

**09 00 00. FINISHES****09 00 03. GENERAL PROVISIONS**

- .1 DESIGNS: All materials, colors, finishes, product specifications, applications and details are to be reviewed and approved by the University Architect prior to the final development of the Construction Documents.

**Wexner Medical Center:** When applicable to Ohio State Wexner Medical Center (WMC) buildings review and approval of materials, colors, finishes, product specifications, applications and details shall be the responsibility of WMC Space and Facilities Planning.

All materials shall meet or exceed the Ohio Building Code (OBC) and University use requirements for the area. All interior finishes shall be of Class A Fire Rated Material.

In remodeled areas, all material patches shall blend as close as possible. Complementary colors and patterns are to match the existing materials so they do not appear patched. Testing is required for asbestos and lead paint in older finishes of a suspect nature. This is important whenever surfaces are to be patched and repaired.

- .2 SUSTAINABLE DESIGN AND CONSTRUCTION POLICIES: The University promotes energy efficient green design, construction and building operations. Whenever possible, materials are to be selected and specified following the provisions of Division 18.
- .3 DESIGNS: For sound control requirements for products and materials included in Division 09, refer to, DIVISION 00\_: PROCESSING THE WORK - 00 00 35. NOISE AND VIBRATION CONTROL.

**Wexner Medical Center:** The A/E shall consult FGI Guidelines for appropriate finish selections. The A/E to review compatibility of finishes selected with Medical Center cleaning / sanitizer products.

- .4 Upon completion of new construction (buildings, building additions, or other structures) or major renovation to existing buildings (e.g. entire building, entire floor, or entire wing), the project shall ensure that an asbestos survey is completed inclusive of all existing and newly installed building materials throughout the construction or renovation area. The asbestos survey shall be completed using the current Environmental Health and Safety (EHS) report and database upload spreadsheet, as well as other requirements in DIVISION 02\_:HAZARDOUS MATERIALS AND ASBESTOS REMEDIATION – 02 82 00.

**09 01 00. MAINTENANCE OF FINISHES**

- .1 DESIGNS: The A/E shall specify only finishes that require little maintenance and can be easily maintained by the University.

**Wexner Medical Center:** Buildings finishes shall be reviewed and tested by WMC Facilities Operations and Environmental Services prior to acceptance into Construction Documents.

**09 05 00. COMMON WORK RESULTS FOR FINISHES****09 05 61.13 MOISTURE VAPOR EMISSION CONTROL**

- .1 DESIGNS: Moisture vapor emission control requirements shall be reviewed and approved by the University Architect prior to the final development of the Construction Documents.

- .2 MOISTURE VAPOR EMISSION CONTROL: A fluid applied membrane forming system that controls the moisture vapor emission rate of high moisture interior concrete to prepare it for floor covering installation. Install system according to ASTM F3010 to produce a uniform monolithic surface free of surface deficiencies, including but not limited to, pin holes, fish eyes, and voids.

.2.1 Performance Characteristics:

- a. Water Vapor Transmission: ASTM E96, maximum 0.03 perm.
- b. Tensile Bond Strength: ASTM D7234, greater than 200 psi with failure in the concrete.

.2.2 Preinstallation Testing:

- a. Alkalinity Testing: ASTM F710 pH testing, install system when pH readings are between 7.0 and 8.5 pH.
- b. Moisture Testing: Perform minimum three tests in each 200 sq.ft. test area. Evenly space test areas.
  - 1) Anhydrous Calcium Chloride Test: ASTM F1869, install system where concrete substrate moisture vapor emission exceeds 3 lb. of water/1000 sq.ft. in 24 hours.
  - 2) Internal Relative Humidity Test: ASTM F2170, in situ probes, install system where concrete substrates show relative humidity level greater than 75 percent.

- .3 Protect installed moisture vapor emission control system from damage, wear, dirt, dust and other contaminants before floor covering installation. Do not allow subsequent pre-installation examination and testing for floor covering installation to damage, puncture, or otherwise impair the moisture vapor emission control system membrane.

**09 06 00. SCHEDULES FOR FINISHES**

- .1 DESIGNS: The A/E shall clearly note all finishes and their extent of coverage on the drawings and specifications using room finish schedules and include notations on elevations and details.

**09 06 90. SCHEDULES FOR PAINTING AND COATING**

1. COATINGS SCHEDULE: The A/E shall prepare a schedule listing all surfaces in generic terms, all coating or finish operations, the types of finish materials and the number of coats of each material.

**09 08 00. COMMISSIONING OF FINISHES**

- .1 RESILIENT FLOORING: Immediately prior to final inspection, resilient flooring and base shall be cleaned as per the manufacturer's recommended guidelines and ready for final finishes. The Contractor shall finish the floor using the manufacturers or University provided waxes.

**Wexner Medical Center:** Buildings waxes are not typically required. If a floor finish is required the contractor shall verify with WMC Environmental Services the type of finish and the manufacturer's recommended installation prior to application.

- .2 CARPETS: Immediately prior to FF&E installation, all carpeted areas shall be cleaned and vacuumed of all construction debris and made ready for installation of FF&E. The Contractor shall clean and vacuum.

**09 20 00. PLASTER AND GYPSUM BOARD**

**09 21 13. PLASTER ASSEMBLIES**

**09 21 16. GYPSUM BOARD ASSEMBLIES**

**DESIGNS:**

Preferred staggered stud assemblies with insulation for acoustical concerns.

