GYPSUM DRYWALL & LIGHT GAUGE METAL STUD SYSTEM - SECTION 09260

1.0 - GENERAL

1.1 Scope

The work of this section consists of the furnishing and erection of all metal studs and gypsum wall board, finished ready for field decoration.

1.2 Submittals

A. Submit manufacturer data, samples and shop drawings.

1.3 Applicable Standards

Current editions or revisions of Federal and ASTM standards shall apply unless specifically noted otherwise.

1.4 Delivery and Storage

All materials shall be delivered to the job in original unopened containers or bundles and stored in a place protected from the elements and damage.

2.0 - PRODUCTS

2.1 Materials

A. Interior wall metal studs shall be cold rolled "Cee" design 25-gauge steel, prepared to receive self-drill, self-tapping screw fasteners. Metal studs web shall be punched to facilitate work of other crafts. At interior wall with plumbing, provide metal stud framing wide enough to fully conceal plumbing work.

B. Exterior wall metal studs shall be 3-5/8" 20-gauge metal studs and runners, welded system, unless noted otherwise. At all areas to receive masonry veneer, use 18-gauge metal studs and runners.

C. Track shall be of proper dimension to receive metal studs and provide a close friction fit.

D. Metal studs and track shall be hot-dipped galvanized.

E. Wall board shall be a mill fabricated gypsum board consisting of a core of processed gypsum rock encased in a heavy mineral finished paper on the face side and a strong liner paper on the back side. The face paper shall be folded around the long edges to reinforce and protect the core and the ends shall be square cut and smooth finish. Thickness shall be as indicated on the Drawings but not less than 5/8".

F. Fire resistant wall board shall be a board having a specifically formulated core which shall meet Underwriter's Laboratory tests for a one-hour fire resistant rating. Material shall be equal to USG Sheetrock® Brand Ultralight Panels Fire code® X as manufactured by U.S. Gypsum, Fire-Shield® LITE® as manufactured by National Gypsum, Fireguard® by Georgia-Pacific.

G. Moisture- and Mold-resistant, Fire-resistant Gypsum Core shall be 5/8" thick Fire code equal to SHEETROCK® brand MOLD TOUGH™ FIRECODE® .

Provide at all walls subject to moisture and/or at walls behind drinking fountains, sinks, lavatories, urinals, water closets, and all other plumbing fixtures where drywall is indicated.

H. For High Impact Areas as indicated provide USG Sheetrock® Brand Mold Tough® VHI Firecode® X Panels or pre-approved equal that meets testing requirements for High Impact. The main ASTM standard for abuse classification is **ASTM C1629** which specifies the levels of performance. Annex A1 describes test methods for testing products for Hard Body Impact Resistance.

> **ASTM C1629** makes reference to three other test methods for abuse resistance: **ASTM E695** for Soft Body Impact, **ASTM D4977** for Abrasion resistance, **ASTM D 5420** for Indentation Resistance.

I. Runner channels shall be hot-rolled or cold-rolled steel and shall be galvanized or given a coat of rust-inhibitive paint. Runner channels shall be one and one-half inches (1-1/2") with flange approximately one-half inch (1/2") deep, spaced not over forty-eight inches (48") on centers. Hot Rolled Channel shall weigh not less than 850 pounds per 1,000 lineal feet; cold rolled channel shall weigh not less than 475 pounds per 1,000 feet.

J. Fasteners shall be flat, countersunk head drywall screws, USG Type S or as approved, or annular nails for use with nailer bars or for wood.

K. Trim shall be hot dip galvanized steel, corner bead, casing, and expansion strips.

L. Joint tape shall be a heavy perforated cross fibered reinforced paper.

M. Joint cement shall be a bedding and finishing cement especially prepared for use with reinforcing joint tape.

N. Metal accessories shall be provided at all exterior corners, where a horizontal surface abuts a vertical surface or where an exposed edge of the wallboard abuts metal. Material shall be as manufactured by or as recommended by the manufacturer of the wall board used.

O. Control joints shall be provided at all corners, intersections, ceilings, etc., subject to movement. Install control joints in areas as recommended by manufacturer and/or as indicated on drawings.

2.2 Auxiliary Materials

A. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

3.0 - EXECUTION

3.1 A. Floor and ceiling tracks aligned accurately according to partitions layout and anchored securely into structural floor and overhead structure at maximum of 16" o.c. All walls shall extend to underside of deck above.

B. Studs spaced not greater than 16" o.c. for gypsum board, anchored securely to floor and ceiling tracks. Set studs approximately 2" from abutting partitions or walls at corners, openings and ends of partitions. Anchor door bucks to adjacent studs.

C. Partitions shall be rigid, sound and plumb with all necessary metal trim, clips and accessories for a complete installation.

D. Gypsum board shall be applied in single layer or multiple layers as indicated on the Drawings by screw application to metal studs with joints taped and filled with manufacturer's recommended joint compound.

E. Application of gypsum board and joint finishing shall not begin under cold or damp conditions. The temperature shall be a minimum of 35^0 before work is begun and shall be maintained at this level or above until the joint cement is set dry and hard. Adequate ventilation shall be provided at all times.

F. Installation shall be in full accord with the recommendations of the manufacturer. Workmanship shall be by competent workmen experienced in the installation of wall board and all work shall be done in accordance with the best practices of the trade to give a smooth, straight, aligned surface which is ready for the finish.

G. Apply metal trim at exposed edges.

H. Neatly cut all openings so that they may be covered by plates and escutcheons.

I. Vertical Furring - All vertical furring in ceiling shall be of 5/8" fire rated gypsum board on metal framing. DO NOT furr with acoustical panels.

3.2 Drywall Finish

A. Temperature and Humidity Conditions
Do not install joint treatment compounds unless installation areas comply with the minimum temperature and ventilation requirements recommended by the manufacturer and conditions are acceptable to the installer.

B. Finish exposed drywall surfaces with joints, corners, and exposed edges reinforced or trimmed as specified, and with all joints, fastener heads, trim accessory flanges and surface defects filled with joint compound in accordance with manufacturer's recommendation for a smooth, flush surface. Drywall finishing work will not be considered acceptable if corners or edges do not form true, level or plumb lines, or if joints, fastener heads, flanges of trim accessories or defects are visible after application of field-applied decoration.
1. Refer to ASTM 6840 for guidelines for acceptable levels of finish.
   a. Finish Level shall be no less than Level 3 for all exposed Gypsum Board.

C. Joint and Corner Reinforcing
1. Use joint tape to reinforce joints formed by tapered edges or butt ends of drywall units and at interior corners and angles. Set tape in joint compound then apply skim coat over tape in one application.

2. Where open spaces of more than 1/16" width occur between abutting drywall units (except at control joints), prefill joints with joint compound and allow prefill to dry before application of joint tape.

3. Provide control joints as recommended by manufacturer.

D. Reinforce external corners of drywall work with specified type of corner bead.

Securely fasten metal corner beads as recommended by the manufacturer. Do not use fasteners which cannot be fully concealed by joint compound fill applied over flanges.

E. Edge Trimming
Provide specified type of metal casing bead trim. Install in single unjointed lengths unless run exceeds longest available stock length. Miter corners of semi-finished type trim. Coordinate installation of trim continuously with drywall installation.

F. Application of Joint Compounds

Use only compatible compounds from one manufacturer. After mixing, do not use joint compounds if recommended pot-life time has expired. Allow drying time between applications of joint compound in accordance with manufacturer's recommendations for the relative humidity and temperature levels at the time of application. In no case, allow less than 24 hours drying time between application to joint compound. Apply not less than 3 separate coats of joint compound over joints, fastener heads, and metal flanges. Joint compound treatment is not required at non-fire rated walls above suspended ceiling where partitions/walls are shown or specified to extend to structural deck or ceiling above suspended ceiling.

G. REVEALS

Provide 1" reveals equal to Fry Reglet drywall reveals Product # DRM-50-100. Reveals shall be painted to match adjacent drywall.

H. LEVELS OF FINISH. The following levels of finish are established as a guide for specific final decoration. The minimum requirements for each level shall be as described herein

1. Level 5:

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. A thin skim coat of joint compound trowel applied, or a material manufactured especially for this purpose and applied in accordance with manufacturer's recommendations, applied to the entire surface. The surface shall be smooth and free of tool marks and ridges. Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of finish paint. See painting specification in this regard.

