

## 5.12 Interior and Exterior Painting

### 5.12.1 General Requirements

1. Performance Standards: Use Master Painters Institute (MPI) published Manuals as follows:
  - a. New surfaces shall use MPI Architectural Painting Specification Manual.
  - b. Existing surfaces shall use MPI Maintenance Repainting Manual.
2. Submittals
  - a. Before Start of Work
    - i. List of all proposed paint materials for review; color samples for selection; color samples for final approval.
    - ii. MSDS Material Data Sheets for review and posting at jobsite.
  - b. During Work
    - i. MPI Accredited Assurance Association (A.Q.A.) inspector reports.
    - ii. Manufacturer Inspectors' reports when required.
    - iii. At Completion
    - iv. Maintenance data: itemized list c/w manufacturer/distributor name, paint type, color formulation.
    - v. Maintenance material shall be minimum four (4) new unopened 1 liter cans or 1% of quantity used, whichever is greater, of each product/color/tint, labeled including Project Name and Number, to be handed over to UofC Project Manager (obtain receipt) at Project site, for storage within the Project site (i.e. designated Janitor Room).
3. Trade Contractor shall be a member of master painters and decorators association (MPDA). Refer to [www.paintinfo.com](http://www.paintinfo.com).
4. Follow MPI Quality Assurance Program including the MPDA Inspection and Guarantee Program.
5. Inspections
  - a. 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 UofC's own forces, (generally smaller renovation projects), UofC will arrange and pay for MPI's inspection services only if required.

- b. 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.
  - c. 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.
6. Warranty - Two-Year MPI Accredited Quality Assurance Association's 2-year guarantee, or a 100% 2-Year maintenance bond issued by a surety licensed in Alberta 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.
  7. Store materials not in actual use in tightly covered containers. Store all painting materials in approved areas of the building.
  8. DO NOT paint stainless steel, brass, baked enamel, aluminum, porcelain enamel, plastic laminate, glass, tile or face-brick surfaces, equipment name and/or specification plates, washroom fixtures, toilet partitions, and other factory-finished items, unless noted otherwise.
  9. All doors shall be painted or stained (refer to Door Schedule). Paint all glazing rebates, and wood and metal stops, before installation of glass.
  10. Paint all wall mounted shelving and interior of drawers, cupboards and cabinet work (unless noted otherwise) to match the walls.

### **5.12.2 Materials**

#### **5.12.2.1 Performance Requirements**

1. Products 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.
5. All paint systems shall be MPI "premium grade" except as noted.
6. Preference shall be ISO 9002 registered manufacturers.
7. Architectural paints and coatings must not exceed the volatile organic compound (VOC) content limits established in Green Seal Standard GS-11, Paints, First Edition, May 20, 1993.
8. Anti-corrosive and anti-rust paints must not exceed the volatile organic compound (VOC) content limit of 250 g/L established in Green Seal Standard GS-03, Anti-Corrosive Paints, Second Edition, January 7, 1997.

9. Minimize tinting to maintain durability.
10. Durability: 5-Year for standard coatings. 20-year where possible using high performance coatings. 30-year for silicate-based paints.
11. Preferred (acceptable) product or material: General Paint, Glidden ICI, Pratt & Lambert, Pittsburgh.
12. Paints shall be ready mixed. Mix materials which come in paste or powder form, or to be field catalysed, in accordance with the manufacturer's directions.

#### **5.12.2.2 Prescriptive Requirements**

1. Materials
  - a. All products to be MPI approved except where noted.
  - b. Paint shall not contain mercury, lead, hexavalent chromium, or cadmium compounds.
2. Use alkyd paints only at high impact areas, or with special approval.
3. 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 and any requirements outlined in the code. See Appendix H for Mechanical Painting Requirements.

#### **5.12.2.3 Paint System, Components, Sheen, and Use**

##### **Exterior New Work**

1. EXT 5.1B / Inorganic Zinc Primer + W.B. Light Industrial Coating / 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 / galvanized 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.
6. Silicate-based paints must be UV resistant, dirt-repelling, and completely pervious; must bond chemically with the cementitious substrate and have a life expectancy of more than 30 years.

