

## 1.0 GENERAL

### 1.1 General & Related Work

- .1 Read this Section in conjunction with all drawings and all other Sections so as to comply with the requirements of Division 1 and the General Conditions of the Contract.
- .2 Requirements specified elsewhere:  
  
Division 13, Section 13080 Asbestos Abatement – General Provisions
- .3 The intent of this Section is to provide safe work practices and procedures to govern the handling of **minor** amounts of asbestos-containing material (ACM) or surfaces which may have been or become contaminated by asbestos either during or prior to work by this Contract at locations outside a prepared Type 3 enclosure.
- .4 Refer to related sections of the Specification for specified personnel protective measures and procedures for work of this Section performed while within a prepared Type 3 enclosure.

### 1.2 Outline of Work

- .1 Supply all labour, material, plant and equipment necessary to safely execute and complete all work of this Section while in conjunction with work specified, required or implied under Section 13080, Asbestos Abatement - General Provisions.
- .2 Isolate the Asbestos Work Area from adjoining spaces through the installation of specified hoardings, seals and enclosures at the perimeter of each phase or work area.
- .3 Remove and dispose of minor amounts (< 4 sq. ft.) of asbestos-containing mechanical pipe insulation present at locations required to facilitate work of this Contract which may not be readily removed following glove bag method or performed in advance of asbestos removal completed within a prepared Type 3 enclosure.

### 1.3 Inspection

- .1 The following Milestone Inspections are to take place during work of this Section:
  - .1 Milestone Inspection A - Site Dismantlement  
Inspection and air sampling within the Asbestos Work Area following completion of work but prior to site dismantlement.

### 1.4 Worker Protection

- .1 Respiratory Protection
  - .1 During wet removal or clean-up of ACMs performed within a sealed Type 2 enclosure, supply and use full face-piece powered air purifying positive pressure dust respirators with HEPA filters.

- .2 During site dismantlement and clean-up of the Asbestos Work Area, supply and use negative pressure non-powered half-face respirators with HEPA filters.

.2 Asbestos Abatement Work Area Entry Procedures

- .1 Before entering Asbestos Work Area, don respirator with new or tested filters, coveralls and head covers. Protective clothing shall cover hair and any reusable clothing.
- .2 Notwithstanding the above, and wherever an attached airlock has been provided, ensure workers reseal curtained doorway leading from out of the airlock upon entry to the Asbestos Work Area.

.3 Asbestos Abatement Work Area Exiting Procedures

- .1 Before leaving Asbestos Work Area, remove contamination from protective clothing and equipment using HEPA vacuum or damp cloth.
- .2 Immediately after exiting the Asbestos Work Area complete the following:
  - .1 Notwithstanding the above, and wherever an attached airlock has been provided, ensure workers reseal curtained doorway upon exiting the Asbestos Work Area.
  - .2 Remove contaminated clothing and place it into a sealed asbestos waste container for disposal.
  - .3 Clean contaminated footwear, hard hats, etc., or place into a sealed polyethylene bag for reuse.
  - .4 Wash hands in wash bucket provided for this purpose.
- .3 Following the above, remove respirator then proceed directly to wash area and complete the following:
  - .1 Notwithstanding the above, and wherever an attached airlock has been provided, ensure workers exit the airlock and reseal curtain doorway before removing their respirator.
  - .2 Wash exposed skin and respirator with soap and water.
  - .3 Seal inlet side of respirator filters with tape then remove filters for testing or dispose of as asbestos-contaminated waste.

**1.5 Visitor Protection**

- .1 Maintain one (1) emergency access kit (equipped with respirator, protective clothing, etc.) within the attached airlock for use by the City or other authorized visitors.

**2.0 PRODUCTS AND FACILITIES**

**2.1 Materials and Equipment**

- .1 Sprayer: Garden reservoir type, low velocity, capable of producing mist or fine spray.

## 2.2 Hoarding Walls

- .1 Walls separating an Asbestos Work Area from an Occupied Area or another work area shall be constructed as follows:
  - .1 Construct 2" x 4" (50 mm x 100 mm) wood or metal stud framework with continuous sill and top plate of sufficient strength to support polyethylene.
  - .2 Cover inside of framework with one (1) layer polyethylene. Install additional layer of rip-proof polyethylene on exterior side of framework in non-construction areas.
  - .3 Free standing enclosures must have a completely sealed polyethylene top.

## 2.3 Airlock

- .1 Where required to provide an attached airlock to permit movement of workers or materials between Occupied Areas and the Asbestos Work Area, construct each airlock as follows:
  - .1 Construct 2" x 4" (50 mm x 100 mm) wood or metal studs framework with continuous sill and top plate of sufficient strength to support polyethylene (minimum size 4' x 4').
  - .2 Cover inside of framework with one (1) layer of polyethylene. Install additional layer of rip-proof polyethylene on exterior side of framework in non-construction areas.
  - .3 Free standing airlocks shall have a completely sealed polyethylene top.
  - .4 Install curtained doorways at opposing ends to permit ingress or egress of workers and materials.
  - .5 Construct curtained doorways as follows:
    - .1 Place two (2) overlapping sheets of polyethylene (use rip-proof polyethylene in non-construction areas) over an existing or temporarily framed doorway.
    - .2 Secure the vertical edge of one (1) sheet along one (1) jamb of the doorway and the vertical edge of the second sheet along the opposite jamb. Then secure both sheets to the head jamb of the framed opening.
    - .3 All edges of polyethylene shall be reinforced with duct tape and the bottom edge shall be weighted to ensure automatic closing. Provide directional arrows indicating opening.
- .2 Where workers egress from the airlock into an Occupied Area, provide an attached change room. Construct as per hoarding walls.

