

Section 09001	Finishes – General Requirements
Section 09100	Metal Support Systems
Section 09250	Gypsum Board
Section 09300	Tile
Section 09510	Acoustical Ceilings
Section 09640	Wood Flooring
Section 09650	Resilient Flooring
Section 09680	Carpet
Section 09700	Specialty Flooring
Section 09900	Painting

1.0 GENERAL

1.1 UBC Related Guidelines

- .1 UBC Technical Guidelines
- .2 Classroom Standards

1.2 Coordination Requirements

- .1 Campus & Community Planning.
- .2 UBC Building Operations - Technical Services.
- .3 Coordinate Wall Finishes with Acoustic Consultant.

1.3 Acoustic Requirements

- .1 An Acoustical Engineering review is required for all educational facilities.
- .2 Ensure acoustic compatibility of all systems and materials.
- .3 Classrooms and labs to comply with latest sound reflectance and absorption criteria. (The Classroom Guidelines, (last updated 1997), are outdated in 2008 and are currently being revised. To discuss Classroom Guidelines please contact the Project Manager, Enrollment Services, Phone: 604-822-4175).

1.4 Environmental Requirements

- .1 Always consider the use of recyclable, recycled, non-toxic, low maintenance and durable finishes.
- .2 Wherever possible utilize water-based, low or non Volatile Organic Compound (VOC) type adhesives.

1.5 Floor Finishing (Scrubbing) Procedures

- 1.1 The first step prior to commencing the floor care process is to complete a detailed construction cleanup of the immediate surrounding area. This includes wiping down of all vertical and horizontal surfaces ensuring all soil and dust is removed. This will help prevent contamination of the finish when applied.
- 1.2 The entire room should be emptied of all furniture and other objects. This will allow the service workers the ability to complete the floor care procedures efficiently and safely.
- 1.3 The floor surface must be vacuumed thoroughly to ensure all loose soil has been removed.
- 1.4 The entire floor surface must be scrubbed with a neutral floor cleaner. The neutral floor cleaner must be spread evenly over the floor surface in 10 ft x 10 ft sections. Continue doing 10 ft x 10 ft sections until the floor surface is completely scrubbed.
- 1.5 The clean, dry surface will be finished (waxed) with a sealer / finish combination product called Buckeye Citation. This is a water based floor finish that is easily applied to clean surfaces in thin even coats. A total of five coats of Citation floor finish must be applied in thin coats and evenly over the entire surface. The floor finish must be allowed to dry for a minimum of 60 minutes between each coat. This drying time between coats allows the moisture within the finish to evaporate and fuse each coat together for a strong, level, hard surface and prepares the floor surface for the final procedure.

- 1.6 When the five thin coats of finish (wax) has been applied and has properly fused each coat together the floor must be allowed to cure for at least 12 hours prior to commencing the final burnishing procedure.
- 1.7 This is the final step in the floor care process and is very important. This burnishing procedure must be performed using a clean burnishing pad and a burnishing machine that operates at no less than 1500 RPM. The floor must be free of all soil and stains prior to burnishing. The burnisher smoothes and hardens the finish surface thus making it resistant to all scuffmarks, spills and normal daily abuse. A burnished floor surface allows for easy maintenance and if maintained properly will prevent future stripping of the floor surface and will also prevent the replacement of the flooring years down the road. The final floor care procedure allows the service workers at UBC, to maintain the floors using a full restoration program.
- 1.8 All equipment and supplies used to perform this detailed floor work must be clean and in good working condition to ensure the best results.

IMPORTANT: These detailed specifications must be followed according to the University of British Columbia's standard. Nothing less than this standard will be accepted or approved.

2.0 FLOORS

2.1 Mat Wells

- .1 Mat wells of any design, shall not be used. Walk-off mats shall be used at UBC. (See 2.2.12).
- .2 Institutional Grade Entry Mats are required in all entries to reduce cleaning, and to provide sufficient non-slip flooring at entrances.

2.2 Flooring Materials and Design Requirements

- .1 Seal Mechanical and Service Room Floors with urethane elastomeric membrane flooring per Section 09700.
- .2 Linoleum to be excluded from washrooms, baths, showers and labs.
- .3 Epoxy coatings to be excluded from showers, use non-slip finish tiles (non-glazed finish).
- .4 Wherever possible use low toxicity and/or sustainable materials.
- .5 Hardwood Floors - refer to Section 09640 for finishing standards.
- .6 Ceramic or Commercial Resilient Flooring: to be used in high traffic areas such as building entrances, corridors, hallways, laboratories, classrooms, coffee areas and lunch rooms. Ceramic tiles are to be used in washrooms. This requirement applies to both new and replacement installations. Only slip resistant materials should be used in wet areas, especially building entrances.
- .7 Carpet, (preferably carpet tile), is to be specified for enclosed administration offices, open administration areas, staff conference and meeting rooms.
- .8 Carpet, (preferably carpet tile), may be used in lounge areas where food is not available; otherwise use linoleum wherever possible.

- .9 For ease of cleaning, linoleum is preferred in undergraduate areas.
- .10 In large lecture theatres or other areas where fixed seating occurs, use resilient flooring for ease of maintenance. Consideration must be given to acoustic treatment other than carpet as a floor finish.
- .11 Laboratory Flooring: Heat welded sheet vinyl flooring, or polished concrete with dustproof hardener. Confirm with UBC Health Safety and Environment for any special requirements for laboratories using radioisotopes. Sealer on concrete floors must be acid resistant. Choice of flooring must reflect slip resistance required for the installation.
- .12 Walk-off mats at exterior doors are required to be Milliken "First Appearances, Brush Off".

3.0 SIESMIC RESTRAINT

- .1 Design for the seismic restraint of shelves, cabinets, fixtures and vending machines, according to BC Building Code 4.1.8.17 and Table 4.1.8.17 (Item 11) for the Structural Restraint of Non- Structural Components.
- .2 Lobby Areas to suit future seismic restraint for vending machines

4.0 WALLS

4.1 Materials

- .1 Ensure lower 3' of walls in high traffic areas are abuse resistant (i.e. chair rails or wall bumpers and corner guards)
- .2 Behind showers or tubs use cement board clad with plastic tub surrounds.
- .3 Standard Public Spaces:
 - .1 Regarding interior colours, so as to minimize Building Operations' storage, costs and wastage, it is recommended that colour selections for public space wall areas be made from General Paint's Neutral Colours brochure or equivalent. Refer to the Section 09900 in the UBC Technical Guidelines.
 - .2 Where wood finishes that clad walls require fire retardant, use only pressure-treated fire retardant, not surface-applied.
 - .3 Where drapery is required to be fire retardant, use only inherently permanent fire retardant fabrics. (Fabrics manufactured utilizing Trevira and/or Avora polyester fibers are considered inherently fire retardant).