**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. Silicate-based paints must be UV resistant, dirt-repelling, and completely pervious; must bond chemically with the cementitious substrate and have a life expectancy of more than 30 years.

**Interior New Work**

1. INT 3.1A / Latex / Custom / Eggshell / Mechanical, Electrical Rooms, and Service Rooms.
2. INT 3.1C / HIPAC Latex / 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 AB Building Code for the visually impaired; other safety markings required by AB Building Code, authorities having jurisdiction, Worksafe.
5. INT 4.2A / Latex / Custom / Eggshell / Mechanical, Electrical rooms, and service rooms.
6. INT 4.2K W.B. Light Industrial Coating / Eggshell / typical concrete block surfaces.
7. INT 4.2C / Alkyd / semi-gloss / concrete block in washroom, janitor and similar rooms.
8. INT 5.1B / W.B. Light Industrial Coating / 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 / Semi Transparent Stain / Gloss / wood trim.
13. INT 9.2A / Latex / Custom Grade / Eggshell / gypsum board in Mechanical, Electrical Rooms, and service rooms.
14. INT 9.2B / HIPAC Latex / Eggshell / typical gypsum board surfaces.
15. INT 9.2C / Alkyd / semi-gloss / gypsum board in washroom, janitor and similar rooms.

**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.

#### **5.12.2.4 Colour Finishes**

##### **Interior New Work**

1. The following interior colors are standard at UofC, and are based on the General Paint coloring system. They are not mandatory, but may be considered whenever practical at the discretion of the Consultant:
  - a. GP #2548 antique white,
  - b. GP #2530 silver white,
  - c. GP #2761 flintstone grey
2. Suggested interior corridor colours are as shown in a silver General Paints booklet titled "Neutral Colours".
3. The following color is mandatory for all exterior Metal Fabrications at or near ground level, including 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 reference number when specified: GP- 3979A.
4. Electrical panels and access panels are in general not to be painted. If painting is required, match colour of any adjoining surfaces except as otherwise required by Codes. Do NOT cover safety decals, or screws or other hardware.
5. Fire hose cabinets or other life safety equipment such as recessed fire extinguisher cabinets, first aid kits, AEDs will not be painted to colour match adjoining surfaces.
  - a. Windowless stainless steel life safety equipment will not be painted but will remain as per original manufacture. Windowless stainless steel life safety equipment cabinets will have labeling affixed on their surfaces indicating the type of life safety equipment contained within. This labelling can be in raised lettering as described in ABC (2006) 3.2.5.11 (see below for details) or the labels can be in the form of a recognized graphical symbol as per the ISO international standards.
  - b. Stainless steel life safety equipment cabinets glass with viewing panels showing the life safety equipment contained within do not require painting unless painting the cabinet will improve the visibility of the cabinet to the occupants of the space.
  - c. Life safety equipment cabinets not constructed from stainless steel shall be painted one of two colours, either red or white, whichever colour provides the greater contrast between the cabinets and adjacent surfaces. These life safety equipment cabinets will have labeling affixed on their surfaces indicating the type of life safety equipment contained within. This labelling can be in raised lettering as described in ABC (2006) 3.2.5.11 or the labels can be in the form of a recognized graphical symbol as per the ISO international standards.

6. Keep sprinkler heads free of paint. Ensure protective covers are removed after painting is complete. Replace any sprinkler heads that show evidence of paint – do not clean.
7. Paint exposed mechanical and electrical louvers, diffusers, grilles, ducts, pipes (insulated and uninsulated), conduit, panels, etc. in finished areas (including mechanical, electrical, telephone/data and utility rooms) unless otherwise noted or unless the item has a factory applied finish or is anodized.
8. Paint sides and edges of plywood equipment and panel backboards prior to erection. Use one coat of primer and two coats of fire retardant alkyd enamel.
9. Paint all exterior ferrous and galvanized metal, including brick ledgers, piping and railings, flashings, mechanical and electrical equipment, etc. unless it is pre-painted or factory finished.
10. New canvas coated mechanical insulation shall be wrapped with fire retardant lagging as required tinted with acrylic latex enamel to match finish coat of finish of adjacent ceiling, and one (1) top coat of semi-gloss alkyd enamel, full bodied, brush applied. All canvas of individual pipes to match,
11. Existing painted canvas coated mechanical insulation surfaces shall be prepared and re-painted with two (2) coats of semi-gloss alkyd enamel, full bodied, brush applied as specified, to match adjacent finish ceiling. All canvas of individual pipes to match,
12. Fabrication - Conform to MPI Manuals.

