

PART 1 GENERAL

1.01 RELATED SECTIONS

- .1 Section 06 03 40 – Historic - Wood Repair.
- .2 Section 08 03 52.71 – Historic – Wood Window Rehabilitation.
- .3 Section 08 03 52.81 – Historic – Wood Window Replacement.
- .4 Section 08 03 80 – Historic - Glazing.

1.02 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 1-GP-2M-80 Oil, Linseed, Boiled.
 - .2 CGSB 1-GP-16M-79 Shellac Varnish.
 - .3 CGSB 1-GP-55M-82 Primer, Wood Exterior.
 - .4 CGSB 1-GP-138M-78 Paint, Exterior, Latex Type.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .3 National Fire Code of Canada.

1.03 SCHEDULING

- .1 Submit work schedule for various stages of painting to Departmental Representative for approval review. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Paint occupied facilities in accordance with approved schedule. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.
- .3 Obtain written authorization from Departmental Representative for changes in work schedule.
- .4 Schedule repainting operations to prevent disruption by other trades if applicable and by occupants in and about building.

1.04 ACTION AND INFORMATION SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for paints and coating products used and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit triplicate 100 x 200 mm "draw-downs" of each paint/varnish formula type and colour specified on applicable materials for Departmental Representative's review prior to commencement of the work.

- .2 Colours and finishes to be selected by Departmental Representative.
- .3 When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.
- .4 Provide WHMIS Material Safety Data Sheets (MSDS) in accordance with Section 01 35 29.06 - Health and Safety Requirements for paints and coating materials to be used.
- .5 Photographic Documentation:
 - .1 Submit photographs for each stage of work and each mock-up in accordance with Section 08 03 52.71 – Historic - Wood Window Rehabilitation.

1.05 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Provide records of products used. List products in relation to finish system and include following:
 - .1 Product name, type and use (i.e. materials and location).
 - .2 Manufacturer's product number.
 - .3 Colour code numbers.
 - .4 Manufacturer's Material Safety Data Sheets.
- .3 Record Documentation: submit assembled documentation in the form of a Conservation Report to document every step of the restoration process from examination of existing conditions to reinstallation.

1.06 QUALITY ASSURANCE

- .1 Qualifications: in accordance with Section 08 03 52.71 – Historic - Wood Window Rehabilitation supplemented as follows.
 - .1 Carry out painting work in this section using skilled tradespersons trained and experienced in removal and installation of specified paint systems.
- .2 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, and solvents) to be from a single manufacturer for each system used.
- .3 Paint materials such as linseed oil, shellac, and turpentine, to be the highest quality product and shall be compatible with other coating materials as required.
- .4 Mock ups:
 - .1 Provide mock-up in accordance with Section 01 45 00 - Quality Control.
 - .2 Prepare and repaint designated surface or item to requirements specified herein, with specified paint or coating showing selected colours, number of coats, gloss/sheen, textures and workmanship for review and approval.
 - .3 When approved, repainted surface and/or item shall become acceptable standard of finish quality and workmanship for similar on-site painting work.
 - .4 Prepare the work described in this section on one sash and one frame selected by the Departmental Representative. Agree on location and extent of each mock-up with Departmental Representative.
 - .5 Include paint removal, to bare wood and sound painted surface, and finish painting.

- .6 Provide additional mock-ups on-site for review by Departmental Representative if initial tests prove unsatisfactory.
- .7 Provide Departmental Representative 5 working days notice prior to undertaking work.
- .8 Approved mock-up may be incorporated into final work.

1.07 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver and store materials in manufacturers' original container with labels intact.
- .3 Ensure dry delivery and storage of materials and equipment at site.
- .4 Store materials and equipment in a well-ventilated place between 10 degrees C and 32 degrees C, and protect from direct sun.
- .5 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Departmental Representative. After completion of operations, return areas to clean condition to approval of Departmental Representative.
- .6 Remove paint materials from storage only in quantities required for same day use.
- .7 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.