END OF SECTION

1.0 - GENERAL

1.1 Related Documents

Drawings and general conditions of Contract, including General and Supplementary Conditions and Division-1 Specification sections apply to work of this section.

1.2 Summary

A. Section Includes:

1. Acoustical ceiling panels.
2. Exposed grid suspension system.
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings.

B. Related Sections:

1. Section 09260 - Gypsum Board
2. Section 09910 - Painting
3. Division 15 Sections - Mechanical Work
4. Division 16 Sections - Electrical Work

C. Substitutions:

1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products which have not been approved by Addenda, the specified products shall be provided without additional compensation.

2. Submittals which do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.
See Section 01360 – Product Substitution for submittal process information and Product Substitution Form.

1.3 References

A. American Society for Testing and Materials (ASTM):

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
7. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.
8. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum.
9. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems.
10. ASTM E 1264 Classification for Acoustical Ceiling Products.
11. ASTM E 1477 Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
12. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
13. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material.

B. ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"

1.4 Submittals

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.

C. Shop Drawings: Layout and details of acoustical ceilings. Show locations of items which are to be coordinated with, or supported by the ceilings.

D. Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

E. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.5 Quality Assurance

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

B. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

1. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.
   a. Flame Spread: 25 or less
   b. Smoke Developed: 50 or less

2. Fire Resistance Ratings: As indicated by reference to design designations in UL Fire Resistance Directory, for types of assemblies in which acoustical ceilings function as a fire protective membrane and tested per ASTM E 119.
   a. Protect lighting fixtures and air ducts to comply with requirements indicated for rated assembly.

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

1.6 Delivery, Storage, and Handling

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

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

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

1.7 Project Conditions

A. Space Enclosure:

All ceiling products and suspension systems must be installed and maintained in accordance with Armstrong written installation instructions for that product in effect at the time of installation and best industry practice. Prior to and after installation, the ceiling product must be kept clean and dry, in an environment that is between 32°F (0°C) and 120°F (49°C) and not subject to Abnormal Conditions within the space or with interfacing construction such as walls or soffits. Abnormal conditions include exposure to chemical fumes, vibrations, moisture, excessive humidity, or excessive dirt or dust buildup.

HumiGuard Plus Ceilings: Installation of the products shall be carried out where the temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry. The ceilings must be maintained to avoid excessive dirt or dust buildup that would provide a medium for microbial growth on ceiling panels. Microbial protection does not extend beyond the treated surface as received from the factory, and does not protect other materials that contact the treated surface such as supported insulation materials.

1.8 Warranty

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace acoustical panels that fail within the warranty period. Failures include, but are not limited to:

1. Acoustical Panels: Sagging and warping as a result of defects in materials or factory workmanship.
2. Grid System: Rusting and manufacturer's defects
3. Acoustical Panels with BioBlock Plus or designated as inherently resistive to the growth of micro-organisms installed with Armstrong suspension systems: Visible sag and will resist the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.

B. Warranty Period Humiguard:

1. Acoustical panels and grid systems with HumiGuard Plus or HumiGuard Max performance supplied by one source manufacturer is thirty (30) years from date of substantial completion.

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.9 Maintenance

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

2.0 - PRODUCTS

2.1 Manufacturers

A. Ceiling Panels:
Armstrong World Industries, Inc. USG or pre-approved equal.

2.2 Acoustical Ceiling Units

A. Acoustical Panels Type L1 (without fire guard): Product:
Fine Fissured, 1728
1. Surface Texture: Medium
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24in X 24in X 5/8in
5. Edge Profile: Square Lay-In for interface with Prelude XL 15/16" Exposed Tee.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.55.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
8. Emissions Testing: < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1- 2007, "Ventilation for Acceptable Indoor Air Quality"
9. Flame Spread: ASTM E 1264;
10. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.85.
11. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
12. Antimicrobial Protection: BioBlock Plus - Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.

B. Acoustical Panels Type ML: Product: Clean Room VL, 868

1. Surface Texture: Smooth
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24in X 24in X 5/8in
5. Edge Profile: Square Lay-In for interface with Prelude Plus XL Fire Guard 15/16" Exposed Tee.
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, N/A.
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 40
8. Emissions Testing: < 13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1- 2007, "Ventilation for Acceptable Indoor Air Quality"
9. Flame Spread: ASTM E 1264; Fire Resistive
10. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.80.
11. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0° C) and 120°F (49° C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work (plastering, concrete, etc) must be complete and dry.
12. Antimicrobial Protection: BioBlock Plus - Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.

2.3 Suspension Systems **(WITHOUT FIRE GUARD CEILING TILES)**

A. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized aluminum as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized aluminum in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).

1. Structural Classification: ASTM C 635 HD.
2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
3. Acceptable Product: Prelude XL 15/16" Exposed Tee as manufactured by Armstrong World Industries, Inc.

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least time three design load, but not less than 12 gauge.

D. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

2.4 Suspension System for Use with Clean Room VL, 868

A. Components: All main beams and cross tees shall be commercial quality hot-dipped galvanized aluminum as per ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping pre-finished galvanized aluminum in baked polyester paint. Main beams and cross tees shall have rotary stitching (exception: extruded aluminum or stainless steel).

1. Structural Classification: ASTM C 635 HD.
2. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
3. Acceptable Product: Prelude Plus XL Fire Guard 15/16" Exposed Tee as manufactured by Armstrong World Industries, Inc.

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched, with a yield stress load of at least time three design load, but not less than 12 gauge.

D. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations, including light fixtures, that fit type of edge detail and suspension system indicated. Provide moldings with exposed flange of the same width as exposed runner.

2.5 Accessories

A. Armstrong Retention Clips (#414) attach to main beams and cross tees behind the Armatuff #862 lay-in ceiling. They help to prevent accidental panel displacement by basketballs and other forces from below ceiling, or to ensure a good seal and maintain a positive pressure within the space when used in conjunction with a gasket. A clip should be placed on each side of a 2' x 2' panel and two clips at third points on each 4' cross tee for a 2' x 4' panel.

3.0 - EXECUTION

3.1 Examination of Adjoining Work

Do not proceed with installation until all wet work or work that has become wet such as concrete, CMU, terrazzo, plastering and painting has been completed and thoroughly dried out.

3.2 Preparation

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

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

3.3 Installation

A. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.

B. Suspend main beam from overhead construction with hanger wires spaced 4-0 on center along the length of the main runner. Install hanger wires plumb and straight. Main beams are to be supported with hanger wires within 8" of vertical surface terminations.

C. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

D. Vertical Wall or soffit surfaces intended to be paint finished shall receive the first coat of primer or block fill prior to installation of wall moulding.

E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 Adjusting and Cleaning

A. Replace damaged and broken panels.

B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage.

C. Ceiling Touch-Up Paint, (Item #5760, 8oz. bottles) (Item #5761, quart size cans), "global white" latex paint should be used to hide minor scratches and nicks in the surface and to cover field tegularized edges that are exposed to view.

D. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

1.0 - GENERAL

1.1 Scope
The work under this section consists of materials and installation complete of New Wood Flooring and Ventilating Base as indicated.

1.2 Quality Assurance
A. Supplier Qualifications - Supplier shall be an established firm experienced in special wood flooring.

B. Installer Qualifications
Flooring contractor shall be a firm experienced in the flooring field and approved by the manufacturer.

C. Submit three (3) copies of WSFI Recommendations for the correct preparation, finishing and testing of concrete subfloor surfaces to received wood flooring.

1.3 Submittals
A. Manufacturers' Products Data - Submit three (3) Wood Specifications.

B. Maintenance Literature - Submit three (3) copies of "WSFI Care and Preservation of Your Wood Floors."

C. Certification - Suppliers shall submit certificates attesting that the materials furnished will meet specifications for grade, quality, dryness and treatment, if required.

1.4 Delivery, Storage and Handling
A. Materials shall not be delivered or installed until room temperature is at least 65° and relative humidity 50% or lower.

B. Area where materials are to be stored should be maintained at 65° and 35 to 50% relative humidity.

1.5 Job Conditions - Sequence
After floors are finished, area to be kept locked to allow curing time for the finish.

1.6 Guarantee
The Stage Wood Flooring applicator and manufacturer shall guarantee all materials and workmanship covered by this section for a period of one (1) year from date of final acceptance of the Contract, or from occupancy of the building, whichever is earlier.

