

Part 1 GENERAL

1.1 SUMMARY

- .1 Types of items described in this Section:
 - .1 Surface preparation and the application of paint systems on the following exterior substrates:
 - .2 Steel.
 - .3 Galvanized metal.
 - .4 Aluminum (not anodized or otherwise coated).
 - .5 Unfinished wood, including wood treated with tinted wood preservative.
 - .6 Shop-primed items.
 - .2 Types of items not described in this Section:
 - .1 Shop priming of metal substrates with primers specified in this Section.
 - .2 Shop priming carpentry with primers specified in this Section.
 - .3 Factory priming and finishing specified in other Sections..
 - .4 Special-use coatings.
 - .5 Surface preparation and the application of paint systems on interior substrates.
 - .6 Surface preparation and the application of wood stains and transparent finishes on exterior wood substrates.
- .3 Related Requirements:
 - .1 Section 01 33 00 - *Submittal Procedures*.
 - .2 Section 01 74 21 - *Construction/Demolition Waste Management and Disposal*.
 - .3 Section 01 78 00 - *Closeout Submittals*.
 - .4 Section 09 91 23 - *Interior Painting* for surface preparation and the application of paint systems on interior substrates
- .4 Scope of Work of this Contract
 - .1 While drawings and schedules identify locations for some finishes, the scope of work entails painting all of the following exterior surfaces:
 - .1 All surfaces explicitly noted.
 - .2 All unfinished exterior surfaces that are either exposed-to-view or semi-exposed-to-view, unless otherwise noted.
 - .2 Specifically, do not paint:
 - .1 Grating.
 - .2 Concrete, brick, stone, or masonry, unless specifically indicated.
 - .3 Roofing membranes.
 - .4 Stainless steel.
 - .5 Aluminum handrail and aluminum stair and ladder components unless specifically indicated.
 - .6 Anodized aluminum and factory-painted aluminum.

- .7 Glass.
- .8 Asphalt.
- .9 Exterior wood pressure treated with wood preservative, unless explicitly noted on drawings.

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM D523 (2014), Standard Test Method for Specular Gloss
- .2 Environmental Protection Agency (EPA)
 - .1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings).
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 The Master Painters Institute (MPI)
 - .1 Architectural Painting Specification Manual - February 2004.
 - .2 Standard GPS-1-05, MPI Green Performance Standard for Painting and Coatings.
- .5 National Fire Code of Canada 2010
- .6 Society for Protective Coatings (SSPC)
 - .1 Systems and Specifications, SSPC Painting Manual 2005.
- .7 Underwriters Laboratories of Canada (ULC)

1.3 DEFINITIONS

- .1 Concealed Surface: A surface that cannot be seen because the view from any angle is obstructed by an immovable object.
- .2 Exposed and semi-exposed surface: Any surface that is not a concealed surface.
- .3 Finish: a final surface treatment intended to enhance the appearance of a substrate or protect it from the adverse effects of its environmental, or both, and includes but is not limited to paint, stains, and coatings.
 - .1 Primer finish is not considered a finish.
 - .2 Gloss Levels:
 - .1 Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
 - .2 Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
 - .3 Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
 - .4 Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
 - .5 Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

- .6 Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

- .1 Product Data: For each type of product. Include preparation requirements and application instructions.
- .2 Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
 - .1 Submit Samples on rigid backing, 200 mm square.
 - .2 Step coats on Samples to show each coat required for system.
 - .3 Label each coat of each Sample.
 - .4 Label each Sample for location and application area.
- .3 Product List: For each product indicated, include the following:
 - .1 Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - .2 Printout of current *MPI Approved Products List* for each product category specified in Part 2, with the proposed product highlighted.
 - .3 VOC content.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- .1 Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - .1 Paint: 5 percent, but not less than 3.8 L of each material and color applied.

1.6 QUALITY ASSURANCE

- .1 MPI Standards:
 - .1 Products: Complying with MPI standards indicated and listed in *MPI Approved Products List*.
 - .2 Preparation and Workmanship: Comply with requirements in *MPI Architectural Painting Specification Manual* for products and paint systems indicated.
- .2 Mock-ups: Apply benchmark samples of each paint system indicated and each colour and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - .1 Departmental Representative will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - .1 Vertical and Horizontal Surfaces: Provide samples of at least 9 sq. m.
 - .2 Other Items: Departmental Representative will designate items or areas required.
 - .2 Final approval of colour selections will be based on benchmark samples.

