

SECTION 09111

METAL FRAMING SYSTEMS

PART 1 – GENERAL

1.01 REFERENCES

- A. ASTN A653 – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvanized) by the Hot-Dip Process.
- B. ASTM C645 – Non-structural steel framing members.
- C. ASTM C754 – Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- D. GA 203 – Installation of Screw-Type Steel Framing Members to Receive Gypsum Board.
- E. Steel Stud Manufacturers Association (SSMA) – Product Technical Information.

1.02 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Product Data: Provide data describing standard framing member materials and finish, product criteria, load charts, limitations, and installation.
- C. Include shop drawings and structural analysis data for wall and ceiling metal framing assemblies, signed and sealed by the qualified professional engineer responsible for their preparation.

1.03 QUALITY ASSURANCE

- A. Perform work in accordance with GA 203 and ASTM C754.
- B. Maintain one (1) copy of each document on site.

1.04 QUALIFICATIONS

- A. Installer: Company specializing in performing the Work of this Section with minimum five (5) years documented experience.

1.05 **COORDINATION**

- A. Coordinate work under provisions of Section 01310.

1.06 **ALTERNATES**

- A. See Section 01230 for bidding alternates affecting the Work of this Section.

1.07 **COLORS**

- A. Colors are specified in Colors/Materials Schedule.

1.08 **SUSTAINABLE BUILDING REQUIREMENTS**

- A. See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2- PRODUCTS

2.01 **MANUFACTURERS**

- A. Scafco Corporation.
- B. Steeler Inc.
- C. Substitutions: Under provisions of Section 01600.

2.02 **FRAMING MATERIALS**

- A. Studs: ASTM A653 galvanized rolled steel, channel shaped, punched for utility access:
 - 1. Non-Bearing Stud Thickness: Minimum 25 gauge, except ASTM C754 limiting heights shall not be exceeded for maximum deflection of 1/240. Minimum 20 gauge for applications to receive ceramic tile finishes, or where required for fire-rated construction.
 - 2. Load-Bearing Stud Thickness: See Structural Drawings.
- B. Joist Framing: ASTM A653 galvanized rolled steel, channel shaped:
 - 1. Load-Bearing Joist Thickness: See Structural Drawings.
- C. Metal Panel SMB Framing: ASTM A653 Galvanized Rolled Steel.

1. Configuration, thickness and sizing – See structural drawings.
- D. Runners: Of same material and thickness as studs, bent leg retainer notched to receive studs with provision for crimp locking to stud.
- E. Furring and Bracing Members: Of same material as studs; thickness to suit purpose.
- F. Fasteners: GA 203. Self-drilling, self-tapping screws.
- G. Sheet Metal Backing: 20 gauge (0.9 mm thick) galvanized steel for reinforcement of wall-mounted items. Similar to Metal-Lite, Inc. "Flush Mount" product.
- H. Anchorage Devices: Power actuated driven and drilled expansion bolts.
- I. Sealant: As specified in Section 07900.
- J. Slip Track: Extended leg-ceiling runner over standard track or ceiling runner system designed to permit vertical deflection of structure, but not lateral deflection of wall. Slip track shall maintain integrity of fire-rated partitions. Similar to Dietrich Metal Framing, Inc. "SLP-TRK" products.
- K. Galvanizing: Provide G60 coating at all interior framing locations, G90 coating at all exterior locations.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify site conditions under provisions of Section 01310.
- B. Verify that conditions are ready to receive work.
- C. Verify that rough-in utilities are in proper location.

3.02 CEILING FRAMING INSTALLATION

- A. Install in accordance with ASTM C754.
- B. Coordinate location of hangers with other work.
- C. Install ceiling framing independent of walls, columns, and above ceiling work.

- D. Reinforce openings in ceiling suspension system that interrupt main carrying channels or furring channels, with lateral bracing. Extend bracing minimum 24 inches past each end of openings.
- E. Laterally brace entire suspension system.

3.03 **ERECTION**

- A. Align and secure top and bottom runners at 24 inches (600 mm) o.c.
- B. Stud splicing not permissible.
- C. Fabricate corners using a minimum of three (3) studs.
- D. Double stud at wall openings, door and window jambs, not more than 2 inches (50 mm) from each side of openings.
- E. Brace stud framing system rigid. Brace all partitions that terminate below ceiling structure at intervals not-to-exceed 10 feet.
- F. Coordinate erection of studs with requirements of doorframes; install supports and attachments.
- G. Backing: Secure to studs. Install backing for support of plumbing fixtures, toilet accessories, and hardware, Backing shall be installed to provide a smooth wall surface.
- H. Refer to drawings for indication of partitions extending to finished ceiling only and for partitions extending to the structure above. Maintain minimum $\frac{3}{4}$ inch clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runner slip track attached to structure. Slip track shall not be rigidly attached to wall framing or finishes, and shall prevent lateral deflection of wall.
- I. Coordinate placement of insulation in stud spaces made inaccessible after stud framing erection.

3.04 **ERECTION TOLERANCES**

- A. Install member to provide surface plane with maximum variation of $\frac{1}{8}$ inch in 10 feet in any direction.

END OF SECTION

SECTION 09260

GYPSUM BOARD SYSTEMS

PART 1 – GENERAL

1.01 REFERENCES

- A. ASTM C36 – Gypsum Wallboard.
- B. ASTM C475 – Joint Treatment Materials for Gypsum Wallboard Construction.
- C. ASTM C557 - Adhesive for Fastening Gypsum Wallboard to Wood Framing.
- D. ASTM C645 – Non-structural steel framing members.
- E. ASTM C665 – Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
- F. ASTM C754 – Installation of Framing Members to Receive Screw Attached Gypsum Panel Products.
- G. ASTM C840 – Application and Finishing of Gypsum Board.
- H. ASTM C1002 – Steel Self Piercing Tapping Screws for the application of Gypsum Panel Product, metal plaster bases to wood or steel studs.
- I. ASTM C1396 – Standard Specifications for Gypsum Board.
- J. ASTM E119 – Fire Tests of Building Construction and Materials.
- K. GA-201 – Gypsum Board for Walls and Ceilings.
- L. GA-216 – Recommended Specifications for the Application and Finishing of Gypsum Board.
- M. GA-600 – Fire Resistance Design Manual.
- N. GA-214 – Recommended Levels of Gypsum Board Finish.
- O. NWWCB – Northwest Wall and Ceiling Bureau Manual.

1.02 SUBMITTALS

- A. Shop Drawings: Show locations, fabrication, and installation of control and expansion joints including plans, elevations, sections, details of components, and attachments to other units of work.
- B. Include shop drawings and structural analysis data for suspended ceiling assemblies and studio wall assemblies, signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Indicate coordination of support systems with building structural elements, mechanical and electrical systems.
- D. Show locations, fabrication, and installation of control and expansion joints including plans, elevations, sections, details of components, and attachments to other units of work.

1.03 QUALITY ASSURANCE

- A. Applicator: Company specializing in performing the Work of this Section with minimum five (5) years experience.

1.04 REGULATORY REQUIREMENTS

- A. Conform to applicable code for fire rated assemblies.

1.05 ALTERNATES

- A. See Section 01230 for bidding alternates affecting the Work of this Section.

1.06 COLORS

- A. Colors are specified in Colors/Materials Schedule.

1.07 SUSTAINABLE BUILDING REQUIREMENTS

- 1. See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2 – PRODUCTS

2.01 GYPSUM BOARD MATERIALS

- A. Gypsum Wallboard: ASTM C36; Fire resistive type, UL rated; 5/8 inch thick, maximum permissible length; ends square cut, tapered and beveled edges.
- B. Exterior Gypsum Sheathing; “Dens Glass Gold”, Georgia Pacific Gypsum, ASTM C1177, UL rated ½ inch thick, maximum permissible lengths, ends square cut.
- C. Cementitious Backing Board: ANSI A118.9 high density, glass fiber reinforced ½ inch thick; 2 inches wide, coated glass fiber tape for joints and corners. Custom Building Products “Wonderboard” or approved.