2.0 - PRODUCTS

2.1 Materials (System thickness 2-3/4")
A. Cushion Pads
1. 6 mil polyethylene

2. 3/4" Cushion Pads

B. Cushion Systems Components
   1. 2 layers of 2" Cushion LD subfloor

   2. Cushion II Flooring
      3/4" thick x 2-1/4" width Douglas Fir B & Better vertical grain or Southern Yellow Pine clear T & G and EM, Flooring by Robbins, Hoener or pre-approved equal and graded in accordance with industry standards.

C. Flooring shall be treated with Woodlife preservative. Each bundle shall be stamped with the official treating plant number and a certificate attesting to treatment shall be furnished with each shipment.

D. Perimeter Base - 3" x 4" ventilating type, black color.

E. Finishing Materials
   1. One (1) coat wood stain (color as selected.)

   2. Oil modified polyurethane sealer and matt finish.

3.0 - EXECUTION

3.1 Inspection

A. Inspect concrete subfloors for proper tolerance and dryness, and report any discrepancies to the architect in writing.

B. All work required to put the subfloors in acceptable condition shall be the responsibility of this contractor.

C. Subfloor should be broom and mop cleaned.

3.2 Installation

A. Cushion System
   1. Install polyethylene film with joints lapped 6" minimum.

   2. Install Cushion Isolator Pads 12" o.c. on lower Cushion LD Subfloor on side opposite Isolator Profiles.

   3. Install lower Cushion LD subfloor perpendicular to direction of the Cushion flooring with Isolator profiles upward, staggering all joints and spacing 1/4" apart.

   4. Install upper Cushion LD subfloor diagonal to lower subfloor panels with Isolator Profiles downward, staggering joints and spacing 1/4" apart. Secure panels using adhesive and 1" staples place 6" o.c. at panel perimeter and 12" o.c. throughout interior.

   5. Machine nail Cushion system flooring with end joints properly driven up and proper spacing provided for humidity conditions in local area. Provide 2" expansion voids at the perimeter and at all vertical obstructions.

B. Sanding

1. Sand flooring with drum sander, edger, buffer, and hand scraper. Use coarse, medium and fine grade sandpaper.

2. After sanding with drum sander, buff entire floor using 100 grit screenback or equal grit sandpaper, with a heavy-duty buffing machine.

3. Vacuum or tack floor before first coat of finish.

4. Floor shall present a smooth surface without drum stop marks, gouges, streaks or shiners.

C. Finishing - Stage

1. Apply one (1) coat stain, one (1) coat sealer and two (2) coats of matt finish.

2. Screenback or steel wool and vacuum or tack between each coat after it is dry.

D. Perimeter Base

Install vent cove base anchored to walls with base cement or screws and anchors. Use pre-molded outside corners and neatly mitered inside corners.

E. Clean up all unused materials and debris and remove from the premises.

END OF SECTION

1.0 - GENERAL

1.1 Section Includes

A. Flooring and accessories as shown on the drawings and schedules as required for complete installation.

1.2 Submittals

A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions for flooring and accessories.

B. Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.

C. If required, submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests.

D. See Section 01350 – Submittals.

1.3 Quality Assurance and Regulatory Requirements

A. Installer Qualifications: Firm with minimum five years successful experience completing resilient tile installation similar to that required.

B. Provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.

C. Materials within each area shall be from one production run as indicated by cartons bearing the same manufacturer's color code.

D. Materials shall be uniform in thickness and size with accurately cut edges. No seconds, off-goods, or remnants will be allowed.

E. Provide flooring material to meet the following fire test performance criteria as tested by a recognized independent testing laboratory:

1. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I.
2. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less.

F. Pre-Installation Conference: Conduct meeting at site prior to commencing work related to resilient tile installation.

1. Require attendance of parties directly affecting resilient tile installation.
2. Review site conditions, procedures, and coordination required with related work.

1.4 Environmental Conditions

A. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

B. Store materials in a clean, dry, enclosed space off the ground, and protected from the weather and from extremes of heat and cold. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

C. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of 100°F (38°C) for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F (13°C) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances.

D. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring. Do not install flooring over concrete slabs until they are sufficiently

dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond and moisture tests.

2.0 - PRODUCTS

2.1 Resilient Tile Flooring Materials

A. Provide "Standard Excelon" Tile Flooring manufactured by Armstrong or pre-approved equal, having a nominal total thickness of 1/8", 12 in. x 12 in. Color and pattern as selected by architect from manufacturer's full range of colors. Vinyl composition tile shall conform to the requirements of ASTM F 1066, Class 2 – through pattern.

B. Resilient tile patterns shall be indicated on architectural plans. Spacing and patterns shall be as indicated or directed.

2.2 Adhesives

A. For Tile Installation System, Full Spread: Resilient Tile Adhesive under the tile and Wall Base Adhesive at the wall base shall be as manufactured or recommended by the manufacturer of the materials used. Provide epoxy adhesive at "wet" areas.

2.3 Accessories

A. For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), shall be as manufactured or recommended by the manufacturer of the products used.

B. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.

C. Provide transition/reducing strips tapered to meet abutting materials as shown on drawings.

D. Provide threshold of thickness and width as shown on the drawings.

E. Provide feature resilient edge strips, 1" wide x 24" length, of equal gauge to the flooring, homogeneous vinyl composition and color as selected by the Architect from standard colors available.

F. Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

G. Provide expansion joint cover equal to Construction Services GFST Series. Install per manufacturer's written instructions.

2.4 Warranty

A. Flooring materials under this section shall be warranted against manufacturing defects for five years from date of substantial completion.

B. Installation shall be warranted for two years from date of substantial completion. Installation warranty shall include guarantee that products have been installed according to manufacturer's installation instructions, edition which is current at the time of installation.

C. Prorated Manufacturer's Warranty

1. **Within One Year**: If a defect is reported in writing to the manufacturer within one year of final completion, manufacturer will supply new material of the same grade sufficient to repair or replace the defective material. Manufacturer will also pay for reasonable labor costs.

2. **Within Two Years**: If a defect is reported in writing to the manufacturer after one year, but within two years of substantial completion, manufacturer will supply new material of same grade sufficient to repair or replace defective material. Manufacturer will also pay fifty per cent of reasonable labor costs.
3. **After Two Years**: If a defect is reported in writing to the manufacturer after two years, but within five years of substantial completion, manufacturer will supply new material of same grade sufficient to repair or replace defective material.

3.0 - EXECUTION

3.1 Inspection

A. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.

B. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

C. Report conditions contrary to contract requirements that would prevent a proper installation. **DO NOT** proceed with the installation until unsatisfactory conditions have been corrected.

3.2 Preparation

A. Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects as recommended by the flooring manufacturer.

B. Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents.

C. For Tile Installation System, Full Spread perform subfloor moisture testing in accordance with ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes", ASTM F 1869,"Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" or as required by manufacturer to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Relative humidity shall not exceed 80% and MVER shall not exceed 5 lbs./1000 sq. ft./24 hrs. On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.

D. For Tile High-Moisture Installation Warranty, perform subfloor moisture testing in accordance with ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes", ASTM F 1869,"Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride", or required by manufacturer to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Relative humidity shall not exceed 90% and MVER shall not exceed 7 lbs./1000 sq. ft./24 hrs. On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed

above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.

E. Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained

F. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

3.3 Installation of Tile Flooring

A. Install flooring in strict accordance with the latest edition of Manufacturer's Guaranteed Installation System and recommended work practices from the Resilient Floor Covering Institute.

B. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.

C. If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.

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

E. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.

F. Border pieces less than 6" wide are NOT acceptable.

G. Installation Direction: Quarter-turned unless otherwise indicated by Architect.

3.4 Installation of Accessories

A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.

B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.

C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.

D. Apply butt-type and/or overlap metal edge strips where shown on the drawings, before and/or after flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.5 Cleaning and Protection

A. Immediately After Installation

1. Sweep, Dust mop or vacuum the floor thoroughly to remove all loose dust and dirt.
2. Remove any dried adhesive residue with a clean white cloth dampened with mineral spirits, carefully follow warnings on container.
3. Damp mop the floor with a properly diluted neutral detergent solution as recommended by manufacturer.
4. Apply high quality commercial floor sealer and Two (2) coats of high quality commercial floor polish as recommended by manufacturer. DO NOT wet wash, machine scrub or strip the floor for at least 4 to 5 days after installation. This is to prevent excess moisture from interfering with the adhesive bond and/ or seam treatments.