- .1 If preliminary colour selections are not approved, apply additional benchmark samples of additional colours selected by Departmental Representative at no added cost to project.
- .3 Compatibility:
 - .1 Ensure type of paint used is compatible with the substrate being painted.
 - .2 If manufacturer of substrate being painted recommends use of selected paint products, limit use to these products only.
 - .1 Use only paints recommended by manufacturer of Division 07 *Mineral Fibre Cement Siding* products.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 7 deg C .
 - .1 Maintain containers in clean condition, free of foreign materials and residue.
 - .2 Remove rags and waste from storage areas daily.
- .2 Fire Safety Requirements:
 - .1 Provide Type ABC fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.
- .3 Waste Management and Disposal:
 - .1 Separate waste materials for reuse in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .3 Collect and separate for disposal polystyrene packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan (WMP).
 - .4 Separate for recycling and place in designated containers Steel waste in accordance with Waste Management Plan (WMP).
 - .5 Place materials defined as hazardous or toxic in designated containers.
 - .6 Handle and dispose of hazardous materials in accordance with CEPA, regulations.
 - .7 Ensure emptied containers are sealed and stored safely.
 - .8 Unused coating materials must be disposed of at official hazardous material collections site as approved by Departmental Representative.
 - .9 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
 - .10 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

- .11 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .12 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:
 - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
 - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - .4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
 - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
- .13 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

1.8 PROJECT CONDITIONS

- .1 Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 10 and 35 deg C.
- .2 Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 3 deg C above the dew point; or to damp or wet surfaces.

Part 2 PRODUCTS

2.1 PAINT, GENERAL

- .1 Material Compatibility:
 - .1 Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - .2 For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- .2 Colours: In not noted otherwise, then selected by Departmental Representative from full range of colours.
- .3 Gloss Levels: As determined by Departmental Representative.

2.2 BLOCK FILLERS

- .1 Interior/Exterior Latex Block Filler: MPI #4.

2.3 PRIMERS/SEALERS

- .1 Alkali-Resistant Primer: MPI #3.
- .2 Bonding Primer (Water Based): MPI #17.
- .3 Bonding Primer (Solvent Based): MPI #69.
- .4 Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint system indicated.

2.4 METAL PRIMERS

- .1 Alkyd Anticorrosive Metal Primer: MPI #79.
- .2 Quick-Drying Alkyd Metal Primer: MPI #76.
- .3 Cementitious Galvanized-Metal Primer: MPI #26.
- .4 Waterborne Galvanized-Metal Primer: MPI #134.
- .5 Quick-Drying Primer for Aluminum: MPI #95.

2.5 WOOD PRIMERS

- .1 Exterior Latex Wood Primer: MPI #6.
- .2 Exterior Alkyd Wood Primer: MPI #5.
- .3 Exterior Oil Wood Primer: MPI #7.

2.6 EXTERIOR LATEX PAINTS

- .1 Exterior Latex (Flat): MPI #10 (Gloss Level 1).
- .2 Exterior Latex (Semi gloss): MPI #11 (Gloss Level 5).
- .3 Exterior Latex (Gloss): MPI #119 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

2.7 EXTERIOR ALKYD PAINTS

- .1 Exterior Alkyd Enamel (Flat): MPI #8 (Gloss Level 1).
- .2 Exterior Alkyd Enamel (Semi gloss): MPI #94 (Gloss Level 5).
- .3 Exterior Alkyd Enamel (Gloss): MPI #9 (Gloss Level 6).

2.8 QUICK-DRYING ENAMELS

- .1 Quick-Drying Enamel (Semi gloss): MPI #81 (Gloss Level 5).
- .2 Quick-Drying Enamel (High Gloss): MPI #96 (Gloss Level 7).

2.9 TEXTURED AND HIGH-BUILD COATINGS

- .1 Latex Stucco and Masonry Textured Coating: MPI #42.
- .2 High-Build Latex (Exterior): MPI #40.

2.10 ALUMINUM PAINT

- .1 Aluminum Paint: MPI #1.

Part 3 EXECUTION

3.1 EXAMINATION

- .1 Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- .2 Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - .1 Concrete: 12 percent.
 - .2 Masonry (Clay and CMU): 12 percent.
 - .3 Wood: 15 percent.
- .3 Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- .4 Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 - .1 Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION

- .1 Comply with manufacturer's written instructions and recommendations in *MPI Architectural Painting Specification Manual* applicable to substrates and paint systems indicated.
- .2 Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - .1 After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
 - .2 Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- .3 Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - .1 Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.

- .4 Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- .5 Concrete Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- .6 Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
- .7 Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- .8 Aluminum Substrates: Remove surface oxidation.
- .9 Wood Substrates:
 - .1 Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - .2 Sand surfaces that will be exposed to view, and dust off.
 - .3 Prime edges, ends, faces, undersides, and backsides of wood.
 - .4 After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

- .1 Apply paints according to manufacturer's written instructions.
 - .1 Use applicators and techniques suited for paint and substrate indicated.
 - .2 Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
- .2 Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match colour of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- .3 If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, colour, and appearance.
- .4 Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and colour breaks.

3.4 CLEANING AND PROTECTION

- .1 At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- .2 After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

- .3 Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Departmental Representative, and leave in an undamaged condition.
- .4 At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING SCHEDULE

- .1 Propose paint system for any surfaces not listed. Propose paint system consisting of a minimum of a prime coat, intermediate coat, and topcoat.
- .2 Galvanized-Metal Substrates:
 - .1 Latex Over Water-Based Primer System: MPI EXT 5.3H.
 - .1 Prime Coat: Waterborne galvanized-metal primer.
 - .2 Intermediate Coat: Exterior latex matching topcoat.
 - .3 Topcoat: Exterior latex.

END OF SECTION