2.02 ACCESSORIES

- A. Fasteners: Type W Bugle head screws, length as recommended by U.S. Gypsum Handbook, required for penetration into framing members.
- B. Acoustical Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
- C. Corner Beads: Metal.
- D. Edge Trim: GA 201 and GA 216; type LC, L, LK bead.
- E. Joint Materials: GA 201 and GA 216; reinforcing tape, joint compound, adhesive, and water.
- F. Control Joint: GA 216; roll-formed zinc control joint with removable strip, similar to USG No. 093.
- G. Metal Furring Channels: GA 216; roll-formed zinc furring channel 25 gauge, ¾ inch.
- H. Metal Reveals: Specification standard: Fry “Reveal Molding” full depth of GWB, width as indicated on drawings. Use factory fabricated reveal “intersection” at all intersecting reveals.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that site conditions are ready to receive work.

3.02 GYPSUM BOARD INSTALLATION

- A. Install gypsum board in accordance with GA 201, GA 216, and GA 600.
- B. Single Layer Applications: Erect single layer board horizontal, perpendicular to framing with ends and edges occurring over firm bearing.
- C. Multiple Layer Applications: Offset joints of successive layers from joints of preceding layers; conform to requirements of fire-rated horizontal assemblies utilized.
- D. Use screws when fastening gypsum board to metal furring or framing.
- E. Use screws when fastening gypsum board to wood furring or framing.
- F. Erect exterior gypsum soffit board perpendicular to supports, with staggered end joints over supports.
- G. Treat cut edges and holes in moisture resistant gypsum board and exterior gypsum soffit board with sealant.
- H. Control Joints: Install control joints to provide for movement at the following conditions, in specific locations approved by Architect for visual effect. Control joints in fire-rated partitions shall be backed with fire-rated gypsum wallboard or fire safing insulation as tested to maintain required rating.
 - 1. Building expansion or control joints in substrate.
 - 2. Wall, Partitions, or Furring: Straight runs that exceed 30 feet.
 - 3. Ceilings: Dimensions that exceed 50 feet in either direction with perimeter relief or 30 feet without perimeter relief. Changes in direction of ceiling framing or furring.
 - 4. Exterior Soffits: Dimensions that exceed 30 feet in either direction.
- I. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
- J. Apply gypsum board to curved walls in accordance with GA-216.

3.03 **ACOUSTICAL ACCESSORIES INSTALLATION**

- A. Install acoustical sealant at gypsum board perimeter at:

1. All penetrations of partitions by conduit, pipe, ductwork, and rough-in boxes.
2. Perimeter of all partitions shown to receive acoustic insulation, where abutting dissimilar materials.

3.04 JOINT TREATMENT

- A. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
- B. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.
- C. Seal gypsum wallboard prior to texturing in accordance with manufacturer's instructions.
- D. Apply one (1) coat tape system (fire tape) at walls and ceilings exposed in attic and attic mechanical rooms.

3.05 LEVELS OF FINISH (per GA-214)

- A. Level 4 (Exposed Areas):
 1. All joint and interior angles shall have tape embedded in joint compound and three (3) separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. All joint compound shall be smooth and free of tool marks and ridges.

3.06 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09310

CERAMIC TILE

PART 1 – GENERAL

1.01 REFERENCES

- A. ANSI A108.1A – Installation of Ceramic Tile in Wet-Set Method, with Portland Cement Mortar.
- B. ANSI A108.1B – Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
- C. ANSI A108.5 – Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex Portland Cement Mortar.
- D. ANSI A108.10 – Installation of Grout in Tile Work.
- E. ANSI A118.1 – Dry-Set Portland Cement Mortar.
- F. ANSI A118.3 – Chemical Resistant, Water-Cleanable, Tile-Setting and Grouting Epoxy.
- G. ANSI A118.4 – Latex-Portland Cement Mortar.
- H. ANSI A118.6 – Ceramic Tile Grouts.
- I. ANSI A137.1 – Standard Specifications for Ceramic Tile.
- J. TCA (Tile Council of America) – Handbook for Ceramic Tile Installation.

1.02 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Product Data: Provide instructions for using mortars and grouts.
- C. Samples: Mount tile and apply grout on one (1) plywood panels, 12 x 12 in size illustrating patten, color variations, and grout joint size variations.

- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements, ANSI A137.1.

1.03 MAINTENANCE DATA

- A. Submit under provisions of Section 01700.
- B. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

1.04 QUALITY ASSURANCE

- A. Conform to TCA Handbook.

1.05 QULAIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with minimum five (5) years experiences.
- B. Installer: Company specializing in performing the Work of this Section with minimum five (5) years experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01600.
- B. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.07 ENVIRONMENTAL REQUIREMENTS

- A. Do not install adhesives in an unventilated environment.
- B. Maintain manufacturer's recommended temperature during installation of mortar materials.

1.08 EXTRA MATERIALS

- A. Furnish under provisions of Section 01700.
- B. Provide 1 square foot of each size, color, and surface finish of tile specified.

1.09 **COLORS**

- A. Colors are specified in Colors/Materials Schedule.

1.10 **ALTERNATES**

- A. See Section 01230 for bidding alternates affecting the Work of this Section.

1.11 **SUSTAINABLE BUILDING REQUIREMENTS**

- A. See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2 – PRODUCTS

2.01 **CERAMIC TILE MATERIALS**

- A. Manufacturers
 - 1. Crossville.
 - 2. Substitutions: Under provisions of Section 01610.
- B. Floor and Wall Tile: Color Blox, 6" x 6"
- C. Base: Color Blox, 6" x 6" cove base.

2.02 **MORTAR AND GROUT MATERIALS**

- A. Manufacturers
 - 1. Laticrete.
 - 2. Substitutions: Under provisions of Section 01610.
- B. Mortar Materials: ANSI A118.4, Latex Portland Cement.
- C. Grout: ANSI A118.6, tile grout, color as selected.
- D. Mix and proportion pre-mix grout materials in accordance with manufacturer's instructions.

2.03 ACCESSORIES

- A. Tile Floor Edging: Schuluter-Systems, Schienen-E, stainless steel edge strip, height flush with top of finished tile.

2.04 UNDERLAYMENT

- A. Manufacturers
 - 1. Dal-Tile
 - 2. The Noble Company
 - 3. Substitutions: Under provisions of Section 01610.

2.05 SEALER

- A. AquaMix, Inc. Penetrating Sealer

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work.

3.02 PREPARATION

- A. Protect surrounding work from damage or disfiguration.
- B. Clean surfaces.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

3.03 INSTALLATION

- A. Install tile per TCA and manufacturer's recommendations.
- B. Thinset Method
 - 1. Wall Tile: W244-01
 - 2. Floor Tile: F113.01

- C. Install underlayment, adhesive, tile, and grout in accordance with manufacturer's instructions.
- D. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- E. Place edge strips at exposed tile edges.
- F. Cut and fit tile tight to penetrations through tile. Form corners neatly.
- G. Place tile joints uniform in width subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Provide expansion joints in accordance with TCA recommendations and as indicated. Keep expansion joints free of mortar and grout. Apply sealant to joints.
- J. Allow tile to set as required by manufacturer's instructions.
- K. Grout tile joints.
- L. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.
- M. Seal tile and grout joints.

3.04 **CLEANING**

- A. Clean tile and grout surfaces.

3.05 **PROTECTION OF FINISHED WORK**

- A. Protect finished Work under provisions of Section 01500.
- B. Do not permit traffic over finished floor surface for four (4) days after installation, or as recommended by manufacturer.

END OF SECTION

SECTION 09511

SUSPENDED ACOUSTICAL CEILINGS

PART 1 – GENERAL

1.01 CEILINGS

- A. Spline ceilings are NOT acceptable. Use lay-in acoustical ceilings.

1.02 SOUND ATTENUATION

- A. Where suspended acoustical ceilings are used as the termination of walls or for wall anchorage, sound seals below and sound dampening construction above the suspended ceiling shall be used to limit sound transmission from room to room. The entire assemblage shall provide a STC rating of at least 40 or better for walls and ceiling.
- B. Air borne sound shall be reduced or minimized by use of sound absorptive surfaces, seals, offset doors, and careful layout and construction of ductwork and grilles.

1.03 NOISE LEVELS

- A. Noise levels in rooms of different occupancies shall conform to levels recommended by the U.S. National Bureau of Standards.
- B. Noise levels of Mechanical Rooms shall not exceed 75 dB.
- C. Noise levels for fume hoods at full velocity shall not exceed 70 dB.

1.04 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. ASTM C665 – Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

- D. ASTM E1264 – Classification of Acoustical Ceiling Products.
- E. Ceilings and Interior Systems Contractors Association (CISCA) – Acoustical Ceilings: Use and Practice.
- F. UL – Fire Resistance Directory and Building Material Directory.
- G. IBC – International Building Code.
- H. ASCE Standard 7 – Minimum Design Loads for Buildings and Other Structures.