Provide moisture resistant gypsum wallboard system at all walls with sinks and/or toilets; and return walls for minimum of 4 feet.

**CONSTRUCTION:** No gypsum board product is to be used as blocking to support casework, door frames, or other woodwork.

- .1 GYPSUM BOARD SYSTEM STANDARDS:
1. Application and Finishing: Comply with Gypsum Association GA-216 "Recommended Specifications for Application and Finishing of Gypsum Board.
  2. Levels of Finish: Comply with Gypsum Association GA-214 "Recommended Levels of Finish for Gypsum Board, Glass Mat and Fiber-Reinforced Gypsum Panels".
  3. Metal Framing Systems: Comply with ASTM C 754.

SOURCE LIMITATIONS: Provide products manufactured within the United States from materials free of sulfur, formaldehyde or other deleterious chemicals. Natural gypsum ore shall be mined in North America. Synthetic (byproduct) gypsum shall be pure calcium sulfate from domestic sources.

FIRE RESISTANCE RATINGS: Where required by project conditions, provide materials and construction which are identical to those of assemblies whose fire resistance rating has been determined by ASTM E 119 by a testing and inspection organization acceptable to authorities having jurisdiction.

1. Provide fire resistance rated assemblies identical to those indicated by reference to GA File No's in GA-600 "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

ENVIRONMENTAL CONDITIONS:

1. Establish and maintenance environmental conditions for application and finishing of gypsum board in accordance with ASTM C 840 and the gypsum board manufacturer's recommendations.
2. Minimum Room Temperatures: Maintain indicated temperatures for at least 48 hours before application and continuously after, until drying is complete.
  - a. Non-adhesive attachment of gypsum board to framing: Minimum 40 degrees F.
  - b. Adhesive attachment and finishing of gypsum board: Minimum 50 degrees F.

NON-LOADBEARING FRAMING SYSTEM COMPONENTS: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf as a minimum standard. Review framing requirements with the gypsum board manufacturer and revise as needed to accommodate project conditions.

1. Gauge: Minimum 20 gauge.
2. Spacing: 16 inches on center.

GYPSUM BOARD: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; edges tapered.

1. Mold Resistance: Score of 10 when tested in accordance with ASTM D3273.
2. Fire-Rated Assemblies: Use board type required by indicated tested assembly. \_If no tested assembly is indicated, use Type X board, UL or WH listed.

3. Thickness: 5/8 inch thick, unless indicated otherwise.

**ABUSE RESISTANT GYPSUM BOARD:** High traffic areas determined by the University.

1. Surface Abrasion: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
2. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
3. Soft Body Impact: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
4. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
5. Type: Fire resistance rated Type X, UL or WH listed.
6. Thickness: 5/8 inch.
7. Edges tapered.

**IMPACT RESISTANT GYPSUM BOARD:** High traffic areas determined by the University.

1. Surface Abrasion: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
2. Indentation: Level 1, minimum, when tested in accordance with ASTM C1629/C1629M.
3. Soft Body Impact: Level 3, minimum, when tested in accordance with ASTM C1629/C1629M.
4. Hard Body Impact: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
5. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
6. Type: Fire resistance rated Type X, UL or WH listed.
7. Thickness: 5/8 inch.
8. Edges tapered.

**ACOUSTICAL GYPSUM-BASED PANEL:** For use in STC rated assemblies in areas requiring increased acoustical performance as determined by the University.

1. Perforated non-fire rated gypsum panels with acoustically transparent scrim complying with ASTM C1396 Non-Type X.
2. Core Hardness: Meets or exceeds 11 in accordance with ASTM C473 B.
3. Flexural Strength: Parallel not less than 46 lbf, and perpendicular not less than 147 lbf in accordance with ASTM C473
4. Nail Pull Resistance: Not less than 87 lbf in accordance with ASTM C473 B.
5. Thickness: 5/8 inch.
6. Edges tapered.

**ANCHORAGES:** Ceiling suspension systems shall be secured to the structure

**ACOUSTIC INSULATION:** Unfaced blanket/batt insulation produced by combining mineral fibers with formaldehyde free thermosetting resins to comply

with ASTM C 665; Type 1, Class A. Maximum flame spread and smoke developed values of 25 and 50 respectively.

FINISHING: Finish gypsum board in accordance with levels defined in GA-214 and as scheduled below:

1. Level 0: Temporary partitions and surfaces to be finished in a later bid package.
2. Level 3: Concealed panels and fire-rated partitions that are not exposed to view.
3. Level 4: Exposed to view walls and ceilings, unless specifically required to be Level 5.
4. Level 5: Walls and ceilings to receive wall covering, environmental graphics, gloss paint, dark accent paint, or specialty paint finishes, paperless mold and moisture resistant panel surfaces exposed to view, large expanses of daylight walls, and other specialty areas indicated in the Finish Schedule.

TOLERANCES:

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

## 09 30 00. TILING

- .1 DESIGNS: Ceramic floor and wall tile or other suitable solid surface material approved by the University Architect, is required for all restrooms, shower rooms, food preparation, food serving and other common areas where water and food is present.

All floor tiles shall be non-slip and rated for heavy duty use.

For designs where floor and wall tile indicate a pattern of colors, details shall be clearly detailed on the Construction Drawings using specific tile sizes, dimensions and details of all surfaces to receive tile.