B. Preparation for Use

1. Scrub the floor with a neutral detergent and scrubbing pad as recommended by manufacturer.
2. Thoroughly rinse floor and allow to dry.
3. Apply Three (3) additional coats of high-quality commercial floor polish as recommended by Manufacturer for a total of Five (5) coats for final acceptance.

C. Perform maintenance according to the latest edition of manufacturer's Guaranteed Installation System.

D. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings.

END OF SECTION

1.0 - GENERAL

1.1 Scope

The work under this section consists of all rubber floor, ramps, treads & risers.

1.2 Samples

Submit for the approval of the Architect samples of each color and type of material. Mark each sample with the manufacturer's name, type material, color, catalog number, name of contractor, and name of project.

1.3 Delivery and Storage

A. Deliver materials to site in manufacturer's original, unopened containers clearly marked with manufacturer's brand name and color. Care shall be taken to prevent damage.

B. Store materials at site for at least 24 hours before installation.

C. Maintain temperature of spaces where materials are stored and are to be installed at not less than 60° for at least 24 hours before installation. Thereafter, maintain a minimum temperature of 60°F.

2.0 - PRODUCTS

2.1 General

A. Materials shall be continuous from stringer to stringer, uniform in thickness and size with accurately cut edges without joints up to 9'0" in width. No seconds, off-goods, or remnants will be allowed.

B. Plain colors shall be uniform throughout. Selections having variegated colors shall present an overall uniform appearance.

C. Materials within each area shall be from one production run.

2.2 Materials

A. STAIR TREADS & RISERS

1. Rubber stair treads and risers 72" in width or less shall be "Rubber Tile Flooring" MOLDED RUBBER STRINGERS & RISERS RT-Rd (Raised Rounds Profile) manufactured by Tarkett. The treads shall be homogeneously constructed of single length without joints, first-quality resilient rubber compound and the color shall extend throughout the thickness of the tread. All treads shall be free from objectionable odors, blisters, cracks and other imperfections which will detract from the serviceability and appearance of the treads. Stair treads shall conform to U.S. Federal Specification RR-T-650C, Composition A, Types 1,2 and 4. The raised round molded rubber stair treads shall be type RT-Rd (Raised Rounds) Profile with Riser and shall be 1/4" (6.35 mm). They shall have square nosing and a length according to Architectural drawings. The color shall be selected by Architect.

2. Stairways with tread widths greater than 72" to receive Tarkett "Rubber Tile

Flooring" MOLDED RUBBER STRINGERS & RISERS RT-Rd (Raised Rounds Profile) single lengths without joints, available by special order up to 9'-0" lengths. The color shall be selected by Architect.

3. Stairway with tread widths greater than 9'-0" lengths shall be provided with minimum joints as directed by the Architect.

B. RAMPS & LANDINGS

1. Rubber ramps and landings shall be "Solid Color Rubber Tile" manufactured by Tarkett. Product shall be homogeneously constructed of first-quality resilient rubber compound and the color shall extend throughout the thickness of the tread. All shall be free from objectionable odors, blisters, cracks, and other imperfections which will detract from the serviceability and appearance of the treads. The raised round molded rubber stair treads shall be type RT-Rd (Raised Rounds) Profile shall be 1/8" (3.17 mm). The color shall be selected by Architect.

C. Adhesives, including primer, shall be as manufactured, or recommended by the manufacturer of the materials used.

D. Cleaner and wax shall be the type and brand recommended by the manufacturer of the resilient flooring.

3.0 - EXECUTION

3.1 Inspection

Surfaces to receive tread and riser material shall meet the minimum requirements established by the manufacturer. Examine surfaces and correct defects before starting applications.

3.2 Precautions During Installations

A. Spaces in which resilient material is being set shall be closed to traffic and to other work until the material is firmly set.

B. Where solvent-based adhesive is used, safety spark proof fans shall be provided and operated when natural ventilation is inadequate. Smoking shall be prohibited.

3.3 Installation

A. Install materials only after all finishing operations have been completed. Moisture content of building, air temperature and relative humidity must be within limits recommended by material manufacturer.

B. Mix and apply adhesive in accordance with the manufacturer's instructions. Cover the area evenly and only to the extent which can be covered with material in the recommended working time of the adhesive.

C. Tread and riser shall be applied in such a manner that the entire under-surface shall be securely bonded in place. Units shall be laid continuous from stringer to stringer and tightly so that each piece is in contact with the adjoining pieces and all joints (if allowed) are in true alignment.

END OF SECTION

1.0 - GENERAL

1.1 Related Documents

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

B. The Construction Waste Management plan prepared by the Construction Manager for coordination of waste material recycling is hereby incorporated by the reference as requirement of this section. Work under this section shall conform to the provisions outlined in the Plan and shall conform with the local recycling Standards to provide a coordinated effort to maximize reuse of waste materials.

1.2 Submittals

A. Submit for the approval of the Architect samples of each color and type of material. Mark each sample with the manufacturer's name, type material, pattern, color, catalog number, thickness, name of contractor, and name of project.

1.3 Delivery and Storage

A. Deliver materials to site in manufacturer's original, unopened containers clearly marked with manufacturer's brand name, color, and pattern numbers, and production run color code. Care shall be taken to prevent damage and freezing during delivery, handling, and storage.

B. Store materials at site for at least 24 hours before installation.

C. Maintain temperature of spaces where materials are stored and are to be installed at not less than 60° for at least 24 hours before installation. Thereafter, maintain a minimum temperature of 60°F.

2.0 - PRODUCTS

2.1 General

A. Materials shall be uniform in thickness and size with accurately cut edges. No seconds, off-goods, or remnants will be allowed.

B. Colors shall be uniform throughout.

C. Materials within each area shall be from one production run as indicated by cartons bearing the same manufacturer's color code.

D. Interior finish materials shall comply with flame spread limitations and smoke production limitations as follows. Tests shall be performed by an independent testing laboratory.

Walls and Ceilings	Flame Spread	25 or less ASTM E-84.
	Smoke Production	350 or less ASTM E-84.
Floors	Flame Spread	75 or less ASTM E-84.
	Smoke Production	350 or less ASTM E-84.

2.2 Manufacturers

A. Rubber Base Manufacturers
   1. Tarkett (Basis of Design)
   2. Roppe

3. Flexco
4. Mannington

B. Transition Material Manufacturers:
1. Tarkett
2. Roppe
3. Flexco
4. Mannington

C. Requests for substitution shall be considered in accordance with provision of Section 01360 and received by Architect at least 10 days prior to bid.

2.3 Wall Base Materials

A. Rubber Base shall be 4" high x running length. Rubber base shall be Johnsonite, Roppe or approved equal. Base type and color as specified on Finish Legend.

B. Provide 1/8" ga., 4 " high Tarkett/Johnsonite Baseworks Thermoset Rubber wall base standard profile conforming to ASTM F1861.
1. Color to be selected by Architect from manufacturer's full range of colors.
2. Refer to manufacturer's written installation instructions for complete installation details.

C. Refer to Section 09560 for Flexco Base Specialty.

D. Adhesives, including primer, shall be as manufactured or recommended by the manufacturer of the materials used.

E. Outside corners are to be mitered. V-cut back of base strip to two thirds of its thickness and fold. Use Tool # 532 cove base groover gunlach or equal. Inside corners are to be mitered.

4' lengths or less and pre-mitered corners are not acceptable

F. Provide caulk to fill in at bullnose corners.

2.4 Floor Transition Materials

A. Provide transition strips tapered to meet abutting materials on drawings.

2.5 Adhesives:

A. Wall Base Adhesives shall be as manufactured or recommended by the manufacturer of the materials used. Provide epoxy at "wet areas".
1. Wall Base Adhesives
a. Tarkett/Johnsonite 960 Wall Base Adhesive for porous surfaces
b. Tarkett/Johnsonite 946 Premium Contact Adhesive for non-porous surfaces
c. Tarkett/Johnsonite 965 Flooring and Tread Adhesive
d. Tarkett/Johnsonite 996 Two-Part Epoxy Adhesive
e. Tarkett/Johnsonite 975 Two-Part Urethane Adhesive
2. Caulk: Color Rite Inc.

B. Floor Transitions: Adhesives shall be as manufactured or recommended by the manufacturer of the materials used.

3.0 - EXECUTION

3.1 Inspection

Surfaces to receive rubber base shall meet the minimum requirements established by the rubber base manufacturer. Examine surfaces and correct defects before starting applications.