1.05 **QUALITY ASSURANCE**

- A. Installer: Company with five (5) years minimum experience. Approved by manufacturer.

1.06 **REGULATORY REQUIREMENTS**

- A. Conform to applicable code for fire rated assembly and combustibility requirements for materials and seismic standards.
- B. Conform to International Building Code (IBC) and ASCE Standard 7 for seismic resistance requirements.

1.07 **ENVIRONMENTAL REQUIREMENTS**

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

1.08 **SUBMITTALS**

- A. Submit under provisions of Section 01330.
- B. Product Data: Provide data on metal grid system components and acoustical units.
- C. Samples: Submit samples illustrating material and finish of acoustical units.
- D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.09 **SEQUENCING/SCHEDULING**

- A. Do not install acoustical ceilings until building is enclosed, sufficient heat is provided, dust-generated activities have terminated, and overhead work is completed, tested and approved.
- B. Schedule installation of acoustic units after interior wet work is dry.
- C. Coordinate and schedule installation of mechanical/electrical items incorporated and cut into ceiling tile/panels and/or suspension system.

1.10 **EXTRA STOCK**

- A. Provide extra quantity of acoustic units under provisions of Section 01700.
- B. Provide minimum 10% extra panels in cartons delivered to Owner.

1.11 **ALTERNATES**

- A. See Section 01230 for bidding alternates affecting the Work of this Section.

1.12 **COLORS**

- A. Colors are specified in Colors/Materials Schedule.

1.13 **SUSTAINABLE BUILDING REQUIREMENTS**

- A. See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2 – PRODUCTS

2.01 **SUSPENSION SYSTEM**

- A. Acceptable Manufacturers
 - 1. USG Interiors, Inc. (Donn Systems).
 - 2. Chicago Metallic Corporation.
 - 3. Armstrong World Industries.
 - 4. Substitutions: Under provisions of Section 01600.
- B. Steel Suspension Grid

1. Intermediate duty class; ASTM C635 fire rated.
 2. 9/16 inch face exposed tree grid to accommodate selected acoustical panel unit.
 3. Studio Ceilings: Armstrong, Suprafine 9/16", White
- C. Main Runners, Cross Tees, and Wall Angles
1. Cold rolled steel
 - a. Positive lock grid components.
 - b. Pull out tension 300 lbs.
 - c. Double web construction.
 2. Standard factory painted finish on exposed surfaces – "White" color.
 3. Maximum deflection allowed: 1/360, including load carrying capacities for light fixtures, HVAC elements and acoustical panels.
- D. Hanger Wire
1. Minimum 12 gauge galvanized, soft annealed, mild steel.
 2. Lateral bracing and vertical struts per UBC Standard 25-2, 1997.
- E. Accessories
1. Stabilizer bars, clips, splices, curved wall angels, hold down clips; per UBC and manufacturer's standards.
 2. Perimeter Trim Axiom: "Knife Edge", perimeter trim. Color to match acoustical panel unit. Provide at all exposed suspended acoustical ceiling edges (clouds, etc.).
- F. All components of ceiling suspension system shall be the products of one (1) manufacturer.

2.02 **ACOUSTICAL PANEL UNITS**

- A. Acceptable Manufacturers

1. Armstrong, referenced manufacturer. Other manufacturer's products shall match referenced product characteristics and appearance.
 2. USG.
 3. BPB America, Inc.
 4. Substitutions: Under provisions of Section 01600.
- B. Products
1. ACT 1, 24 inches x 48 inches x $\frac{3}{4}$ inches; lay-in.
 - a. Armstrong – Dune Second Look, Item 2722, Class A per ASTM E 1264, flame spread 25 or under; 35-39 STC range, NRC 0.55; light reference LR-1, tegular edge.
 2. Type ACT 2, 48 inches x 48 inches x 1 inch; lay-in.
 - a. Armstrong – Optima Open Plan, Item 3256 Class A per ASTM E1264, flame spread 25 or less; 35-39 STC, NRC .95; light reflectance LR-90; tegular edge.
 3. Studio Ceilings: Armstrong Optima, Open Plan, White

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify site 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 – LAY-IN GRID SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636 and 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. Locate system on room axis according to reflected plan.
- D. Install after major above ceiling work is complete. Coordinate the location of hangers with other work.
- E. Hang suspension 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 or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability. Support fixture loads by supplementary hangers located within 6 inches of each corner.
- H. Do not eccentrically load system, or produce rotation of runners.
- I. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths. Miter corners. Provide edge moldings at junctions with other interruptions.
- J. Install light fixture boxes constructed of gypsum board above light fixtures in accordance with UL assembly requirements.
- K. Installation shall conform to International Building Code (IBC) and ASCE Standard 7 for seismic resistance.

3.03 **INSTALLATION – ACOUSTICAL UNITS**

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Install units after above ceiling work is complete.
- D. Install acoustical units, level in uniform plane, and free from twists, warps and dents.
- E. Cut tile to fit irregular grid and perimeter edge trim. Double cut and field paint, exposed edges of tegular units.

3.04 ERECTION TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degree.

END OF SECTION

SECTION 09650

RESILIENT FLOORING

PART 1 – GENERAL

1.01 REFERENCES

- A. ASTM E648 – Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
- B. ASTM F1066 – Vinyl Composition Floor Tile.
- C. ASTM F1303 – Sheet Vinyl Floor Covering with Backing.
- D. ASTM F1861 – Resilient Wall Base.
- E. FS RR-T-650 – Treads, Metallic and Non-metallic, Non-skid.

1.02 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Shop Drawings: Indicate seaming plan, borders, and patterns.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- D. Samples: Submit samples illustrating color and pattern for each floor material for each color specified.
- E. LEED™ Documentation.

1.03 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame/smoke rating requirements in accordance with ASTM E684.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect, and handle products to site under provisions of Section 01600.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Store materials for three (3) days prior to installation in area of installation to achieve temperature stability.
- B. Maintain ambient temperature required by adhesive manufacturer three (3) days prior to, during, and twenty-four (24) hours after installation of materials.

1.06 EXTRA MATERIALS

- A. Furnish under provisions of Section 01700.
- B. Provide a minimum of 20 square feet of each type of flooring, 10 lineal feet of base, of each material specified.

1.07 ALTERNATES

See Section 01230 for bidding alternates affecting the Work of this Section.

1.08 COLORS

- A. Colors are specified in Colors/Materials Schedule.

1.09 SUSTAINABLE BUILDING REQUIREMENTS

See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2 – PRODUCTS

2.01 MANUFACTURERS – RUBBER BASE MATERIALS

- A. Roppe.
- B. Substitutions: Under provisions of Section 01600.

2.02 BASE MATERIALS

- A. Base: 700 Series, ASTM F1861, Type TP, Group I (solid), extruded rubber; 4 inches high; 1/8 inch thick; top set, coved toe base (continuous lengths).

2.03 **MANUFACTURERS – STATCI DISSIPATIVE TILE FLOORING (SDT)**

- A. Roppe.
- B. Substitutions: Under provisions of Section 01600.

2.04 **STATIC DISSIPATIVE TILE FLOORING MATERIALS (SDT)**

- A. Static Dissipative Tile: Statprotect. Static Dissipative Tile. 24" x 24" size, 1/8" thick.
- B. ASTM E648, Class 1.

2.05 **ACCESSORIES**

- A. Subfloor Filler: Water-resistant; type recommended by flooring material manufacturer.
- B. Concrete Slab Control Joint and Construction Joint Sealant: Type recommended by floor covering manufacturer and compatible with filler and mastic.
- C. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
- D. Edge Strips: Carpet to sheet vinyl – Johnsonite #EG-XX-L.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 – EXECUTION

3.01 **EXAMINATION**

- A. Verify concrete floors are dry to a maximum moisture content of 7 percent, and exhibit negative alkalinity, carbonization, or dusting.
- B. Verify floor and lower wall surfaces are free of substances that may impair adhesion of new adhesive and finish materials.

3.02 **PREPARATION**

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.

- B. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.
- D. Apply primer to surfaces.

3.03 **INSTALLATION – BASE**

- A. Fit joints tight and vertical. Maintain minimum measurement of 18 inches between joints.
- B. Miter internal corners. At external corners, use pre-molded units. At exposed ends, use pre-molded units.
- C. Install base on solid backing. Bond tight to wall and floor surfaces.
- D. Scribe and fit to doorframes and other interruptions.

