

## **Part 1 General**

### **1.1 SUMMARY**

- .1 Lead-containing paint is confirmed to be present in almost all the buildings through analytical testing.
- .2 Comply with requirements of this Section when performing following Work:
  - .1 Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding on walls and ceilings. Locations are as indicated in the attached Table 1.1. Mock-up of an area 1m x 1m in a location approved by the Departmental Representative to be carried out prior to proceeding with the work.
  - .2 Removal of lead-containing coatings with a chemical gel on walls and ceilings. Locations are indicated in the attached Table 1.1. Mock-up of an area 1m x 1m in a location approved by the Departmental Representative to be carried out prior to proceeding with the work.
  - .3 Guardroom: Mechanical removal of the existing parging from the brick subsurface, which will not damage the underlying historic substrate.
    - .1 Prepare Mock-up No. 1 of an area 1m x 1m, in a location approved by the Departmental Representative, of the removal of delaminated parging.
    - .2 Prepare Mock-up No. 2 of an area 1m x 1m, in a location approved by the Departmental Representative, of the removal of parging that remains adhered to the subsurface.
    - .3 Use of electrical or pneumatic tools for mechanical removal are prohibited. Use of tools such as chisels, rubber mallets, wood scapers are permitted.
    - .4 The extent and area of parging to be removed must be confirmed with the Departmental Representative prior to any removals.
- .3 In the identified zones where high level of lead was detected (>1,000 mg/kg), complete removal of the coatings will be done using chemical stripping. Partial removal, of loose and flaking paint, will be completed on areas <1,000 mg/kg as indicated in attached documents. All removal will be done in ways to ensure no damage to underlying historic substrate.
- .4 Abatement work should follow the most stringent guidelines applicable. Materials with leachable lead concentrations greater than 5 mg/L must also be manifested as dangerous goods during transport under the federal TDGA Regulations. If materials are to be disposed of out-of-province, transportation must comply with the Interprovincial Movement of Hazardous Waste Regulations under the CEPA.

### **1.2 RELATED REQUIREMENTS**

- .1 Section 02 61 33 Hazardous Designated Substances Report

- .2 Section 02 83 11 Lead Based Paint Abatement – Intermediate Precautions

### 1.3 REFERENCE STANDARDS

- .1 Department of Justice Canada
  - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Health Canada
  - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
- .3 Human Resources and Social Development Canada (HRSDC)
  - .1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .4 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .5 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)
  - .1 NIOSH 94-113 - NIOSH Manual of Analytical Methods (NMAM), 5th Edition (2020).
- .6 Nova Scotia Environment
  - .1 Lead in the Workplace: A Guide to Working with Lead (2015)
- .7 Ontario Ministry of Labour
  - .1 Lead on Construction Projects (2011)

### 1.4 DEFINITIONS

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Authorized Visitors: Parks Canada Agency (or designated representative).
- .3 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects over cuts and tears, and elsewhere as required to provide protection and isolation. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.
- .4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.
- .5 Action level: employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic metre of air (50 ug/m<sup>3</sup>) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic metre of air for removal of lead-based paint by methods noted in paragraph 1.1.

- .6 Competent person: Individuals capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.

## **1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide proof satisfactory to the Designated representative that suitable arrangements have been made to dispose of lead-based paint waste in accordance with requirements of authority having jurisdiction.
- .2 Provide proof of Environmental Liability and Contractor's General Insurance.
- .3 Quality Control:
  - .1 Provide the Designated representative necessary permits for transportation and disposal of lead-based paint waste and proof that lead based paint waste has been received and properly disposed.
  - .2 Provide proof satisfactory to the Designated representative that employees have had instruction on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.
- .4 Product data:
  - .1 Provide documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including:
    - .1 Chemical gel stripping product
    - .2 Encapsulant : Lime based permeable primer, colour: white

## **1.6 QUALITY ASSURANCE**

- .1 Regulatory Requirements: comply with Federal, Provincial and local requirements pertaining to lead paint, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
  - .1 Require construction work to follow applicable occupational health and safety regulations.
  - .2 Safety Requirements: worker and visitor protection.
    - .1 Protective equipment and clothing to be worn by workers and visitors in work Area include:
      - .1 Respirator NIOSH approved and equipped with replaceable HEPA filter cartridges with an assigned protection factor of 10, acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure. Provide sufficient amount of filters.
      - .2 Half mask respirator: half-mask particulate respirator with P, R, or N - series filter, and 100, 99, or 95 % efficiency could be provided.

- .3 Disposable type protective clothing that does not readily retain or permit skin contamination, consisting of full body covering including head covering with snug fitting cuffs at wrists, ankles, and neck and bootie covers.
- .2 Eating, drinking, chewing, and smoking are not permitted in work area.
- .3 Ensure workers wash hands and face when leaving work area.
- .4 Visitor Protection:
  - .1 Provide approved respirators and overboots to Authorized Visitors to work areas.
  - .2 Instruct Authorized Visitors procedures to be followed in entering and exiting work area.

