

Cape Spear Lightstation
Remediation/Risk Management
Cape Spear, NL

2016-08-20

PART 1 GENERAL

1.1 Related Sections .1 01 33 00 - Submittal Procedures.

1.2 References .1 Canada Green Building Council (CaGBC)

.1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package for New Construction and Major Renovations.

.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.

.6 Society for Protective Coatings (SSPC)

.1 Systems and Specifications, SSPC Painting Manual 2005.

1.3 Quality Assurance .1 Qualifications:

.1 Qualified journeypersons as defined by local jurisdiction to be engaged in painting work

.2 Apprentices: may be employed provided they work under direct supervision of

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qualified journeyperson in accordance with trade regulations.

- .3 Conform to latest MPI requirements for exterior painting work including preparation and priming.
- .4 Materials: in accordance with MPI Painting Specification Manual "Approved Product" listing and from a single manufacturer for each system used.
- .5 Paint materials such as linseed oil, shellac, and turpentine to be highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and to be compatible with other coating materials as required.

1.4 Performance Requirements

- .1 Environmental Performance Requirements:
 - .1 Green Performance in accordance with MPI Standard GPS-1.

1.5 Scheduling

- .1 Submit work schedule for various stages of painting to Engineer for approval. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from Engineer for changes in work schedule.
- .3 Schedule painting operations to prevent disruption of occupants in and about building.

1.6 Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and

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limitations.

- .3 Upon completion, submit records of products used. List products in relation to finish system and include the following:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour numbers.
 - .4 MPI Environmentally Friendly classification system rating.
 - .5 Manufacturer's Material Safety Data Sheets (MSDS).
- .4 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
- .5 When approved, samples shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site. Submit full range of available colours where colour availability is restricted.

1.7 Quality Control

- .1 Provide mock-up in accordance with Section 01 45 00 - Quality Control.

1.8 Maintenance

- .1 Extra Materials:
 - .1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Submit one, four litre can of each type and colour of finish coating. Identify colour and paint type in relation to established colour schedule and finish system.

1.9 Delivery, Storage And Handling

- .1 Deliver, store and handle as follows:
 - .1 Deliver and store materials in original containers, sealed, with labels intact.
 - .2 Labels: to indicate:

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- .1 Manufacturer's name and address.
- .2 Type of paint or coating.
- .3 Compliance with applicable standard.
- .4 Colour number in accordance with established colour schedule.
- .3 Remove damaged, opened and rejected materials from site.
- .4 Provide and maintain dry, temperature controlled, secure storage.
- .5 Observe manufacturer's recommendations for storage and handling.
- .6 Store materials and supplies away from heat generating devices.
- .7 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
- .8 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .9 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.
- .10 Remove paint materials from storage only in quantities required for same day use.
- .11 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
- .12 Fire Safety Requirements:
 - .1 Provide one 9 kg Type ABC dry chemical 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 the
National Fire Code of Canada.

.2 Waste Management and Disposal:

- .1 Paint, stain and wood preservative
finishes and related materials
(thinners, solvents, etc.) 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.
- .2 Material which cannot be reused must
be treated as hazardous waste and
disposed of in an appropriate manner.
- .3 Place materials defined as hazardous
or toxic waste, including used
sealant and adhesive tubes and
containers, in containers or areas
designated for hazardous waste.
- .4 To reduce the amount of contaminants
entering waterways, sanitary/storm
drain systems or into the ground the
following procedures shall be
strictly adhered to:
 - .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 an

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approved legal manner in
accordance with hazardous waste
regulations.

- .5 Empty paint cans are to be dry
prior to disposal or recycling
(where available).
- .5 Close and seal tightly partly used
sealant and adhesive containers and
store protected in well ventilated
fire-safe area at moderate
temperature.