Designs of ceramic “mosaics” shall include specific tile sizes and detailed drawings showing extent or complexity of patterns.

All floor tile grout shall be sealed. In frequently wet areas such as shower and pools areas, floor and wall grout shall be sealed.

Provide cementitious backer units for application area of tile in wet areas including shower and steam rooms.

Provide marble threshold in door frames at tile locations; match width of frame.

**Wexner Medical Center:** Floor and wall grout shall be epoxy and a sealer is not required. Floor and wall tile to be porcelain, unless matching existing ceramic.

- .2 Refer to Section 09 05 61.13 Moisture Vapor Emission Control for concrete testing and performance requirements of a moisture vapor emission control system before start of tile flooring installation.
  - .3 INSTALLATION GUIDELINES; Refer to the most current version of the Tile Council of North America (TCNA) “Handbook for Ceramic, Glass, and Stone Tile Installation” for industry guidelines related to tile materials and installation methods.
    - .2.1 When accent tile differs in thickness from field tile, vary setting bed thickness so tiles are flush from one type to the next.
    - .2.2 LARGE FORMAT TILE; Install with random or 33 percent offset.
- Wexner Medical Center: See Wexner Medical Center Material Color Schedule for approved tile and grout manufacturer, type, and color.**
- .4 TOLERANCES: Wall and floor surfaces shall be true to plane and fall within a maximum tolerance variation as follows:
    - .3.1 Walls: 1/8 inch in 8 feet.
    - .3.2 Floors: 1/8 inch in 10 feet.

#### **09 50 00. CEILINGS**

- .1 DESIGNS: All ceilings shall be designed to be easily accessible for maintenance and other access needs such as technology installations. A single type of ceiling tile, tile size and suspension system shall be used throughout a building to minimize maintenance and repair costs. Limited exceptions to this are special feature areas or specialized function areas where no accessibility is required. The use of 3- foot tile and other non-standard tile sizes is prohibited.

Fire code gypsum board or fire rated acoustic tile with rated suspension assembly shall be used for fire-rated ceilings.

**Wexner Medical Center: See Interior Finish Schedule for approved ceiling panel and grid manufacturer, type, and color.**
- .2 INSTALLATION TOLERANCES
  - .2.1 Maximum variation from flat and level surfaces: 1/8 inch in 10 feet.
  - .2.2 Maximum variation from plumb of grid members caused by eccentric loads: 2 degrees.

#### **09 51 00. ACOUSTICAL CEILINGS**

- .1 DESIGNS: Mineral fiber lay-in type acoustic ceilings shall be specified. Panels shall be a minimum of 5/8 inch thick and maximum panel size shall be 24 inches x 48 inches or 24 inches x 24 inches. A single type and size of acoustic ceiling panel shall be consistent throughout a building for maintenance purposes.

Other size panel sizes and materials proposed are subject to review and approval by the University Architect.

## 09 53 00. ACOUSTICAL CEILING SUSPENSION ASSEMBLIES

- .1 DESIGNS: Ceiling suspension assemblies shall be supported directly from the building structure and shall be supported at all four corners of fluorescent light fixtures. Ceilings shall not be supported from ductwork, electrical conduit, heating or plumbing lines, and vice versa. Each utility system and the ceiling grid system shall be a separate installation and each shall be independently supported from the building structure. Where interferences occur, provide trapeze type hangers or other suitable supports for each system. Locate hangers and supports where they will not interfere with access to mixing boxes, fire dampers, valves, and other appurtenances requiring servicing.

The requirements for independent supports for ceiling grid systems shall be repeated in the applicable sections of the specifications. If patented ceiling suspension systems are required for plaster, gypsum board, and acoustic ceilings, a separate section may be written for the systems; or each separate system may be specified in the section for the particular ceiling material, at the option of the A/E; however, it is preferred that suspension systems for acoustic ceilings be specified with the ceiling materials to avoid divided responsibilities.

Stainless steel hanger wires must be specified for canopy suspension systems and for other systems in locations subject to moisture penetration or condensation.

**Wexner Medical Center: Provide non-ferrous aluminum grid and suspension materials in MRI areas.**

- .2 SEISMIC RESTRAINTS: Includes seismic clips designated to secure acoustical panels in place during a seismic event, perimeter stabilizers designed to accommodate seismic forces, and compression struts designed to accommodate seismic forces.
- .2.1 Delegated Design Submittal: Include design calculations for seismic restraints, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- .2.2 Seismic Performance: Suspended ceilings shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.



- .3 ANCHORAGES: Ceiling suspension systems shall be secured to the structure with toggle, molly bolts, self-drilling anchors, cast-in inserts, or bolts in expansion shields. The use of wood, lead, or plastic plug anchors is also prohibited.
- .4 CLEAN ROOM GASKETS; Provide gasketing and related tapes, seals, and retention clips designed to seal out foreign material and maintain positive pressure in clean rooms.

## 09 60 00. FLOORING

- .1 DESIGNS: A/E selections shall be based on extra heavy duty commercial grade flooring, rated for intended use by the manufacturer. Custom materials and colorations are prohibited as they increase later costs for repair and renovations. Specify designs for visually impaired where applicable. Specify designs for static dissipation requirements where applicable.

All product specifications, accessory items, colors, finishes, applications and details are to be reviewed and approved by the University Architect prior to the final development of the Construction Documents.