5.0 CEILINGS

5.1 Material

- .1 Concealed-spline ceilings are not acceptable.
- .2 Minimize use of ceiling material - expose where possible.
- .3 Use only ceilings that are easily accessible and that can be removed and replaced by the service trades without damage and without requiring other tradesmen or special equipment. It should be noted that drop-down tiles with reveal edges are weaker than standard tiles.

- .4 Fire resistant ceilings that require the use of hold down clips must not be used.
- .5 Coordinate noise reduction coefficient and sound reduction coefficient with an Acoustic Consultant.

6.0 **ARTWORK**

- .1 Seismic restraint of Artwork is required.
- .2 Coordinate structural attachment and seismic restraint of artwork with Structural Engineer.

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 Section 09001 Finishes – General Requirements

1.2 **Performance Standards**

- .1 Association of Wall & Ceiling Contractors of B.C. (AWCC), Specification Standards Manual.
- .2 Meet all of the requirements stipulated by:
 - .1 The seismic zone established by UBC.
 - .2 BC Building Code, including Clause 4.1.9.1.15 and Table 4.1.9.1.D.

1.3 **Quality Control and Assurance**

- .1 Submittals
 - .1 Shop drawing: for all seismic restrained engineered studwork, bracing, and suspension systems, including where such systems act as support for work requiring seismic restraints (i.e. Laboratory and other cabinets, fume hoods, vending machines, etc.).
- .2 Quality Assurance
 - .1 All seismic restraint work including anchoring devices to be designed and certified by a professional engineer registered in BC, who is to also carry out periodic site reviews of the work of this section during construction and at completion, and submit reports and letters of assurances in the forms established by BC Building Code. Costs to be included in contract.

2.0 **MATERIALS**

- .1 Life Cycle Costing.
 - .1 25-Year

2.2 **Prescriptive Requirements**

- .1 Materials
 - .1 Products (UBC Mandatory, approved, or not approved for UBC projects - typ.).
 - .1 Metal channel carriers and stiffeners: thick cold rolled steel, galvanized.
 - .2 Acoustical Sealant: meeting CGSB 19-GP-21M.
 - .3 Apply a double bead of acoustic sealant 3/8" (10 mm) from each edge, to all partition tracks prior to securing.
 - .2 Minimum Metal Stud Gauge
 - .1 0.46 mm (25 gauge) except as otherwise required.
 - .2 0.88 mm (light duty 20 gauge) at the following locations:
 - .1 Studs exceeding allowable heights for L/240 as given in Tables in Manual.
 - .2 Studs (double) on either side of door frames and header.
 - .3 Studs supporting ceramic tile finishes.
 - .4 Ceiling deflection track.
- .2 Execution
 - .1 Maximum stud spacing: 16" oc.
 - .2 Provide allowance for deflection of structure minimum 1" for studwork.

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 Section 09001 Finishes – General Requirements
- .2 UBC Technical Guidelines

1.2 **Performance Standards**

- .1 Association of Wall and Ceiling Contractors of British Columbia (AWCC) Specifications Standards Manual.

2.0 **MATERIALS**

2.1 **Performance Requirements**

- .1 Environmental
 - .1 Consider utilizing board with a high percentage of recycled gypsum.
 - .2 Prefer low volatile organic compound (VOC) emitting joint compounds.
 - .3 Consider the use of paper joint tape instead of fiberglass. (Use only where recommended by the board manufacturer.)
 - .4 Utilize finishing techniques that reduce the amount of sanding required (i.e. finishing with a wet sponge).
 - .5 Heat and ventilate area when curing to quickly remove VOC's.
 - .6 To avoid the absorption of VOC's from other material, store gypsum in a well ventilated area and apply paint or other surface treatment as soon as possible after installation.
 - .7 Use water resistant board and other specialty boards only where absolutely necessary as these products are not easily recycled.
 - .8 Manufacture
 - .1 Gypsum board shall be with a high percentage of recycled gypsum.
 - .2 Joint compound shall be low VOC.
 - .3 Joint tape shall be paper, fiberglass only where recommended by the board or surface treatment manufacturer.

2.2 **Prescriptive Requirements**

- .1 Materials
 - .1 Products (UBC mandatory, approved, or not approved for UBC projects - typ.).
 - .2 The use of exterior "gypsum board" is not permitted in any long term installation except at much protected locations. Instead utilize reinforced cement board or gypsum sheathing with a silicone treated gypsum core bonded to inorganic fiberglass matt both sides or, where possible, considers the use of plywood.
 - .3 In wet areas use re-enforced cement boards or boards with a silicone treated gypsum core bonded to in-organic fiberglass mat on both sides.
- .2 Components
 - .1 Gypsum Wallboard, ASTM C36 or CSA A82.27-M, standards per AWCC Manual, and as follows:
 - .1 Type shall be regular for vertical surfaces.
 - .2 Typical thickness shall be 5/8" for public areas, 1/2" elsewhere.

- .3 Type shall be 'X' type where required for fire-resistance-rated assemblies, or 'C' where this type is noted at ULC Designs.
- .4 Type shall be sag-resistant type for ceiling surfaces.
- .5 Edges shall be tapered.

- .2 Acoustical sealant for exposed Joints shall be manufacturer's standard non-sag, paintable, non-staining latex sealant to ASTM C 834.

- .3 Finishes
 - .1 Refer to AWCC Manual for description of "level" of gypsum wallboard finishing. Levels of finishing as follows:
 - .1 Level 0 shall be for application of ceramic tile.
 - .2 Level 3 shall be in Stockrooms, Mechanical, Electrical, and similar service rooms.
 - .3 Level 4 shall be typical for all exposed locations, and the following concealed locations: substrate for wall coverings.
 - .4 Level 5 shall be where semi-gloss or gloss paint or epoxy paint is scheduled, i.e. washrooms, laboratories, food preparation areas.

