, prior to applying adhesive. Apply according to manufacturer's directions.

3.03 INSTALLATION, GENERAL

- A. Do not begin installation until work of other sections including painting, is substantially complete. Use only experienced workmen. Strictly adhere to printed instructions of manufacturer's of various materials; if found to be in conflict refer to Architect for decision.
- B. Maintain room temperatures in installation areas at not less than 65 deg F for a period of at least 48 hours prior to commencement of tile work, and to at least 48 hours after completion, and not less than 60 deg F from that time on.
- C. Lay resilient materials in manner to insure good, uniform contact with substrate materials and to produce finished surfaces which are smooth, even, and in true planes, free of buckles, waves and other imperfections. Store and use adhesives in accordance with manufacturer's published instructions.
- D. Where different colors of resilient flooring occur in adjoining rooms or areas and not threshold is called for, install feature strip under door or across center of doorless opening, of color selected by the Architect.

- E. Fit flooring neatly into breaks and recesses, against bases and thresholds and around pipes, columns and other projections. Cut, fit and scribe borders after application of field tile.
- F. Install edge stripes where resilient flooring materials terminate at points higher than contiguous finished flooring.
- G. Clean off surplus adhesive from resilient materials and adjacent surfaces.

END OF SECTION 09650

SECTION 09900

PAINTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes: Work of this Section consists of installing all materials furnished under this Section, including all equipment, labor, services, and incidental items required to complete work as shown on Drawings and specified in this Section.

1. Surface preparation, painting, and finishing of exposed interior and exterior items and surfaces whether new or existing surfaces with existing surfaces prepared, painted, and finished to extent indicated in Section 01731 and scheduled on Drawings.
2. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified under other Sections.
3. Surface preparation includes all necessary work specified in this Section and required to provide surface suitable for application of primers, emulsions, opaque paints, enamel paints, transparent coatings, sealers fillers, stains, waxes, and other applied materials whether used as prime, intermediate, or finish coats applied.
4. Exposed Surfaces:
 - a. Where item or surface is not specifically mentioned, paint same as similar adjacent materials or surfaces.
 - b. If color or finish is not designated, Architect will select from standard colors or finishes available.
5. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.

B. Definitions:

1. Paint includes coating systems materials, primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate, or finish coats.
2. Standard Coating Terms: As defined in ASTM D16 apply to this Section.
 - a. Flat: Refers to lusterless or matte finish with gloss range below 15 when measured at 85 deg. meter.
 - b. Eggshell (Low Luster): Refer to low-sheen finish with gloss range between 15 and 35 when measured at 85 deg. meter.
 - c. Satin: Refer to low-sheen finish with gloss range between 15 and 35 when measured at 60 deg. meter.
 - d. Semigloss: Refer to medium sheen finish with gloss range between 30 and 65 when measured at 60 deg. meter.
 - e. Full-Gloss: Refers to high sheen finish with gloss range more than 65 when measured at 60 deg. meter.

1.03 SUBMITTALS

- A. Product Data: Provide for each paint system specified.
1. Material List:
 - a. List each material and cross-reference specific coating and finish system and application.
 - b. Identify each material by manufacturer's catalog number and general classification.
 2. Manufacturer's Information: Manufacturer's technical information, label analysis, and instructions for handling, storage, and application of each material proposed for use.
 3. Certification: Submit notarized certificates by manufacturer stating products comply with local regulations controlling use of volatile organic compounds (VOCs).
- B. Samples for Verification Purposes:
1. Provide samples of each color and material to be applied, with texture to simulate actual conditions on representative samples of actual substrate.
 2. Use representative colors when preparing samples for review.
 3. Resubmit until required sheen, color, and texture are achieved.
 4. Provide list of material and application for each coat of each sample.
 5. Label each sample as to location and application.