In some cases, the University may choose to purchase Flooring for a project. In these cases, the cost of Flooring is moved from Construction funds to Equipment funds for the purchase. Design of spaces, door clearances and scheduling of the work where Flooring is required must provide for these installations, whether Flooring is provided by the Contractor or by the University.

The A/E shall provide detailed specifications of at least one selected product and two additional products which are acceptable equals in material construction and color for bidding.

The A/E shall specify products that can be obtained and installed by Contractors of an established firm, experienced in the installation of the specified product. The specifications shall request Contractors to have completed at least three projects of equal size, material and complexity to verify experience.

- .2 INSTALLATION CONDITIONS: The A/E shall specify critical Flooring Substrate Conditions appropriate to the material specified. The A/E shall include standard testing methods for determining Relative Humidity in concrete flooring, Moisture Vapor Emission Rate of concrete subfloor. The A/E shall outline Contractor responsibility for conducting the tests prior to installation.
- .3 Refer to Section 09 05 61.13 Moisture Vapor Emission Control for concrete testing and performance requirements of a moisture vapor emission control system before start of resilient flooring installation.

**Wexner Medical Center:** See Interior Finish Schedule for approved flooring manufacturers, types, and colors.

**09 65 00. RESILIENT FLOORING**

**09 65 13. RESILIENT BASE AND ACCESSORIES**

09 65 13.13 RESILIENT BASE

- .1 MATERIALS: Base to be 1/8 inch thick, rounded top edge and 4-inch minimum height. Specify straight wall base for carpeted areas and coved wall base with toe for resilient flooring areas. Specify that internal and external corners be formed on the job with joints a minimum of 18 inches from corners. Terminal ends of base shall be beveled and toes rounded. Color to be integrated with the material. Material can be vinyl or rubber per Architect's (project) specification. Use of coiled rolls is preferred.

**Wexner Medical Center:** Standard is a 6-inch-high base.

- .2 WARRANTIES: Meet or exceed 5 year material warranty.

09 65 13.23 RESILIENT STAIR TREADS AND RISERS

- .1 MATERIALS: Color integrated treads and risers, vinyl or rubber. Slip resistant and easily maintainable. Use stair tread nose filler to fill nosing substrates that do not conform to tread contours. Install to produce a flush joint between units.

Comply with ASTM F2169 Group 2 designation and provide stair treads with a contrasting color for the visually impaired that is either the same materials as the tread or an abrasive material.

**Wexner Medical Center:** Resilient treads and risers are required for inpatient facilities. Resilient treads and risers are preferred for outpatient, but not required.

- .2 WARRANTIES: Meet or exceed 5 years material warranty.

09 65 16. RESILIENT SHEET FLOORING

- .1 MATERIALS: Commercial grade, high performance homogeneous sheet flooring. Seams to be heat welded, when possible. Use standard 4 inch high cove base at wall. A 6 inch high flash coving may be specified to enhance hygienic qualities. Where applicable, manufacturers to provide stain resistance test data, coefficient of friction ratings (wet and dry), load bearing capacity and other standardized test data as may apply.

**Wexner Medical Center:** Heat weld seams in patient care areas. Use flooring

manufacturer's recommended high peel and shear strength adhesive to prevent flooring failures under patient beds and other heavy-duty use areas.

Overall Nominal Thickness: .080 inches

Reference Specs: Meets or exceeds ASTM F-1913; Type II, Grade 1 for vinyl sheet flooring without a backing.

Fire Test Data: Meets ASTM E-648 (Critical Radiant Flux) / ASTM E-662 (Smoke Density)

Static Load Limit: ASTM F-970 250 PSI (Std.), 700 PSI

Slip-Retardant Performance: ASTM D-2047 James Test; Exceeds ADA recommendation.

Traffic Performance: Rated for extra heavy commercial traffic.

Recycled Vinyl Content to be 10% or greater.

.2 WARRANTIES: Meet or exceed 5 years material warranty.

#### 09 65 16.13 LINOLEUM FLOORING

.1 MATERIALS (SHEET): Homogeneous linoleum sheet floor covering made of primarily natural materials consisting of linseed oil, wood flour, rosin binders and dry pigments mixed and calendared using a two-layered process onto a jute backing including a strong, durable primer and a top layer.

Reference Specs: Meets or exceeds ASTM F2034 for Linoleum Sheet Flooring.

Overall nominal thickness: 0.100 inches.

Static Load Limit: 450 pounds per square inch.

Traffic Performance: Rated for extra heavy commercial traffic.

Recycled content: 45% or greater Post-Industrial Recycled Content.

**Wexner Medical Center:** Heat weld seams in patient care areas. Use flooring manufacturer's recommended high peel and shear strength adhesive to prevent flooring failures under patient beds and other heavy duty use areas. Consult FGI guidelines for rooms to receive heat welded seams. If heat weld is not required, use Net Fit seams.

.2 MATERIALS (TILE): Homogeneous linoleum tile floor covering shall be made of primarily natural materials consisting of linseed oil, wood flour, rosin binders and

dry pigments mixed and calendared using a two-layered process) onto a polyester back. Standard sizes no customs.

Reference Specs: Meets or exceeds ASTM F2195 for Linoleum Tile

Static Load Limit 1500 pounds per square inch

Traffic Performance: Rated for extra heavy commercial traffic.

Recycled content: 45% or greater Post Industrial Recycled Content.

.3 WARRANTIES: Meet or exceed 5 years material warranty.

