

**Part 1 GENERAL**

**1.1 Summary**

- .1 Finish painting defined under this Section is to specify the general requirements of the Work and is applicable to items not covered under other Sections of this Specification.

**1.2 Quality Assurance/Submittals**

- .1 Submit samples in accordance with CW 1110.
- .2 Perform painting work by applicator with minimum five (5) years of proven, satisfactory and successful painting experience on projects of similar size and nature. Provide qualified crew of painters and full time review of work by qualified supervisor for duration of work.
- .3 Submit in writing list of proposed materials, for approval at least six (6) weeks before materials are required. List shall contain following for record:
  - .1 Manufacturer's product number and application instructions
  - .2 Finish formula
  - .3 Product type
  - .4 CGSB number
  - .5 Colour number
  - .6 Maximum VOC classification
  - .7 Ecologo certification where applicable
- .4 Samples: Submit at least three (3) weeks prior to painting Work commencing at the Site (and resubmit until approved), two (2) identified (with Project Name, the finish, colour name and number, sheen and gloss values) samples of the following:
  - .1 Each specified colour in each specified finish coat material on minimum 150 mm x 300 mm coated stock card

**1.3 Environmental Requirements**

- .1 Comply with requirements of WHMIS regarding use, handling, storage, and disposal of hazardous materials; and material safety data sheets acceptable to Ministry of Labour.
- .2 Provide paint products certified to meet the requirements of the Environmental Choice Program, Department of the Environment. Provide CSA Certification Reports that products proposed for use are certified under the Environmental Choice Program. Water based paints to be certified to ECP-07-89. Solvent based paints to be certified to ECP-12-89.
- .3 Arrange for ventilation system to be operated during application of paint. Ventilate area of work by use of approved portable supply and exhaust fans. Provide continuous ventilation during and after application of paint. Run ventilation system twenty four (24) hours per day during installation; provide continuous ventilation for seven (7) days after completion of application of paint. Apply paint finishes only when temperature at location of installation can be satisfactorily maintained within Manufacturers recommendations. Substrate and ambient temperature shall be within limits prescribed by Manufacturer.

- .4 Maintain minimum interior temperature of 18°C (65°F) during application and drying of paint and maintain until building occupancy occurs. Do not undertake exterior painting if air and surface temperature are expected to fall below 10°C (50°F) before coating has dried. Avoid painting during winds, weather conditions which may affect paint application or following rain. Wait until frost, dew or condensation has evaporated.
- .5 Provide heating to maintain minimum temperatures recommended by Manufacturers.
- .6 Apply paint finish only in areas where dust is no longer being generated by related construction operations such that airborne particles will not affect the quality of the finished surface. Apply paint only when surface to be painted is dry, properly cured and adequately prepared.
- .7 Protect floors of storage areas by means of tarpaulins and metal pans.
- .8 Deposit waste rags in metal containers with tight fitting metal lids and remove from the building at the end of each working shift.
- .9 Keep solvents for brush and roller cleaning in tightly sealed containers when not in use. Do not allow brushes and rollers to stand in solvents in open containers overnight.

#### **1.4 Painting and Finishing Work Standards**

- .1 The best practices specified or recommended in CAN/CGSB-85.100 are to govern for painting methods and procedures, unless specified otherwise in this Section.

#### **1.5 Colour Selections**

- .1 The Contract Administrator will issue a schedule indicating colour(s), gloss value and sheen. Colour may be selected from the lines of up to three (3) Manufacturers and an unlimited number of colours and gloss and sheen.

#### **1.6 Extra Stock**

- .1 Prior to Total Performance, Supply and deliver to a designated storage area at the Site, sealed, original, fresh containers of each paint and finish product applied, and in each colour, all labelled as specified in this Section.
- .2 Supply 1 litre of extra stock for products for which less than 45 litres were used, 4 litres of extra stock when from 45 to 180 litres were used, and 10 litres of extra stock when in excess of 180 litres were used.