3.2 Precautions During Installations

A. Spaces in which rubber base material is being set shall be closed to traffic and to other work until the base is firmly set.

B. Where solvent-based adhesive is used, safety sparkproof fans shall be provided and operated when natural ventilation is inadequate. Smoking shall be prohibited.

3.3 Installation

A. Install rubber base materials only after all finishing operations have been completed. Moisture content of concrete slabs, building air temperature and relative humidity must be within limits recommended by rubber base manufacturer.

B. Mix and apply adhesive in accordance with the manufacturer's instructions. Cover the area evenly and only to the extent which can be covered with rubber base material in the recommended working time of the adhesive.

C. Base shall be applied in such a manner that the entire under- surface shall be securely bonded in place. Base shall be laid tightly so that each piece is in contact with the adjoining pieces and all joints are in true alignment.

D. Apply resilient base to permanent walls, cabinets, and fixtures in rooms or areas as specified. Install base in as long lengths as practicable. Press down so that bottom cove edge follows floor. Scribe accurately to abutting materials.

3.4 Adjustments

Inspect and make necessary adjustments after heat is applied continuously in finished areas. Any portion of the rubber base which has not seated in a level plane with surrounding base and all damaged, imperfect, or improperly installed base shall be warmed, carefully removed, and new base of the same color and thickness substituted.

3.5 Cleaning and Waxing

Remove stains from base and clean as required and recommended by manufacturer.

3.6 Surplus Materials

Unused runs and one full carton of materials shall be left at the job and turned over to the Owners.

END OF SECTION

1.0 - GENERAL

1.1 Summary

A. Section Includes: Luxury Vinyl tile floor coverings.

B. Cement Based Finishing Underlayment

C. Related Sections:
   1. Division 5 Section: Miscellaneous Metals

1.2 References

A. ASTM International:
   1. ASTM E648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
   2. ASTM E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
   3. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
   4. ASTM F970 Standard Test Method for Static Load Limit.
   5. ASTM F1700 Standard Specification for Solid Vinyl Floor Tile.

B. National Fire Protection Association (NFPA):
   1. NFPA 253 Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Energy Source.
   2. NFPA 258 Research Test Method for Determining Smoke Generation of Solid Materials.

1.3 System Description

A. Performance Requirements:
   1. Fire Performance:
      a. Critical Radiant Flux (NFPA 253 or ASTM E648): Class 1 (0.45 watts per square centimeter or greater).
      b. Smoke Density (NFPA 258 or ASTM E662): 450 or less.

1.4 Submittals

A. General: Submit listed submittals in accordance with Conditions of the Contract and Section 01360 - Submittals

B. Product Data: Submit product data for specified products.

C. Samples: Submit selection and verification samples of finishes, colors and textures.

1.5 Quality Assurance

A. Installer Qualifications: Firm with minimum five years successful experience completing resilient tile installation similar to that required.

B. Provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.

C. Materials within each area shall be from one production run as indicated by cartons bearing the same manufacturer's color code.

D. Materials shall be uniform in thickness and size with accurately cut edges. No seconds, off-goods, or remnants will be allowed.

E. Provide flooring material to meet the following fire test performance criteria as tested by a recognized independent testing laboratory:

1. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I.
2. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less.

F. Pre-Installation Conference: Conduct meeting at site prior to commencing work related to resilient tile installation.

1. Require attendance of parties directly affecting resilient tile installation.
2. Review site conditions, procedures, and coordination required with related work.

1.6 Delivery, Storage & Handling

A. General: Comply with Division 1 Product Requirements Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

2.0 - PRODUCTS

2.1 Cement Based Finish Underlayment

A. Ardex Feather Finish as approved by Ardex Engineered Cements
1. Self-Drying
2. Waterbased

2.2 Vinyl Tile Floor Covering

A. Manufacturer: Interface

B. Other manufacturers seeking approval must submit product information and comply with Section 01360 - Product Substitution. Information must be received by Architect at least 10 days prior to bid date.

2.3 Materials

A. Level Set Collection LVT: Natural Woodgrains
1. Product No. A002
2. Product Construction: High performance luxury vinyl tile
3. Classification: ASTM F1700, Class III, printed vinyl plank.
4. Wear Layer Thickness: 22 mil
5. Total thickness: 4.5mm

6. Backing Class: Commercial Grade.
7. Finish: Ceramor Coating.
8. Installation Recommendation: Floating Floor with tactiles glue free installation system.
9. Nominal dimensions: 25cm x 1m (9.845in x 39.38in)
10. Installation Methods: Ashlar or Herringbone

3.0 - EXECUTION

3.1 Manufacturer's Instructions

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

3.2 Finishing Underlayment

A. Clean and prepare the full extent of the existing concrete floor scheduled to receive flooring under this section.

B. Provide new Ardex feather finish underlayment as recommended by the manufacturer to achieve a uniform, level substrate surface throughout the entire area to receive flooring products specified under this section.

3.3 Examination

A. Site Verification of Conditions: Verify that substrate conditions, which have been previously installed under this section, are acceptable for product installation in accordance with manufacturer's instructions.

3.4 Preparation

A. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.5 Protection

A. Protect installed products until completion of project.

B. Repair or replace damaged products prior to Substantial Completion.

END OF SECTION

1.0 – GENERAL

1.1 Related Documents

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

1.2 Summary

A. This section includes the following:

1. Resinous flooring system as shown on the drawings and in schedules.

B. Related sections include the following:

1. Cast-in-Place Concrete, Section 03300

1.3 System Description

A. The work shall consist of preparation of the substrate, the furnishing and application of a seamless flooring system with decorative flake broadcast and chemical resistant topcoat.

B. The system shall have the color and texture as specified by the Owner with a nominal thickness of 60 Mils. It shall be applied to the prepared area(s) as defined in the plans strictly in accordance with the Manufacturer's recommendations.

C. 4 inch Cove base to be applied where noted on plans and per manufacturers standard details unless otherwise noted

1.4 Submittals

A. Product Data: Latest edition of Manufacturer's literature including performance data and installation procedures.

B. Samples: A 6 x 6 inch square sample of the proposed system. Color, texture, and thickness shall be representative of overall appearance of finished system subject to normal tolerances.

1.5 Quality Assurance

A. The Manufacturer shall have a minimum of 10 years' experience in the production, sales, and technical support of epoxy and urethane industrial flooring and related materials.

B. The Applicator shall have experience in installation of the flooring system as confirmed by the manufacturer in writing in all phases of surface preparation and application of the product specified. Qualifications of applicator must be submitted to Architect by the General Contractor for approval within 24 hours after acceptance of bid. Architect reserves the right to reject applicator if they do not meet the specified qualifications and/or cannot provide documentation from manufacturer.

C. No requests for substitutions shall be considered that would change the generic type of the specified System.

D. System shall be in compliance with requirements of United States Department of Agriculture (USDA), Food, Drug Administration (FDA), and local Health Department.

E. A pre-installation conference shall be held between Applicator, General Contractor, manufacturer and the Owner for review and clarification of this specification, application procedure, quality control, inspection and acceptance criteria and production schedule.

1.6 Product Delivery, Storage, And Handling

A. Packing and Shipping
All components of the system shall be delivered to the site in the Manufacturer's packaging, clearly identified with the product type and batch number.

B. Storage and Protection

1. The Applicator shall be provided with a dry storage area for all components. The area shall be between 60 F and 85 F, dry, out of direct sunlight and in accordance with the Manufacturer's recommendations and relevant health and safety regulations.
2. Copies of Material Safety Data Sheets (MSDS) for all components shall be kept on site for review by the Architect or other personnel.

C. Waste Disposal

1. The Applicator shall be provided with adequate disposal facilities for non-hazardous waste generated during installation of the system.

1.7 Project Conditions

A. Site Requirements

1. Application may proceed while air, material and substrate temperatures are between 60 F and 85 F providing the substrate temperature is above the dew point. Outside of this range, the Manufacturer shall be consulted.
2. The relative humidity in the specific location of the application shall be less than 85 % and the surface temperature shall be at least 5 F above the dew point.
3. The Applicator shall be supplied with adequate lighting equal to the final lighting level during the preparation and installation of the system.

B. Conditions of new concrete to be coated with specified flooring material.

1. Concrete shall be moisture cured for a minimum of 7 days and have fully cured for 28 days in accordance with ACI-308 prior to the application of the coating system pending moisture tests. Outside of these parameters manufacturer shall be consulted.
2. Concrete shall have a light steel trowel finish (a hard steel trowel finish is neither necessary or desirable).
3. Sealers and curing agents should not be used.