#### 09 65 19. RESILIENT TILE FLOORING

.1 MATERIALS: Vinyl Composition Tile, 1/8 inch thick, thru-pattern or thru-chip construction and meets the requirements of the ADA for static coefficient of friction when installed in accordance with manufacturer's guidelines, waxes and coatings. Recycle content (post-consumer and post-industrial waste) minimum 10%. Resilient tile is prohibited next to urinals. Specify standard tile sizes.

Static load limit: 75 PSI

Flooring Radiant Panel Test: Passes

Flame Spread: Passes

The A/E may propose resilient materials other than vinyl composition tile that are advantageous to the project. Approval of the University Architect is required prior to specifying such materials.

Acceptable material quality: equal or better than Armstrong Excelon Vinyl Composition Tile.

.2 WARRANTIES: Meet or exceed 5 years material warranty.

#### 09 66 00. TERRAZZO FLOORING

.1 MATERIALS: Terrazzo floors separated from the structural slab by a sand cushion are preferred. Approximately 2-3/4 inches shall be allowed from rough slab to finish floor.

.2 DESIGNS: Architect shall define surface finish level for grit polishing for each mixture. Precast cove base shall be used when applicable. Floor grinding shall be held min 8" off walls and cove base. Hand detail grinding tools shall be used within 8" of walls and cove base to prevent defects of overgrinding and gouging. Floor drains in areas to receive terrazzo shall be slightly recessed in a min 3'x3' square or radial sump formed in the terrazzo for existing conditions or coordinated with concrete slab if new construction. The terrazzo contractor shall

coordinate and install to ensure drains are at the lowest point .

- .3 QUALIFICATIONS: Installer to be certified by the National Terrazzo and Mosaic Association.
- .4 Refer to Section 09 05 61.13 Moisture Vapor Emission Control for concrete testing and performance requirements of a moisture vapor emission control system before start of terrazzo flooring installation.

#### 09 66 23. RESINOUS MATRIX TERRAZZO FLOORING

- .1 DESIGNS: If design conditions, or budget, dictate thin set method of installation, marble chip or ceramic granule toppings may be installed with chemical matrix or with cement matrix chemically bonded to the substrate, only when such methods and materials are approved by the University Architect.

**Wexner Medical Center: See Interior Finish Schedule for approved terrazzo mix types and colors.**

- .2 Work shall be performed in accordance with the National Terrazzo and Mosaic Association Inc. (NTMA).

- .2.1 Manufacturer Qualifications: Minimum five years of documented experience and an associate member firm of the NTMA.

- .2.2 Installer Qualifications: Minimum five years of documented experience, approved by the matrix manufacturer, and a Contractor member of the NTMA.

- .3 INSTALLATION TOLERANCES

- .3.1 Maximum variation from flat surface: 1/8 inch in 10 feet.

- .3.2 Maximum variation from level (except surfaces sloping to drain): 1/8 inch.

- .4 ACCENT STRIPS: Stainless steel, No. 4 satin finish.

#### 09 67 00 FLUID APPLIED RESINOUS FLOORING (EPOXY)

- .1 MATERIALS: Acceptable material quality: equal or better than Steri-Seal HC Epoxy Coating System by Dudick, Inc.

System: a moisture-tolerant primer and one or two coats of low odor epoxy coating to achieve protection for concrete and other substrates. provides high film integrity, and excellent chemical resistance required for prolonged substrate protection.

- .2 SUBMITTALS: Specify submittals with Manufacturer's data and layout of areas to be finished. Specify sample materials/colors submittal for approval.

.3 INSTALLATIONS:

**SURFACE PREPARATION - Concrete:** Concrete must be prepared mechanically to remove the surface laitance. Oils, grease or other contaminants must be removed prior to surface preparation. Concrete must be free of curing compounds and form release agents. Surface texture should be similar to 60-80 grit sandpaper or the visual standard, CSP-3 from the International Concrete Repair Institute. The prepared surface should have a nominal tensile strength of 250 PSI per ASTM D7234. All concrete substrates must be checked for moisture prior to product application using the Plastic Sheet Test, ASTM D4263 or specified method. Additional surface preparation will be required if a 60-80 grit texture is not achieved and the surface laitance not completely removed with the first mechanical preparation procedure.

**CMU:** CMU surfaces to be lightly abrasive blasted to clean CMU block and to provide a 60-80 grit sandpaper texture of the mortar joints. Care must be taken not to damage CMU. **Wall Boards:** Consult Manufacturer for preparation methods. Mechanical preparation removes laitance, exposing honeycombs or voids beneath the surface that must be filled with compatible filler such as Dudick Scratch-Coat.

**ENVIRONMENTAL CONDITIONS** Temperature of the concrete substrate must be between 50°F and 110°F. Relative humidity must not exceed 90%. Substrate temperature must be 5°F above the Dew Point.

**FLOOR TOPPING APPLICATION** Spray or roller apply one or two coats @ 10-12 mils WFT each coat. Allow sufficient dry time between coats. Roller application may leave a high texture finish. Consult manufacturer for spray equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

**09 67 23 FLUID APPLIED RESINOUS NITROGEN RESISTANT FLOORING**

.1 **MATERIALS:** Acceptable material quality: equal or better than Shock Crete HD Coating System by Dudick, Inc.

System: a 1/4" – 3/8" thick, self priming, aggregate filled, polyurethane floor topping as manufactured by Dudick, Inc. Application shall be according to the manufacturer's recommendations.