1.08 AMBIENT CONDITIONS

- .1 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Unless specifically pre-approved by Departmental Representative and applied product manufacturer, perform no painting work when:
 - .1 Ambient air and substrate temperatures are below 10 degrees C.
 - .2 Substrate temperature is over 32 degrees C unless paint is specifically formulated for application at high temperatures.
 - .3 Substrate and ambient air temperatures are expected to fall outside paint manufacturer's prescribed limits.
 - .4 Relative humidity is above 85 % or when dew point is less than 3 degrees C variance between air/surface temperature.
 - .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
 - .2 Perform no painting work when maximum moisture content of substrate exceeds:
 - .1 15% for wood.
- .2 Application Requirements:
 - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations.
 - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted herein.
 - .3 Apply paint when previous coat of paint is dry or adequately cured.
 - .4 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.

- .5 Do not apply paint when:
 - .1 Temperature is expected to drop below 10 degrees C before paint has thoroughly cured.
 - .2 Substrate and ambient air temperatures are expected to fall outside paint manufacturer's limits.
 - .3 Surface to be painted is wet, damp or frosted.
- .6 Protect until paint is dry or until weather conditions are suitable.
- .7 Schedule painting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.
- .8 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.
- .9 Paint occupied facilities in accordance with approved schedule only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

1.09 EXTENDED WARRANTY

- .1 For the work of this Section, the 12 month warranty period is extended to 24 months for the painting of sashes and other new wood components.

PART 2 PRODUCTS

2.01 MATERIALS

- .1 Linseed oil paint, by same manufacturer as putty compound.
 - .1 Paint shall consist of cold-pressed, cleaned, filtered, sterilized, well-matured, cooked linseed oil only.
 - .2 Pigments shall be made from titanium oxide, iron oxides, chromium oxide green and ultramarine blue.
 - .3 Wood primer: Raw linseed oil type, by same manufacturer as paint.
- .2 Latex paint.
 - .1 Exterior latex paint.
 - .2 Alkyd primer, by same manufacturer as paint.
- .3 Wood Sealer: Shellac.
 - .1 Shellac flakes, de-waxed.
 - .2 Denatured alcohol (methyl hydrate).

2.02 COLOURS

- .1 Departmental Representative will provide Colour Schedule after Contract award.
- .2 Colour schedule will be based upon selection of four base colours for interiors and two base colours for exteriors. No more than six colours will be selected for entire project and no more than six colours will be selected in each area.
- .3 Selection of colours will be from manufacturer's full range of colours.

2.03 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials is allowed only with Departmental Representative's written permission.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Add thinner to paint manufacturer's recommendations.
- .4 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.04 PAINTING SYSTEMS

- .1 New woodwork, frames and exterior parts of sashes: 1 coat of boiled linseed oil; 3 coats of linseed oil paint.
- .2 Extant woodwork, frames and exterior parts of sashes: 1 coat of raw linseed oil, 2 coats of boiled linseed oil, 3 coats of linseed oil paint.
- .3 Extant woodwork, interior face of sashes: 1 coat of alkyd primer, 2 coats of latex paint.
- .4 Extant woodwork, sash stops: 2 coats of shellac, 2 coats of latex paint.
- .5 Extant woodwork, interior face of sashes to encapsulate extant grained finish: 2 coats of latex paint.

2.05 TOOLS

- .1 Brush: natural bristle brushes of size and shape to suit application.
- .2 Rags: micro fibre rags
- .3 Mechanical tools without sharp edges.
- .4 Scouring pad: plastic mesh.
- .5 Cleaning solution: trisodium phosphate and linseed oil soap, by same manufacturer as paint.
 - .1 Mix linseed oil soap with boric acid; 1 tablespoon of acid to 1 litre of soap.

PART 3 EXECUTION

3.01 PREPARATION (PAINT REMOVAL)

- .1 For sashes, stops and other disassembled wood components, remove paint to bare wood in shop by either the careful use of heat guns or steam, followed by scraping and sanding.
 - .1 For each window unit, retain a 300 mm long portion of the paint layers on the inside face of the upper rail to encapsulate extant grained finish. Wipe surfaces with trisodium phosphate, rinse with potable water.
- .2 For frames, remove paint in situ by the use of an infrared stripper, scraping and sanding. Assume to bare wood and sound painted surface respectively on the lower and upper half of the frame.
- .3 Neatly remove any existing caulking.