4. Concrete surfaces on grade shall have been constructed with a vapor barrier to protect against the effects of vapor transmission and possible delamination of the system.

C. Safety Requirements

1. Other trades shall be removed during the application of the product and 72 hours after completion

2.0 – PRODUCTS

2.1 Manufacturers

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

1. Basis-of-Design Product: Subject to compliance with requirements, provide BPI Spartacote Chip Pure Seamless Floor System. Not all manufacturers produce all categories and types of resinous flooring systems.
   a. Also pre-approved are:
   Sherwin Williams – Aqua Armor Decorative Mosaic Flooring
   Stonhard – Stontec ERF

2. Other Products must be approved prior to Bid and must be submitted in compliance with Section 01360 - Product Substitution.

2.2 Flooring

A. Spartacote Chip Pure Seamless Floor System (60 mil floor system),
   1. System Materials:
      a. Primer: Primer/Scratch Coat 160 sq. ft/gal
      b. Base resin: Pigmented Body Coat 65 sq. ft/gal
      c. Broadcast Aggregate: Broadcast Chips
      (size and quantity determined by selection of architect)
      d. Grout Coat: MVT Tolerant UV Stable Glaze 160 sq. ft/gal
      e. Top Coat: Surface Build Top Coat UV- Finish to be selected by Architect
      f. Color: See Finish Legend

   2. Cove base (4 inch high with 2 inch diameter radius, smooth texture)
      a. Cove resin; Cove Gel, Spartacote Broadcast quartz mixed with resin and troweled in place
      b. Overlay Spartacote Chip Pure Floor System to match floor
      c. Cove termination strip: clear plastic with 1/8" lip

2.3 Product Requirements

Material: Spartacote Resin	2-component epoxy
Density	12.70 lbs./gallon
VOC Content, Mixed	
Volume Solids	59%
Flash Point: Part A Part B	>212°F 170 °F

Mixing Ratio	1:4 by Vol.
Pot Life, Approximate	60 minutes @ 75°F
Open to Foot Traffic	After 16 hrs. at 73°F
Curing Temperature	Minimum 50°F
Full Cure & Max. Resistance	7 days
Hardness, Shore D ASTM-D-2240	70-75
Compressive Strength ASTM-C- 579	6500 psi
Flexural Strength ASTM-C-580	2100 psi
Adhesion To: -New concrete (5 days) -Moist concrete (28 days) -Dry concrete (28 days)	110 psi 550 psi 580 psi

3.0 – EXECUTION

3.1 Examination

A. Examine substrates, areas and conditions, with Applicator present, for compliance with requirements for maximum moisture content, installation tolerances and other conditions affecting flooring performance.

B. Verify that substrates and conditions are satisfactory for flooring installation and comply with requirements specified.

3.2 Preparation

A. General

1. Existing concrete surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, and bituminous products
2. Mechanical surface preparation
   a. Shot blast all surfaces to receive flooring system with a mobile steel shot, dust recycling machine (Blastrac or equal). All surface and embedded accumulations of paint, toppings hardened concrete layers, laitance, power trowel finishes and other similar surface characteristics shall be completely removed leaving a bare concrete surface having a minimum profile of CSP 3-5 as described by the International Concrete Repair Institute.
   b. Floor areas inaccessible to the mobile blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
   c. Wherever a free edge will occur, including doorways, wall perimeters, expansion joints, columns, doorways, drains and equipment pads, a ¼ inch deep by 3/16 inch wide keyways shall be cut in.
   d. Cracks and joints (non-moving) greater than 1/4 inch wide are to be chiseled or chipped-out and repaired per manufacturer's recommendations.

3. At spalled or worn areas, mechanically remove loose or delaminated concrete to a sound concrete and patch per manufactures recommendations.

3.3 Application

A. General
1. The system shall be applied in six distinct steps as listed below:
   a. Substrate preparation
   b. Cove application
   c. Primer Application
   d. Topping/overlay application with flake aggregate broadcast.
   e. Grout coat application
   f. Topcoat application to thickness to reach even texture matching accepted sample
2. Immediately prior to the application of any component of the system, the surface shall be dry and any remaining dust or loose particles shall be removed using a vacuum or clean, dry, oil-free compressed air.
3. The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results in accordance with the Manufacturer's recommendations.
4. The system shall follow the contour of the substrate unless pitching or other leveling work has been specified by the Architect.
5. A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

B. Cove
1. Cove will be placed with the broadcast flake to match selected color and size at 4 inches in height unless otherwise noted on drawing with a 1 inch radius
2. The cove will be smooth with no texture above mid-radius

C. Topping
1. The topping shall be applied as a self-leveling system as specified. The primer must be applied and will not be a lift coat. The topping shall be applied in one to two lifts with a minimum thickness of 60 mils.
2. The topping shall be comprised of three components, a resin, hardener and filler as supplied by the Manufacturer.
3. The hardener shall be added to the resin and thoroughly dispersed by suitably approved mechanical means.
4. The topping shall be applied over horizontal surfaces using a pin rake, trowels or other systems approved by the Manufacturer.
5. Flake shall be broadcast into the wet material to excess.
6. Allow material to fully cure. Vacuum, sweep and/or blow to remove all loose aggregate.

D. Grout coat and Topcoat
1. The grout coat shall be mixed and applied per manufacturer recommended procedure.
2. The grout coat shall be comprised of two components, a resin, hardener.
3. The grout coat will be applied at the rate of 160 sf per gallon.
4. The top coat shall be mixed and applied per manufacturer recommended procedure.
5. The top coat shall be comprised of two components, a resin, hardener.
6. The top coat will be applied at a rate to achieve selected texture.
7. The finish floor will have a uniform texture free of dry or smooth areas that do not match the selected texture. The finished thickness shall be 60 mils.

3.4 Field Quality Control

A. Tests, Inspection

The following tests shall be conducted by the Applicator:

1. Temperature
   Air, substrate temperatures, relative humidity, and, if applicable, dew point.
2. Perform moisture tests on concrete as follows:
   a. Perform calcium chloride moisture tests in accordance with ASTM D1869 a minimum of twice for the first 1000 sq. ft and once for each additional 1000 sq. ft of area to be coated. Provide a written report of these test results including a letter of acceptance from the manufacturer.
   b. Perform PH tests alongside each calcium chloride moisture tests. Provide a written report of these test results including a letter of acceptance from the manufacturer.

B. Coverage Rates
Rates for all layers shall be monitored by checking quantity of material used against the area covered.

C. Provide daily reports including detailed days activities, materials used with batch numbers and environmental conditions

3.5 Cleaning And Protection

A. Cure flooring material in compliance with manufacturer's directions, taking care to prevent their contamination during stages of application and prior to completion of the curing process.

B. Remove masking. Perform detail cleaning at floor termination, to leave cleanable surface for subsequent work of other sections.

END OF SECTION

SECTION 09800 - ACOUSTICAL PANEL TREATMENT

1.0 GENERAL

1.1 Section Includes

A. Acoustical wall panels.

1.2 Related Sections

A. Section 09260 - Gypsum Board Assemblies.

B. Section 09510 - Suspended Acoustical Ceilings: Conventional grid-supported acoustic ceilings.

C. Section 09910 - Paints and Coatings.

1.3 References

A. ASTM C 423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method; 2000.

B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2000a.

1.4 Performance Requirements

A. Acoustical Absorption: Perform testing in accordance with ASTM C 423, Type A mounting method unless otherwise specified.

B. Flame Spread Rating: Provide all components with Class A flame spread rating when tested in accordance with ASTM E 84, unless otherwise specified.

1.5 Submittals

A. Submit under provisions of Section 01350.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Independent testing agency test reports.

C. Selection Samples: For each product specified, two complete sets of color samples representing manufacturer's full range of available colors and patterns.

D. Verification Samples: For each product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.6 Quality Assurance

A. Manufacturer Qualifications: Minimum 10 years of experience in producing acoustical products of the types specified herein.

B. Installer Qualifications: Acceptable to the manufacturer of the acoustical products being installed.

C. Mock-Up: Provide a mock-up for evaluation of installed appearance.
1. Install acoustical products in areas designated by Architect.
2. Do not proceed with remaining work until Architect approves workmanship and appearance.
3. Approved mock-up may remain as part of the work.

