

# HIGH EFFICIENCY SPECIFICATION

## **DIVISION 1**

### **SECTION 1D ASBESTOS REMOVAL SUPPLEMENT AND ASBESTOS INSPECTION REPORT(S)**

1D.01 GENERAL: Comply with all of the Contract Documents.

#### 1D.02 SCOPE OF WORK

A. Provide all labor, materials and equipment or incidental items required to perform the work of this Section and related work as indicated on the Contract Documents, including, but not limited to the following:-

- Work area preparation and site isolation
- Protective clothing and equipment for asbestos removal
- Decontamination
- Methods of Asbestos - containing waste
- Air monitoring
- Equipment list
- Compliance and Certification
- Detailed requirements
- Final clean up of work area

NOTE:        REFER TO ATTACHED "Asbestos Inspection Report(s)" for quantities.

#### 1D.03 WORK AREA PREPARATION AND SITE ISOLATION

A. The following preparations may be accomplished without utilizing protective clothing (use of respirators is suggested).

1. Caution signs shall be provided and displayed in accordance with Section 1910.145 of the OSHA regulation.
2. Inspection of rooms shall be made by representatives of the Contractor and Architect before any work is initiated to inventory any existing damage to components, such as furniture, fixtures, walls, doors and radiator covers.
3. Before the work is begun, the Contractor shall clean with wet cloths, or if necessary, with a vacuum equipped with High Efficiency Particulate Absolute filters, all items and equipment which can be removed without disrupting the asbestos material. These items and equipment shall be removed from the work area and returned after the job has been completed and the work area has been decontaminated to the satisfaction of Architect. Cloths and filters used for cleaning shall be disposed of as contaminated waste.

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4. The Contractor shall isolate the work area by building an approved decontamination facility at all entrances and exits to the work area.
  5. The Contractor shall establish emergency and fire evacuation procedure from the work area.
- B. The following preparations shall be performed in the stated order utilizing protective clothing and approved respirators:
1. Completely seal off all openings to the work area including but not limited to ducts, floor drains, doorways, corridors, windows and skylights with plastic sheeting taped securely in place.
  2. Wet clean all non-removable items, including built-in equipment, in the work area and cover with double thickness of plastic sheeting taped securely in place.
  3. Cover all floor and wall surfaces in the work area with plastic sheeting taped securely in place to protect such surfaces from water damage and to prevent contamination of those surfaces. Floor drains shall be sealed individually and floors shall have a layer of 6 mil plastic.
  4. Detach and clean removable electrical, heating and ventilating equipment and other items connected to asbestos surfaces. These items shall be removed from the work area using proper decontamination procedures and returned to their proper place when the work area has been decontaminated.
  5. Remove all heating, ventilating and air conditioning systems, filters and pack them in 6 mil minimum single thickness sealed plastic bags. They should be handled in the same manner as removed asbestos. The filters should be replaced with new filters as a final step in the decontamination process (after the final wash-down).
  6. As all existing ventilating systems in the work area will be sealed throughout the removal operation, an alternate system must be utilized. Install approved micro-trap units utilizing appropriate HEPA filters to exhaust air from the work area. These units should be sized according to the area being worked and should be installed so that replacement air enters the work area through escape of contaminated air.

### 1D.04 PROTECTIVE CLOTHING AND EQUIPMENT FOR ASBESTOS REMOVAL

- A. The Contractor shall provide approved respirators and protective clothing to all workers and to all official representatives of Architect, State or other governmental entity and the Architect/Engineer who may inspect the job site.

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- B. Protective clothing shall consist of full body coveralls, disposable head-covers, boots or sneakers and gloves as required by OSHA regulations. Eye protection and hard hats shall be available as appropriate. Coveralls may be of a paper disposal type.
- C. The Contractor shall require that all persons entering the work area wear an approved respirator and protective clothing. There shall be no exception to this rule.