- .4 Execution
 - .1 Use finishing techniques that reduce the amount of sanding required (i.e. finishing with a wet sponge).
 - .2 Heat and ventilate area when curing to quickly remove VOC's, avoid propane heaters due to high moisture generation.
 - .3 To avoid the absorption of VOC's from other material; store gypsum in a well ventilated area and apply paint or other surface treatment as soon as possible after installation.
 - .1 Use finishing techniques that reduce the amount of sanding required (i.e. finishing with a wet sponge).
 - .4 Install gypsum panels with face side out, except where gypsum panel is the substrate for ceramic tile work where backside shall face out.
 - .5 Heat and ventilate area when curing to quickly remove VOC's, avoid propane heaters due to high moisture generation.
 - .6 To avoid the absorption of VOC's from other materials, store gypsum in a well ventilated area and applies paint or other surface treatment as soon as possible after installation.

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 Section 09001 Finishes - General Requirements

1.2 **Description**

- .1 Ceramic and Other Tile.

1.3 **Performance Standards**

- .1 Do tile work in accordance with Tile Installation Manual latest edition produced by the Terrazzo Tile and Marble Association of Canada (TTMAC).

1.4 **Quality Control and Assurance**

- .1 Submittals
 - .1 Before Start of Work
 - .1 List of all proposed tile materials for review, and color samples for selection plus for final approval.
 - .2 MSDS Material Data Sheets for review and posting at jobsite.
 - .2 At Completion
 - .1 Maintenance data shall be itemized list c/w manufacturer/distributor name for all products used.
 - .2 Extended warranties.
 - .3 Provide for the Owners future maintenance 2% of the tile used, in original unopened packaging.
 - .3 Quality Assurance
 - .1 Whenever possible, obtain manufacturer extended warranties (Five- Year plus), generally available for larger tiled areas when manufacturer of tile-setting materials and accessories supplies all such materials and carries out inspections of the tile work installation.
 - .2 Quality Control
 - .1 Tile installation shall be in strict accordance with the written instructions and recommendations of the tile manufacturer and related product manufacturers.

2.0 **MATERIALS**

2.1 **Performance Requirements**

- .1 General
 - .1 All non-mosaic type tiles used in wet areas or entry areas to be non-slip with a static coefficient of friction of .60 or higher in accordance with ASTM C1028.
 - .2 Ceramic tile must conform to the standards for stain resistance, crazing and thermal shock requirements when tested in accordance with CAN2-75.1-M77.

- .2 Environmental
 - .1 Epoxy grouts introduce environmental risks and their use should be limited to areas that require the extra durability and ease of maintenance that these products offer.
 - .2 Due to the toxic fungicide additives in mildew resistant sealant, its use should be limited to areas of constant moisture.
 - .3 Products are to use non- toxic and non-specialized cleaning materials.

2.2 Prescriptive Requirements

- .1 Wall Tile shall be glazed finish.
- .2 Size shall be no larger than 300 mm x 300 mm, no smaller than 100 mm x 100 mm.
- .3 No glazed tile to be used on floors.
- .4 Materials
 - .1 Products (UBC Mandatory, approved, or not approved for UBC projects - typ.).
- .5 Components
 - .1 Mortar shall be latex additive for thin-set mortar and latex grouts.
 - .2 Epoxy grouts are required in all shower/change rooms, high traffic, and pools areas generally (but confirm with manufacturer for pool water conditions). Other grout types may be required in special installations such as in laboratories and food services areas.
 - .3 Divider strips shall be at a depth to suit, zinc alloy, with non-corrosive anchors.
 - .4 Applicable at termination of ceramic tile flooring to other flooring finish. Set on centre of doors. Top surface to be flush with finished floor.
 - .5 Tile Preferences
 - .1 Floor tile to be slip resistant, always non-glazed.
 - .2 Wall tile shall be glazed finish.
 - .3 Nominal size shall be no larger than 300 mm x 300 mm, no smaller than 100 mm x 100 mm.
 - .4 Size preferred shall be 100 mm x 100 mm.
- .6 Execution
 - .1 Concrete curing compounds, form oils and sealers may prevent adhesion: ensure proper preparation for tile work.

1.0 GENERAL

1.1 Related UBC Guidelines

- .1 Section 09001 Finishes – General Requirements

1.2 Description

- .1 Metal T- Bar Suspension Systems and Infill Tiles.

1.3 Performance Standards

- .1 Association of Wall & Ceiling Contractors of B.C. (AWCC), Specification Standards Manual.
- .2 Suspension components shall be in accordance with ASTM-C635, “Intermediate Duty” for typical ceiling lighter weight panels such as mineral fiber panels.
- .3 “Heavy Duty” for heavier panels such as composed of gypsum board.
- .4 Installation shall be in accordance with ASTM-C636.
- .5 Seismic design, components, and installation: in accordance with ASTM-E580, Clause 4 “Areas Subject to Moderate to Severe Seismic Disturbance” and subsequent Clauses, and meeting all of the following requirements:
 - .1 The seismic zone established by UBC.
 - .2 BC Building Code Clause 4.1.9.1.15 and Table 4.1.9.1.D.
 - .3 Coordination with seismic requirements of other trades, such as for Division 15 and 16, affecting the work of this Section 09510.
- .6 Use only ceilings that are easily accessible and that can be removed and replaced by the service trades without damage and without requiring other tradesmen or special equipment.
- .7 Only materials that carry some assurance of a future supply of patterns and colors should be specified.
- .8 Fire resistant ceilings that require the use of hold down clips, and concealed spline systems must not be used at UBC.

1.4 Quality Control and Assurance

- .1 Submittals
 - .1 Samples.
- .2 Quality Assurance
 - .1 All seismic restraint work including anchoring devices shall be designed and certified by a Professional Engineer registered in BC, who shall carry out periodic site reviews of the work of this Section during construction and at completion, and submit reports and Letters of Assurances in the Forms established by BC Building Code. Costs to be included in Contract.

2.0 **MATERIALS**

2.1 **Performance Requirements**

- .1 General
 - .1 T- bar ceilings are required to be seismically reinforced in all new constructions.
 - .2 Typical, to equal or exceed: published performance data for "preferred" Armstrong components noted below, or as recommended by Project Acoustical Consultant.
 - .3 Flame Spread Rating of 0-25 required for all Educational Facilities.
- .2 Environmental
 - .1 Source
 - .1 ISO 1400 Series Certified.
 - .2 Life Cycle Costing
 - .1 25-year for suspension system.
 - .2 High recyclable material content.
 - .3 Maintenance.
 - .1 Provide for the Owners future maintenance 5% of the tile used, original unopened packaging. The requirement for extra materials is reduced to 2% if the standard materials are utilized.
 - .3 Disposal
 - .1 Recyclable.