1.04 QUALITY ASSURANCE

- A. Qualifications - Applicator: Engage experienced applicator who has completed painting system applications similar in material and extent to those indicated for Project resulting in construction record of successful in-service performance.
- B. Single-Source Responsibility: Provide primers and undercoat paint produced by same manufacturer as finish coats.
- C. Field Samples:
1. On wall surfaces and other exterior and interior components, duplicate finishes of prepared samples.
 2. Provide full-coat finish samples on min. 100 sq. ft. of surface until required sheen, color and texture are obtained.
 3. Simulate finished lighting conditions for review of in-place work.
 4. Final acceptance of colors will be from job-applied samples.
 5. Architect will select one room or surface to represent surfaces and conditions for each type of coating and substrate to be painted.
 6. Apply coatings in this room or surface in accordance with Schedule, or as specified.
 7. After finishes are accepted, this room or surface will be used for evaluation of coating systems of similar nature.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to job site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and following information:
1. Product name or title of material.
 2. Product description (general classification or binder-type).
 3. Manufacturer's stock number and date of manufacture.
 4. Contents by volume, for pigment and vehicle constituents.
 5. Thinning instructions.

6. Application instructions.
7. Color name and number.

B. Storage:

1. Store materials not in use in tightly covered containers in well-ventilated areas at min. 45 deg F ambient temperature.
2. Maintain used containers in storage in clean condition, free of foreign materials and residue.
3. Protect from freezing.
4. Keep storage area neat and orderly.
5. Remove oily rags and waste daily.
6. Take necessary measures to ensure workers and work areas are adequately protected from fire and health hazards resulting from handling, mixing, and application.

1.06 PROJECT CONDITIONS

A. Environmental Requirements:

1. Apply water-based paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F.
2. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or to damp or wet surfaces unless otherwise permitted by paint manufacturer's printed instructions.
3. 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.

1.07 EXTRA MATERIALS

- A. Furnish extra paint materials from same production run as applied materials.
- B. Package paint materials in unopened, factory-sealed containers for storage, complete with labels describing contents including additional label identifying color name and number and rooms and surfaces where applied.
- C. Deliver extra materials to Owner.
- D. Quantity: Furnish Owner with additional 5 percent of each material and color applied, but not less than 1 gal. or case, as appropriate.

1.08 Record Document Submittal

- A. Product Data: Provide for each paint, specified and all approved substitutes.
 1. Material list
 - a. List each material and cross reference specific coating and finish system and application.
 - b. Identify each material by manufacturer's catalog number and general classification.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Standard Architectural Opaque and Transparent Finish Coating: Benjamin Moore and Co., ICI Dulux, Sherwin Williams.

2.02 MATERIALS

- A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- B. Materials Quality: Paint material containers not displaying manufacturer's product identification will not be acceptable.
- C. Colors:
 - 1. Tint primers and undercoats to approximate shade of selected finish coat color.
 - 2. For deep-tone finish colors, use Deep-Base Primers recommended by manufacturer for surface.
 - 3. Color selections:
 - a. If color is not listed for specific area or item, it does not relieve Contractor of responsibility for providing colors to be selected.
 - b. Color selection made by Architect is to determine basic color required for surface.
 - c. Colors with same designation but produced from two or more sources shall match when viewed from a distance of 24 in. or more.
 - d. Final application of colors shall match prepared samples approved by Architect.

PART 3 - EXECUTION

3.01 PREPARATION

- A. General:
 - 1. Remove hardware and hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place not to be painted or provide surface-applied protection before surface preparation and painting.
 - 2. Remove items if necessary for complete painting of items and adjacent surfaces.
 - 3. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
- B. Cleaning:
 - 1. Before applying paint or other surface treatments, clean substrates of substances that could impair bond of various coatings.
 - 2. Remove oil and grease before cleaning.
 - 3. Schedule cleaning and painting so dust and other contaminants from cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation:
 - 1. Clean and prepare surfaces to be painted in accordance with manufacturer's instructions for each particular substrate condition and as specified.
 - 2. Provide barrier coats over incompatible primers or remove and reprime.
 - 3. Notify Architect in writing of problems anticipated with using specified finish-coat material with substrates primed by others.
- D. Materials Preparation:
 - 1. Mix and prepare painting materials in accordance with manufacturer's directions; use only thinners approved by paint manufacturer, and only within recommended limits.

2. Maintain containers used in mixing and application of paint in clean condition, free of foreign materials and residue.
3. Stir materials before application to produce mixture of uniform density, and stir as required during application.
4. Do not stir surface film into material.
5. Remove film and, if necessary, strain material before using.