### **5.12.3 Specific painting**

#### **5.12.3.1 Mechanical Room Floors**

1. For mechanical room without storage, acceptable products: “Duochem 390 membrane (35 mils)”, with “Duochem 6001 finish” as manufactured by Duochem, or approved equivalents.
2. For mechanical room with storage, acceptable products: “Duochem 390 membrane”, with “Duochem 391 primer”, and “Duochem 6001 finish” as manufactured by Duochem, or approved equivalents.
3. Concrete slab on grade: acceptable products: “Duochem 8200” as manufactured by Duochem, or approved equivalent. Choose another product if chemical resistance is needed.
4. See Section 5.12.3.2 for requirements of membrane floors in Mechanical Rooms.

#### **5.12.3.2 Level floors with cove bases (For Heavy-Duty Waterproof Areas):**

1. Prepare all new and existing concrete surfaces with abrasive blasting equipment (Blastrac).
2. Grind surface imperfections to obtain a smooth and level surface.
3. Apply (1) coat: acceptable products: “S6511 System Penetrating Prime & Seal Primer” as manufactured by Rust-Oleum or approved equivalent.

4. Apply (1) coat: acceptable products: "8000 System OverKrete HD", 6 mm (1/4") non-porous mortar with 100 mm (4") high "8000 System OverKrete CB" as manufactured by Rust-Oleum, "Duochem 9400 with "Duochem 5235" as manufactured by Duochem, or approved equivalent.
5. Apply two (2) coats: 15 mils dry film thickness per coat for smooth finish: acceptable products: "8100 System OverKrete Xtra S" as manufactured by Rust-Oleum, "Duochem 7105" as manufactured by Duochem, or approved equivalent.

Or

1. Apply one (1) coat: 25 mils dry film thickness per coat for semi-smooth finish: acceptable products: "8100 System OverKrete Xtra S" as manufactured by Rust-Oleum, "Duochem 7105" as manufactured by Duochem, or approved equivalent.
2. Apply one (1) coat: 20 mils dry film thickness per coat for non-skid finish: acceptable products: "8100 System OverKrete Xtra S" as manufactured by Rust-Oleum, "Duochem 7105" as manufactured by Duochem, or approved equivalent.

#### **5.12.3.3 Sloped floors with cove bases (for Heavy-Duty waterproof Areas):**

1. Prepare all new and existing concrete surfaces with abrasive blasting equipment (Blastrac).
2. Grind surface imperfections to obtain a smooth and level surface.
3. Apply one (1) coat: acceptable products: "S6511 System Penetrating Prime & Seal Primer" as manufactured by Rust-Oleum or approved equivalent.
4. Before the primer has cured, apply grout to form a sloped floor to drain, 3 mm per 305 mm (1/8" per ft.) slope, with a minimal thickness of 3 mm (1/8"):
  - a. Acceptable products: "Overdrive" epoxy grout as manufactured by Rust-Oleum, "Duochem 9400" as manufactured by Duochem, or approved equivalent.
5. Once the epoxy grout has set, apply "8000 System OverKrete HD" 6 mm (1/4") non-porous mortar with 100 mm (4") high "8000 System OverKrete CB" as manufactured by Rust-Oleum, "Duochem 9400" with "Duochem 5235" as manufactured by Duochem, or approved equivalent.
6. Apply two (2) coats: 15 mils dry film thickness per coat for smooth finish: acceptable products: "8100 System OverKrete Xtra S" as manufactured by Rust-Oleum, "Duochem 7105" as manufactured by Duochem, or approved equivalent.

#### **5.12.3.4 Washrooms, typical floors w/o Ceramic Tile:**

1. Two (2) to three (3) coats: acceptable products: "S-40 System Gloss Concrete Epoxy Floor Coating" as manufactured by Rust-Oleum, "Duroplast 150" as manufactured by Duochem, or approved equivalent.