3.04 **INSTALLATION – TILE FLOORING**

- A. Install in accordance with manufacturer's instructions.
- B. Mix tile from container to ensure shade variations are consistent when tile is placed.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Set flooring in place; press with heavy roller to attain full adhesion.
- E. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.
- F. Install tile to square grid pattern. Allow minimum ½ full size tile width at room or area perimeter.
- G. Terminate flooring at centerline of door openings where adjacent floor finish is dissimilar.
- H. Install resilient edge strips at unprotected or exposed edges, and where flooring terminates.
- I. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

- J. Install feature strips, edge strips, and floor markings where indicated. Fir joints tightly.

3.05 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and wax floor and base surfaces in accordance with manufacturer's instructions.

3.06 PROTECTION OF FINISHED WORK

- A. Protect finished work under provisions of Section 01500.
- B. Prohibit traffic on floor finish for forty-eight (48) hour after installation.

END OF SECTION

SECTION 09688

CARPET

PART 1 – GENERAL

1.01 REFERENCES

- A. ASTM D2859 – Test Method for Flammability of Finished Textile Floor Covering Materials.
- B. ASTM E84 – Surface Burning Characteristics of Building Materials.
- C. ASTM E648 – Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
- D. NFPA 253 – Test for Critical Radiant Flux of Floor Covering Systems.

1.02 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Shop Drawings: Indicate seaming plan, method of joining seams, and direction of carpet.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics, sizes, patterns, color available, and method of installation.
- D. Samples: Submit samples illustrating color and pattern for each carpet material specified.
- E. Submit samples of edge strip material for each color specified.
- F. Manufacturer's Installation Instructions: Indicate special procedures, and perimeter conditions requiring special attention.

1.03 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing specified carpet with minimum three (3) years documented experience.

- B. Installer: Company specializing in installing carpet with minimum three (3) years documented experience approved by manufacturer.

1.04 **REGULATORY REQUIREMENTS**

- A. Conform to applicable code for flame/smoke rating requirements in accordance with ASTM E84.

1.05 **ENVIRONMENTAL REQUIREMENTS**

- A. Store materials for three (3) days prior to installation in area of Installation to achieve temperature stability.
- B. Maintain minimum 70 degrees F ambient temperature three (3) days prior to, during and twenty-four (24) hours after installation.

1.06 **MAINTENANCE DATA**

- A. Submit under provisions of Section 01700.
- B. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.07 **EXTRA MATERIAL**

- A. Furnish under provisions of Section 01700.
- B. Provide a minimum of 100 square feet of carpeting of each type, color, and pattern specified.

1.08 **WARRANTIES**

- A. Provide manufacturer's warranties under provisions of Section 01700.
- B. Manufacturer's ten (10) year Colorfastness to Light warranty.
- C. Manufacturer's five (5) year Colorfastness to Atmospheric Contaminants warranty.
- D. Wear – Ten (10) Year Wear Warranty: Provide Owner a written warranty from manufacturer that shall warrant that no part of the wearing surface shall wear more than 10% by weight for a period of ten (10) years. This warranty is full term non-prorated providing for replacement of worn areas with the same type of material at no cost to the Owner.

- E. All of the above warranties are to be presented in writing, signed by a legal representative of the manufacturer.

1.09 COLORS

- A. Colors are specified in Colors/Materials Schedule.

1.10 ALTERNATES

See Section 01230 for bidding alternates affecting the Work of this Section.

1.11 SUSTAINABLE BUILDING REQUIREMENTS

See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2 – PRODUCTS

2.01 MANUFACTURER – CARPET

- A. Interface – Style: Furrows.

2.02 CARPET MATERIALS

- A. Construction: Tufted featured loop carpet tile.
- B. Pile Height: .101 inches
- C. Yarn Weight: 17 oz/sq yd.
- D. Backing: Glasbac

2.03 STATIC DISSIPATION

- A. Follow manufacturers instruction (attached) related to installation of carpet in conjunction with static dissipation system.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are smooth and flat with maximum variation of ¼ inches in 10 feet and are ready to receive work.
- B. Verify concrete floors are dry to a maximum moisture content of 7 percent; and exhibit negative alkalinity, carbonization, or dusting.

3.02 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.

3.03 INSTALLATION

- A. Apply carpet and adhesive in accordance with manufacturers' instructions.
- B. Verify carpet match before cutting to ensure minimal variation between dye lots.
- C. Double cut carpet, to allow intended seam and pattern match. Make cuts straight, true, and unfrayed.
- D. Locate seams in area of least traffic.
- E. Join seams in accordance with manufacturer's instructions. Form seams straight, not overlapped or peaked, and free of gaps.
- F. Lay carpet tight and flat on Subfloor, well fastened at edges, with a uniform appearance. Provide monolithic color, pattern, and texture match within any one area.
- G. Do not change run of pile in any room where carpet is continuous through a wall opening into another room. Locate change of color or pattern between rooms under door centerline.
- H. Cut and fit carpet around interruptions.

- I. Fit carpet tight to intersection with vertical surfaces without gaps.
- J. Where wall bases are scheduled, cut carpet tight to walls. Fit carpet tight to vertical interruptions, leaving no gaps.
- K. Install carpet continuously to stair treads, full width. Install in one (1) piece. Adhere over entire surface. Fit accurately and securely, tight to treads and risers.

3.04 **CLEANING**

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

Interface

Furrows II ESD Computer Grade Tile

PRODUCT NUMBER: 146380250C
PRODUCT CONSTRUCTION: Tufted Textured Loop
STANDARD COLORLINE: 2
YARN SYSTEM: Blue Chip™ solution dyed type 6, 6 nylon
DYE METHOD: 100% Solution Dye
SOIL/STAIN PROTECTION: Protekt²®
ANTIMICROBIAL: (AATCC 138 Washed)(AATCC 174 Parts 2&3) Intersept®

<u>PRODUCT SPECIFICATIONS:</u>	<u>U.S.</u>	<u>METRIC</u>
TUFTED YARN WEIGHT:	17oz/yd ²	576.0 g/m ²
MACHINE GAUGE:	1/12 in	47.2 ends/10cm
PILE HEIGHT:	0.19 in	4.8 mm
PILE THICKNESS:	0.106 in	2.7 mm
STITCHES:	8.33/in	32.80 ends/10 cm
PILE DENSITY:	5774	
TOTAL THICKNESS:	0.280 in	50 cm x 50 cm

PERFORMANCE SPECIFICATIONS

Radiant Panel: (ASTM E-648) Class 1
Smoke Density: (ASTM E-662) ≤450
Lightfastness: (AATCC 16 – E) ≥4.0@ 60 AFU's
Static: (AATCC – 134) < 2.0 KV
Dimensional Stability: AACHEN Din 54318 < .10%
Standard Backing: Computer Grade Tile (50cm x 50cm)
Backing Options: Computer Grade Tile (50cm x 50cm)

INSTALLATION

Tile: Monolithic; Parquet 1 (Quarter-Turn)

All Product Specifications are averages derived from product sample testing and are subject to normal manufacturing tolerances and testing tolerances. Test results for purchased carpet may vary from the stated averages due to manufacturing tolerances and testing tolerances. "Tufted Yarn Weight" refers to total input weight of yarn used in tufting process and processes such as tufting and shearing will result in a lower finished yarn weight in purchased carpet. Pile Density stated in the Product Specifications is based on the Tufted Yarn Weight. Product Specifications are valid as of the stated revision date, and may be changed without notice as long as product performance is not materially affected.

Issue Date: 12/6/05

Interface

Interface Furrows Computer Grade Glasbac carpet tile, 50 cm

Keen attention to detail is one of the key reasons Interface Glasbac carpet tile has become the industry standard for stability and performance in over 20 years of production. Similar attention to detail during floor preparation and installation is essential to take full advantage of Glasbac's performance potential. Interface Glasbac tiles are available in 50 cm and one-meter.

