

STANDARD SPECIFICATION  
JANUARY 2010

**DIVISION 1**

**SECTION 1D SCOPE OF SERVICES AND SPECIFICATION FOR ASBESTOS  
ABATEMENT AND CLEAN-UP OF CONTAMINATED  
SURFACES**

**1D.01 GENERAL**

A. General Conditions:

1. All work under this Scope is subject to the General Conditions, Special Condition and Contract Documents, all of which are hereby made part of this scope. Completed work must comply with New York City Department of Environmental Protection Regulations and promulgated under Title 15, Chapter 1, Rules of the City of New York and Laws and Regulations of all Federal, State, or City having jurisdiction.
2. Prior to commencement of the work, the Contractor shall carefully examine the site where work is proposed, as well as its adjacent areas and seek other usual sources of information about the site. The Contractor will be conclusively presumed to have full knowledge of any and all conditions on the site relating to, or affecting in any way, the performance of the work.
3. All abatement procedures shall be performed in compliance with current Federal, State, and City environmental and building codes. The specifications and procedures contained in this contract shall be applicable to asbestos abatement work, including securing all required permits, certificates and licenses. When a conflict in regulations exists, the most stringent shall apply, or as otherwise directed by Architect/Engineer.
4. Consistent with the policies and procedures, the Architect/Engineer reserves the right to make changes from time to time, when deemed necessary, in this scope of services. Architect/Engineer will determine what work or material is to be added or omitted by the changes, and the value of any work and / or material required to be added or omitted.
5. THE METHODS OF ASBESTOS ABATEMENT AS INDICATED IN THE SPECIFICATIONS ARE COVERED BY PATENTS. PATENTS HAVE BEEN ISSUED WITH RESPECT TO "NEGATIVE PRESSURE ENCLOSURE" OR "NEGATIVE-AIR" OR "REDUCE PRESSURE" AND "GLOVE BAG".
6. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGES, LOSSES AND EXPENSES RESULTING FROM ANY INFRINGEMENT OF ANY PATENT, INCLUDING BUT NOT LIMITED TO THE PATENTS DESCRIBED ABOVE AND USED BY THE CONTRACTOR DURING PERFORMANCE OF THIS AGREEMENT.

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1D.02 DEFINITIONS

- A. The definitions specified in section 1-02 of the regulations promulgated under Title 15, Chapter 1, Rules of the City of New York will be effective except as altered or added to as follows:
1. Contractor shall mean a self-employed person, company, unincorporated association, firm, partnership or corporation and any owner or operator thereof, which engages in an asbestos removal / abatement project or employs persons engaged in an asbestos project.
  2. Third Party Air Monitor, as used in this specification shall mean a Certified Testing Laboratory employed by the asbestos abatement Contractor.
  3. Large asbestos project shall mean an asbestos project involving the disturbance of 260 linear feet or more of asbestos containing material or 160 square feet or more of asbestos containing material.

1D.03 SCOPE OF WORK

- A. The work covered and provided by the Contractor under these specifications shall be entitled Asbestos Abatement.
- B. The Contractor's work shall encompass the abatement of the following Asbestos-Containing Materials (ACM) within the areas defined in the Contract Documents:

NOTE: REFER TO ATTACHED CONTRACT ASBESTOS PROJECT NOTIFICATION (ASBESTOS INSPECTION REPORT) ACP-7 FOR LOCATIONS OF ABATEMENT AND QUANTITIES.

1. All breeching, tank, and boiler insulation, as scheduled or recommended for abatement.
2. All pipe and fitting insulation on steam supply, condensation return, and hot and cold water lines, and as scheduled or recommended for abatement.
3. Plaster, lath, and contaminated substrate as scheduled or recommended for abatement.
4. Linoleum floor covering and vinyl floor tile as scheduled or recommended for abatement.
5. Roofing materials including saturated felt, tar, mineral sheet, and roofing compound as scheduled or recommended for abatement.

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6. Clean-up of work area including HEPA (High Efficiency Particulate Air) vacuuming and wet cleaning of asbestos contaminated surfaces (decontamination) as scheduled.
- C. Contractor shall provide all labor, material, equipment and 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:
- a. Compliance and certification
  - b. Work area preparation and site isolation
  - c. Protective clothing and equipment for asbestos abatement:
    - Polyethylene Waste Bags (6-mil)
    - Polyethylene Sheeting (6-mil)
    - Glove Bag (6-mil)
    - Respirator H.E.P.A. (High Efficiency Particulate Air) Filters
  - d. Equipment and engineering controls
  - e. Decontamination enclosure system facilities
  - f. Asbestos abatement:
    - Asbestos Pipe Insulation abatement by Glove-Bag Procedure
    - Asbestos Surfacing Material abatement By:
      - a). Full Isolation
      - b). Tent
    - Clean-up of Work Area, HEPA (High Efficiency Particulate Air) vacuuming and wet cleaning of asbestos contaminated surfaces
    - Enclosure Containment of Asbestos Containing Material
    - Asbestos Roofing Materials abatement as:
      - a). Friable
      - b). Non-Friable
    - Non-Friable Asbestos Flooring Material abatement
  - g. Personal air monitoring
  - h. Lock down encapsulation
  - i. Final clean up of work area
  - j. Storage and disposal of asbestos containing waste
    - Debris:
      - a). Non-asbestos containing
      - b). Containing asbestos