E. Tinting:

1. Tint each undercoat lighter shade to facilitate identification of each coat where multiple coats of same material are applied.
2. Tint undercoats to match color of finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.02 APPLICATION

A. General:

1. Apply paints according to manufacturer's directions.
2. Use applicators and techniques best suited for substrate and type of material being applied.
3. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of durable paint film.
4. Provide finish coats compatible with prime paints used.
5. Number of coats and film thickness required is same regardless of application method.
6. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
7. Sand between applications where sanding is required to produce even, smooth surface in accordance with manufacturer's direction.
8. 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.
9. Ensure surfaces, including edges, corners, crevices, welds, and exposed fasteners receive dry film thickness equivalent to that of flat surfaces.
10. Term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place; extend coatings in these areas as required to maintain system integrity and provide desired protection.

B. Scheduling Painting:

1. 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.
2. Allow sufficient time between successive coatings to permit proper drying.
3. 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 undercoat.

C. Application Procedures:

1. Apply paints and coatings by brush, roller, spray, or other applications according to manufacturer's directions.
2. Brushes: Use brushes best suited for material being applied.
3. Rollers: Use rollers of carpet, velvet back, or high, pile sheep's wool as recommended by manufacturer for material and texture required.
4. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.

D. Minimum Coating Thickness:

1. Apply materials at not less than manufacturer's recommended spreading rate.
2. Provide total dry film thickness of entire system as recommended by manufacturer.

E. Block Fillers: Apply block fillers to concrete masonry block at rate to ensure complete coverage with pores filled.

F. Prime Coats:

1. Before application of finish coats, apply prime coat of material required to be painted or finished, and that has not been prime coated by others.
2. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure finish coat with no burn-through or other defects due to insufficient sealing.

G. Stipple Enamel Finish:

1. Roll and redistribute paint to even and fine texture.
2. Leave no evidence of rolling such as laps, irregularities in texture, skid marks, or other surface imperfections.

H. Pigmented (Opaque) Finishes:

1. Completely cover to provide opaque, smooth surface of uniform finish, color appearance and coverage.
2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

I. Transparent (Clear) Finishes:

1. Use multiple coats to produce glass-smooth surface film of even luster.
2. Provide finish free of laps, cloudiness, color irregularities, runs, brush marks, orange peel, nail holes, other surface imperfections.
3. Provide satin finish for final coats, unless otherwise indicated.

J. Completed Work:

1. Match approved samples for color, texture, and coverage.
2. Remove, refinish or repaint work not in compliance with specified requirements.

3.03 FIELD QUALITY CONTROL

A. Testing:

1. Owner reserves the right to invoke the following material testing procedure at any time, and any number of times, during period of field painting.:
2. Owner will engage the service of independent testing laboratory to sample materials being used.
3. Samples of materials delivered to project site will be taken, identified, sealed, and certified in presence of Contractor.
4. Testing laboratory will perform appropriate tests for following characteristics, as required by Owner:
 - a. Quantitative materials analysis.
 - b. Abrasion-resistance.
 - c. Apparent reflectivity.
 - d. Flexibility.
 - e. Washability.
 - f. Absorption.
 - g. Accelerated weathering.
 - h. Dry opacity.
 - i. Accelerated yellowness.
 - j. Recoating.
 - k. Skinning.
 - l. Alkali and mildew-resistance.
5. If test results show materials being used do not comply with specified requirements Contractor may be directed to stop work and remove noncomplying materials, pay for testing, recoat surfaces coated with rejected materials and remove rejected materials from previously painted surfaces if, on recoating with specified materials, the two coatings are incompatible.

3.04 CLEANING AND PROTECTION

A. Clean-Up:

1. At end of each workday, remove from site discarded paint materials, rubbish, cans and rags.
2. On completion of painting work, clean window glass and other paint-spattered surfaces.
3. Remove spattered paints by proper methods of washing, and scraping using care not to scratch or otherwise damage finished surfaces.

B. Protection:

1. Protect work of other trades whether or not to be painted, against damage painting and finishing work.
2. Correct any damage by cleaning, repairing, or replacing, and repainting, as acceptable to Architect.
3. Provide WET PAINT signs as required to protect newly-painted finishes.
4. After completion of painting operations, remove temporary protective wrapping provided by others for protection of their work.
5. At completion of work of other trades, touch up and restore damaged or defaced painted surfaces.

3.05 EXTERIOR STANDARD ARCHITECTURAL OPAQUE AND TRANSPARENT FINISH COATINGS

A. General:

1. Following finish coatings schedule is based on product of Benjamin Moore to establish minimum quality of coatings.
2. Equal or better products of ICI Dulux or Sherwin Williams are acceptable when supporting technical data is submitted in compliance with requirements of Section 01600.
3. Provide primers and undercoat coatings produced by same manufacturer as finish coats.