2.2 **Prescriptive Requirements**

- .1 Materials
 - .1 Products (UBC Mandatory, approved, or not approved for UBC projects - typ.).
- .2 Components
 - .1 The following preferred standard products are used and stocked for maintenance at UBC; if used, the requirement for extra materials will be reduced:
 - .1 UBC Standard Tile: 24" x 48" x 5/8" Armstrong #769 "Cortega".
 - .2 Suspension System: 15/16" exposed Tee, Armstrong "Prelude XL".
 - .2 For other systems proposed, criteria for selection: ease of accessibility, durability, high light reflectance, environmental responsibility, recommended for use by Project Acoustical Consultant.
- .3 Execution
 - .1 Connect T-Bar to edge molding using pop rivets, matching color of suspension system, as set out for seismic restraint by ASTM Standards.

1.0 GENERAL

1.1 Related UBC Guidelines

1.2 Description

- .1 Wood Flooring and Related Accessories.
- .2 Finishing of Wood Sports Floors.

1.3 Performance Standards

- .1 NFCA National Floor Covering Association
 - .1 Floor Covering Specification Manual
- .2 Sports Floor Systems (Resilient Systems)
 - .1 Performance criteria standards and requirements to be determined with Sports Associations and users for each particular sport, and specialist sports floor system manufacturers.

1.4 Quality Control and Assurance

- .1 Submittals
 - .1 Confirm with UBC that gym floor markings are to current regulations and meet UBC requirements.
- .2 Quality Assurance
 - .1 Trade to have recognized specialized experience, and have successfully completed 5 similar wood floor and/or Sports Floor System installations, including sanding and finishing, for 5 preceding years minimum.

2.0 MATERIALS

2.1 Performance Requirements

- .1 General
 - .1 Longest life finishes to be used. UBC recognizes that this will likely involve products with high VOC content. Ensure coordination in job scheduling. Sufficient ventilation to be provided, including to prevent absorption by other materials.

2.2 Prescriptive Requirements

- .1 Materials
 - .1 Products (UBC Mandatory, approved, or not approved for UBC projects - typ.).
- .2 Components
 - .1 New wood floors (other than Sport Floors) to be factory pre-finished, c/w acrylic impregnation of the wood cells to improve indentation and wear resistance, and finish coat of extra-hard mineral crystals suspended in multiple coats of ultra-violet cured urethane with stain injected throughout the wear layer, all to minimize maintenance.
- .3 Finishes
 - .1 Sports Floors

- .1 Sealer shall be 2 coats water based or moisture cured urethanes - Basic Coating Hydro line, Reichhold MC330 or equal.
 - .2 Line marking paint to be compatible with sealer and top coat.
 - .3 Top Coat shall be water based or moisture cured urethane - Basic Coat Street Shoe, Reichhold MC330 or equal.
- .4 Execution
- .1 Refinishing of Sports Floors
 - .1 Sand off existing floor finishes with 16 or 24 grit paper.
 - .2 Second Cut shall use 36 grit paper, if old finish is still present.
 - .3 Follow rough sanding with 60 grit paper.
 - .4 Skim fill entire floor with latex wood sealer.
 - .5 Final sand with 100 grit paper.
 - .6 Vacuum floor prior to first coat of finish.

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 UBC Technical Guidelines

1.2 **Co-ordination Requirements**

- .1 Coordinate with UBC Building Operations, Technical Services.

1.3 **Description**

- .1 Resilient Flooring and Bases.

1.4 **Performance Standards**

- .1 NFCA National Floor Covering Association: Floor Covering Specification Manual.
- .2 Applicable product Standards including CSA, CGSB and ASTM.

1.5 **Quality Control and Assurance**

- .1 Submittals
 - .1 Before Start of Work
 - .1 List of each proposed materials for review, and color samples for selection plus for final approval.
 - .2 MSDS Material Data Sheets for review and posting at jobsite.
 - .3 Manufacturer requirements for bond and moisture tests, and reports of test results to indicate substrate conformance.
 - .2 At Completion
 - .1 Maintenance data shall be an itemized list c/w manufacturer/distributor name, product type and color.
 - .2 Maintenance material shall be a minimum 5% of each product/color used (no cuttings), 2% if the standard materials listed below are utilized.
 - .3 Include sufficient adhesive in unopened containers. Package and label, including Project Name and Number, and hand over at a UBC location to UBC Development Manager; obtain receipt.
 - .4 Maintenance Manual shall be manufacturers' recommended maintenance procedures and products.
- .2 Quality Assurance
 - .1 For sheet material, installer to be a certified manufacturer-trained "Master Mechanic" (or similar term), completely familiar with the products, seam welding, and the manufacturer currently recommended methods and conditions of installation. Submit certificate of qualification. Similarly for other resilient flooring installers, when available.
 - .2 Adhesives and auxiliary products to be as recommended in writing by each resilient flooring manufacturer.
- .3 Quality Control
 - .1 Manufacturer preference shall be a registered ISO 9001 quality system.
 - .2 The manufacturer's representative shall inspect the work when required during the contract, and at completion prior to submitting the manufacturer's warranty.

- .3 Install resilient flooring only when moisture emission from concrete substrate is at or below the maximum permissible level of 3 lbs. of water per 1000 sq.ft, based on qualitative tests using calcium chloride test kits developed by the Resilient Flooring Institute, and to manufacturer's requirements.
- .4 Warranties
 - .1 In addition to a 2-Year subcontractor warranty, submit a 5-Year manufacturer limited warranty for sheet flooring work.
- .5 Commissioning
 - .1 Provide xx hours of instruction time to UBC Custodial Group on recommended maintenance procedures and products, by manufacturer representative in presence of trade contractor.
- .6 Maintenance
 - .1 Refer to Section 01740 - Cleaning.

2.0 **MATERIALS**

2.1 **Performance Requirements**

- .1 General
 - .1 Products to conform and perform to Manufacturer published literature.
- .2 Environmental
 - .1 Source
 - .1 Manufacturer preference for registered ISO 14001 Environmental Management System.
 - .2 Manufacture
 - .1 Select materials of lowest VOC content, including adhesives which preferably should be water-based.
 - .2 Select products with highest natural material content: Use linoleum as much as is practical, as the preferred product.
 - .3 Consider the use of linoleum which is produced from natural renewable ingredients.
- .3 Maintenance
 - .1 Suggest cleaning agents of least impact on environment.
 - .2 Disposal
 - .1 Products containing PVC: do "NOT" incinerate.
 - .2 Dispose for recycling wherever possible.

