
**Demolition of Administration Building
Southside Road, St. John's, NL
Project No. R.111146.001**

2020/12/01

Section 02 82 00.02 – Asbestos Abatement - Intermediate Precautions

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PART 1 - GENERAL

1.1 DESCRIPTION

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removing non-friable asbestos containing materials by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.
 - .2 Removing non-friable asbestos containing materials using glove bag methods.
- .2 These materials can also be removed by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if:
 - .1 The material is wetted to control the spread of dust or fibres.
 - .2 The work is done only by means of non-powered hand-held tools.
 - .3 The work is completed using a glove-bag.
- .3 This section shall apply to unknown building materials that may be identified during the demolition Work.

1.2 RELATED SECTIONS

- .1 Section 02 82 00.01 – Asbestos Abatement - Minimum Precautions.
- .2 Section 02 82 00.03 – Asbestos Abatement - Maximum Precautions.

1.3 DEFINITIONS

- .1 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .2 Asbestos Containing Materials (ACMs): materials that contain 0.5 per cent or more asbestos by dry weight including fallen materials and settled dust.
- .3 Asbestos Work Area: area where work takes place which will, or may disturb ACMs.
- .4 Authorized Visitors: Designated Representative and representatives of regulatory agencies.
- .5 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 the 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.
- .6 Friable Materials: material that when dry can be crumbled, pulverized or powdered by

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hand pressure and includes such material that is crumbled, pulverized or powdered.
Includes potentially ACM containing ash.

- .7 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 dimension at 99.97% efficiency.
- .8 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .9 Occupied Area: any area of building or work site that is outside Asbestos Work Area.
- .10 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.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.
- .12 Supervisor: Contractor's worker able to provide a history of satisfactory experience in the area of asbestos abatement that can satisfy Provincial and Federal requirements and will be permitted to supervise the work in this Section. The supervisor responsible for the work of this Section is to have a minimum of five (5) years of experience in the area of asbestos abatement.
- .13 Glove Bag: pre-fabricated glove bag as follows:
 - .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
 - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
 - .3 Equipped with reversible double-pull double throw zipper on top and at approximately mid-section of the bag.
 - .4 Straps for sealing ends around pipe.
 - .5 Must incorporate internal closure strip if it is to be moved or used in more than one specific location.

1.4 SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos containing waste in accordance with requirements of authority having jurisdiction.
- .3 Submit requirements for Notice of Project Form.
- .4 Submit proof of Contractor's Asbestos Liability Insurance.
- .5 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.

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- .6 Submit proof satisfactory to Departmental Representative that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, and aspects of work procedures and protective measures.
- .7 Submit proof that supervisory personnel have attended asbestos abatement course, of not less than two (2) days duration, approved by Departmental Representative. Minimum of one supervisor for every ten (10) workers.
- .8 Submit Worker's Safety Compensation Commission status and transcription of insurance prior to commencing asbestos abatement work.
- .9 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including:
 - .1 Encapsulants;
 - .2 Amended water;
 - .3 Slow drying sealer.
- .10 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.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Provincial/Federal 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 the time Work is performed.
- .2 Health and Safety:
 - .1 Perform construction occupational health and safety in accordance with Provincial OHS.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Designate Asbestos Work Area using an asbestos banner tape barrier surrounding the areas containing asbestos.
 - .2 Protective equipment and clothing to be worn by workers while in Asbestos Work Area 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 Provincial Authority having jurisdiction. The respirator is 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

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- is to be replaced prior to being used by a worker; and, when not in use, it is to be stored in a convenient, clean and sanitary location. The employer is 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 is 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 is to be worn. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing is to 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. It includes suitable footwear, and it to be repaired or replaced if torn. The Contractor is to provide suitable footwear relevant to the safe work procedure. This may be steel toes rubber boots or steel toed boots extending to the ankle.
- .3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- .4 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.
- .5 Facilities for washing hands and face shall be provided where the main point of ingress and egress has been identified for the Asbestos Work Area.
- .6 Ensure workers wash hands, face, and respirator when leaving Asbestos Work Area.
- .7 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
- .8 If at any time the Contractor, Departmental Representative or analytical confirmation shows that the protection factor of the minimum asbestos abatement procedure is inadequate, work procedures are to be upgraded to intermediate or high risk work procedures or additional controls must be requested by the contractor in writing for approval by the Departmental Representative.
- .9 Visitor Protection:
- .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
- .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
- .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