### **Part 2 PRODUCTS**

#### **2.1 Painting, Finishing, and Coating Products**

- .1 Unless otherwise specified, painting and protective coating products are specified in PART 3 of this Section and are the products of ICI/Glidden.
- .2 Painting and protective coating products fully equivalent to the ICI/Glidden products specified and supplied by the following Manufacturers are acceptable:
  - .1 Sherwin Williams
  - .2 Benjamin Moore
  - .3 Pittsburgh Paints

- .3 Finishing products such as oils or putties not specified in this Section are to be premium quality and as recommended by the Manufacturer of the paint or finish product it is associated with.
- .4 Unless otherwise specified, paint is to be ready-mixed. Where site mixing is required for certain products, mix in strict accordance with the Manufacturer's instructions to produce smooth flowing materials with an easy-brushing consistency.
- .5 Gloss value will be determined in accordance with ASTM D523, Tentative Method of Test for 60 Deg. Specular Gloss. Gloss values for terminology specified are as follows:
  - .1 Flat - less than 8
  - .2 Eggshell - 25 to 35
  - .3 Semi-gloss - 45 to 55
  - .4 Gloss - in excess of 85
- .6 On walls no defects shall be visible from a distance of 1000 mm at 90° to surface. On ceilings no defects shall be visible from floor to surface when viewed using final lighting source. Final coat shall exhibit uniformity of colour and uniformity of sheen across full surface area.
- .7 Paint colours will be selected by Contract Administrator from the Manufacturer's full colour range, including light, dark and accent tones, and the Contract Administrator will issue a schedule indicating the colours, locations, gloss value and sheen. Note that products of more than one Manufacturer may be selected.

### **Part 3 EXECUTION**

#### **3.1 Examination of Substrate**

- .1 Examine surfaces to receive paint or protective coating to ensure that they are in the proper condition to be painted or coated. Commencement of painting and protective coating Work will be interpreted as acceptance of the surface to receive the Work. Correction of defective painting or protective coating Work resulting from application to unsatisfactory surfaces will be the responsibility of the painting contractor.

#### **3.2 Special Conditions**

- .1 Post "No Smoking" signs and ensure that spark-proof electrical equipment is used in areas where flammable painting products are applied or stored.
- .2 Post "Wet Paint" signs throughout freshly finished areas and remove when finishes are dry.
- .3 Prohibit traffic where possible, from areas where painting is being carried out until paint is cured.
- .4 Provide adequate ventilation. Where building is occupied, provide necessary air barrier to prevent fumes from entering occupied areas.
- .5 Prior to the application of special finishes, arrange for a meeting at the Site with the Contract Administrator to discuss the condition of surfaces to receive painting, special finish, and application procedures.

### **3.3 Protection**

- .1 Cover or mask surfaces adjacent to those receiving treatment and finishing to protect the Work of others from damage and soil. Mask instruction and specification plates and controls attached to equipment being painted.
- .2 Take particular care in storage and mixing areas to ensure that tarpaulins and metal pans protect floors.
- .3 Co-ordinate with the appropriate trades for the removal from finished surfaces, storage and reinstallation after finish Work is completed of finish hardware, switch and receptacle plates, escutcheons, luminarie frames, and similar items.

### **3.4 Preparation of Surfaces**

- .1 General:
  - .1 Vacuum clean areas inside the building(s) immediately prior to commencing finishing Work.
  - .2 Scrub mildewed surfaces with a solution of trisodium phosphate, bleach with a solution of one part sodium hydrochlorite (Javex) to three parts water, and rinse with clear water.
  - .3 Arrange for finishing hardware, electrical plates, accessories, and similar removable fittings on surfaces to be finished to be removed. Mask any other Work that is not removable.
  - .4 Prepare surfaces to be painted or coated such that the surfaces are thoroughly dry and free of chemicals, mortar splatters, organic matter, oil, grease, rust, scale, loose paint, and any other material, and such that the surfaces are in a proper condition to receive paint, stain, or other specified coating.
- .2 Cleaning Procedures:
  - .1 Surface preparation methods shall remove any contaminant that will interfere with full adhesion of protective painting and coating systems. Level of cleaning shall be based on SSPC, recommended designations of metal cleaning procedures specified.
  - .2 SSPC-SP1 (Solvent Cleaning): Use of solvents (such as mineral spirits, xylene, toluene) or cleaning action to remove oil, grease, and soil drawing and cutting compounds or similar solvent soluble contaminants. Do not use gasoline or benzene.
  - .3 SSPC-SP2 (Hand Tool Cleaning for mild exposure conditions): Use of scrapers, sandpaper, wire brushing or hand impact tools to remove loose mill scale, non-adherent rust and scaling paint or other foreign matter. Do not use hand tool cleaning procedure for areas subject to corrosive environment or on surfaces for vinyl chloride top coating. Remove weld flux and spatter to avoid localized paint failure.
  - .4 SSPC-SP3 (Power Tool Cleaning for use under severe exposure conditions or immersion applications): Use power sanders and wire brushes, impact tools, grinders and power chipping hammers to remove loose mill scale, loose rust, paint or other foreign matter. Do not allow excessive power tool cleaning.
  - .5 SSPC-SP5 (White Metal Blast Cleaning): Use when protective coating or environment is such that no rust, mill scale or other foreign matter can be tolerated on steel surface. Prime cleaned surfaces before any rusting occurs.