No substitutes. To assure *maximum* performance, floor primers and adhesives have been specially formulated for this specific backing type. Unless specifically addressed in this instruction, we recommend Computer Grade carpet tile be installed with the following products by Re:Source Technologies:

Re:Source 3300, primer barrier coating
Re:Source 2400, Conductive Grid-Set adhesive

Quality Foundation: Re:Source barrier coat must be used over all:

- Concrete slabs where the moisture content based on a calcium chloride test is over 3.0 lb and less than 5.0 lb (in excess of 5.0 lb refer to Re:Source Pre-Seal)
- Concrete slabs where the pH is over 9.0.
- Existing adhesives
- Excessively dusty concrete surfaces
- All installations below grade

Testing the slab. Testing for concrete moisture or vapor emission is another essential step in preparing the floor. Usually it's the General Contractor's responsibility to provide a suitable Subfloor for carpeting. However, it's the installer's responsibility to make sure the Subfloor being covered measures at three pounds or less by proper application of the calcium chloride test. If the concrete slab tests higher than three pounds; STOP the installation and immediately contact the Interface Solutions Help Desk at 877.733.7403.

Concrete moisture. Vapor emission levels should not exceed *three pounds* as determined by the proper application of the calcium chloride test.

Alkalinity. Chemical pH of the slab should not exceed *nine*.

CRI 104. In addition to the specific instructions detailed here, the Carpet and Rug Institute Standard for Installation of Commercial Carpet, CRI 104, must be closely followed as basic

minimum requirement for floor preparation and installation on all carpet installations. Please note that many of the Interface installation requirements detailed here may actually exceed those in the CRI Installation Standard because of specific product characteristics.

Before starting

Correct carpet? Installer must verify carpet conforms to Owner's specifications, including correct product and color. Each carton contains 20 tiles (or 5.98 square yards.) Labels on each carton contain important information including: Product, color, and dye lot.

Do not mix dye lot or run numbers in the same area. Interface Flooring will not be responsible for sorting or reinstalling mixed lots. On fusion-bonded carpet, take care to separate tops and bottoms during installation. *Once an incorrect color or product has been installed, Interface will not be held responsible or assume related costs for corrective action.*

Construction site. Far too often, carpet products are installed before the construction site is reasonably accessible or ready. Carpet can be permanently damaged or stained during the construction process. Please understand that Interface will not be held responsible for any staining, soiling, contamination or damage caused by building construction. Both the installer and the general contractor should consider the risks when installing carpet before other construction site trades have completed their work. Paints or lacquer over spray, spills, excessive soiling are among a variety of possible job site contaminants that will void the Owner's product warranty.

Temperature and lighting. Job site and all products or materials to be used in the installation must be preconditioned at a temperature between 60° F (15.5° c) and 95° F (35° c) for a period of 48-72 hours before installation begins. The temperature must remain within this range throughout the installation. Otherwise, the carpet or adhesive could be damaged. Lighting must be in service to allow inspection under specified lighting conditions.

Tools required. Inch/metric steel measuring tape, white chalk line, carpet knife, straight edge, and paint roller or straight edged trowel (for adhesive).

Preparing the Subfloor

Subfloor surfaces must be dry, level, and free from dirt, grease, oil, paint, sealer, old adhesives, and other foreign materials. The level should meet the same standards as outlined in the American Concrete Institute (ACI) specifications for Concrete Building (ACI 301-84) – 11.7.3 troweled finish and 11.9.1 finishing tolerances. Leveling compounds should be Portland-cement based. Gyp-Crete is not recommended as a suitable substrate for Glasbac tiles or other Interface Americas carpet products.

New concrete slabs. Before applying Re:Source 2400 conductive adhesive or Re:Source Technologies Barrier Coat 3300 concrete slabs must be fully cured, which usually requires about 90 days. New concrete must always be tested for moisture emission and excessive alkalinity. Moisture emission rate should be determined with pH testing strips and distilled water. Procedures for conducting these tests are outlined in more detail below. Call the Interface Solutions Help Desk at 877.733.7403 if moisture levels exceed three pound or if the chemical pH is over nine.

Existing concrete slabs. Always prime with Re:Source Technologies 3300 barrier coat if chemicals were used to remove the old finish. Old floor covering adhesives, paint sealers, grease, oil, and other foreign materials should be removed then covered with barrier coat to avoid possible adhesive contamination.

Keep in mind that changing floor covering products can also change the rate of vapor emission coming from old concrete slabs. This change could create moisture problems. Moisture testing must be done prior to installation of Glasbac to make certain vapor emission rate will not become a problem.

Patching compounds. Cracks and holes must be patched with approved patching compounds. Most must be mixed with latex rather than water to avoid cracking or chipping. Recommended patching compounds include: Lev-L-Astic, Fixall, Armstrong 5-180, Webpatch, or Ardex K-15T4, Ardex SDP, Ardex feather finish or other similar cement based compounds utilizing latex polymers and self drying technology. Ardex K-15T4 is the only patching compound currently recommended that are designed to be mixed with water, per manufacturer's instructions, and still provide an excellent substrate.

Barrier patching. Once Subfloor is patched and patched areas have dried, remember to seal with Re:Source Technologies 3300 barrier coat.

Testing concrete. General contractor or installer should perform tests for moisture and alkalinity before installation. Test for moisture with a calcium chloride kit Moisture vapor emission should not exceed three pounds per 1000 square feet per 24 hours as determined by the proper application of the calcium chloride test. A minimum of three tests should be conducted on each floor. Keep in mind that test protocol now requires that the test environment be similar to the environmental conditions anticipated when the space is occupied. That generally means the building must be enclosed and climate controlled for at least 72 hours prior to testing. Keep in mind that the test must also be in place a full 72 hours to develop accurate readings.

Alkalinity. Test for alkalinity by scrapping an indentation in the concrete and pour a small amount of distilled water into the indentation. Use pH test papers or test strips to check the pH of the water. If the chemical pH is over nine on a scale of 14, wash floor with a mixture of 30% vinegar and 70% water. Rinse floor with water and retest. Repeat, if necessary, until pH is seven or over, but less than or equal to nine.

Excessive moisture or alkalinity can contaminate the adhesive, or damage the carpet backing, adversely affecting indoor air quality. Installing Glasbac carpet tiles over excessive moisture can also void product warranties.

Over vinyl tile. Replace or patch loose tiles and remove wax coating. It's extremely important to remember that cutback adhesives will damage the backing on Interface Glasbac carpet tiles. Re:Source Technologies 3300 barrier coat must be used to prevent backing contamination.

Over wood. Sand finish down to bare wood. Repair loose or broken boards and other defects for a smooth surface.

Over tongue and groove. Securely fasten boards to Subfloor with 8-D cement coated screw nails. Sand cupped or uneven wood strips until level. If boards are worn or badly cupped, cover with 5/8 inch (1.6cm) exterior grade AD plywood secured with 8-D cement coated screw nails spaced 6 inches (15.2cm) apart. Sand seams smooth.

Other wood floors. Cover single layer plywood or particle board floors with 5/8 inch (1.6cm) exterior grade AD plywood. Secure the 8-D cement coated screw nails spaced 6 inches (15.2cm) apart. Sand seams smooth. If double layered floors are sound, apply latex top coat to make smooth and level. Sand if necessary.

Granolithic, terrazzo, marble, ceramic. Patch or fill cracks and irregularities, including ceramic tile grout lines, with latex-mixed or Interface approved patching compound. Remove surface glaze by rough sanding.

Installation

Centering, squaring the installation. Divide the room into four quadrants and snap a chalk line. Make sure quadrants meet at right angles. Take care to keep perimeter tile cuts larger than half size or 9.84 inches (25 cm).

Through doorways. In order to spread adhesive throughout the room and allow for a single set up time, an additional perpendicular line should be established and squared from the center line of the room to run through doorways. Care should be taken to measure a distance equal to an even number of tiles from the room's center line to a point in the doorway. That point in the doorway will determine where the first tile is installed.

By establishing a line through the doorway and perpendicular to the centered chalk line grid in the room, adhesive can be spread in the room. The installer can spread back through the doorway and begin a square installation in the doorway without having to track back through the adhesive.

Arrows point the way. Glasbac carpet tiles have arrows printed on the backing showing pile direction. For monolithic installation, be sure arrows point in the same direction throughout the installation.

Parquet Installation. Some products are designed to be installed only by the parquet method. Carpet tiles designed for parquet installation are marked accordingly. For parquet installation, arrows should point in the same direction every other tile and diagonally. Arrows on alternating tiles should be turned 90° parquet in either direction, consistently.

Adhesive application. Computer Grade carpet tiles must be installed with a full spread application of Re:Source Technologies 2400 conductive Adhesive using the long-napped paint roller. Because the adhesive is an integral part of the conductivity of the installation extra care must be taken to ensure an even coat of adhesive with no voids or thin areas. Do not spread around chalk lines or add water to the adhesive. Once applied, allow the adhesive to dry for 45-60 minutes or until the surface becomes tacky to the touch.