2.2 **Prescriptive Requirements**

- .1 Materials - Products (UBC Mandatory, approved, or not approved for UBC projects).
 - .1 Linoleum with heat-welded seams
 - .1 Linoleum must be used in corridors, lecture theatres and classrooms; do "not" install on concrete slabs below grade, slabs on grade without a vapor barrier, wet areas such as entrance lobbies, (where walk-off mats on towed concrete is

- preferred), in washrooms, and laboratory areas (staining and deterioration under prolonged water saturation).
- .2 Install linoleum wherever undergraduates work, ("not" carpet).
- .3 Linoleum is not suitable for locations where water may collect such as below grade, entrances, washrooms and laboratories.
- .4 Large size linoleum tiles. Their use allows Building Operations to maintain the floors, which sheet goods do not.

- .2 Sheet Vinyl with heat-welded seams
 - .1 Use typically for labs and wet areas as discussed above; include flash-coved base where cleanliness is critical (toxic or radiation areas: discuss with UBC Health Safety & Environment).
 - .2 Large size vinyl tiles. As with lino tiles this product allows building Operations to maintain the floor finish, where sheet goods do not.

- .3 Slip-Resistant Sheet Vinyl with Heat-Welded Seams
 - .1 Use (include flash-coved base).
 - .2 Washrooms and wet areas (as option to ceramic or similar tile), food service areas, janitor rooms, and laboratories.

- .4 Vinyl Composition Tile (VCT)
 - .1 Can only be installed in less-used, low-traffic areas such as storage rooms, electrical rooms, comm. rooms, vaults etc.
 - .2 Do not install VCT in well-used public areas, such as classrooms, lecture theatres, and corridors. VCT shrinks over time because the fillers dry the product out.
 - .3 VCT does not have the reinforcement strength that the old asbestos filler used to have. This allows water or traffic to release edges causing delamination. In lab areas where hazardous and often heavy materials (gas cylinders) are constantly transported, VC tiles have proved to be potentially dangerous and have caused tipping and tripping hazards. VCT has not proved to be satisfactory under life-cycle analysis.

- .5 Rubber Cove Base shall typically be 102 mm (4") high and black.

- .2 Execution
 - .1 Conform to manufacturers' written recommendations.

3.0 **OTHER**

- .1 Cleaning
 - .1 Refer Section 01740 - Cleaning.

- .2 Turn-Over Procedures
 - .1 Contractor to protect resilient flooring in door ways with undid card board or treated paper until floor has been handed over to and accepted by UBC Project Coordinator UBC Project Coordinator to receive 2% overage before accepting flooring finish. UBC Project Coordinator must contact UBC Custodial Manager after handover from contractor and before user occupancy to allow for burnishing and finishing plus general cleaning unless work will be carried out by contractor to UBC Custodial Group's specifications.

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 Section 09001 Finishes - General Requirements
- .2 UBC Technical Guidelines

1.2 **Description**

- .1 Carpet Tile, (preferred), Direct Glue-Down Carpet, and Carpet Accessories.

1.3 **Performance Standards**

- .1 British Columbia Building Code.
- .2 NFCA National Floor Covering Association Floor Covering.
- .3 Specification Manual, including the CCI Canadian Carpet Institute Supplement.
- .4 CAN/CGSB-4.129: Carpet for Commercial Use.
- .5 CAN/CGSB-4.155: Flammability of Soft Floor Coverings.
- .6 CGSB 4-GP-156: Direct Glue-Down Carpet, Guide to Selection and Installation.
- .7 ASTM E648: Radiant Panel Test.
- .8 ISO #6925: Methylamine Pill Test.
- .9 CAN/ULC-S102.2: Standard Method of Test for Surface Burning.
- .10 Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.
- .11 WCB Workers Compensation Board, Industrial Health and Safety Regulations.
- .12 WHMIS Workplace Hazardous Materials Information System.

1.4 **Quality Control and Assurance**

- .1 Submittals
 - .1 Before Start of Work
 - .1 Manufacturer's product data verifying compliance with specification requirements for carpet types and accessories specified.
 - .2 Manufacturer's full range (large set) of carpet colors and patterns available for carpet types meeting specification requirements for review and selection.
 - .3 Two 400 mm (16") square samples of each type and of each color of carpet to be used. For carpet with pattern repeat, submit a minimum of three repeats of the pattern.
 - .4 Manufacturer's product data and material / color range of carpet accessories for review and selection.
 - .5 Seaming Plan for all areas clearly indicating materials, patterns / colors, pile direction, joint (seam) locations (i.e. locations of length and cross seams and open edges) and other details including type and finish / color of trims and moldings used, required to clarify the work for review before commencing installation. Cross seams shall be avoided and will only be permitted where made unavoidable by carpet width or roll length. Avoid seams at doors and pivot points.
 - .6 Certificate from carpet manufacturer stating that each roll of carpet furnished has been manufactured in accordance with specification requirements along with roll registration numbers.

- .2 At Project Completion
 - .1 Manufacturer's maintenance data and cleaning instructions for each type of carpet installed.
 - .2 Two percent (2%) of total carpeted area from same production run of each type, color and/or pattern of carpet installed, in full roll width x length as required, and sufficient adhesive to install this carpet, in unopened containers.
 - .3 In addition to the above, turn over to the UBC Development Manager all carpet pieces remaining at job completion. No carpet scraps shall be removed from the site without the UBC Development Manager's written approval.
- .2 Quality Assurance
 - .1 Conform to NFCA Specification Standards Manual requirements for all products and installation, and all manufacturers' written instructions.
- .3 Quality Control
 - .1 Conduct hygrometer moisture tests on concrete shall not to exceed 65% per CCI Manual, or stricter manufacturer requirements.
 - .2 Test new and suspect concrete floors for alkalinity and neutralize in accordance with NFCA/CCI recommendations. Carpet manufacturer's representative to review carpet seaming and installation to ensure conformance with guarantee requirements and submit a written report to the Consultant and UBC Development Manager confirming same.
- .4 Warranties
 - .1 In addition to any other required warranties, provide the following written minimum guarantees or warranties to commence at Date of Substantial Performance, and details of guarantees or warranties that exceed noted minimum requirements.
 - .2 By Fiber Manufacturer
 - .1 Ten (10) year abrasive wear guarantee that carpet fiber will provide specified level of appearance, subject to proper care and maintenance.
 - .2 Ten (10) year color fastness to light.
 - .3 Ten (10) year color fastness to atmospheric contaminants.
 - .3 By Carpet Manufacturer
 - .1 Ten (10) year against unraveling, zippering, and delimitation / deterioration of backing not to exclude wet or steam cleaning methods.
 - .4 By Carpet Installer
 - .1 One (1) year that all seams will remain sound and tight and carpet will not break away from adhesive.
 - .5 By Adhesive Manufacturer
 - .1 Ten (10) year, including labor and material, against adhesive failure.