- .6 SSPC-SP6 (Commercial Blast Cleaning): Use for moderate exposure conditions where high but not perfect degree of blast cleaning is required. Prime blast cleaned surfaces as soon as possible.
- .7 SSPC-SP7 (Brush-Off Blast Cleaning): Use for ordinary exposure where environment is mild to permit tight mill scale, paint and minor amounts of rust to remain on surface. An effective means to clean rusty galvanized metal siding and old finishes in poor condition.
- .3 Perform surface preparation work as follows:
  - .1 Surfaces Subjected to High Heat Condition (140°C and Up): SSPC-SP5.
  - .2 Interior Concrete Block, Poured and/or Precast Concrete: CAN/CGSB-85.100.
  - .3 Woodwork for Painting: Seal all knots and sapwood in surfaces to receive paint with alcohol-based primer-sealer. Sand smooth rough surfaces of all woodwork to be finished and clean surfaces free of dust before applying first coat. Fill nail holes, splits and scratches with non-shrinking filler after first coat are dry. Remove salt deposits that may appear on wood surfaces treated with fire retarder.
  - .4 Concrete Horizontal Surfaces: If concrete is less than twenty six (26) weeks old or has been previously painted, clean surface and etch with muriatic acid with extenders. Rinse out etching compound with clean water and TSP to neutralize acidity of surface (pH 6.5-7.5). Rinse out with clean water 2 to 3 times and allow to dry. Verify that moisture content is less than 12% before proceeding with painting.
  - .5 Concrete Vertical Surfaces: Use sand blasting, high pressure water blasting, high pressure water blasting with abrasives, vacuum blasting with abrasives or alternatively, needle guns or power grinders equipped with suitable grinding stone, to remove concrete, loose mortar, fins, projections and surface contaminants. Vacuum or blow down and remove dust and loose particles from surface.
  - .6 Concrete Floors: Prepare in accordance with CAN/CGSB-85.100.
  - .7 Concrete Block Masonry: Fill voids and cracks in masonry block wall to provide uniform surface for subsequent coats.

### **3.5 General Application of Paint and Finishes**

- .1 Verify by review of other Sections of this Specification, the extent of surfaces primed as part of the Work of other Sections, and include for priming of unprimed surfaces which are scheduled or specified to be painted.
- .2 Back prime fitments and similar Work as soon as it is delivered and before it is installed. Use exterior primer compatible with the finish coat for exterior Work, and enamel undercoat for interior Work to receive paint or enamel finishes. Prevent primer from running over faces.
- .3 Use only brushes for enamels for painting wood.
- .4 Provide finish uniform in sheen, colour and texture, free from streaks, shiners and brush or roller marks or other defects. Apply materials in accordance with Manufacturer' directions and Specifications. Do not use adulterants.
- .5 Finishes and number of coats specified hereinafter in Finish Schedule are intended as minimum requirements guide only. Refer to Manufacturer's recommendations for exact instructions for thickness of coating to obtain optimum coverage and appearance. Some

materials and colours may require additional coats and deeper colours may require use of Manufacturers' special tinted primers. Unless otherwise specified, provide three (3) coats finish as minimum finish. Obtain colour chart giving colour schemes and gloss value for various areas from the Owner. Colour chart shall give final selection of colours and surface textures of all finishes, and whether finishes are transparent (natural) or opaque (paint).