## 3.0 EXECUTION

### 3.1 Site Preparation

- .1 Submit pre-removal damage survey to Asbestos Abatement Consultant.

- .2 Perform all work during scheduled times approved by the Asbestos Abatement Consultant, after shutting down HVAC systems affecting the Asbestos Work Area.
- .3 Moving of equipment, tools, supplies, and stored materials which can be performed without disturbing ACM will be performed by others.
- .4 Protect electrical and mechanical systems within work area which may be affected by work of this Section.
- .5 Where access within a contaminated space or where removal or clean-up of minor amounts of ACMs is to be performed, erect hoarding walls at locations required to isolate the Asbestos Work Area from Occupied Areas.
- .6 Isolate or otherwise disable HVAC system, vents and diffusers located within the Asbestos Work Area. System shall remain disabled until completion of work and clean-up of Asbestos Work Area.
- .7 At locations where a sealed Type 2 enclosure has been erected, provide an attached airlock to permit ingress or egress of workers and materials.
- .8 Install temporary lighting at a level so as to provide for safe and efficient use of work area - minimum 550 LUX.
- .9 Seal openings within the asbestos work enclosure using polyethylene, tape, caulking, etc., including but not limited to windows, doors, vents, diffusers, etc.
- .10 Cover floor and wall surfaces within or forming the enclosure with polyethylene sheeting. Use sufficient layers to provide adequate protection.
- .11 Install additional polyethylene and plywood so as to protect surfaces in the work area that may be damaged. Carefully protect all finishes that are scheduled to remain in place.
- .12 At locations where a sealed Type 2 enclosure has been provided, establish negative pressure within the Asbestos Work Area as follows:
  - .1 Provide a minimum of two (2) HEPA vacuums or required number of negative pressure units within each work area.
  - .2 Operate vacuums (or negative pressure units) continuously from this point until completion of site dismantlement.
  - .3 Provide additional vacuums (or negative air units) as necessary to maintain specified pressure drop and to ensure at all times air movement at perimeter of enclosure flows inward into the Asbestos Work Area.
  - .4 Distribute negative air source evenly throughout the site.
  - .5 Install and make airtight all negative air discharge ducting.

- .6 Leak test in place using DOP method, negative pressure units which discharge directly into an Occupied space. Discharge into Occupied Areas only with written approval of the Asbestos Abatement Consultant.
- .7 Provide weighted flaps as necessary to provide make-up air.
- .13 Provide required tools, equipment, vacuums, materials and waste receptacles within the Asbestos Work Area.
- .14 Post signs at perimeter of Asbestos Work Area.
- .15 Do not commence contaminated work until authorized by the Asbestos Abatement Consultant.

### **3.2 Maintenance of Asbestos Work Area**

- .1 Maintain Asbestos Work Area in a clean and tidy condition.
- .2 Ensure barriers and enclosures are effectively maintained. Repair damaged barriers and remedy defects immediately upon discovery.

### **3.3 Asbestos Removal**

- .1 Seal openings to enclosure with tape following worker access. Ensure workers remain inside enclosure until work at risk of disturbing ACMs is complete and enclosure has been cleaned.
- .2 HEPA vacuum visible fallen ACM, settled dust, etc., from exposed surfaces, light fixtures, etc., throughout the Asbestos Work Area prior to and throughout the course of the work.
- .3 Remove minor amounts (< 4 sq. ft.) of asbestos-containing mechanical insulation from systems or services within the enclosure to facilitate work of this Contract in layers. Maintain exposed surfaces of insulation in a wet condition and place directly into waste receptacle.
- .4 Seal exposed edges of insulation scheduled to remain with heavy coat of red pigmented encapsulant.
- .5 Treat all materials removed as ACM and dispose of as such.
- .6 Clean surfaces from which asbestos has been removed with scouring pads, vacuuming or wet-sponging to remove all visible material after completion of removal of ACM.
- .7 Wet clean enclosure including surfaces of polyethylene, equipment, ducting, floor, etc.
- .8 Apply a heavy coat of lock-down agent to all surfaces from which ACM has been removed and to surfaces of polyethylene.
- .9 Schedule and obtain written approval of Milestone Inspection A (Site Dismantlement) before proceeding.

**3.4 Site Dismantlement and Clean-up**

**.1 Teardown of Sealed Type 2 Enclosures:**

- .1 Do not commence site dismantlement until authorized by the Asbestos Abatement Consultant.
- .2 Carefully roll polyethylene towards the centre of the enclosure. As polyethylene is rolled away, immediately remove visible debris with a HEPA vacuum.
- .3 Place polyethylene, tape, cleaning material, clothing and other contaminated waste in containers and dispose of as asbestos waste.

**.2 Clean-up:**

- .1 Equipment used in contaminated Asbestos Work Area shall be washed to remove any visible signs of asbestos contamination.
- .2 Dismantle and remove from the area, temporary framework used to support polyethylene.
- .3 Immediately upon shutting down of negative air units, seal air inlet grill and exhaust vent with polyethylene tape. Dispose of unit pre and intermediate filters as asbestos contaminated waste.
- .4 Seal vacuum hoses and fittings, flexible ductwork and all tools used in contaminated work site in 6 mil polyethylene bags prior to removal from work area.
- .5 Wash and mop with clean water all surfaces in the work area.

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End of Section

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