

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

- .1 Read and be governed by the conditions of the Contract and specifications of Division 01.

1.2 REFERENCES

- .1 CSA International
  - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 Submittal Procedures
  - .1 Construction Waste Management:
    - .1 In accordance with Section 01 00 10, 01 74 20

1.4 SITE CONDITIONS

- .1 Review section 01 14 25 of division 01 "Designated Substance Report" and take precautions to protect environment.
- .2 If material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.
  - .1 Proceed only after receipt of written instructions have been received from Departmental Representative.
- .3 Notify Departmental Representative before disrupting building access or services.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Inspect building with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.
- .4 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.
  - .1 Immediately notify Departmental Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.
  - .2 Immediately notify the Departmental Representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.

3.2 PROTECTION

- .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and parts of building to remain in place. Provide bracing and shoring required.
- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Protect building systems, services and equipment.
- .4 Provide temporary dust screens, covers, railings, supports and other protection as required.

3.3 PREPARATION

- .1 Protection of In-Place Conditions:
  - .1 Prevent movement, settlement, or damage to adjacent structures, utilities, and parts of building to remain in place. Provide bracing and shoring required.
  - .2 Keep noise, dust, and inconvenience to occupants to minimum.

- .3 Protect building systems, services and equipment.
  - .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
  - .5 Do Work in accordance with Section 01 35 29.06. Health and Safety Requirements
- .2 Demolition/Removal:
- .1 Remove items as indicated.
  - .2 Remove parts of existing building to permit new construction.
  - .3 Trim edges of partially demolished building elements to tolerances as defined by Departmental Representative to suit future use.

### 3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 Cleaning.
- .3 Refer to demolition drawings and specifications for items to be salvaged for reuse.
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 20 Cleaning.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**Part 1            General**

**1.1                SUMMARY**

- .1 Comply with requirements of this Section when performing following work:
  - .1 Installing or removing ceiling tiles that are asbestos-containing material, if the tiles cover an area less than 7.5 square metres and are installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
  - .2 Installing or removing non-friable asbestos-containing material, other than ceiling tiles, if the material is installed or removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
  - .3 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material if:
    - .1 The material is wetted to control the spread of dust or fibres, and
    - .2 The work is done only by means of non-powered hand-held tools.
  - .4 Removing less than one square metre of drywall in which joint-filling compounds that are asbestos-containing material have been used.

**1.2                SECTION INCLUDES**

- .1 Requirements and procedures for asbestos abatement on non-friable asbestos-containing materials without the use of power tools.

**1.3                RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 35 29.06 - Health and Safety Requirements.
- .3 Section 01 74 20 - Construction/Demolition Waste Management and Disposal.

**1.4                REGULATORY REQUIREMENTS**

- .1 Comply with Federal, Provincial and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications the more stringent requirement applies. Comply with regulations and guidelines in effect at the time the work is performed, including but not limited to the following:
  - .1 Canada Labour Code, Part II Occupational Health and Safety.
  - .2 Ontario Occupational Health and Safety Act (OSHA).
    - .1 O.Reg. 490/09, as amended: Designated Substances.
    - .2 O.Reg. 278/05, as amended: Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations.
  - .3 Ontario Environmental Protection Act (OEPA).
    - .1 O.Reg. 347/90, as amended: General – Waste Management.
  - .4 Canadian Environmental Protection Act, 1999 (CEPA).

- .5 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .6 Public Works & Government Services Canada (PWGSC) Department Policy 057: Asbestos Management.
- .7 CSA Standard Z94.4-11 (R2016): Selection Care and Use of Respirators.
- .8 National Building Code Part 8 (as applicable).
- .9 Ontario Building Code (as applicable).
- .10 CSA Standard S350-M1980 (R2003): Code of Practice of Safety in Demolition of Structures.
- .11 CAN/CGSB 1.205-2003 Sealer for Application to Asbestos-Fibre-Releasing Materials

## **1.5 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 HEPA Filter: High Efficiency Particulate Air filter at least 99.97% efficient in collecting and retaining fibres greater than 0.3 microns.
- .3 Amended Water: Water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .4 Asbestos-Containing Materials (ACMs): Materials containing 0.5% or greater asbestos by dry weight, including settled dust and fallen material.
- .5 Asbestos Work Area: Area where actual removal of asbestos-containing materials takes place.
- .6 Occupied Area: Any area of the building or work site that is outside Asbestos Work Area.
- .7 Authorized Visitors: Consultant and Building Owner, or designated representatives, and representatives of regulatory agencies.
- .8 Non-Friable Material: Material that when dry cannot be crumbled, pulverized or powdered by hand pressure and generally includes manufactured materials that contain asbestos as a binding agent.
- .9 DOP Test: A testing method used to determine the integrity of the Negative Pressure unit using dispersed oil particle (DOP) HEPA-filter leak test.
- .10 Sprayer: Garden reservoir type sprayer or airless spray equipment capable of producing a mist or fine spray. Must be appropriate capacity for scope of work.