2.0 **MATERIALS**

2.1 **Performance Requirements**

- .1 General
 - .1 Minimum performance characteristics of carpet

- .1 Soil and stain protection shall be an integral life long stain proofing, i.e., inherent in or bonded to nylon fiber. Topical treatments are not acceptable.
 - .2 Stain resistance (STR) shall be a minimum level of 8 in high traffic areas and 6 in low traffic areas based on AATCC 138 test for 5 washings to simulate removal of topical treatments by hot water extraction followed by AATCC 175 test.
 - .3 Soil resistance (SR) with an average of 3 fluorine analyses to CRI TM-102, of a single composite sample shall be a minimum of 500 ppm fluorine by weight and a minimum of 400 ppm fluorine by weight after 2 AATCC 171 (Hot Water Extraction) cleanings.
 - .4 Static control shall be a permanent anti-static filament, and without chemical treatment, with maximum static generation below 3.0 kV after hot water extraction under standard conditions of 21° C and 20% relative humidity.
 - .5 Anti-microbial protection shall be permanent (not topical) treatment to prevent bacteria, fungi and bacteria growth lasting life of carpet.
 - .6 Indoor air quality shall be to minimum Canadian Carpet Institute Indoor Air Quality standards, with maximum 0.5 mg/cm².hr total VOC emission in accordance with ASTM D5116-90.
 - .7 Flammability CAN/ULC-S102.2 shall be Flame Spread Rating of 300; Smoke Developed Classification of 500.
 - .8 Radiant panel test shall be class I (0.45 watts/m² or greater).
 - .9 Pill test shall pass.
- .2 Environmental
- .1 Carpet to be 14001 certified or equal, for recycled content or recyclables.
 - .2 Source
 - .1 ISO 9002 quality audit certified.
 - .3 Performance
 - .1 Indoor Air Quality
 - .1 All carpet is to comply with the requirements of The Carpet and Rug Institute's Indoor Air Quality Program, as described in "Carpet Testing Program Procedures - Overview" and "The Carpet and Rug Institute Indoor Air Quality Carpet Testing Program." Each product to hold an eight-digit identification number assigned to it by this program. PCH4 emitting carpets must be identified in submission with test data.
 - .4 Disposal
 - .1 Recycle-Ability of Carpet
 - .1 Carpet face must be 100% recyclable.
 - .2 Submit manufacturer's recycling program with for each product.
 - .3 Provide percentage of recycled content contained in each product by color and recycle-ability of each product.

2.2 Prescriptive Requirements

- .1 Carpet coloration shall be mottled, multi-colored, feathered look; preferably dark colour with lighter accent colours or mid to dark colours. Luster shall be dull.
- .2 Carpet coloration must hide dirt and demonstrate to minimal maintenance and cleaning.
- .3 Components
 - .1 General
 - .1 Carpet tiles are preferred for their ease of installation, their ease of changeability, and their comparable price to broadloom.
 - .2 Carpet provided shall be first quality commercial grade carpet for heavy traffic usage as manufactured by a nationally recognized manufacturer.
 - .2 Yarn
 - .1 100% first quality, type 6/6 or 6 bulk continuous filament (BCF) nylon.
 - .3 Carpet construction shall meet the following minimum requirements:
 - .1 Construction shall be level loop or textured level loop.
 - .2 Dye Method :
 - .1 Solution dyed or other method providing permanent stain resistance (i.e., inherent in or bonded to nylon fiber) with low luster colour(s).
 - .3 Plies shall be a minimum of 3.
 - .4 Pile height shall be 5.0 mm (0.197") maximum; 4.0 mm (0.144") minimum.
 - .5 Tuft Bind shall be a minimum 12 pounds, wet or dry.
 - .6 Gauge shall be minimum 39.4 col/10 cm (1/10") or better (a looser gauge may be allowed if Kilotex rating is sufficiently high).
 - .7 Stitch count shall be a minimum 40 / 10 cm (10 per inch).
 - .8 Yarn face weight shall be a minimum 950 gm/m² (28 oz/sq.yd), or better (a lesser weight may be allowed with a Type 2 or 3 backing system).
 - .9 Pile density factor (ASTM D418) shall be a minimum 12 Kilotex/cm².
 - .4 Adhesives
 - .1 Premium grade, low VOC (solvent-free), waterproof type for direct glue down carpet application as recommended by carpet manufacturer for backing system and substrate / grade level and usage conditions, complete with guarantee against adhesive bond failure. Spread rates stipulated by the manufacturer to be strictly adhered to.

3.0 OTHER

- .1 Turn-Over Procedures
 - .1 Contractor to ensure that glued carpets are protected against damage from rolling loads for 48 hours after installation and protected by covering with plywood or hardboard where rolling traffic will occur (i.e. moving of equipment, etc.).
 - .2 Contractor to ensure that carpet is protected from traffic damage with suitable covering (un-dyed untreated paper) until floor has been turned over and accepted by UBC Project Manager. Typically also provide two large sections of surplus carpet cuttings and place at entry doors so that they can be used as doormats by other trade personnel entering the carpeted area.

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 Section 09001 Finishes – General Requirements

1.2 **Description**

- .1 Waterproof membrane flooring and base to be applied at all Mechanical Rooms (see 2.1.1.2), Penthouses, and similar locations where leaks in building systems may occur and cause water damage, such as to floors below. Chosen system to have been specifically designed for this purpose.
- .2 Waterproof traffic topping as corrosion protection for all concrete parking slabs. Chosen system to have been specifically designed for this purpose.

1.3 **Quality Control and Assurance**

- .1 Submittals
 - .1 MSDS data sheets; installation instructions.
 - .2 Sample, to include base upturn; color samples for selection.
 - .3 Maintenance data and instructions.
- .2 Quality Assurance
 - .1 Manufacturer licensed applicator.
- .3 Quality Control
 - .1 Strictly conform to Manufacturer written instructions, including preparation of substrates.