Copper strips to ground. There are several acceptable methods for grounding computer grade carpet tile. These methods are dependent on site conditions and end users preference.

- A. Place a 2" by not less than 36" copper foil strip into the dried adhesive. Approximately 6" of the copper strip should extend up the wall at the predetermined grounding locations.
- B. In large rooms or if building steel and/or an electrical ground are not readily available it may be necessary to install copper foil across the entire room from the available grounding location.

Grounding frequency.

- A. 36" copper strips should be installed at every column and all practical access points to building steel and not less than 1 per 100 sf.
- B. A full 2" length copper grounding strips should be installed approximately 25' to 40' apart throughout the installation.

Raised panels. A swath of adhesive on each panel and offset joints are essential for a successful installation on raised floors. Raised floor panels are prone to subtle flexing. To insure long-term uniform appearance, avoid matching raised floor seams with tile joints. A brief pass on each panel with the adhesive roller will assure the installation remains tight in spite of subtle flexing from the raised panels. For proper grounding procedures contact Interface Technical Support @ 877.733.7403.

Technique. To assure a tight installation at all tile seams, brush pile fiber back and tip individual tiles into place to avoid trapping pile fiber in the seam. Frequently check tile joints for proper

alignment and firm edge-to-edge abutment at the tile backing rather visual alignment from the face. *Avoid excessively tight joints that can cause tiles to peak or buckle.*

Tipping tiles into place. Tip individual tiles into place. (Corner first as pyramid takes shape.) Please take care to prevent tile corners from rolling under when tiles are positioned. Sliding tiles across the adhesive will cause corners to roll under and should be avoided. The one-meter squares may require two people for proper installation. Frequently check tile joints for proper alignment and firm abutment. Avoid tight or overly compressed joints that can cause peaking edges or corners.

Check tightness. Expect a slight gain as the squares are installed because of spacing at the joints.

Standard 50 cm. For standard, 50 cm Glasbac tile, determine the amount of gain by measuring 11 installed squares from edge to edge, spanning 10 seams. The measurement should be slightly more than 550 cm with a gain no greater than *three millimeters* (about 1/8 inch). If the gain exceeds 3 mm, tiles should be reinstalled and butted more tightly along backing edge. Reposition and check again.

One meter tiles. To insure a tight installation and minimize the amount of gain in the one-meter squares, measure five squares from the front side of the first tile to back side of the fifth tile. The measurement should be slightly more than 500 cm with a gain no greater than *three millimeters* (about 1/8 inch). If gain exceeds 3 mm, tiles should be reinstalled and butted more tightly. Reposition and check again.

Cut tiles. Fixtures, architectural elements, and perimeters will require tile cutting. Always cut tiles from the back. Always secure cut or partial tiles with adhesive.

Floor outlets. Electrical floor outlets are usually wired after tile installation. Install tile over electrical boxes and mark locations with a piece of tape. Tiles can be lifted for cutouts later.

Flat wire. Keep flat wire runs centered under tile rows. Avoid using adhesives over flatware runs, as damage to flatware may result when tiles are removed.

Trench headers. Center trench headers directly under a full tile row.

Stairways. Tiles installed on stairs should be securely adhered in a full spread application of vinyl cove base adhesive or with a vinyl compatible contact cement, such as Roberts 167. Compatible edge trim and nosing products may also be required to prevent edge ravel.

Replacement. Replace damaged tiles with attic stock ordered with the original installation. Visual differences between new and old tiles will become less apparent in a few weeks. Pile brushing helps minimize differences. Also consider replacing damaged tiles with tiles removed

from less visible areas in the installation. Use attic stock to replace tiles removed from less visible area.

Under floor access. Interface free-lay tiles allow quick access to under floor utilities and flatware. When removing and repositioning tiles, always replace in original position, taking care to brush fiber upwards out of tile seams and firmly abut backing edges.

Protection. Avoid dislodging tiles during furniture and fixture placement, by placing standard sheets of plywood or hardboard over the complete installation. Afterwards, vacuum the entire floor with a pile lifter. If pile lifter is not available, use an upright, cylindrical brush vacuum cleaner.

Important advice. *These installation procedures are recommendations designed for the experienced and competent carpet tile installer such as those trained and certified in the Re:Source network of solution providers. Strict adherence to these procedures will result in a quality installation under most conditions.*

*Any situation that could alter the installation procedure or jeopardize the possibility of a satisfactory installation, such as identification of defective material or unusual installation conditions, creates a responsibility for the installer to **STOP** the installation immediately and call the Interface Solutions Help Desk at **877.733.7403**.*

Interface Flooring will be responsible, within the scope of product guarantees, for defective materials, but this does not include materials with defects identified prior to installation. Interface Flooring will not be responsible for workmanship or problems caused by improper installation.

END OF SECTION

SECTION 09720

WALL COVERINGS

PART 1 – GENERAL

1.01 SUMMARY

A. This Section include the following:

1. Vinyl wall covering.
2. Custom Digital Wallcovering

1.02 SUBMITTALS

- A. Product Data: For each type of product indicated. Include data on physical characteristics, durability, fade resistance, and flame-resistance characteristics.
- B. Shop Drawings: Show location and extent of each wall-covering type. Indicate pattern placement, seams and termination points.
- C. Samples for Initial Selection: For each type of wall covering indicated.
- D. Samples for Verification: Full width by 54-inch (1000 mm) long section of wall covering from lot to be used for each type of wall covering indicated for each color, texture, and pattern required.
1. With specified treatments applied.
 2. Show complete pattern repeat.
 3. Mark top and face of material.
- E. Schedule: For wall coverings. Use same designations indicated on Drawings.
- F. Maintenance Data: For wall coverings to include in maintenance manuals.

1.03 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Provide wall coverings and adhesives with the following fire-test-response characteristics as determined by testing identical

products applied with identical adhesives to substrates per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. Surface-Burning Characteristics: As follow, per ASTM E 84:
 - a. Flame-Spread Index: 25
 - b. Smoke-Developed Index: 25

1.04 **PROJECT CONDITIONS**

- A. Environmental Limitations: Do not install wall coverings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- B. Lighting: Do not install wall covering until a permanent level of lighting is provided on the surfaces to receive wall covering.
- C. Ventilation: Provide continuous ventilation during installation and for not less than the time recommended by wall-covering manufacturer for full drying or curing.

1.05 **EXTRA MATERIALS**

- A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 1. Wall-Covering Material: Full-size units equal to 5 percent of amount of each type installed.

1.06 **ALTERNATES**

See Section 01230 for bidding alternate affecting the Work of this Section.

1.07 **COLORS**

- A. Colors are specified in Colors/Materials Schedule.

1.08 SUSTAINABLE BUILDING REQUIREMENTS

See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Vinyl Wallcovering: Versa Wallcovering.
- B. Custom Digital Wallcovering: MDC Wallcovering.

2.02 WALL-COVERING PRODUCTS

- A. General: Provide rolls of each type of wall covering from the same run number or dye lot.
- B, Vinyl Wall Covering:
 - 1. Contract Wallcoverings, Inc.
 - a. Versa Second Look
 - 2. Vinyl Wall-Covering Standards: Provide products complying with the following:
 - a. CFFA-W-101 for Type II products.
 - b. ASTM E-84 for strippable wall coverings that qualify as Category Type II Commercial Serviceability products.
 - 3. Total Weight Excluding Coatings: 20 oz per lineal yard.
 - 4. Width: 54 inches (1372 mm).
 - 5. Backing Fiber Content: Cotton
 - 6. Backing Material: Osnaburg
 - 7. Repeat: Random, reverse hang

8. Colors, Textures, and Patterns: Versa Second Look, ASL-51556, Classico, Ermine
- C. Custom Digital Wallcovering
1. MDC Wallcovering:
 - a. Custom Wallcovering
 - b. Total Weight: 21 oz Linear Yard
 - c. Width: 54 inches
 - d. Graphic Image: Architect to provide digital graphic image in format appropriate for wallcovering printing process. Wallcovering manufacturer is responsible for incorporation of image into printing process and coordination required to ensure proper alignment of image in field application.

2.03 ACCESSORIES

- A. Adhesive: Mildew-resistant, non-staining, strippable adhesive, for use with specific wall covering and substrate application, as recommended in writing by wall-covering manufacturer, and with a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Seam Tape. As recommended in writing by wall-covering manufacturer.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with installer present, for compliance with requirements for levelness, wall plumbness, maximum moisture content, and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation.