1.7 Delivery, Storage, And Handling

A. Protect acoustical products from moisture during shipment, storage, and handling.

B. Store products in manufacturer's unopened packaging until ready for installation.
1. Store materials flat, in dry, well-ventilated space.
2. Do not stand panels on end.
3. Protect edges from damage.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 Project Conditions

A. Do not begin installation of acoustical products until building has been enclosed and environmental conditions approximate those that will prevail when building is occupied.

B. Environmental Requirements: Do not install panels until wet work, such as concrete and plastering, is complete; the building is enclosed; and the temperature and relative humidity are stabilized at 60 – 80 degrees F (16 – 27 degrees C) and 40% to 50%, respectively.

1.9 Extra Materials

A. Provide 5 percent, but not less than 1 of each type of acoustical unit actually installed, for Owner's use in maintenance.

2.0 PRODUCTS

2.1 Manufacturers

A. Basis of Design - Manufacturer: G&S Acoustics

B. Requests for substitutions will be considered in accordance with provisions of Section 01360. Submit for pre-approval at least 10 days prior to bid.

C. Provide all acoustical products specified herein by a single manufacturer.

2.2 Acoustical Wall Panels

A. Painted Wall/Ceiling Panels: Pinta panels; core of 6 to 7 pcf (96 to 112 kg/cu m) fiberglass, with chemically hardened edges and a paintable scrim fiber facing sheet.

1. Core Thickness: 1 inch (25.4 mm); NRC 0.85.
2. Core Thickness: 2 inch (51 mm); NRC 1.05.
3. Size: As indicated.
4. Finish: Latex paint as selected from manufacturers standards
5. Color: As scheduled, see finish schedule
6. Edges: Square and painted.
7. Corners: Square.
8. Wall Panel Mounting: Adhesive.
9. Wall Panel Mounting: Angled Impaling clips.
10. Ceiling Panel Mounting: Lay-in ceiling grid as specified in Section 09511.
11. Ceiling Panel Mounting: Two part clips with continuous ceiling Z bar.

2.3 Accessories

A. Mounting Adhesive: Water-based, heavy-bodied adhesive as recommended by manufacturer of acoustical panels.

B. Impaling Clips. Manufacturer's standard 3 by 4 inches (75 by 100 mm) galvanized mounting clips designed for impaling back side of fiberglass units.

C. Two-Part Z-Clips: Manufacturer's standard mounting bar and matching clips for mounting on rear of acoustical panels.

3.0 EXECUTION

3.1 Examination

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 Preparation

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 Installation

A. Install acoustical units in accordance with manufacturer's instructions.

B. Adhesive Mounting: Size back of panels at 18 inch (450 mm) on center in both directions with thin coating of adhesive in 4 inch (100 mm) squares. Center adhesive dabs the size of a large egg on each sized area, and press panel firmly against substrate, flattening adhesive. Block panel for not less than 24 hours until adhesive has set.

C. Impaling Clips: Fasten clips to wall at 48 inches (1220 mm) on center, with points facing upward. Attach panels by pressing downward and toward the wall, so points of clips are embedded firmly in back of panel.

D. Two-Part Clips: Fasten bars to wall at 48 inches (1220 mm) on center in both directions. Impale matching mechanical clips into back of panels in matching pattern and drop panel into position so clips fully engage into wall-mounted bars.

3.4 Protection

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

1.0 – GENERAL

1.1 Scope

A. The work under this section consists of all painting, finishing work and related items.

B. Paint or Painting shall include sealers, primers, stains, and oil, alkyd, latex and enamel paints and the application of these materials on surfaces prepared to produce a complete job whether or not every item is specifically mentioned. Where items are not mentioned they shall be furnished as specified for similar work. **Only work specifically noted as being excluded shall be left unfinished.**

C. This specification includes field painting of all exposed piping, metal, ductwork, conduit, hangers, mechanical and electrical equipment in finished spaces. A finished space is one listed in the Finish Schedule as having finish materials on walls and/or ceiling.

1.2 List of Proposed Materials

A. The contractor shall either verify in writing that he intends to apply the products listed in the Paint Schedule, or shall submit for approval a list of comparable materials of another listed approved manufacturer. This submittal shall include full identifying product names and catalog numbers.

1.3 Submittals

A. As soon as practicable after contract is let, submit for approval a detailed schedule of the paint proposed, listing the name of each product, and the surface to which it will be applied. Omission of any item from the approved schedule shall not relieve Contractor of his obligation.

B. Product Data: For each paint system indicated. Include block fillers and primers.

1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
3. Coating Maintenance Manual: Upon conclusion of the project, the Contractor or paint manufacturer / supplier shall furnish a coating maintenance manual, such as Sherwin-Williams "Custodian Project Color and Product Information" report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product / color / finish was used, product data pages, Material Safety Data Sheet (MSDS), care and cleaning instructions, Touch-up procedures.

1.4 Storage of Materials

A. Deliver all painting materials to job site at least three (3) days before beginning painting in original unbroken containers showing manufacturers name and type of paint, subject to Architect's inspection and approval.

B. All materials used on the job shall be stored in a single place. Such storage place shall be kept neat and clean, and all damage thereto or its surroundings shall be made good. Any soiled or used rags, waste, and trash must be removed from the building every night, and every precaution taken to avoid the danger of fire.

1.5 Protection of Other Work

A. The painting contractor shall furnish and lay drop cloths in all areas where painting is being done to protect floors and other work from damage. He shall be responsible for any damage to other work and shall replace any materials which have been damaged to such an extent that they cannot be restored to their original condition. All damage must be repaired to the satisfaction of the Architect.

1.6 Job, Weather, and Temperature Conditions

A. Maintain temperature in building at constant 65° F. or above and provide adequate ventilation for escape of moisture from the building in order to prevent condensation mildew, damage to other work, and improper drying.

B. Exterior painting shall not be done when the temperature is below 50° F., while the surface is damp, or during cold, rainy, or frosty weather, or when the temperature is likely to drop to freezing within 24 hours. Avoid painting surfaces while they are exposed to hot sun.

C. Before painting is started in any area, the area shall be broom cleaned and excessive dust shall be removed from all areas to be painted. After painting operations begin in a given area, clean only with commercial vacuum cleaning equipment.

D. Adequate illumination shall be provided in all areas where painting operations are in progress.

1.7 Inspection of Surfaces

A. Before starting any work, surfaces to receive paint finishes shall be examined carefully for defects which cannot be corrected by the procedures specified under paint manufacturers recommended "Preparation of Surfaces" and which might prevent satisfactory painting results. Work shall not proceed until such damages are correct.

B. At areas of existing previously painted surface, the painting contractor shall field verify to assure compatibility between existing paint / coating material and the proposed new paint / coating material prior to procuring such new materials or products. Should a material or product compatibility conflict be discovered, the Contractor shall immediately notify the Architect for direction prior to proceeding with procuring such materials or products.

C. The beginning of work in a specific area shall be construed as acceptance of the surfaces and the Contractor shall be fully responsible for satisfactory work.

1.8 Quality Assurance

A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats. An inspection is required by manufacture in between prime coat and finish. Per the request of the Architect.

C. Coordination of Work: Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of total coatings systems for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

D. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.

1.9 Cooperation With Other Trades

A. This work shall be scheduled and coordinated with other trades and shall not proceed until other work and/or job conditions are as required to produce satisfactory results.

B. The contractor shall examine the specifications for the various trades and shall thoroughly familiarize himself with all provisions regarding painting. **All surfaces that are left unfinished by the requirements of other sections shall be painted or finished as part of the work covered by this section.**

1.10 Maintenance Material

The contractor shall turn over to the Owner at the final inspection one gallon of each type and final color of the paint used on the project.

2.0 – PRODUCTS

2.1 Materials

A. Except where otherwise specifically stated hereinafter, painting materials shall be products of one of the following manufacturers without substitution of "Equal", and shall be in that manufacturer's top grade of the respective type: Benjamin Moore, PPG, or Sherwin-Williams (Basis of Design). The term "top grade" refers to the manufacturers advertised line of best quality and not to "Professional" or "maintenance" lines. Any deviations from the requirements of this article shall only be by written change order with contract price adjusted accordingly.

B. If job-mixed paints are used, submit proposed formulas for approval before proceeding with work. Thinning and tinting materials shall be as recommended by the manufacturer of the material used.

C. Paints and finishing materials shall be free from skins, lumps, or any foreign matter when used, and pigments, fillers, etc., shall be kept well stirred while being applied.

