

## **Part 1 General**

### **1.1 SUMMARY**

- .1 Comply with requirements of this Section when performing the following Type-2 operations as defined in Public Works and Government Services Canada (PWGSC) Deputy Minister Directive (DIR:057) *Respecting Asbestos Management in Federal Owned or Leased Buildings or Facilities containing Asbestos*:
  - .1 Removing approximately 55 m<sup>2</sup> of asbestos-containing drywall joint compound on the walls and ceiling of the base level and 2nd level operations room using Type 2 procedures. Assume drywall joint compound is present covering entire gyproc walls and ceilings.

### **1.2 RELATED REQUIREMENTS**

- .1 Section 01 33 00 - Submittal Procedures
- .2 Section 01 35 33 - Health and Safety Requirements
- .3 Section 01 35 43 - Environmental Procedures
- .4 Section 01 74 11 – Cleaning
- .5 Section 01 74 21 - Construction Demolition Waste Mgt and Disposal
- .6 Section 02 41 13 - Selective Site Demolition
- .7 Section 02 81 01 - Hazardous Materials
- .8 Section 02 83 10 - Lead-Based Paint Abatement – Minimum Precautions

### **1.3 REFERENCES**

- .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 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .4 Occupational Health and Safety Act, S.N.S. 1996, c. 7, Province of Nova Scotia, last updated in 2013, c.41.
- .5 Workplace Health and Safety Regulations, N.S. Reg. 143/2014, Province of Nova Scotia.
- .6 Asbestos Waste Management Regulations, N.S. Reg. 53/95, Province of Nova Scotia, last updated on October 18, 2013.
- .7 Guidelines for Outdoor Work with Asbestos, Nova Scotia Department of Environment and Labour, Occupational Health & Safety Division, March 26, 1998.

- .8 Dealing with Asbestos Containing Materials-An Information Package, Province of Nova Scotia, July 1988.
- .9 PWGSC Deputy Minister Directive (DIR:057) Respecting Asbestos Management in Federal Owned or Leased Buildings or Facilities containing Asbestos.
- .10 Stantec Consulting Limited
  - .1 Limited Hazardous Building Materials Assessment, Cape Sable Island Lighthouse, Shelburne County, Nova Scotia, DFRP #02298, LL #327, RPIS #MC 00086. Dated March 30, 2016 (Appendix 1).
- .11 References in Appendices obtained from previous reports on this site.

#### **1.4 DEFINITIONS**

- .1 Authorized Visitors: Public Works and Government Services Canada (PWGSC), Fisheries and Oceans Canada, Environmental Consultant, representatives of regulatory agencies and any visitor approved by PWGSC and/or Fisheries and Oceans Canada.
- .2 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .3 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.
- .4 Asbestos-Containing Materials (ACMs): materials that contain 0.5 per cent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .5 Presumed-Asbestos-Containing Materials (ACMs): materials that are suspected to contain 0.5 per cent or more asbestos by dry weight and are identified under Existing Conditions.
- .6 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.
- .7 Competent worker: in relation to specific work, means a worker who:
- .8 Competent worker: in relation to specific work, means a worker who:
  - .1 Is qualified because of knowledge, training and experience to perform the work.
  - .2 Is familiar with provincial and federal laws and with the provisions of the regulations that apply to the work.
  - .3 Has knowledge of all potential or actual danger to health or safety in the work.
- .9 Friable material: means material that:
  - .1 When dry, can be crumbled, pulverized or powdered by hand pressure, or
  - .2 is crumbled, pulverized or powdered.
- .10 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .11 Occupied Area: any area of the building or work site that is outside Asbestos Work Area.

- .12 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.
- .13 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for work.

## **1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit proof satisfactory to the Departmental Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.
- .3 Provide proof of Contractor's Asbestos Liability Insurance.
- .4 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.
- .5 Submit proof to Departmental Representative that all asbestos workers and/or supervisor have received appropriate training (in accordance with Provincial Regulations) and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .6 Submit Workers' Compensation Board of Nova Scotia status and transcription of insurance.
- .7 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

## **1.6 QUALITY ASSURANCE**

- .1 Regulatory Requirements: comply with Federal, Provincial, and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.
- .2 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
  - .2 Safety Requirements: worker and visitor protection.
    - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Areas include:
      - .1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Nova Scotia guidelines. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood

or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.