## **1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .2 Disposal of lead waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of lead waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .3 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

## **1.8 EXISTING CONDITIONS**

- .1 Notify Designated representative of lead-based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by the Designated representative.

## **1.9 SCHEDULING**

- .1 Not later than two days before beginning Work on this Project notify following in writing:
  - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
  - .2 Provincial Ministry of Labour.
  - .3 Disposal Authority.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Designated representative copy of notifications prior to start of Work.
- .4 Hours of Work: perform work involving lead-based paint abatement during normal working hours. Work may be required outside normal working hours to meet schedule requirements requiring approval from Designated representative.

## **1.10 PERSONNEL TRAINING**

- .1 Provide Designated Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures, and in use, cleaning, and disposal of respirators.
- .2 Instruction and training related to respirators includes, at minimum:
  - .1 Proper fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Polyethylene 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.
- .3 Chemical gel stripping product: Safety Peel by Prosoco, or Piranha 4 by Fibrelock, or equivalent product as approved by the Departmental Representative.
- .4 Lime-based adherence primer (vapor permeable coating): Base Plus Primer by Color Rare, colour: white, or equivalent product as approved by Departmental Representative.
- .5 Lead waste containers: fibre or metal type acceptable to dump operator with tightly fitting covers and 0.15 mm thickness sealable polyethylene liners.
  - .1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

## **Part 3 Execution**

### **3.1 SUPERVISION**

- .1 One Supervisor for every ten workers is required.
- .2 Supervisor must remain within work area during disturbance, removal, or handling of lead-based paints.

### **3.2 PREPARATION**

- .1 Remove and store items to be salvaged or reused.
  - .1 Protect and wrap items and transport and store in area specified by the Designated representative.
- .2 Work Area:

- .1 Pre-clean fixed casework and equipment within work area, using HEPA vacuum and cover and seal with polyethylene sheeting and tape.
  - .2 Clean work area using HEPA vacuum. If not practicable, use wet cleaning method. Do not raise dust.
  - .3 Seal off openings with polyethylene sheeting and seal with tape.
  - .4 Protect floor surfaces covered from wall to wall with polyethylene sheets.
  - .5 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.
  - .6 Where water application may be required for wetting lead containing materials, provide temporary water supply appropriately sized for application of water as required. Contractor is responsible for providing their own fresh water, as no water is available on site (the use of grey water or water taken from the Harbour is prohibited).
  - .7 Provide electrical power and shut off for operation of powered tools and equipment. No power is available to contractors on the island. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.
- .3 Do not start work until:
- .1 Arrangements have been made for disposal of waste.
  - .2 Tools, equipment, and materials waste containers are on site.
  - .3 Arrangements have been made for building security.
  - .4 Notifications have been completed and preparatory steps have been taken.

### **3.3 LEAD ABATEMENT**

- .1 In the areas where high level of lead was detected ( $>1,000$  mg/kg), complete removal of the coating will be completed using chemical gel stripping product.
- .2 In areas with lead total lead concentrations  $<1,000$  mg/kg, removal of lead-containing coatings using non-powered hand tool, other than manual scraping and sanding as will occur on loose and flaking coating only. Well adhered coatings will remain on the surface.
- .2 Remove lead-based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags and place in labelled containers for transport. HEPA filter vacuum cleaner to be used to absorb all materials as it is being removed.
- .3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area. Clean external surfaces thoroughly again by wet sponging. Wash containers thoroughly pending removal to outside. Ensure containers are removed by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, soft bristle brush and wet sponge surface from which lead based paint has been removed to remove visible material. During this work keep surfaces wet.
- .5 After soft bristle brushing and wet sponging surfaces to remove visible lead-based paint, wet clean entire work area and equipment used in the process.

- .6 Once inspected by Designated Representative, apply one continuous coat of lime-based primer to surfaces. Follow manufacturer recommendations for drying time. Do not disturb work area for 8 hours. No entry, activity, or disturbance during this period.

### **3.4 INSPECTION**

- .1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Designated Representative will result in work stoppage, at no cost to Parks Canada Agency. Designated representative will inspect work for:
  - .1 Adherence to specific procedures (abatement) and materials.
  - .2 Final cleanliness and completion.
  - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
  - .4 Once lime based primer is applied, an adherence test for the primer coating will be performed. A methodology for testing will be provided to the Contractor from Parks Canada Agency.

### **3.5 FINAL CLEANUP**

- .1 Following cleaning and when inspection is satisfactory, proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead containing particles observed during cleanup, immediately, using HEPA vacuum.
- .3 Place polyethylene sheets, tape, cleaning material, clothing, and contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

### **3.6 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS**

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Designated Representative.

**END OF SECTION**