### 1D.05 DECONTAMINATION

- A. The Contractor shall provide an adequate decontamination area consisting of a serial arrangement of rooms or spaces adjoining the work areas. Each area shall be clearly identified and separated from the other areas by plastic sheet doors, acceptable air locks, or other arrangements designed to minimize fiber or air transfer as people pass between areas.
- B. The decontamination areas are described below:
  - 1. Clean Room: In this room persons remove and leave all street clothes and put on clean disposal coveralls. Approved respiratory protection equipment is also picked up in this area. **NO ASBESTOS CONTAMINATED ITEMS SHOULD ENTER THIS ROOM.**
  - 2. Shower Room: In this room persons used for transit by cleanly dressed people entering the job site from the clean room and for showering by them after they have undressed in the equipment room. **THIS IS A CONTAMINATED AREA.**
  - 3. Equipment Room: Work equipment, footwear, and all other contaminated work clothing are left here. This is a change and transit area for people. Plastic floor covering is required. **THIS IS A CONTAMINATED AREA.**
- C. Workers and visitors shall observe the following work area entry and exit procedures:
  - 1. Worker enters clean room and removes street clothing, puts on clean coveralls and respirator and passes through shower room into the equipment room.
  - 2. Any additional clothing and equipment previously deposited in the equipment room is put on. (When work area is too cold for coveralls only, the worker will usually provide himself/herself with additional warm garments. These must be treated as contaminated clothing and left in the decontamination unit. Under no circumstances shall a worker enter the work area without having protective clothing on).
  - 3. Worker proceeds to work area.
  - 4. Before leaving the work area, the worker shall remove all gross contamination

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and debris from the coveralls. In practice this is usually carried out by one worker assisting another.

5. The worker proceeds to equipment room and remove all clothing except approved respirators. Extra work clothing may be stored in contaminated end of the unit. Disposable coveralls are placed in a bag for disposal with other material. The worker then proceeds rapidly into the shower room. Respirators shall be taken off last to prevent inhalation of fibers during removal until they have been washed free of dust.
  6. After showering the worker moves to the clean room and dresses in street clothing prior to exiting.
  7. Respirators are picked up, washed thoroughly, wrapped and stored in the clean room.
- D. Filters in the respirators shall be removed when wet and treated as contaminated waste. A new filter shall be in place in the respirator prior to reuse.
- E. There shall be no smoking, eating or drinking in any contaminated areas (shower room, equipment room and work area). Respirators shall be worn in all contaminated areas.
- F. Work footwear shall remain inside the contaminated area until completion of the job and should be thoroughly cleaned at that time.

### 1D.06 METHODS OF ASBESTOS REMOVAL

- A. The asbestos material shall be sprayed with Asbestite Asbestos removal formula #1000 as manufactured by Arpin Products, Inc., Asbestite Division #6, 1718 F Street, South Belmar, NJ. Follow manufacturers instructions for the mixing and application of the product. This spraying to be done prior to asbestos removal.
- B. Removal of the asbestos material shall be done in small sections by two-person teams, on staging platforms if needed. The wet material from each section shall be packed and sealed into labeled 6 mil plastic bags. Water-soaked fallen material shall not be left out of bags overnight, or for more than four hours on hot days, to prevent loss of its water content due to evaporation. Since plastic bags will not be effective when wire lath and similar sharp edged materials are involved in asbestos removal, the use of leak-tight drums shall be required for the packing of such materials. Bags and drums shall be marked with the label prescribed by Section 61.22 (c) of the EPA regulations. The outside of all containers shall be wet-cleaned or HEPA vacuumed before leaving the equipment area. All vacuum cleaners shall be equipped with HEPA filters.

NOTE: (1) - the plastic bags must be free of punctures.