2.0 **MATERIALS**

2.1 **Performance Requirements**

- .1 Membrane Flooring
 - .1 Urethane elastomeric solvent-free liquid-applied seamless waterproof flexible flooring, extended up to a suitable uniform height. System typically consists of a primer, primary coating, and colored top coat. Min. 40 mil dry thickness is preferred.
 - .2 For Mechanical Room floors the preferred coating is Coronado Industrial Coatings Coropoxy WB Amine Adduct 142 Line. This is an odour-free waterborne coating that meets MPI # 93 epoxy floor paint, and is obtained through General Paint Ltd.
- .2 Traffic Topping
 - .1 A waterproof traffic coating consisting of a flexible, liquid applied, elastomeric membrane topped with a liquid applied polyurethane wearing course containing hard aggregates and a urethane topcoat.
 - .2 The system to be totally water-proof, flexible and thermally compatible with the concrete substrate under applicable service conditions. The system to exhibit zero chloride permeability when tested in accordance with the test procedure developed by the Portland Cement Association on behalf of the Federal Highway Administration for the rapid determination of the chloride permeability of concrete.

- .3 Finished surfaces to be skid resistant, wet or dry. Sample system: Duo deck I (heavy duty) and Duo deck II (medium duty) all urethane traffic system as manufactured by Duochem or equal.

2.2 Environmental

- .1 Life Cycle Costing
 - .1 25-Year.

1.0 **GENERAL**

1.1 **Related UBC Guidelines**

- .1 Section 09001 Finishes – General Requirements
- .2 UBC Technical Guidelines
- .3 *Division 17 (17100 – 3.4.10, 17110 – 2.3)*

1.2 **Co-ordination Requirements**

- .1 Coordinate with Consultants - Structural, Mechanical, Electrical and/or Landscape.
- .2 Coordinate with UBC Building Operations, Paint Shop through the Project Manager.
- .3 Coordinate with the Architect, Technical Services, Building Operations; phone: 604-822-9510.
- .4 For Mechanical Room Floor Coatings, refer to Section 09700.
- .5 *UBC Information Technology (IT).*

1.3 **Description**

- .1 Exterior and Interior Painting.

1.4 **Performance Standards**

- .1 Master Painters Institute (MPI) published Manuals as follows:
 - .1 New surfaces shall use MPI Architectural Painting Specification Manual.
 - .2 Existing surfaces shall use MPI Maintenance Repainting Manual.

1.5 **Quality Control and Assurance**

- .1 Submittals
 - .1 Before Start of Work
 - .1 List of all proposed paint materials for review; color samples for selection; color samples for final approval.
 - .2 MSDS Material Data Sheets for review and posting at jobsite.
 - .3 Certification reports for Eco-Logo and VOC content.
 - .2 During Work
 - .1 Use MPI Accredited Assurance Association (A.Q.A.) inspector reports, or preferably MPI inspector.
 - .2 Manufacturer Inspectors' reports when required.
 - .3 At Completion
 - .1 Maintenance data: itemized list c/w manufacturer/distributor name, paint type, color formulation.
 - .2 Maintenance material shall be minimum four (4) unopened 1 liter cans of each product/color, labeled including Project Name and Number, to be handed over to UBC Development or Project Manager (obtain receipt) at Project site, for storage within the Project site (i.e. designated Janitor Room).
- .2 Quality Assurance
 - .1 Trade Contractor shall be a member of master painters and decorators association (MPDA). Refer to www.paintinfo.com
 - .2 Follow MPI Quality Assurance Program including the MPDA Inspection and Guarantee Program.

- .3 Quality Control
 - .1 All work to be inspected by an MPI approved/appointed Inspection Agency, acceptable to the Consultant and the MPI Accredited Assurance Association (A.Q.A.), and paid by the Trade Contractor; MPI Inspection to be carried out irrespective of type of Guarantee. (Note: on a Consultant-designed project when work of this Section is carried out by UBC's own forces, (generally smaller renovation projects), UBC will arrange and pay for MPI's inspection services only if required).
 - .2 When "special" non-MPI products or systems are to be used, the manufacturer to also carry out inspections and certify the work, following the same procedures as set out in the MPI Manual, and paid by the Trade Contractor.
 - .3 Inspection to include inspection of surfaces prior to start of work, moisture tests, preparation for painting, primer, completed work, and during and at end of Warranty including expediting correction of defects.
- .4 Warranties
 - .1 2-Year MPI Accredited Quality Assurance Association's 2-year guarantee, or a 100% 2-Year maintenance bond issued by a surety licensed in British Columbia warranting also that painting work has been performed to MPI Manual requirements. The A.Q.A. association's guarantee shall NOT exclude any of the work carried out under this section.

2.0 **MATERIALS**

2.1 **Performance Requirements**

- .1 General
 - .1 Use products that are listed in MPI Manual Current Approved Product List.
 - .2 Material such as linseed oil, shellac, turpentine, etc. not specifically listed by brand name shall use highest quality product.
 - .3 All products for each paint system applied shall be from same manufacturer for compatibility.
 - .4 Primers on steelwork shall provide MPI approved primers suitable for paint systems noted, and suitable for subsequent work carried out by this Section. Coordinate with Sections 05100 and Section 05500.
 - .5 All paint systems shall be MPI "premium grade" except as noted.
- .2 Environmental
 - .1 Source
 - .1 Preference shall be ISO 9002 registered manufacturers.
<http://www.praxiom.com/iso-9002-1994a.htm>
 - .2 Manufacture
 - .1 Select lowest range VOC products from each MPI product category number listed in the MPI Manual current approved product list, preferably "Three-Tree" and Eco-Logo certified.
 - .3 Performance
 - .1 Durability
 - .1 Minimize tinting to maintain durability.

- .2 Life Cycle Costing
 - .1 Exterior expectancy shall be minimum 8 years using standard coatings. Expectancy for High Performance Coatings shall be a minimum 15 years, and whenever possible financially, contractors are to use high performance coatings. Approximately 60-year for silicate-based paints, especially on cementitious-finished heritage buildings.
 - .2 Interior expectancy is 5-10 years.
- .3 Disposal
 - .1 Refer Section 01355.