B. Galvanized Metal:

1. Opaque-Painted – Soft-Gloss Finish:
 - a. System: 2 finish coats over primer coat.
 - b. Primer Coat: BM IronClad Galvanized Metal Primer #155.
 - c. First and Second Finish Coats: BM MoorGlo Latex House and Trim Paint #096.

3.06 INTERIOR STANDARD ARCHITECTURAL OPAQUE AND TRANSPARENT FINISH COATINGS

A. GENERAL:

1. Following finish coatings schedule is based on product of Benjamin Moore to establish minimum quality of coatings.
2. Equal or better products of ICI Dulux or Sherwin Williams are acceptable when supporting technical data is submitted in compliance with requirements of Section 01600.
3. Provide primers and undercoat coatings produced by same manufacturer as finish coats.

B. Wood:

1. Opaque-Painted – Semi-Gloss Finish:
 - a. System: 2 finish coats over primer coat.
 - b. Primer Coat: BM Regal First Coat #216.
 - c. First and Second Finish Coats: BM Regal AquaGlo #333.
2. Transparent-Varnished – Clear Low-Luster Finish:
 - a. System: 2 finish coats over paste wood filler and penetrating stain.
 - b. Paste Wood Filler: BM Benwood Paste Wood Filler #238
 - c. Penetrating Stain: BM Moore's Interior Wood Finishes Penetrating Stain #234.
 - d. First and Second Finish Coats: BM Moore's Interior Wood Finishes Latex Urethane Acrylic Finish #416.

C. Drywall:

1. Opaque-Painted – Flat Acrylic Finish:
 - a. Surfaces: Ceilings, soffits.
 - b. System: 2 finish coats over primer coat.
 - c. Primer Coat: BM Regal First Coat #216.
 - d. First and Second Finish Coats: BM Regal Wall Satin #215.
2. Opaque-Painted – Low Luster, Acrylic Enamel Finish:
 - a. Surfaces: Walls

- b. System: 2 finish coats over primer coat.
 - c. Primer Coat: BM Regal First Coat #216.
 - d. First and Second Finish Coats: BM Regal AquaVelvet #319.
 3. Opaque-Painted – Semigloss, Acrylic Enamel Finish:
 - a. Surfaces: Bathrooms, kitchens
 - b. System: 2 finish coats over primer coat.
 - c. Primer Coat: BM Regal First Coat #216.
 - d. First and Second Finish Coats: BM Regal AquaGlo Vinyl-Acrylic Latex Enamel #333.
- D. Ferrous Metal:
 1. Opaque-Painted – Soft-Gloss Finish:
 - a. System: 2 finish coats over primer coat.
 - b. Primer Coat: BM IronClad Retard-X Rust Inhibitive Paint #162.
 - c. First and Second Finish Coats: BM Regal AquaGlo #333.
- E. Galvanized Metal:
 1. Opaque-Painted – Soft-Gloss Finish:
 - a. System: 2 finish coats over primer coat.
 - b. Primer Coat: BM IronClad Galvanized Metal Latex Primer #155.
 - c. First and Second Finish Coats: BM Regal AquaGlo #333.
- F. Concrete Substrates, Nontraffic Surfaces:
 1. Opaque Painted – Low Luster Acrylic Finish.
 - a. Surfaces: Walls
 - b. System: 2 coats finish over primer coat.
 - c. Prime Coat: BM Moorcraft Super Spec latex enamel undercoat and primer sealer #253.
 - d. First and Second Coats: Regal Aquavelvet Eggshell #319.
- G. Concrete Substrates, Traffic Surfaces:
 1. Semi-Opaque Finish – Concrete Stain
 - a. Surfaces: Floors.
 - b. System: Vexcon Chemical Inc. – Certi-Vex Concrete Stain.
- H. CMU Substrates:
 1. Opaque Painted - Low Luster Acrylic Finish.
 - a. Surfaces: Walls.
 - b. System: 2 coats finish over primer coat.
 - c. Primer Coat: BM Moorcraft Super Craft latex block filler #285.
 - d. First and Second Coat: Regal Aquavelvet Eggshell #319.

END OF SECTION 09900