.2 **SUBMITTALS:** Specify submittals with Manufacturer's data and layout of areas to be finished. Specify sample materials/colors submittal for approval.

.3 **INSTALLATIONS:**

**SURFACE PREPARATION:** Concrete must be prepared mechanically to remove surface laitance. Oils, grease or other contaminant must be removed prior to

surface preparation. Concrete must be free of curing compounds and form release agents. Surface texture should be similar to 40-60-grit sandpaper or the visual standard, CSP-5 from the International Concrete Repair Institute with exposed pea gravel. The prepared surface should have a nominal tensile strength of 250 PSI per ASTM D-4541. All concrete substrates must be checked for moisture prior to product application using the Plastic Sheet Test, ASTM D-4263. Additional surface preparation will be required if a 40-60 grit texture with exposed pea gravel is not achieved and the surface laitance not completely removed with the first mechanical preparation procedure.

**ENVIRONMENTAL CONDITIONS:** Temperature of the material and concrete substrate must be between 50°F and 90°F. Consult Manufacturer for temperatures below 50°F. Relative humidity must not exceed 90%. Substrate temperature must be 5°F above the Dew Point.

**FLOOR TOPPING APPLICATION** Spray or roller apply one or two coats @ 10-12 mils WFT each coat. Allow sufficient dry time between coats. Roller application may leave a high texture finish. Consult manufacturer for spray equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

## **09 68 00. CARPET TILE**

.1 **MATERIALS:** Acceptable material quality: equal or better than Dupont Antron Legacy nylon and Antron Lumena nylon.

**Yarn:** 100% first quality, bulk continuous filament nylon type 6 or 6.6 offering a construction and performance standards testing program by fiber producer. The fiber shape to have a maximum Modification Ratio of 1.5 for soil release capabilities. The fiber identification is to AATCC 20. **Static Control:** By permanent means (i.e. antistatic filaments) and without chemical treatment, static generation below 3.5 kilovolts under standard conditions of 65 F and 20% relative humidity. **Electrostatic Propensity (Static delayed signal):** AATCC 134.

**Construction:** tufted or woven, level or multi-level loop pile with maximum height variation of 1/32 inch.

**Dye Method:** Meets or exceeds Stain Resistance specification with greater than 5 years on the floor performance history.

**Pile Weight:** minimum 24 oz/yd<sup>2</sup>

**Primary Backing:** polypropylene or non-woven

**Secondary Backing:** to provide permanent moisture barrier

Resistance to Delamination: ASTM D3936 minimum 3.0 lbs/inch

Tuft Bind: ASTM D1335 minimum 20 lbs

Pile density 36 x face weight/finished pile HEIGHT: minimum 5800

Flammability – Must pass Methenamine Pill test (DOC FF1-70). Meet Flooring Radiant Panel Test – Class 1. NBS Smoke Chamber – must meet or exceed 350 or less in flaming mode.

Colorfastness to Light: AATCC 16E, 200 AFU, International Gray Scale for Color Change rating min 3-4.

Colorfastness to atmospheric contaminants: AATCC 164(ozone) & AATCC 129 (oxides of nitrogen) for 2 cycles, International Gray Scale for Color Change rating min. 3-4.

Stain Resistance - AATCC 138 for 5 washings to simulate removal of topical treatments by hot water extraction, followed by: AATCC 175, minimum level 8 using AATCC Red Dye 40 Scale with greater than 5 years on the floor performance history.

Soil Resistance: An average of 3 fluorine analyses (AATCC 189) of a single composite sample to be a minimum of 500 ppm fluorine by weight when new and 400 ppm fluorine by weight after 2 AATCC 171 (HWE) cleanings.

Coloration: Color hue and values to be in optimum light reflectance rating for soil hiding enhancement.

Appearance Retention - Vetterman Drum Test ASTM D5417 for 22,000 cycles. This is a minimum rating of 3.0 using CRI TM-101 Reference Scale. Testing without underpad or brushing.

Indoor Air Quality - maximum 0.5 mg/m<sup>2</sup>hr total VOC emission, ASTM D5116  
Warranty: Must meet or exceed 10-year warranty.

**Wexner Medical Center:** Carpet tile only; unless advance permission to specify broadloom is granted by the University Architect. See Interior Finish Schedule for approved carpet manufacturers, types, and colors.

- .2 SUBMITTALS: Specify shop drawing submittals with seam layouts for approval. Specify sample materials submittal for approval.
- .3 INSTALLATIONS: In normal installations, carpet shall be glued to the substrate with no cushion or pad using premium quality waterproof non-flammable adhesive.

For exceptional instances requiring carpet installation over padding, the cushion



or pad shall be factory applied and an integral part of the product. Use high density sponge rubber carpet cushion equal to or better than Tred-Mor flat profile carpet cushion as manufactured by SCI (Sponge-Cushion, Inc.) with minimum specifications for extra heavy commercial and institutional traffic.

- .4 Refer to Section 09 05 61.13 Moisture Vapor Emission Control for concrete testing and performance requirements of a moisture vapor emission control system before start of carpet flooring installation.
- .5 RECLAMATION: Designate Reclamation Program or agency firm providing used carpet recycling. Reclamation agency and carpet remover shall certify in writing that used carpet was removed and recycled in accordance with Reclamation Program.