- B. Clean substrates of substrates that could impair wall coverings bond, including mold, mildew, oil, grease, incompatible primers, dirt, and dust.
- C. Prepare substrates to achieve a smooth, dry, clean, structurally sound surface free of flaking, unsound coatings, cracks and defects.
 - 1. Moisture Content: Maximum of 5 percent on new plaster, concrete, and concrete masonry units when tested with an electronic moisture meter.
 - 2. Plaster: Allow new plaster to cure. Neutralize areas of high alkalinity.
 - 3. Metals: If not factory primed, clean and apply metal primer.
 - 4. Gypsum Board: Prime with primer recommended by wall-covering manufacturer.
 - 5. Painted Surfaces: Treat areas susceptible to pigment bleeding.
- D. Check painted surfaces for pigment bleeding. Sand gloss, semi-gloss, and eggshell finishes with fine sandpaper.
- E. Remove hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.
- F. Acclimatize wall-covering materials by removing them from packaging in the installation areas not less than 24 hours before installation.

3.03 **INSTALLATION**

- A. General: Comply with wall-covering manufacturers' written installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Cut wall-covering strips in roll number sequence. Change roll numbers at partition breaks and corners.
- C. Install strips in same order as cut from roll.
- D. Install reversing every other strip.
- E. Install wall covering with no gaps or overlaps, no lifted or curling edges, and no visible shrinkage.

- F. Install seams vertical and plumb at least 6 inches (150 mm) from outside corners and 6 inches (150 mm) from inside corners unless a change of pattern or color exists at corner. No horizontal seams are permitted.
- G. Fully bond wall covering to substrate. Remove air bubbles, wrinkles, blisters, and other defects.
- H. Trim edges and seams for color uniformity, pattern match, and tight closure. Butt seams without any overlay or spacing between strips.

3.04 **CLEANING**

- A. Remove excess adhesive at finished seams, perimeter edges, and adjacent surfaces.
- B. Use cleaning methods recommended in writing by wall-covering manufacturer.
- C. Replace strips that cannot be cleaned.
- D. Reinstall hardware and hardware accessories, electrical plates and covers, light fixture trims, and similar items.

END OF SECTION

SECTION 09841

ACOUSTICAL FINISH MATERIALS

PART 1 – GENERAL

1.01 SCOPE

- A. This Specification addresses special equipment, materials, operations and methods to be used for acoustical treatment.

1.02 RELATED DOCUMENTS

- A. General Provisions of the Contract, and applicable requirements of Division 1 and this Section apply to the work specified in this Section.
- B. Work in this Section shall be subject to drawings. General conditions, schedules, addenda, and other contract documents.

1.03 SUBMITTALS

- A. Installing contractor to submit complete product data to the Architect in accordance with the General Provisions of the Specifications before any materials are delivered to the job site.
- B. Submit the following information to the Acoustical Engineer so that products can be checked for compliance with the specifications:
 - 1. Submittals showing the following:
 - a. Acoustical test data.
 - b. Maintenance instructions.
 - c. One sample of each type of acoustical product specified as shown on drawings and schedule.
 - d. Submit one (1) sample of wall panel 18 x 18 inch in size illustrating color, finish, and texture with cut out for electrical junction box to demonstrate finished edge condition.

1.04 **EXTRA STOCK**

- A. Furnish extra materials described below, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Acoustical Wall Panels: Full-size units equal to 5 percent of amount installed.
 - 2. Panel Fabric: Fabric bolts in quantities equal to 5 percent of installed.

1.05 **OPERATIONS AND MAINTENANCE**

- A. Upon completion of this portion of the work, and as a condition of its acceptance, the installing contractor is to compile and submit operation and maintenance information as required under the General Provisions of these Specifications.

1.06 **PROJECT ACOUSTICAL CONSULTANTS**

- A. The Acoustical Consultants for this Project are:

Noel Frederick Sparling
720 Olive Way, Suite 1400
Seattle, WA 98101-1853
Phone: 206.667.0555667.0555
Fax: 206.667.0554667.0554
Email: nfrederick@Sparling.com

1.07 **CONTRACTOR RESPONSIBILITY**

- A. The Contractor shall be responsible for the examination and acceptance of all surfaces and conditions prior to acoustical panel installation.
- B. Changes or additions necessary to meet the requirements given on the plans or in the specifications are to be made without any expense to the Owner.

1.08 **QUALITY ASSURANCE**

- A. Substitutions or changes will only be permitted by prior approval by the Architect and Acoustical Engineer.
- B. Any discrepancies between the drawings and this document shall be brought to the immediate attention of the Architect and Acoustical Engineer.

1.09 ALTERNATES

See Section 01230 for bidding alternates affecting Work of this Section.

1.10 COLORS

A. Colors are specified in Colors/Materials Schedule on the drawings.

PART 2 – PRODUCTS

2.01 ACOUSTICALLY ABSORPTIVE PANELS (AAP)

A. HIGH-IMPACT/TACKABLE FABRIC-WRAPPED ABSORPTIVE PANELS (ACOUSTICAL WALL PANELS)

1. Panels shall be constructed of a single core construction of dimensionally stable rigid fiberglass of 6-7 pounds per cubic foot density with a 1/8" thick 16-20 pcf high density acoustically transparent face.
2. Wall panel dimension shall be shown on drawings.
 - a. Studio or room wall panels shall be 2" thick.
 - b. Corridor wall panels shall be 1" thick.
3. Each unit shall be 1 – 1/8" thick and dimensioned as shown on drawings.
4. Edges and Finishes
 - a. Edge profile shall be square.
 - b. Corner finish shall be square.
 - c. Edge treatment shall be resin-hardened.
 - d. Fabric panel finish: Fabric shall cover face, edges, and a return on the back of a minimum of 1-1/2".
 - 1) Fabric Manufacturer: TBDTBD
 - 2) Pattern: TBDTBD

- 3) Color: TBDTBD
- 4) Panel Mounting:
 - a. 2" panels in all rooms shall be a demountable Velcro system and standard continuous wall-leveling angle are to be supplied by the Contractor. Velcro shall be attached with adhesive and staples.
 - b. 1" panels in the corridors shall be mechanical clip, adhesive, fasteners and standard continuous wall-leveling angle are to be supplied by the Contractor.
5. All panel components shall have a Class "A" flame spread rating of 25 or less in accordance with ASTM E-84.
6. Panels shall have a minimum Noise Reduction Coefficient (NRC) of 0.90 in accordance with ASTM C-423 (Type "A" Mounting)
7. Acceptable Products:
 - a. H.I.R. #1 by Decoustics
 - b. High Impact Absorptive Panel by Conwed
 - c. Quiet touch Extra by Jasco Manufacturing
 - d. Series 200 High Impact by Snap-Tex
 - e. High Impact HardSide by Kinetics

PART 3 – EXECUTION

3.01 GENERAL

- A. All acoustical products shall be installed in accordance with manufacturer's printed instructions and recommendations, and in compliance with the governing code.
- B. All necessary hardware and accessories for installation are to be furnished by the Contractor.

END OF SECTION

SECTION 09900

PAINTING

PART 1 – GENERAL

1.01 LEAD BASED PAINT REQUIREMENTS

- A. The following guidelines must be met regarding lead construction: WAC 296-155-176, TSCA April 22, 2008 Section 402(c)(3), and 29 CFR 1926.62.

1.02 REFERENCES

- A. Master Painters Institute (MPI) Architectural Painting Specification Manual.
- B. Master Painters Institute (MPI) Maintenance and Repainting Manual.

1.03 SUBMITTALS

- A. Samples
 - 1. Submit per Section 01330 and the following:
 - a. Submit 8 inch x 10 inch color samples of color selections indicated in Colors/Materials Schedule. Submit samples in gloss selections scheduled.
 - b. Furnish additional required samples until colors, finishes, and textures are reviewed and Architect issues written authorization to proceed.
 - c. Retain approved samples for reference.
- B. Materials and Products Lists (Typewritten)
 - 1. Submit complete lists of products proposed for use in scheduled finish systems.
 - a. Arrange in same format as scheduled in this Section, and list MPI product numbers applicable to each system.
 - b. Include applicable manufacturer's recommendations.

- c. Include additional information requested by Architect.
- C. A copy of all manifest forms for disposal of hazardous waste must be transmitted to Pacific Lutheran University's Environmental Health and Safety office.