**5.12.3.5 Washrooms: Floors and cove bases (For Heavy-Duty Waterproof areas):**

1. Apply one (1) coat: approved products: "S6511 System Penetrating Prime & Seal Primer" as manufactured by Rust-Oleum or approved equivalent.
2. Apply two (2) coats: 15 mils dry film thickness per coat for smooth finish.
3. Acceptable products: "8100 System OverKrete Xtra S" as manufactured by Rust-Oleum, or "Duochem 7105" as manufactured by Duochem, or approved equivalent.

**5.12.3.6 Doors and Frames:****Wood door and frame**

1. One (1) coat primer: acceptable product: "Sierra Performance Griptec" as manufactured by Rust-Oleum, "NO 4000 ODOR LESS Primer/Sealer" or approved equivalent.
2. Two (2) finish coats DTM acrylic urethane enamel: acceptable products:
3. "Sierra Metalmax" as manufactured by Rust-Oleum, "Eco Spec WB" interior latex pearl finish as manufactured by Benjamin Moore, or approved equivalent.

**Metal door and frame**

1. Two (2) finish coats DTM acrylic urethane enamel: acceptable products:
2. "Sierra Metalmax" as manufactured by Rust-Oleum, "Super Spec HP DTM Acrylic Gloss Enmal KP 28" as manufactured by Benjamin Moore, or approved equivalents.

**5.12.3.7 Exterior stainless steel**

1. Preferred: EXT 5.6B / Vinyl wash primer / Polyurethane
2. Acceptable: EXT 5.6A / Vinyl wash primer / Alkyd, can be used with permission of FMD (OUA).

**5.12.3.8 Exterior galvanized steel**

1. One (1) coat: acceptable products: "KP 04" acrylic metal primer as manufactured by Benjamin Moore or approved equivalent.
2. Two (2) coats: acceptable products: "KP 28" acrylic DTM gloss enamel as manufactured by Benjamin Moore or approved equivalent.

**5.12.4 Execution**

1. Conform to MPI Manuals, including preparation for work of this Section.
2. Allow each coat to dry before applying the next coat, sanding between coats.
3. Sand and dust between all coats to remove all defects visible to the unaided eye from a distance of 1500 mm.



4. Any resultant damage or results emanating from preparation for painting, including pressure washing and similar procedures are the responsibility of the Contractor.
5. Cleaning - remove paint spots from both existing and new surfaces irrespective of who caused them.
6. Typical Floors
  - a. Scrape loose paint and repair surfaces with materials compatible with surface composition then sand and clean surfaces.
  - b. Ensure that all surfaces are dry, clean, free from dust, grease, wax, soap, rust, mildew, tool and machine marks, insects, etc., by washing with Trisodium Phosphate.
  - c. Application as per manufacturer's specification.
7. Walls, ceilings, doors, frames, wood surfaces, etc.:
  - a. Scrape loose paint and repair surfaces with materials compatible with surface composition then sand and clean surfaces.
  - b. Ensure that all surfaces are dry, clean, free from dust, grease, wax, soap, rust, mildew, tool and machine marks, insects, etc., by washing with Trisodium Phosphate.
8. Wood floors
  - a. General
    - i. If reparations to existing floors have to be done with new planks, use a colorant stain on all surfaces before varnishing for a final uniformity.
    - ii. Loose floor boards have to be replaced by new planks.
    - iii. Filler products are to be avoided.
  - b. Sanding
    - i. Dustless sanding machine to be used.
    - ii. Light weight machine to be used (-200lb).
    - iii. Hand scraping has to be done on perimeters.
  - c. Varnish
    - i. Verify with manufacturer compatibility of the product with the existing wood species and finish before specifying.
    - ii. Clear wood finishes, floor coatings, stains, primers, and shellacs must not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.
    - iii. Test durability to meet: ASTM D4060.



- iv. Two (2) coats: "Rebound Water-borne Floor Finish" as manufactured by Schwartz Chemical Corporation, or approved equivalent.

**Revision History**

<b>Revision Date</b>	<b>Version</b>	<b>Description</b>
Nov 2014	1.1	Baseline version
August 9, 2023	1.0	Added Revision History table to end of document and reset to Version 1.0.