## **1.6 SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Before commencing work:

- .1 Obtain from the appropriate agency and submit to Engineer/Consultant all necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and of proper methods of disposal. Submit proof satisfactory to Owner that suitable arrangements have been made to receive and properly dispose of asbestos waste.
- .2 Submit proof satisfactory to Owner that all employees have had instruction on the hazards of asbestos exposure, respirator use, dress, hygiene, and washing facilities, entry and exit from work areas, and all aspects of work procedures and protective measures for Type 1 Operations. Supervisory personnel shall have attended an asbestos abatement course, of not less than two days duration, approved by the Owner. Submit proof of attendance in the form of a certificate.
- .3 Submit Provincial requirements for Notice of Project Form, if required.
- .4 Submit proof of Contractor's Asbestos Liability and Commercial General Liability and Automobile Insurances in the minimum amounts specified by the Owner.
- .5 Submit DOP test results for all negative air units and/or HEPA vacuums to be utilized within asbestos work areas.
- .6 Submit proof satisfactory to the Owner that all employees have had respirator fitting and testing. Workers must be fit-tested with the respirator that is personally issued in accordance with the requirements of CSA Z94.4-11 Selection, Use, and Care of Respirators.
- .7 Inform and submit proof that all sub-trades have been informed of the presence of asbestos-containing materials identified in the Designated Substance Survey.
- .8 Submit Worker's Safety and Insurance Board status and transcription of insurance.
- .9 Submit documentation including test results, fire and flammability data, and Safety Data Sheets for chemicals or materials to be brought on-site, including but not limited to the following:
  - .1 Amended water.
  - .2 Slow-drying sealer.

## 1.7 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 protection.
    - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
      - .1 Non-powered reusable or replaceable filter-type NIOSH-approved respirator equipped with HEPA filter cartridges, personally issued to the worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to the Provincial

Authority having jurisdiction (Must meet the requirements and usage as outlined in Table 2 – Respirators of O.Reg. 278/05).

- .2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.
- .2 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area or anywhere within the building.
- .3 Before leaving Asbestos Work Area, dispose of protective clothing as contaminated waste as specified.
- .4 Ensure workers wash hands, neck and face when leaving Asbestos Work Area.
- .5 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

### **1.8 INSTRUCTION AND TRAINING**

- .1 Before commencing work, provide to Owner 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 a 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 a competent, qualified person, as defined by O.Reg 278/05.

### **1.9 EXISTING CONDITIONS**

- .1 Notify Engineer/Consultant of friable and non-friable suspect asbestos-containing material discovered during work and not apparent from drawings, specifications, or report pertaining to work. Do not disturb such material pending written instructions from Engineer and/or Consultant.

### **1.10 SUPERVISION**

- .1 An approved Asbestos Supervisor must remain on-site at all times during the disturbance, removal, or other handling of asbestos-containing materials. Minimum of one Asbestos Supervisor for every fifteen workers.

### **1.11 WASTE MANAGEMENT AND DISPOSAL**

- .1 The contractor is responsible for contacting the Owner to ensure that the site has a valid Ontario Waste Generator Number, available through the Ontario Hazardous Waste Network ([www.hwin.ca](http://www.hwin.ca)).

- .2 Asbestos Containing Materials are regulated waste products. All asbestos waste removed must be shipped to a landfill approved to accept asbestos waste. Only a licensed waste carrier with a valid Ministry of Environment and Climate Change (MOE) Environmental Compliance Approval for transporting asbestos waste can transport the asbestos waste to a landfill that has an Environmental Compliance Approval from the MOE to accept this form of hazardous material. The contractor will provide proof to the Engineer/Consultant, in the form of landfill weigh scale receipts, that all asbestos waste was properly disposed at a licensed landfill.
- .3 Any waste bins stored on-site must be sealed and locked at all times when not being loaded with waste.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Drop Sheets: 0.15 mm (6 mil) thick polyethylene.
- .2 Polyethylene: 0.15 mm (6 mil) thick.
- .3 FR polyethylene: 0.25 mm (10 mil) thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .4 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .5 Waste Containers: Contain waste in two separate containers. Inner container: 0.15 mm thick sealable polyethylene waste bag. Outer container: sealable metal or fibre type where there are sharp objects included in the waste material; otherwise outer container may be a sealable metal or fibre type or a second 0.15 mm thick sealable polyethylene bag. Labelling requirements: Affix a pre-printed cautionary asbestos warning that is clearly visible when ready for removal to disposal site.

## **Part 3 Execution**

### **3.1 PROCEDURES**

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 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.
- .3 Remove visible dust from surfaces in the work area where dust is likely to be disturbed during course of work. Use HEPA vacuum or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate. Do not use compressed air to clean up or remove dust from any surface.

- .4 Prevent the spread of dust from Asbestos Work Area using measures appropriate to the work to be done.
  - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in Asbestos Work Area where dust and contamination cannot otherwise be safely contained.
  - .2 Seal all diffusers and ducts with FR polyethylene.
  - .3 Seal all doorways with FR polyethylene.
  - .4 Seal all non-firestopped wall and ceiling penetrations with stuffed fibreglass insulation covered by FR polyethylene.
- .5 Wet materials containing asbestos to be disturbed (including cut, ground, abraded, scraped, drilled, or otherwise disturbed) with an appropriate wetting agent.
  - .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 at no additional cost to Owner.
- .6 Clean-Up:
  - .1 Frequently during the work and immediately after completion of work, clean up dust and asbestos-containing waste using a 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 an asbestos waste; wet and fold these items to contain dust, and then place in plastic bags.
  - .3 Clean the exterior of each waste-filled bag using damp cloths or a HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.
  - .4 Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial 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 work areas and adjacent areas affected by the work using HEPA vacuum.

**END OF SECTION**