1.04 **QUALIFICATIONS**

- A. Manufacturer: Miller Paint Miller Paint Company
- B. Applicator: Company specializing in performing the Work of this Section with minimum three (3) years documented experience.

1.05 **REGULATORY REQUIREMENTS**

- A. Conform to applicable code for flame and smoke rating requirements for finishes.

1.06 **DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, protect, and handle products to site under provisions of Section 01600.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- C. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- D. Store paint materials at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufactures' instructions.

1.07 **ENVIRONMENTAL REQUIREMENTS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

- C. Minimum Application Temperatures for Latex Paints: 45 degrees F (7 degrees C) for interiors; 50 degrees F (10 degrees C) for exterior; unless required otherwise by manufacturer's instructions.

1.08 **EXTRA MATERIALS**

- A. Furnish under provisions of Section 01700.
- B. Maintenance Materials: Leave ½ gallon of each type and color of paint and other coating products for maintenance purposes.
 - 1. Label for positive identification.
 - 2. Store where directed.
 - 3. Turn over to Owner at jobsite and obtain signed receipt.

1.09 **WARRANTY**

- A. Furnish one (1) year warranty in accordance with referenced services "Manual" on full value of work included in this Section.
 - 1. Warrant work to be in accordance with Specifications, standards and requirements incorporated in referenced manual.
 - 2. Warranty not applicable to defective items through faulty work by other trades, or for failure of substrates.
 - 3. Warranty does not assume any liability for claim other than repairing painting and finishing defects, as determined by Manual.

1.10 **COLORS**

- A. Colors are specified in the Colors/Materials Schedule on the drawings.

1.11 **SUSTAINABLE BUILDING REQUIREMENTS**

See Section 01011 for sustainable building requirements affecting the Work of this Section.

PART 2 – PRODUCTS

2.02 MATERIALS

- A. All materials shall be in accordance with the MPI Architectural Painting Specification Manual “Approved Product” listing and shall be from a single manufacturer for each system used.
- B. Conform also to governing regulations such as Federal and State requirements for pollution, safety, and health. Finishes shall have flame spread ratings that do not exceed those permitted by the IBC.
- C. Materials not specifically indicated, but required, such as linseed, oil, shellac, thinners, shall be the highest quality product of an approved manufacturer listed in the MPI Architectural Painting Specification Manual.
- D. Mixing: Furnish ready-mixed products.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of Work. Report any condition that may potentially affect proper application.
- C. Test shop applied primer for compatibility with subsequent cover materials.
- D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Plaster and Gypsum Wallboard: 12 percent
 - 2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent
 - 3. Interior Wood: 15 percent, measured in accordance with ASTM D2016.
 - 4. Exterior Wood: 15 percent, measured in accordance with ASTM D2016.
 - 5. Concrete Floors: 8 percent

3.02 MATERIALS NOT TO BE FINISHED

- A. The following receive no finish except as indicated:
 - 1. Metals as listed:
 - a. Brass, bronze, copper, plated metals and stainless steel.
 - 2. Plastic laminate surfacing.
 - 3. Glass, unless otherwise noted.
 - 4. Electronic switch plates; lighting fixtures.
 - 5. Finish hardware.

3.03 PREPARATION

- A. Prepare surfaces as follows and as specified in the MPI Architectural Painting Specifications Manual and the MPI Maintenance Repainting Manual. Consult manuals for surface preparations not indicated.
- B. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- C. Correct defects and clean surfaces that affect Work of this Section. Remove existing coatings that exhibit loose surface defects.
- D. Seal with shellac and seal marks which may bleed through surface finishes.
- E. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high-pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- G. Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply compatible sealer or primer.
- H. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

- I. Concrete Floors: Remove contamination. Acid etch and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- J. Copper Surfaces Scheduled for a Paint Finish: Remove contamination by steam, high-pressure water, or solvent washing. Apply vinyl etch primer immediately following cleaning.
- K. Copper Surfaces Scheduled for a Natural Oxidized Finish: Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid. Rub on repeatedly for required effect. Once attained, rinse surfaces with clear water and allow to dry.
- L. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- M. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- N. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- O. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- P. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Spot prime paint after repairs.
- Q. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Primer bare steel surfaces.
- R. Interior Wood Items Scheduled to Receive Paint Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.

- S. Interior Wood Items Scheduled to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats.
- T. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied.
- U. Exterior Wood Scheduled to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior caulking compound after sealer has been applied.
- V. Glue-Laminated Beams: Prior to finishing, wash surfaces with solvent, remove grease and dirt.
- W. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer.

3.04 **APPLICATION**

- A. Perform the Work in accordance with MPI Architectural Painting Specifications Manual and manufacturer's directions. Where these may be in conflict, the more stringent requirements govern.
- B. All work shall be premium grade in accordance with referenced manuals.
- C. Apply products in accordance with manufacturer's instructions.
- D. Do not apply finishes to surfaces that are not dry.
- E. Apply each coat to uniform finish.
- F. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- G. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
- H. Allow applied coat to dry before next coat is applied.
- I. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- J. Prime concealed surfaces of woodwork with primer paint.

- K. Prime concealed surfaces of interior woodwork scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with mineral spirits.
- L. Studio Doors: Allow paint at doors and frames to adequately cure to avoid damaging door seals and operation.

3.05 **FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT**

- A. Refer to Division 15 and Division 16 for schedule of color coding and identification banding of equipment, duct work, piping, and conduit.
- B. Paint shop primed equipment. Paint shop prefinished items occurring at interior areas.
- C. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- D. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, except where items are prefinished.
- E. Paint interior surfaces of air ducts that are visible through grilles and louvers with one coat of flat black paint, to visible surfaces. Paint dampers exposed behind louvers and grilles to match face panels.
- F. Paint exposed conduit and electrical equipment occurring in finished areas.
- G. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
- H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.
- I. Paint existing mechanical grilles and diffusers that are to be reused in renovated spaces.

3.06 **PATCHING**

- A. As work is completed in room areas, repair surfaces damaged by other trades requiring touch-up of refinishing.

3.07 **CLEANING**

- A. As work proceeds, and on completion of work, promptly remove all spilled, splashed or splattered products so as not to damage surfaces.
 - 1. During work progress, keep premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris.

3.08 **PAINTING AND FINISHING TITLES AND CODE NUMBERS**

- A. References are from referenced manual unless otherwise indicated. They indicate coating system, grades, and acceptable manufacturers and products.

3.09 **GLOSS**

- A. All finishes: Gloss as scheduled.

3.10 **EXTERIOR PAINTING AND FINISHING SCHEDULE**

(All Work Premium Grade)

- A. Paint exterior surfaces in accordance with the following MPI Painting Specification Manual requirements:
 - 1. Asphalt Surfaces: (zone/traffic marking for drive and parking areas, etc.)
EXT 2.1B: Alkyd zone/traffic marking finish.
 - 2. Structural Steel and Metal Fabrications:
EXT 5.1D: Alkyd G6 semi-gloss finish.
 - 3. Galvanized Metal: (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, gutters, flashing, etc.)
EXT 5.1L: Polyurethane Pigmented over inorganic rich zinc primer and high build epoxy.

3.11 **INTERIOR SURFACES**

- A. Paint interior surfaces in accordance with the following MPI Painting Specification Manual requirements:

1. Structural Steel, Metal Fabrications, Doors, Frames, Railings, Decking, Misc. Steel, etc.:

INT 5.1Q: Latex G5 semi-gloss finish (over alkyd primer).

2. Galvanized Metal:
INT 5.3C: Alkyd G5 semi-gloss finish.

3. Aluminum:

INT 5.4H: Latex G3 eggshell finish.

4. Gypsum Board:

INT 9.2A: Latex G3 eggshell finish.

3.12 FIELD QUALITY CONTROL

- A. Conform to referenced manual's standards for work, unless otherwise indicated.

3.13 REPLACEMENT OF HARDWARE AND MISCELLANEOUS ITEMS

- A. Reinstall items previously required to be removed.
- B. Studio Doors: Replace all non-functioning seals and hardware damaged by painting operations.

3.14 CLEANING

- A. At conclusion of project, thoroughly clean paint and splatters from glass, mirrors, and other surfaces. Take care not to scratch surfaces.
- B. Clean residue of Work of this Section from any other surfaces.
- C. At work's conclusion, leave premises neat and clean.

END OF SECTION