- .6 Advise when each applied paint coat can be inspected. Do not recoat without inspection. Tint each coat slightly to differentiate between applied coats. Sand smooth enamel and varnish undercoats prior to recoating. Apply primer coat soon after surface preparation is completed to prevent contamination of substrate.
- .7 Read Mechanical and Electrical Specifications for instruction on painting Mechanical and Electrical work and perform such work under supervision of respective Mechanical and Electrical Divisions. Finish paint primed mechanical equipment: heaters, convectors, radiators, wall fin perimeter induction units, fan coil units, and similar items. Prime and paint exposed, unfinished electrical raceways, fittings, outlet boxes, junction boxes, pull boxes, and similar items. Keep sprinkler heads free of paint. Take steps to protect gauges, identification plates and similar items from being painted over or paint splattered. Remove grilles, covers, and access panels for mechanical and electrical systems from installed location and paint separately, if these items are not factory finished, Paint work to match surfaces they are seen against unless directed otherwise. Paint interior surfaces of air ducts visible through grilles and louvres, with one (1) coat of flat black metal paint to limit of sight line.
- .8 Maintain at the site at all times until the Work is completed, a moisture meter, hygrometer, and thermometer to verify surface and environmental conditions.
- .9 Perform painting and coating Work under supervision of an experienced foreman using clean equipment designed for the purpose used.
- .10 Unless otherwise specified, follow the specific instructions of the Manufacturer(s) of the products used.
- .11 Apply finishing products to provide full coverage at a rate not to exceed that stated by the Manufacturer for applicable surface, free from perceptible defects, and with even colour, sheen and texture. Vary the tone of each coat slightly to permit supervision identity.
- .12 Make clean, true junctions with no overlap between adjoining applications of finish coatings.
- .13 Use products of a single Manufacturer in each coating application.
- .14 Apply each coat only after the preceding coat is dry and hard, or as otherwise directed by the product Manufacturer.
- .15 Sand wood and metal surfaces lightly with No. 00 sandpaper between coats.
- .16 Use paint or finish thinners only where specified or directed by the paint Manufacturer.
- .17 Apply paint and coatings only when the ambient temperature and the temperature of the surface to be painted exceed 4.4°C, except for materials and locations listed below where ambient and surface temperatures must exceed the temperatures stated:
  - .1 Latex paint for surfaces inside the building - 7°C.
  - .2 Latex paint for surfaces outside the building - 10°C.
  - .3 Enamels for all surfaces - 21°C.

- .18 Do not:
  - .1 Apply finishes in direct sunlight that raises surface temperature above that required for proper application and drying.
  - .2 Apply exterior finishes in rainy, foggy, or windy weather.
  - .3 Apply exterior finishes when relative humidity exceeds 85%, when condensation has formed or is likely to form on the surface, nor immediately following rain, frost, or formation of dew.
  - .4 Apply finishes when dust is being raised.
  - .5 Apply finishes to cement board products, pipe and/or duct and/or equipment insulation, concrete or masonry surfaces that contain in excess of 12% moisture, or to wood products that contain in excess of 15% moisture except where the wood product would normally contain in excess of 15% moisture.
- .19 Paint the following items where indicated:
  - .1 Areas and surfaces indicated to be painted on finish schedules.
  - .2 Areas and surfaces indicated to be painted on detail Drawings.
  - .3 Exposed exterior and interior ferrous metal including hollow metal doors and frames.
  - .4 Interior wood surfaces.
  - .5 Interior surfaces of poured concrete.
  - .6 Interior surfaces of concrete block masonry work.
  - .7 Back boards for work of other Division.
  - .8 Bituminous coat in other sections.
  - .9 All existing surfaces disturbed by work of this contract or Contractor's forces.
  - .10 Prime paint as minimum walls etc. before installing electrical panels.
- .20 Unless otherwise specified, DO NOT apply paint or finish to the following:
  - .1 Finishing hardware.
  - .2 Equipment nameplates and other such identification.
  - .3 Switch, receptacle and other electrical device faceplates.
  - .4 Exposed copper, brass, plastic, and FRP unless otherwise specified.
  - .5 Lighting fixtures.
  - .6 Stainless steel.
  - .7 Chrome plated surfaces, and polished or lacquered brass or bronze surfaces.
  - .8 Underground piping and accessories.
  - .9 Surfaces factory coated with baked epoxy or enamel.
  - .10 Plastic laminate surfaces.
  - .11 Manhole and catch basin covers.
  - .12 Covers or strainers associated with floor drains, cleanout terminations, and similar equipment.
  - .13 Recessed electrical boxes and similar recessed equipment.
  - .14 Exterior poured concrete and masonry surfaces.
  - .15 Valve handles.
  - .16 Control panels.