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- k. Labor For:
  - Certified Asbestos Supervisors
  - Certified Asbestos Handlers

1D.04 UTILITY AND WATER SERVICES

A. Water;

- 1. If water is available in the building, the Abatement Contractor shall use hoses to bring water to the location where needed. Hose connections shall be kept tight.
- 2. If water service is not available in the building, the Abatement Contractor shall provide all temporary water needed for the project.
  - a. Shower water for the decontamination unit shall include hot and cold at the temporary shower unit.
  - b. Heating of the work area, if necessary.
  - c. Temporary drinking water and portable toilet facilities must be present to accommodate asbestos abatement site personnel.

B. Electricity;

- 1. If electricity is available, the Contractor may use it for lighting, and for small power tools.
- 2. If electrical service is not available in the building, the Abatement Contractor shall provide all electricity needed for the project:
  - a. The Abatement Contractor shall provide and set up temporary electrical generators, if necessary, to support the asbestos abatement process.
  - b. All of the Abatement Contractor's temporary lighting and electrical services for the work area shall have weatherproof enclosures and shall be ground fault protected.

1D.05 ASBESTOS-CONTAINING MATERIAL

- A. The percentage of the asbestos composition, within each type of material, will be provided by Architect/Engineer upon Contractor's written request.

1D.06 WORKMANSHIP AND MATERIALS

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- A. It is the Contractor's responsibility to meet the minimum code and standards requirements.

1D.07 APPLICABLE STANDARDS

- A. All work shall be conducted in accordance with the applicable provision(s) of the:
1. Occupational Safety and Health Administration (OSHA), including: Asbestos Regulations, Title 29, Part 1926, section 58 of the Code of Federal Regulations;
  2. Environmental Protection Agency (EPA) Regulations for Asbestos; Title 40, Part 61, Sub-parts A and M or the Code of Federal Regulations;
  3. New York City Department of Environmental Protection (NYCDEP) Asbestos Control Program, Regulations promulgated under Title 15, Chapter 1, Rules of the City of New York;
  4. New York State Department of Labor (NYSDOL) Regulations promulgated under Industrial Code 56, Cited as 12 NYCRR Part 56;
  5. 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;
  6. Department of Labor Standard Safety and Health Regulations for Construction, as stated in the Federal Register, VOL 36, number 75, Part II as issued in Washington D.C.
  7. And all other federal, state and local laws, regulations, codes, and standards, as applicable, and as may be revised or added during the term of this contract.

1D.08 REGULATION POSTINGS

- A. Current editions of each applicable regulation shall be posted by the Contractor in a most visible place at the job site. Contractor shall assure that the regulations are not altered, defaced, or covered by other materials. One copy of each current regulation shall also be kept at the General Contractor's office.
- B. Contractor shall post telephone numbers for local emergency services at the job site.

1D.09 ASBESTOS ACTION LEVEL

- A. The 8-hour Time Weighted Average (TWA), must not exceed 0.01 fibers, longer than 5 micrometers, per cubic centimeter of air (f / cc), as determined by phase contrast microscopy. This level is determined by air monitoring conducted by the Third Party Air Monitor.

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- B. The Third Party Air Monitor shall assess whether work should proceed whenever the level outside the work area exceeds 0.01 f / cc. The Third Party Air Monitor and the Abatement Contractor shall take steps to locate the source of contamination and the Abatement Contractor shall abate it.
- C. The Contractor shall clean up surfaces outside of the work area using HEPA (High Efficiency Particulate Air) vacuums and wet cleaning techniques prior to resuming abatement activities.

1D.10 WORK AREA CLEARANCE LEVEL

- A. Following asbestos abatement activities, the work area clearance level shall not exceed 0.01 fibers per cubic centimeter of air (f / cc) as determined by phase contrast microscopy or an equivalent method approved and conducted by the Third Party Air Monitor.

1D.11 THIRD PARTY AIR MONITOR DUTIES

- A. Air monitoring shall be conducted as per applicable standards in section 1D.07 of this Scope of Services by the Third Party Air Monitor.
- B. The Third Party Air Monitor will ensure that the Asbestos Contractor has notified, as required, the applicable federal, state, and municipal agencies of its intent to perform either an asbestos project (asbestos report form ACP-7) or an abatement to be performed under the designation of other than asbestos project (not an asbestos project form ACP-5).