- .4 Scraping and sanding shall be done carefully so as not to gouge or otherwise alter the profiles of mouldings. Orbital sanders are not allowed.
- .5 Customize blades for scrapers to match the shape of the original profiles.
- .6 Sand elements lightly and ease corners in preparation for painting. Carefully sand to achieve smooth surface without altering profiles, feather edges, remove all dust with vacuum, and wipe clean.
- .7 Apply knot sealer recommended by paint manufacture and in accordance with manufacturer's written instructions.
- .8 Keep all surfaces dry until painting is complete.
- .9 Remove dust, dirt, and surface debris by brushing, wiping with dry, clean cloths or compressed air.
- .10 For new wood, sand surfaces to remove mill scale and wipe clean.
- .11 Clean unpainted exterior surfaces with soap using scouring pad. Rinse thoroughly with water; be careful not to over soak. Let dry 24 hours.
- .12 Prevent contamination of cleaned surfaces by salts, acids, alkalis, corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.
- .13 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.
- .14 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.

3.02 PROTECTION

- .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore such surfaces as directed by Departmental Representative.
- .2 Protect passing pedestrians, building occupants and general public in and about the building.
- .3 Remove surface hardware, and surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Store items and re-install after painting is completed.
- .4 As painting operations progress, place bilingual signs, warning of wet paint, to approval of Departmental Representative.

3.03 APPLICATION

- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Interior paint application:
 - .1 Before painting, prime with a mixture of shellac flakes and alcohol to seal knots and prevent paint penetration, surfaces originally stained, such as sash stops.
 - .1 Mix shellac flakes and methyl hydrate in a glass jar to the consistency of motor oil. Mix only enough for one day's use.

- .2 Brush shellac mixture onto surfaces. Let dry for 2 hours before applying paint.
- .2 Apply paint in a uniform layer using brush of types suitable for application.
- .3 Work paint into cracks, crevices and corners.
- .4 Use dipping, sheepskins or daubers when no other method is practical in places of difficult access and when specifically authorized by Departmental Representative.
- .5 Paint surfaces and corners not accessible to brush using daubers and/or sheepskins.
- .6 Brush out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple unless approved by Departmental Representative.
- .3 Exterior paint application:
 - .1 Back prime work before assembly. Prime end grain and joinery, including mortice and tenon, with boiled linseed oil.
 - .2 Prior to mixing paint, remove any skin from the surface. As some settling of pigment may have occurred during shipping, stir the paint thoroughly with a hand-blender before painting.
 - .3 Do not dilute paint with solvents. Where necessary, thin with a maximum 5% boiled linseed oil.
 - .4 Add zinc white, 5% by volume, to the paint as a fungicide. As this affects paint colours, samples will be adjusted prior to painting.
 - .5 Apply warmed paint in thin coats with a brush and/or micro fibre rags. Note that linseed oil paints are to be applied much more thinly, but in multiple coats, compared to conventional paints.
 - .6 Apply a minimum of three thin finish coats of paint. Finish and number of coats specified are intended to cover surfaces completely. If they do not, apply further coats until complete coverage and even appearance is achieved to Departmental Representative's approval.
 - .7 After first coat on wood, fill any minor holes or small checks on vertical surfaces with linseed oil based glazing putty and rub smooth.
 - .8 Use a soft brush to paint over putty so as to not disturb fresh putty. Lap paint neatly 2 mm onto the glass surface.
 - .9 Upon completion apply one coat of boiled linseed oil to even appearance. Spread the paint well in several directions before the final long brushstroke, spreading the paint as thinly as possible.
- .4 Remove runs, sags and brush marks from finished work and repaint.
- .5 Apply coats of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .7 Sand and dust between coats to remove visible defects.

3.04 CLEANING

- .1 Proceed in accordance with Section 01 00 10 – General Instructions, Cleaning.

- .2 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
- .3 Keep work area free from unnecessary accumulation of tools, equipment, surplus materials and debris.
- .4 Clean equipment and dispose of wash water used for water borne materials, solvents used for oil based materials as well as cleaning and protective materials (e.g. rags, drop cloths, and masking papers), paints, thinners, paint removers/strippers in accordance with the safety requirements of authorities having jurisdiction and as specified.
 - .1 Clean brushes and tools with soap from same product line and manufacturer as the paint.

3.05 RESTORATION

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on affected exposed surfaces. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

3.06 PROTECTION OF COMPLETED WORK

- .1 Protect area where paint has been applied.
- .2 On completion of specified work remove surplus materials, tools and equipment and debris on work area; leave clean and tidy to complete satisfaction of Departmental Representative.

END OF SECTION