- .2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing shall consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing to include suitable footwear, and to be repaired or replaced if torn.
- .2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- .3 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
- .4 Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area.
- .5 Ensure workers wash hands and face when leaving Asbestos Work Area.
- .6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects the seal between respirator and face.

## **1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Collect and separate for disposal. Place paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Fisheries and Oceans Canada practices.
- .3 Separate for reuse and recycling and place in designated containers in accordance with Fisheries and Oceans Canada practices.

- .4 Place materials defined as hazardous or toxic in designated containers.
- .5 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .6 Fold up metal banding, flatten and place in designated area for recycling.
- .7 Disposal of asbestos waste generated by removal activities must comply with Provincial Regulations (N.S. Reg. 53/95). Dispose of asbestos waste in sealed double thickness 6 mil bags or leak proof drums. Label containers with appropriate warning labels.
- .8 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

## **1.8 EXISTING CONDITIONS**

- .1 Suspected asbestos-containing materials have been identified in the form of
  - .1 Drywall joint compound on the walls and ceiling of the base level and 2nd level operations room (2% Chrysotile).
- .2 Reports and information pertaining to ACMs to be handled, removed, or otherwise disturbed and disposed of during this project are outlined in Section 1.3 References and are provided in Appendix A.
- .3 Notify Departmental Representative of any suspect ACMs discovered during Work and not apparent from drawings, specifications, or reports pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.

## **1.9 SCHEDULING**

- .1 Not later than two days before beginning Work on this Project notify following in writing:
  - .1 Nova Scotia Labour and Advanced Education.
  - .2 Disposal Authorities.
- .2 Inform sub trades of presence of asbestos-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.

## **1.10 PERSONNEL TRAINING**

- .1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.
- .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 Drop Sheets:
  - .1 Polyethylene: 0.15 mm thick.
  - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .3 Waste Containers: contain waste in two separate containers.
  - .1 Inner container: 0.15 mm thick sealable polyethylene waste bag.
  - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
  - .3 Labelling requirements: affix pre-printed cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.
- .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .5 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

## **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 ACMs.

### **3.2 PROCEDURES**

- .1 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.
- .2 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
  - .1 Use FR polyethylene drop sheets over flooring in work areas where dust or contamination cannot otherwise be safely contained.

- .2 When removing drywall material erect enclosure of polyethylene sheeting around work area, shut off mechanical ventilation system serving work area and seal ventilation ducts to and from work area
- .3 Remove loose material by HEPA vacuum; thoroughly wet friable material containing asbestos to be removed or disturbed before and during Work unless wetting creates hazard or causes damage.
  - .1 Use garden reservoir type low - velocity sprayer or airless spray equipment capable of producing mist or fine spray.
  - .2 Perform Work in a manner to reduce dust creation to lowest levels practicable
- .4 Ensure proper equipment is on site to perform the removal of ACMs.
- .5 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.
  - .1 Use garden reservoir type low - velocity fine - mist sprayer.
  - .2 Perform Work to reduce dust creation to lowest levels practicable.
  - .3 Work will be subject to visual inspection and air monitoring.
  - .4 Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
  - .5 Thoroughly clean tools and equipment before reusing.
- .6 Cleanup:
  - .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
  - .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
  - .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
  - .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
  - .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

### **3.3 INSPECTION/AIR MONITORING**

- .1 Following completion of cleaning operations, PWGSC may decide to take air samples within former Asbestos Work Areas in accordance with Provincial Occupational Health and Safety Regulations. A third party consultant may be commissioned by PWGSC to perform environmental oversight during abatement activities and to conduct air monitoring and testing.

- .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial Occupational Health and Safety Regulations.
- .2 If air monitoring shows that areas outside Asbestos Work Area enclosures are contaminated, enclose, maintain and clean these areas in same manner as that applicable to Asbestos Work Area.
- .3 Ensure that respiratory safety factors are not exceeded.
- .4 During the course of Work, Departmental Representative to measure fibre content of air outside Work areas by means of air samples analyzed by Phase Contrast Microscopy (PCM).
  - .1 Stop Work when PCM measurements exceed 0.05 f/cc and correct procedures.
- .5 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Departmental Representative will result in work stoppage, at no cost to Department.
- .6 Departmental Representative will inspect work for:
  - .1 Adherence to specific procedures 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.

### **3.4 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 Departmental Representative.

**END OF SECTION**