1.10 Ambient
Conditions

- .1 Heating, Ventilation and Lighting:
 - .1 Provide temporary ventilating and
heating equipment. Do not perform
painting work unless adequate and
continuous ventilation and sufficient
heating facilities are in place to
maintain ambient air and substrate
temperatures above 10 degrees C for
24 hours before, during and after
paint application until paint has
cured sufficiently.
 - .2 Where required, provide continuous
ventilation for seven days after
completion of application of paint.
 - .3 Perform no painting work unless a
minimum lighting level of 323 Lux is
provided on surfaces to be painted.
Adequate temporary lighting
facilities to be provided by General
Contractor.
- .2 Temperature, Humidity and Substrate
Moisture Content Levels:
 - .1 Unless specifically pre-approved by
specifying body, Paint Inspection
Agency 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

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- degrees C unless paint is specifically formulated for application at high temperatures.
- .3 Substrate and ambient air temperatures are expected to fall outside MPI or 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 is 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.
- .3 Conduct moisture tests using a properly calibrated electronic Moisture Meter.
- .3 Surface and Environmental Conditions:
 - .1 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted herein.
 - .2 Apply paint when previous coat of paint is dry or adequately cured.
 - .3 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.
 - .4 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 MPI or paint manufacturer's limits.

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- .3 Surface to be painted is wet, damp or frosted.
- .5 Provide and maintain cover when paint must be applied in damp or cold weather. Heat substrates and surrounding air to comply with temperature and humidity conditions specified by manufacturer. Protect until paint is dry or until weather conditions are suitable.
- .6 Schedule painting operations such that surfaces exposed to direct, intense sunlight are scheduled for completion during early morning.
- .7 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.

PART 2 PRODUCTS

- 2.1 Materials
 - .1 Paint materials listed in latest edition of MPI Approved Products List (APL) are acceptable for use on this project.
 - .2 Paint materials for paint systems: to be products of single manufacturer.
 - .3 Acceptable products (or approved equivalents), are as follows:
 - .1 Exterior concrete: 2 coats of Master Protect EL750 Elastomeric Coating (or approved equivalent). Apply as per manufacturer's instructions. Note that the work area is to be fully enclosed and hoarded with proper conditions inside the hoarding, prior to re-painting.
 - .2 Fog Horn: Prime the surface by applying 2 coats of Amerlock 2 surface tolerant epoxy coating (or approved equivalent) at 5-7 mils film thickness per coat. Apply one coat of Amershield high solids polyurethane coating (or approved equivalent) at 3-5 mils dry film

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thickness. Apply as per manufacturer's instructions.

- 2.2 Colours
- .1 The intent is to match the existing colours. Coordinate with the Departmental Representative.
 - .2 Selection of colours will be from manufacturers full range of colours.
 - .3 Where specific products are available in restricted range of colours, selection will be based on limited range.

PART 3 EXECUTION

- 3.1 Manufacture Instructions
- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

- 3.2 Preparation
- .1 Perform preparation and operations for exterior painting in accordance with MPI Maintenance Repainting Manual except where specified otherwise.
 - .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

Clean and prepare surfaces as noted on the drawings.
 - .3 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other 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.

- 3.3 Protection
- .1 Protect factory finished products and

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equipment.

- .2 Protect passing pedestrians, and general public in and about building.
- .3 Remove light fixtures, surface hardware on doors, and other 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 "WET PAINT" signs in pedestrian and vehicle traffic areas to approval of Engineer.

3.4 Application

- .1 Method of application to be approved by Departmental Representative. Apply paint by brush, roller or sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Spray Application:
 - .1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
 - .2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
 - .3 Apply paint in a uniform layer, with overlapping at edges of spray pattern. Brush out immediately runs and sags. Use brushes to work paint into cracks, crevices and places that are not adequately painted by spray.
- .3 Brush and Roller Application:
 - .1 Apply paint in a uniform layer using

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brush and/or roller of types suitable for application.

- .2 Work paint into cracks, crevices and corners.
- .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
- .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple unless approved by Engineer.
- .5 Remove runs, sags and brush marks from finished work and repaint.
- .4 Apply coats of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .6 Sand and dust between coats to remove visible defects.
- .7 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as projecting ledges.
- .8 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

3.5 Field Quality Control

- .1 Inspection:
 - .1 Advise Departmental Representative when each surface and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.

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3.6 Cleaning

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.

3.7 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 exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Engineer. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Engineer.