Adhesive removal Solvents must comply with Carpet and Rug Institute Publication 104.

#### **09 70 00. WALL FINISHES**

- .1 DESIGNS: A/E selections shall be based on extra heavy duty commercial wall finish, rated for intended use by the manufacturer. Custom materials and colorations are prohibited as they increase later costs for repair and renovations.

All product specifications, accessory items, colors, finishes, applications and details are to be reviewed and approved by the University Architect prior to the final development of the Construction Documents.

The A/E shall provide detailed specifications of at least one selected product and two additional products which are acceptable equals in material construction and color for bidding.

The A/E shall specify products that can be obtained and installed by Contractors of an established firm, experienced in the installation of the specified product. The specifications shall request Contractors to have completed at least three projects of equal size, material and complexity to verify experience.

**Wexner Medical Center: See Interior Finish Schedule for approved carpet manufacturers, types, and colors.**

#### **09 72 00. WALL COVERINGS**

- .1 MATERIALS: Materials must conform to ASTM E-84 and OBC. Research code carefully to determine class of fire and smoke resistance required for the specific application.

Vinyl wall covering must satisfactorily pass ASTM F793, Category V, Type II, meeting Type II performance levels for vinyl coated wall covering as defined by

FS CCCW-408C, and CFFA Quality Standards for vinyl coated fabric wall covering.

Use a new blade for each cut.

- .2 SUBSTRATE: Level 5 finish as specified in Section 09 21 16. If applied to masonry add gypsum board on furring.

No vinyl wall covering shall be installed on the interior side surface of exterior walls.

### **09 90 00. PAINTING AND COATING**

- .1 DESIGNS: Painting shall be in compliance with Master Painters Institute (MPI) Standards and comply with Lake Michigan Air Directors Consortium (LADCO) VOC requirements as a minimum. Division 18 project requirements will take precedence over LADCO VOC requirements.

<https://www.ppgpaints.com/products/ecological-solutions/government-regulations/ladco>

Wherever possible, select products having low or no VOCs or odors.

Provide SDS for each product to Ohio State-EHS

Paints shall be applied using appropriate techniques to reduce the number of VOCs released into the air.

- .2 OCCUPIED AREAS: Whenever possible and feasible, restrict painting to those times when the building is unoccupied. Notify building occupants of the scheduled application timeframe so they are aware of the work and can make other occupancy arrangements if chemically sensitive. Employ sufficient amounts of local exhaust ventilation to keep the build-up of odors and toxic compounds within the building to a minimum.

- .3 WOOD DOORS: Wood doors are to be specified as factory finished in Section 08 14 16. If a door needs to be field cut, then seal cut edges and surfaces with minimum two coats of varnish or appropriate sealer.

### **09 91 13 EXTERIOR PAINTING**

#### **.1 SURFACE PREPARATION**

**GALVANIZED SURFACES TO BE PAINTED:** Remove surface contamination and oils and wash with non-petroleum based solvents. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods. Apply coat of etching primer.

**CORRODED STEEL AND IRON SURFACES TO BE PAINTED:** Prepare using at least SSPC-SP 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).

**UNCOATED STEEL AND IRON SURFACES TO BE PAINTED:** Remove oil, grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire brushing or sandblasting; clean by washing with solvent. Cleaning methods shall comply with Steel Structures Painting Council recommendations. Prime paint entire surface; spot prime after repairs.

**SHOP-PRIMED STEEL SURFACES TO BE FINISH PAINTED:** Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Cleaning methods shall comply with Steel Structures Painting Council recommendations. Prime bare steel surfaces. Re-prime entire shop-primed item.

**EXTERIOR WOOD TO RECEIVE OPAQUE FINISH:** Remove dust, grit, and foreign matter. Sand surfaces exposed to view and dust off. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied. Back prime concealed surfaces before installation.

## 09 91 23. INTERIOR PAINTING

### .1 SURFACE PREPARATION

When painting building interior subgrade stone and brick masonry foundation walls, provide vapor permeable paint (silicate emulsion paint), as approved by the university, to facilitate thru-wall drying as originally designed. When a perimeter drywall finish is desired on perimeter subgrade spaces of university buildings constructed prior to 1950, provide top and bottom cavity venting to allow for thru-wall drying. Consult facility operations envelope engineer or technical service group prior to the preparation of construction documents.

**CONCRETE AND UNIT MASONRY SURFACES TO BE PAINTED:** Remove efflorescence, chalk, dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry. If hardeners or sealers were used to improve curing, use mechanical methods to prepare surface.

**GYPSUM BOARD SURFACES TO BE PAINTED:** Remove dust, dirt, loose and other foreign material. Fill hairline cracks, holes and other minor defects with filler compound. Spot prime defects after repair. Sand smooth.

**PLASTER SURFACES TO BE PAINTED:** Fill hairline cracks, small holes, and

imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

**CONCRETE FLOORS AND TRAFFIC SURFACES TO BE PAINTED:** Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

**GALVANIZED SURFACES TO BE PAINTED:** Remove surface contamination and oils and wash with non-petroleum based solvents. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods. Apply coat of etching primer.

**CORRODED STEEL AND IRON SURFACES TO BE PAINTED:** Prepare using at least SSPC-SP 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).

**UNCOATED STEEL AND IRON SURFACES TO BE PAINTED:** Remove oil, grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire brushing or sandblasting; clean by washing with solvent. Cleaning methods shall comply with Steel Structures Painting Council recommendations. Prime paint entire surface; spot prime after repairs.