- .17 Electrical panels.
- .18 Circuit breakers, switches, receptacles, and similar electrical devices.
- .19 Caulked joints.
- .20 Pre-finished sheet metal flashing.
- .21 Pre-finished exterior wall louvres.
- .22 Pre-finished exterior metal soffit.

### **3.6 Paint Formula:**

- .1 Apply paint to surfaces with the following:
  - .1 Concrete Block and Poured Vertical Concrete Inside Building:
    - .1 One coat Glidden Ultra Block # 36250.
    - .2 Two coats DevGuard 4308 Alkyd Industrial Gloss Enamel at 1.5 to 2.0 mils DFT.
  - .2 Wood, Including Plywood for Paint Finish:
    - .1 One coat Glidden Alkyd Enamel Undercoat # 9431 at 1.0 to 1.5 mils DFT.
    - .2 Two coats DevGuard 4308 Alkyd Industrial Gloss Enamel at 1.5 to 2.0 mils DFT.
  - .3 Concrete Main Floor Slab: Prime and paint as follows:
    - .1 One prime coat of 78-D-7 "Hi Build" epoxy (grey colour), to a 50  $\mu$  DFT.
    - .2 One finish coat of 78-W-3 "Hi-Build" epoxy (grey colour), to a 100  $\mu$  DFT.
    - .3 One finish coat of 78-D-7 "Hi-Build" epoxy (grey colour), to a 100  $\mu$  DFT.

### **3.7 Adjustment and Cleaning**

- .1 Touch up and refinish minor defective Work. Refinish the entire surface where the finish is damaged or not acceptable, including areas exhibiting incomplete or unsatisfactory coverage. Patching will not be permitted.
- .2 Remove spilled or splattered finish materials from surfaces of Work performed under other Sections. Do not mar surfaces while removing.
- .3 Clean and make good surfaces soiled or otherwise damaged in connection with work of this Section. Pay the cost of replacing finishes or components that cannot be satisfactorily cleaned.
- .4 Upon completion, remove masking and clean adjacent surfaces free of over spray spatters, drips, smears and over spray.

### **3.8 Disposal of Paint Waste**

- .1 Be responsible for removal and disposal of material and waste generated by this Section.
- .2 Remove empty and partly used containers from Site and recycle or dispose of as Hazardous Waste in accordance with local municipal, provincial and federal environmental regulations. Provide proof of such action in form of receipts of tipping fees, disposal fees or bills of lading, as applicable.

- .3 Remove from Site peripheral items, such as clean up solvents, paintbrushes, rags, and similar items and dispose of where necessary in accordance with local municipal, provincial and federal environmental regulations.
- .4 Do not rinse off of latex paints from brushes and rags under running water tap. While work is ongoing, whether using latex or alkyd products, rinse off all brushes and rags in container with appropriate solvent (water or paint thinner). Leave such container in well-lit and well-ventilated area, away from any flammable conditions. Dispose of emulsion created in accordance with local municipal, provincial and federal environmental regulations.
- .5 Wipe or drain clean empty containers. Allow remaining film to dry before disposal. Recycle metal containers and dispose of containers which are not recyclable. Ensure non-recyclable containers are acceptable to disposal recipient authority.
- .6 Dispose paint that cannot be recycled as hazardous waste. Generators of Hazardous Waste shall be registered and disposal shall be in accordance with regulations of authorities. When handling coating materials, approved vapour/particulate respirator shall be worn as protection from solvent vapours; dust respirators are not acceptable.
- .7 Remove cleanup solvents and recycle if possible.
- .8 Treat non-recyclable thinners and paint sludge as hazardous waste.

### **3.9 Extended Warranty**

- .1 Warrant Work against defects in material and quality of performance for a period of two (2) years.

**END OF SECTION**