D. Interior finish materials shall comply with flame spread limitations and smoke production limitations as follows:

Walls and Ceilings - Flame Spread - 25 or less ASTM E-84.
Smoke Production - 350 or less ASTM E-84.

2.2 Colors

A. Not limited to "stock" ready-mixed colors. Bring to directed shades or tones by mixing.

B. In two-coat or three-coat work use slightly different colors for different coats to avoid skipping.

C. Accent or feature areas when indicated shall be colors as selected. Color spacing and pattern shall be as indicated and/or directed. Maximum three (3) colors per area.

D. Complete color scheme shall be as indicated on Finish Legend and Schedule.

2.3 Accessory Materials

Provide all required ladders, scaffolding, drop cloths, maskings, scrapers, tools, sandpaper, dusters, cleaning solvents, and waste as required to perform the work and achieve the results specified herein.

3.0 – EXECUTION

3.1 Workmanship

A. Surfaces shall be clean, dry, and free of oil, grease, dirt, mildew, loose or peeling paint, loose wood particles, and in proper condition for painting. All work shall be carefully done by skilled mechanics. Finished surfaces shall be uniform in coverage, gloss, finish and color, and free from brush marks. All coats shall be thoroughly dry before applying succeeding coats.

B. Do all work in strict accordance with manufacturer's label directions.

C. Hand sand woodwork until smooth and free from raised grain and other surface imperfections. First coat shall be applied before erection, to all surfaces, front and back. After woodwork is primed, fill nail holes, cracks, etc., full and smooth with putty. Lightly sand between coats where necessary in accord with good practice. Fully finish the top and bottom edges of doors and other woodwork edges not normally visible. Shellac knots and pitch streaks before painting.

D. On concrete or masonry, do no painting until the surface has dried to the equivalent of eight days drying time under well ventilated conditions in good drying weather.

E. Vertical surfaces to Interface with suspended acoustical panel ceiling shall be primed/filled to a minimum of 8" about finish ceiling elevation prior to the installation of the acoustical panel ceiling perimeter wall edge molding/trim.

F. Wash metal surfaces with mineral spirits to remove any dirt, grease, before applying materials. Where rust or scale is present, use wire brush, or sandpaper clean before painting. Clean shop coats of paint that become marred and touch up with specified primer.

G. Treat galvanized metal surfaces chemically with compound designed for this purpose, apply as per manufacturer's directions before applying first paint coat.

H. Remove and protect hardware panels, accessories, device plates, lighting fixtures, factory finished work, and similar items; or provide ample in-place protection. Upon

completion of each space, carefully replace all removed items.

I. Exterior doors shall have tops, bottoms, and side edges finished the same as the exterior faces of these doors. Interior door shall have vision windows, louvers, grilles, etc. Finished to match door frame.

J. All closets and the interior of all cabinets shall be finished the same as adjoining room paint or stain unless otherwise scheduled. All other surfaces shall be finished the same as nearest or adjoining surfaces unless otherwise scheduled or directed.

3.2 Schedule

A. Exterior Metals

1. Galvanized metal shall be solvent clean with VM&P Naphtha.
Primer: S-W: Procryl B66 - 1310
Finish: Apply two coats
B66-600 Series

2. Non-primed metal shall be cleaned and etched with approved acid and washed with water.
Primer: S-W: Procryl B66 - 1310
Finish: Apply two coats
S-W: Pro Industrial DTM Acrylic Coating

3. Primed metals shall be inspected, scuffs, and abrasions sanded free of rust and receive full coat of primer. Concealed metal surfaces shall be spot primed.

Primer: S-W: Procryl B66 - 1310
Finish: Apply two coats
S-W: Pro Industrial DTM Acrylic Coating

B. Interior Metals

1. Non-primed metal shall be primed under this section.
Primer: S-W: Procryl B66 - 1310

Finish: Apply two coats
S-W: Pro Industrial DTM Acrylic Coating, Gloss

2. Primed metal shall have scratches and abrasions sanded free of rust and receive one full coat of primer.
Primer: S-W: Procryl B66 - 1310

Finish: Apply two coats
S-W: Pro Industrial DTM Acrylic Coating

C. Exterior Wood

Exposed wood of every description.

Primer: S-W: Exterior Latex Wood Primer, B42W8041
Finish: Apply Two Coats:
S-W: A-100 Exterior Latex Satin, A82 Series

D. Interior Woodwork and Trim

Apply two finish coats

Primer: S-W: Prep-rite Problock B51-620

Finish: Apply Two Coats:

S-W: ProMar 200 Zero VOC Interior Latex Semi-Gloss, B31-2600

E. Interior Gypsum Board and Plaster

1. Latex Finish system:

Primer: S-W: ProMar 200 Zero VOC Interior Latex Primer, B28-2600

Finish Apply Two Coats:

S-W: ProMar 200 Zero VOC Interior Latex

2. High Touch areas - Microbicidal Latex Finish System – passive system for controlling / killing E-COLI, STAPH and MRSA Infections. With topcoat EPA registered No. 64695-1.

Prime Coat: Primer, latex, interior: S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils (0.102 mm) wet, 1.0 mils (0.025 mm) dry.

a. First Coat: Microbicidal Latex, interior, matching topcoat.

b. Topcoat: Microbicidal Latex, interior, eggshell:
S-W Paint Shield Interior Latex Eg-Shel Microbicidal Paint, D12W51, at 4.0 mils (0.102 mm) wet, 1.8 mils (0.046 mm) dry, per coat. Brush and roll application only.

3. Ceiling Application:

**Note: Provide flat finish for gypsum board in ceiling applications.

S-W: Pro-Mar Ceiling Paint, P200 Flat - B30W2651

4. High Performance System: (All areas not ceiling) ***

Primer: S-W: ProMar 200 Zero VOC Interior Latex Primer, B28-2600

Finish Apply Two Coats:

S-W: Pro Industrial Pre-Catalyzed Waterbased Epoxy

Provide at all wet areas

S-W: Pro Industrial Waterbased Catalyzed Epoxy

F. Exterior Exposed Concrete and/or Clay Brick Masonry

Primer: Loxon Exterior / Interior Concrete & Masonry Primer / Sealer, A24W8300

Block Filler:S-W: Pro Industrial Heavy Duty Acrylic Block filler, B42-151

Finish:

S-W: A-100 Exterior Latex

Sheen indicated on Finish Schedule

G. Interior Concrete and Concrete Masonry

1. Concrete Masonry Surfaces shall be filled unless noted otherwise.

Prime: Pro Industrial Heavy Duty Acrylic Block Filler, B42W151

Finish Apply Two Coats:

S-W: Pro Industrial Pre-Catalyzed Waterbased Epoxy

Provide at all wet areas

S-W: Pro Industrial Waterbased Catalyzed Epoxy

a. Note: Block Filler should achieve a smooth pinhole free appearance.

b. This is necessary for proper protection before top coat is applied.

c. Apply at recommended film thickness and spread rate as indicated by manufacturer.
d. Architect requires manufacturer' inspection between block filler and top coat.

2. **Sealed Concrete (SC):** Concrete MUST be etched, with H&C® Concrete Etcher or muriatic acid, following label directions.

Reducer/Cleaner --- Aromatic 100, R2K5, or R7K65
Brush – Use natural bristle brushes
Roller – Use a ¼" – 3/8" nap woven or other solvent-resistant cover
Freshly stained or painted surfaces will require cure time before any application of this H&C® High Performance Industrial Clear. Follow manufacturer's instructions and recommendations.

H. Interior Wood Doors and Natural Finish Wood
One (1) coat - Stain, of selected color, S-W: Wood Classics "250" Interior Wood Stain, A49-800
Or One (1) coat – S-W: Wood Classics Waterborne Polyurethane

I. Exterior Ground Mount and Roof Top Mechanical Units, Equipment and Accessories. Painting contractor shall examine the site and all drawings and provide one (1) heavy coat of paint for each unit. Provide also one (1) coat primer for galvanized and/or rust areas.

J. Exposed Ceiling Painting (Dryfall)
Primer: Pro Industrial Pro-Cryl Primer (1 coat)
Finish: Waterborne Acrylic Dry Fall Flat (1-2 coats)
B42W00001

3.3 Material Application
A. All materials shall be applied in complete accordance with manufacturer's printed instructions.
B. All coats shall be thoroughly dry before the succeeding coat is applied.

END OF SECTION