**SHOP-PRIMED STEEL SURFACES TO BE FINISH PAINTED:** Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Cleaning methods shall comply with Steel Structures Painting Council recommendations. Prime bare steel surfaces. Re-prime entire shop-primed item.

**INTERIOR WOOD ITEMS TO RECEIVE OPAQUE FINISH:** Wipe off dust and grit prior to priming. Sand surfaces exposed to view and dust off. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

## .2 APPLICATIONS:

**DRY FILM THICKNESSES** shall be specified for all coats of paint on metals.

**ACCENT COLORS:** If it is anticipated 5% or more of the scheduled finishes will be in accent colors, attention should be called to this fact. Estimated percentage of accent colors should be given as an aid to bidders in preparation of bids. A statement should be made to the effect that the information given in no way restricts the A/E in his final selection of colors.

**COLOR CODING FOR PIPING:** Include finish painting of insulated and uninsulated piping in the General Construction Documents and include color banding of finished piping in the appropriate locations. See Divisions in the

Facilities Services Subgroup.

**INTERIOR WOODWORK:** Painted finish -- primer and 2 coats semi-gloss latex enamel.

**METAL DOORS AND FRAMES:** Shop coat, touch up and two coats semi-gloss enamel. Tops and bottoms of metal doors shall be painted with the same materials and number of coat as used on the door faces.

**NEW GYPSUM WALLBOARD:** Spackle as required, primer and 2 coats semi-gloss latex enamel.

**EXISTING PREVIOUSLY PAINTED GYPSUM WALLBOARD OR PLASTER:** Primer and 1 coat semi-gloss latex enamel or semi-gloss latex. If surface is poor, remove finish to substrate, repair and finish the same as new gypsum wallboard or plaster.

**INTERIOR CONCRETE OR CONCRETE BLOCK (Unpainted):** 1 coat self-sealing heavy filler-type primer and 2 coats semi-gloss latex. For laboratories requiring chemical resistance, replace the latex paint with water-based epoxy two-component finish.

For corridors or abuse areas, replace the semi-gloss alkyd or latex paint with high gloss alkyd enamel.

**Wexner Medical Center:** See Interior Finish Schedule for approved paint manufacturers, types, and colors.

All painting shall be in compliance with Master Painters Institute (MPI) standards.

Whenever possible select products having low or no VOC's or odors. Use paints having low VOC's that meet EPA and consensus industry requirements. Substitute water-based products where possible.

Provide SDS for each product to Ohio State-EHS

Whenever possible and feasible restrict painting to those times when the building is unoccupied.

Paints should be applied using appropriate techniques to reduce the amount of volatiles released into the air.

Sufficient amounts of local exhaust ventilation should be employed to keep the buildup of odors and toxic compounds within the building to a minimum.

The building occupants should be notified a minimum of 72 hours before the scheduled application so they are aware of the work and can make other occupancy arrangements if chemically sensitive.

## **09 93 00. STAINING AND TRANSPARENT FINISHING**

### **.1 SURFACE PREPARATION**

INTERIOR WOOD ITEMS TO RECEIVE TRANSPARENT FINISH: Wipe off dust and grit prior to sealing. Sand surfaces exposed to view and dust off. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

EXTERIOR WOOD TO RECEIVE TRANSPARENT FINISH: Remove dust, grit, and foreign matter. Sand surfaces exposed to view and dust off. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior calking compound after sealer has been applied. Prime concealed surfaces.

### **.2 APPLICATIONS:**

INTERIOR WOODWORK: Natural finish -- stain, 2 coats sanding sealer, 2 coats semi-gloss varnish. If polyurethane varnish is used, delete sanding sealer.

TOP AND BOTTOM EDGES OF WOOD DOORS shall be sealed after fitting and finished with at least two coats of varnish or paint.

**Wexner Medical Center:**  
PPG Break-Through V50-410 or V70-610 Series for Satin or Gloss finish,  
coordinate gloss level specified with Wexner Medical Center Planner.

EXTERIOR WOOD PLATFORMS OR BENCHES: Use Behr plus 10 Solid Color Stain or approved equal in accordance with manufacturer's directions.

## **09 96 00. HIGH PERFORMANCE COATINGS**

### **09 96 43. FIRE RETARDANT COATINGS**

- .1 **INSTALLATIONS:** Materials shall be applied by applicators franchised and approved by manufacturers of materials approved for use. General Contractor shall furnish the manufacturer's certification that materials delivered to the project meet requirements specified. Certification shall be countersigned by the General Contractor, who shall assume the responsibility of complying with the manufacturer's specifications. Materials and application equipment shall be of type approved by the manufacturer. A/E shall coordinate sufficient labeling of surfaces that are protected with fire retardant coatings to sufficiently

communicate extents for future maintenance and renovations.

**09 96 53. ELASTOMERIC COATINGS**

- .1 **INSTALLATIONS:** If coatings specified can be applied with equipment ordinarily used by painters, these coatings may be specified in the section entitled, **PAINTING.**

**09 97 00. SPECIAL COATINGS**

**09 97 23. CONCRETE AND MASONRY COATINGS**

- .1 **DESIGNS:** HVAC Equipment Room and other Service Room floors in all buildings shall be completely sealed from water and moisture penetration to the floors below.

**END OF DIVISION 09 - FINISHES**