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- (2) - the seal at the top of the bags shall be accomplished by twisting the open end and then tying an overhand knot in the twisted material (or other EPA approved method which forms a leak-tight seal. Wire does not usually meet this condition).
- C. When all asbestos removal is completed, the entire work area shall be cleaned with a wire brush and amended water. All plastic coverings of fixtures and non-removable equipment shall be removed and packaged for disposal. All disposal equipment shall be packaged for disposal.
- D. All accessory equipment shall be moved to the equipment room in sealed containers (6 mil minimum) and decontaminated for removal.
- E. All free water (in contaminated areas) shall be retrieved and placed in plastic lined leak-tight drums.
- F. Plastic sheeting used to protect floors and walls shall be carefully removed and rolled up with the contaminated portion inside.
- G. Final clean up of work area may commence.
1. After completion of the cleaning operations, the contractor shall:
    - a. Perform a complete visual inspection of the work area to ensure that it is dust free.
    - b. Request air monitoring within 48 hours to determine the amount of asbestos in the air.
  2. The concentration of asbestos fibers shall not exceed 0.1 fiber per cubic centimeter. The volume of the air sample shall not be less than 240 liters. Final air testing to be done by testing laboratory employed by the contractor and approved by Architect.
  3. If the test results exceed the limits as stated above, clean up and testing shall be repeated until compliance is achieved.
- H. The following steps may be performed without utilizing protective clothing:
1. After the area is found to be in compliance with item VII, the following work shall be performed by the contractor:
    - a. All entrances and exits shall be unsealed.
    - b. Plastic sheeting, tape and any other debris shall be disposed of in sealed plastic bags labeled as contaminated waste.

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- c. The inside of windows shall be washed.
- d. Woodwork, trim and floor shall be cleaned.
- e. Cloths or sponges used in the, cleaning operation shall be disposed of as contaminated waste.
- f. There shall be no residue left on floors whether resulting from torn barriers or any other reason.

### 1D.07 DISPOSAL OF ASBESTOS CONTAINING WASTE

- A. The Contractor shall transport all 6 mil plastic bags to a sanitary landfill disposal site approved by the Department of Environmental Protection. Transportation shall be performed by a DEP registered waste hauler.
- B. All plastic bags removed and placed in the fill. If bags are damaged, they shall be placed in leak tight drums and such contaminated drums shall be buried. These drums shall not be used for any purpose except for transporting asbestos material.

### 1D.08 AIR MONITORING

- A. Air monitoring will be conducted throughout the entire removal operation in accordance with Section 1910.001 (f) of OSHA regulations. The Testing Laboratory will be employed by the contractor.
- B. As soon as air monitoring tests are completed, the Testing Laboratory will send the results of such tests to the contractor and Architect. No advance or preliminary copies of tests will be sent to any one party without full distribution of tests results.
- C. Additional air monitoring in and adjacent to the work area may be conducted at contract's expense, at Architect's discretion.
- D. The Contractor shall cooperate fully with all aspects of air monitoring operations. Contractor to take five (5) air tests at conclusion of project, prior to occupancy by Architect.

### 1D.09 EQUIPMENT LIST

- A. Protective coveralls.
- B. Respirators.
- C. Hard Hats and Goggles where necessary.
- D. 6 Mil Plastic.

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- E. 6 Mil Plastic Bags.
- F. HEPA Vacuum.
- G. Micor Trap Filter Unit.

### 1D.10 COMPLIANCE AND CERTIFICATION

All work shall comply with applicable provisions of the:

- A. Occupational Safety and Health Administration: (OSHA), including: Asbestos Regulations, Title 29, Part 1910, Section 1001 of the Code of Federal Regulations.
- B. Environmental Protection Agency (EPA): Regulations for Asbestos Title 40, Part 61, Sub-parts A and B or the Code of Federal Regulations.
- C. New York State Department of Environmental Conservation (DEC) Regulations regarding industrial waste collector registration Title 6, Part 364 of the New York State Official Compilation of Codes, Rules and Regulations-6NYCRR364.
- D. EPA publication of March 1979, entitled "Asbestos Containing Materials in School Buildings, A Guidance Document Part 1 & 2.
- E. EPA publication of March 1983, entitled "Guidance for Controlling Friable Asbestos Containing Materials in Building." EPA 560/5-83-02.
- F. Department of Labor Standards Safety and Health Regulations for Construction, as stated in the Federal Register, VO 36, number 75, Part II as issued in Washington D.C.
- G. Federal Regulations (40 C.F.R. 60 Sub-Part B), National Emission Standards for asbestos.
- H. Contractors, Workers shall comply with DEP Local Law 76/83 as detailed.
- I. Filing of Form ACP 7 shall be coordinated with the Coordinating Agency and copies will be approved by Steven C. Mendelson, Supervisor, Asbestos Investigator.