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1.6 ACM DISPOSAL

- .1 Disposal of asbestos waste generated by removal activities must comply with Provincial, Federal and Municipal regulations. Dispose of asbestos waste in sealed double thickness 15 mm bags or leak proof drums. Label containers with appropriate warning labels.
- .2 Provide manifests describing and listing waste created and disposed.

1.7 EXISTING CONDITIONS

- .1 Refer to Hazardous Material Assessment report appended to these specifications.

1.8 INSTRUCTIONS

- .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, in use of glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, at minimum:
 - .1 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.

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 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 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.

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- .3 Labelling requirements: affix pre-printed cautionary asbestos warning that is visible when ready for removal to disposal site.

- .4 Glove Bag:
 - .1 Acceptable materials: safe-T-Strip products in configuration suitable for Work.
 - .2 Glove bags intended for use in more than one location must be equipped with reversible, double-pull, double-throw zipper on top and at approximately mid-section of the bag.

- .5 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.

- .6 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.

- .7 Encapsulant: surface film forming type conforming to CAN/CGSB-1.205.

- .8 Provide 24 volt safety lighting and ground fault interrupter (GFI) circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.

PART 3 - EXECUTION

3.1 SUPERVISION

- .1 Minimum of one (1) Supervisor for every ten (10) workers is required.

- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos-containing materials.

3.2 PROCEDURES

- .1 Complete construction occupational health and safety in accordance Provincial OHS.

- .2 Before beginning Work, at the Asbestos Work Areas, install warning signs.

- .3 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene drop sheets where dust or contamination cannot otherwise be safely contained. Drop sheets are not to be reused.

- .4 Pipe Insulation Removal Using Glove Bag:
 - .1 Before beginning Work remove visible dust from surfaces in work area where dust is likely to be disturbed during course of work.
 - .1 Use HEPA vacuum or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.
 - .2 Do not use compressed air to clean up or remove dust from any surface.

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- .2 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
- .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 Complete Work in a manner to reduce dust creation to lowest levels practicable.
- .4 Place tools necessary to remove insulation in tool pouch. Wrap bag around pipe and close zippers. Seal bag to pipe with cloth straps.
- .5 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.
- .6 Insert nozzle of garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.
- .7 When glove bags are intended for use at more than one location: after wash-down and application of sealer, seal off waste in lower section of bag using zipper at mid- section of bag. Remove air from top section of bag through elasticized valve using HEPA vacuum. Remove bag from pipe, reinstall in new location, and reseal to pipe prior to opening lower section of bag. Repeat stripping operation.
- .8 If bag is to be moved along pipe, first remove air from top section through elasticized valve using HEPA vacuum. Next loosen straps, move bag, re-seal to pipe using double-pull zipper to pass hangers. Repeat stripping operation.
- .9 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.
- .10 After removal of bag the pipe must be made free of residue. Remove residue using HEPA vacuum or wet cloths. Surfaces must be free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow-drying sealer to seal in any residual fibres.
- .11 Upon completion of Work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.
- .6 Work is subject to air monitoring under contractor's Quality Assurance program, and to visual inspection under contractor's Quality Assurance program and by Departmental Representative. Contamination of surrounding areas indicated by visual inspection or air monitoring will require clean-up of affected areas.
- .7 Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.

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- .8 Cleanup:
- .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste (including ash) using HEPA vacuum.
 - .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat dropsheets 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 the Authority Having Jurisdiction. Supervise dumping and ensure 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 FINAL CLEANUP AND DEMOBILIZATION

- .1 From beginning of Work until completion of cleaning operations, Departmental Representative to take air samples on daily basis outside of Asbestos Work Areas in accordance with Provincial Occupational Health and Safety Regulations.
- .2 If air monitoring shows that areas outside Asbestos Work Areas are contaminated 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.

END OF SECTION