2.2 Prescriptive Requirements

- .1 Materials
 - .1 Use MPI approved products except where noted.
 - .2 Use paint with reduced volatile and preservative content formulated for minimum VOC emissions, especially where rooms are continuously occupied.
 - .3 Paint shall not contain mercury, lead, hexavalent chromium, or cadmium compounds.
 - .4 Use alkyd paints only at high impact areas, or with special approval. (See note .6 next).
 - .5 Do not use water-soluble paints for handrails, or door frames where hand oils could cause paint breakdown.
 - .6 Preference should be given to alkyd paints in renovation work and for painting handrails, doors, door frames and window frames because of durability and life cycle cost. Being more durable, less VOC's are released over time than water based paints which must be renewed more often. Do not use water based paints on handrails etc. where hand oils will break down the paint.
 - .7 Mechanical, Electrical, and similar Service Rooms or enclosed spaces, and concealed spaces: Services in these area, including equipment, piping, pipe insulation, coils, ductwork, conduit, electrical and control panels, access panels, etc. are NOT to be painted, except for pre-finishing carried out by manufacturers and any make-good work.
 - .8 For Mechanical Room floors over occupied spaces see Section 09700 Paragraph 2.1.1.2.
- .2 Paint Systems, Components, Sheen, and Use
 - .1 Exterior New Work
 - .1 EXT 5.1B / Inorganic Zinc Primer + High Performance Acrylic / Gloss / Exposed Structural Steel.
 - .2 EXT 5.1D / Alkyd / Gloss / Miscellaneous Metal including railings, guardrails, bollards.
 - .3 EXT 5.1G / Zinc Rich Primer + 2-Component Aliphatic Polyurethane / shop finished exposed structural steel; detailing of steelwork carefully coordinated to minimize fieldwork touch-up.
 - .4 EXT 5.3B / Alkyd / Gloss / galvanised hollow metal doors and pressed steel frames; roof-top ducting, vents and piping, exterior galvanized metal generally.

- .5 Strong consideration should be given to using Potassium Silicate-based paints on cementitious surfaces. Contact the Architect, Technical Services; phone: 604-822-9510. Silicate-based paints must be completely unaffected by UV, static dirt-repelling, completely breathable, inorganic/sustainable, must bond chemically with the cementitious substrate and have a life-expectancy of more than 60 years.
- .2 Exterior Renovation Work
 - .1 REX 5.1K or L / Water Based Light Industrial Coating / semi-gloss / painted doors and frames.
 - .2 Strong consideration should be given to using Potassium Silicate-based paints on cementitious surfaces. Contact the Architect, Technical Services; phone: 604-822-9510. Silicate-based paints must be completely unaffected by UV, static dirt-repelling, completely breathable, inorganic/sustainable, must bond chemically with the cementitious substrate and have a life-expectancy of more than 60 years.
- .3 Interior New Work
 - .1 INT 3.1A / Latex / Custom / Eggshell / Mechanical, Electrical Rooms, and Service Rooms.
 - .2 INT 3.1C / High Performance Acrylic / Eggshell / typical concrete surfaces.
 - .3 INT 3.1D / Alkyd / semi-gloss / concrete in washroom, janitor, and similar rooms.
 - .4 INT 3.2H / Latex Zone & Traffic Markings / nosing at stairs, conforming to BC Building Code for the visually impaired; other safety markings required by BC Building Code, authorities having jurisdiction, Worksafe.
 - .5 INT 4.2A / Latex / Custom / Eggshell / Mechanical, Electrical rooms, and service rooms.
 - .6 INT 4.2K / High Performance Acrylic / Eggshell / typical concrete block surfaces.
 - .7 INT 4.2C / Alkyd / semi-gloss / concrete block in washroom, janitor and similar rooms.
 - .8 INT 5.1B / High Performance Acrylic / Gloss / Structural Steel.
 - .9 INT 5.1E / Alkyd / Gloss / Metal Fabrications at contact surfaces such as stairs, railings, trench gratings, trench covers and frames, access doors/panels, elevator doors and frames.
 - .10 INT 5.3C / Alkyd / Gloss / galvanized hollow metal doors, door and window frames; galvanized metal fabrications.
 - .11 INT 5.3F / Alkyd Dryfall / flat / steel deck.
 - .12 INT 6.4C / Alkyd / Gloss / wood trim.
 - .13 INT 9.2A / Latex / Custom Grade / Eggshell / gypsum board in Mechanical, Electrical Rooms, and service rooms.
 - .14 INT 9.2B / High Performance Acrylic / Eggshell / typical gypsum board surfaces.
 - .15 INT 9.2C / Alkyd / semi-gloss / gypsum board in washroom, janitor and similar rooms.
- .4 Interior Renovation Work
 - .1 RIN 5.3B / Water Based Light Industrial Coating / semi-gloss / painted hollow metal doors and pressed steel frames.
 - .2 RIN 6.3P / Water Based Light Industrial Coating / semi-gloss / painted wood doors and frames.
- .3 Colour Finishes
 - .1 Exterior New Work

- .1 The following interior colors are standard at UBC, and are based on the General Paint coloring system. They are not mandatory, but may be considered as a guide whenever practical, at the discretion of the Consultant:
 - .1 GP 8520W "Glamour Gray".
 - .2 GP 8220W "Hayseed".
 - .3 GP 8630W "Prism White".
 - .4 GP 7740W "Snow Gum."
- .2 Suggested interior corridor colours are as shown in a silver General Paints booklet titled "Neutral Colours".
- .4 Metal Fabrications at or near ground level.
 - .1 GP- 3979A is mandatory for all exterior metal fabrications on campus, such as handrails, stairs, railings, and light standards and other similar fittings and components on the Site. General Paint has no problem mixing this color's older ref. number when specified:
- .5 Electrical panels, fire hose cabinets, access panels: match color of adjoining surfaces except as otherwise required by Building and/or Fire Codes.
- .6 Fabrication
 - .1 Conform to MPI Manuals.

2.3 Execution

- .1 Conform to MPI Manuals, including preparation for work of this Section.
- .2 Contract MPI inspectors for quality control.
- .3 Allow each coat to dry before applying the next coat, sanding between coats.
- .4 Any resultant damage or results emanating from preparation for painting, including pressure washing and similar procedures, are the responsibility of the Contractor.

3.0 OTHER

- .1 Cleaning
 - .1 Remove paint spots from both existing and new surfaces regardless of who caused them.
- .2 *Communications cables must not be painted. They must be masked and protected from paint overspray or direct painting.*
- .3 *Wall-mounted plywood back-boards inside all Communications Rooms must be painted. See Section 17110 – 2.3.*