### 1D.11 DETAILED REQUIREMENTS

- A. The following detailed requirements shall be coordinated with other parts of this Specification.
  - 1. Caution signs shall be provided and displayed in accordance with Section 1910:45 of the OSHA Regulation.

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2. Remove all existing asbestos pipe insulation, located in the basement of building scheduled for renovation under this Contract. The actual locations shall be verified by the Contractor.
3. The Contractor shall set up temporary Electrical Generators to accomplish all asbestos removal.
4. The Contractor must set up temporary water and portable toilet facilities to accomplish all asbestos removal.

NOTE:        ELECTRICAL AND WATER SERVICES HAVE BEEN CAPPED AT THE INLET LOCATIONS. VERIFY AT EACH BUILDING LOCATION. CONTACT UTILITY COMPANY FOR TURN ON DESIGNATION.

### 1D.12 FINAL CLEAN UP OF WORK AREA

- A. The following procedures must be accomplished utilizing protective clothing:
1. The Contractor shall alternately clean all surfaces in the work area with amended water and with HEPA filtered vacuum. (NOTE A HEPA vacuum will fail if used on wet material). All radiator covers shall be removed and fin tube radiators shall be vacuumed. After first cleaning of the working area, the contractor shall wait 24 hours to allow for settlement of dust and then wet-clean or HEPA vacuum all surfaces in the work area again (using alternate method).
  2. Clean Up and Guarantee
    - a. After the second cleaning operation, the following test should be performed. A complete visual inspection should be made to ensure dust free conditions and two air samples within forty-eight (48) hours after completion of all cleaning work should be taken. (Minimum volume of air sample, 240 liters).
    - b. If noncompliance occurs, repeat cleaning and measurement until space is in compliance (refer to 29 CFR 1910.1001, 7a).
  3. Disposal of Asbestos Material and Related Debris
    - a. All asbestos materials and miscellaneous debris in sealed drums will be transported to the pre-designated disposal site in accordance with the guidelines of the U.S. Environmental Protection Agency.
    - b. Workers unloading the sealed drums and machinery operators will wear respirators when handling materials at the disposal site.

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- c. The bags may be dumped from the drums into the burial site. The drums may be reused. However, if a bag is broken or damaged, the entire drum should be buried.
4. Waste Transporter Permit The Contractor will be required to utilize the Waste Transporter Permit and follow all provisions of the Environmental Conservation Law Title 3, of Article 27. Copies of the permit after all asbestos has been removed from specified location; documented as asbestos and indicated where same will be transported to be given to Project Superintendent and Contract Inspector. The Contractor will also be required to comply with U.S. Environmental Protection Agency regulations (29 CFR 1910 for collecting packing, transporting an disposing of asbestos).
5. Miscellaneous
  - a. If, at any time, the Department of Housing Preservation and Development representative decides that work practices are violating pertinent regulations, or endangering workers, he will immediately notify in writing the on site Contractor's representative that operations will cease until corrective action is taken.
  - c. Any conduits loosened in the removal process shall be reinstalled with clamps, straps etc., as per New York City Electrical Code and Authority's Inspector.

NOTE: The Contractor will be required to keep a daily log to be inspected by Contract Inspector and Architect. This log will comply to DEP-LL-76/85.

END OF SECTION