1D.12 QUALIFICATIONS OF ASBESTOS ABATEMENT CONTRACTOR

- A. The Contractor must have a minimum of two years experience in asbestos abatement projects that complied with Federal, State and City Environmental Codes applicable to asbestos abatement work and staffed by personnel that have been certified in the same.
- B. The Contractor must provide evidence of following:
  - 1. A valid New York State Department of Labor Asbestos Handler License issued for the company;
  - 2. The Abatement Contractor's Respiratory Protection Program as required by OSHA regulations 29 CFR 1926.58(h)3;
  - 3. Evidence that the Contractor has successfully performed and completed at least five asbestos abatement contracts, using the techniques as hereinafter specified, within the past two years. The Contractor shall supply the name and telephone number of a person who is familiar with the work performed.

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4. Documentation for all Contractor's workers and supervisors have most certified by the NYSDOL and NYSDEP as asbestos handlers or supervisors, along with copies of their respirator fit test and medical forms.

1D.13 PERSONNEL PROTECTION AND EQUIPMENT SPECIFICATIONS

A. General Worker Protection Requirements:

1. All workers and supervisors shall have been certified by the New York City Department of Environmental Protection and the New York State Department of Labor and shall be fully knowledgeable in the use of equipment and methods essential to asbestos abatement conditions.
2. The asbestos handler supervisor and the Contractor shall be responsible for the following tasks:
  - a. Ensure that individuals are wearing proper personal protective equipment and are trained in its use.
  - b. Keep entry log records and ensure that they are recorded in accordance with this Scope of Services.
  - c. Survey the work areas on regularly basis and ensure the workers personal protective equipment is properly maintained at all times.
  - d. Ensure that sufficient personal protective equipment is stored in the clean room.
  - e. Contractor shall take precautions to prevent circumstances that are immediately hazardous to life and safety, such as, but not limited to electrical, fire, fall / tripping and momentum hazards.
3. Protective clothing shall include disposable full body coveralls, foot and head covering, hard hats, protective eyewear, gloves and rubber boots (OSHA regulations 29 CFR 1926.58).
4. The use of non-disposable coveralls shall not be a substitute for protective clothing. Non-disposable coveralls shall be considered as tools upon their entry into the work area, which can be decontaminated only by a special laundering facility.
5. Contaminated clothing must be sealed in impermeable bags and the bags shall be appropriately labeled.

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6. The abatement 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.
7. Personal hygiene at the work site shall meet the following requirements:
  - a. There shall be no smoking, eating, drinking or chewing of gum or tobacco or application of cosmetics inside the work place.
  - b. Jewelry shall not be worn in any contaminated area.
8. The Contractor shall post signs during all abatement activities. Signs shall be posted at all approaches to the work place including all internal doorways. These signs shall bear the following information:

**DANGER! ASBESTOS. CANCER AND LUNG DISEASE HAZARD.  
AUTHORIZED PERSONNEL ONLY. RESPIRATORS AND  
PROTECTIVE CLOTHING ARE REQUIRED IN WORK AREA.**

9. Warning labels shall be affixed to all waste containers containing asbestos material and shall bear the following information:

**DANGER! THIS AREA CONTAINS ASBESTOS FIBERS. AVOID DUST.  
CANCER AND LUNG DISEASE HAZARD.**

**B. Worker Protection Requirements for Glove and Tent Procedures:**

1. The worker protection requirements for abatement activities by glovebag and tent procedures shall follow the requirements, except as modified herein:
  - a. Asbestos handlers involved in the glovebag and tent procedure shall wear two (2) disposable protective clothing including gloves, hood and footwear, and respiratory equipment.
  - b. All personnel must wear double-layer personal protective clothing, and clothing shall be used for the installation of the glove-bag or tent and throughout the procedure. If a decontamination unit is contiguous to the work area, only one layer of disposable personal protective clothing shall be required.

**C. Respiratory Protection and Equipment Requirements:**

1. The Abatement Contractor shall provide approved respirators and protective clothing to all workers and to all official representatives of HPD and other authorized government officials who may inspect the job site.

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2. All respiratory protection shall be Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH) approved in accordance with the provision of 30 CFR Part 11.
3. The Contractor shall provide respirators selected in accordance with OSHA standards, 29 CFR 1929.58. Workers shall be provided with personally issued and individually marked respirators. No facial hairs (beard) shall be permitted to be worn when wearing respiratory protection that requires a mask-to-face seal.
4. Polyethylene waste bags and plastic sheeting shall be six (6) mil thick with a warning label on all bags.
5. Compressors for Air Supplied to Type C Respirators shall meet the following specifications:
  - a. Breathing air shall, at a minimum, meet the requirements of the specifications for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7. 1 (1976). A minimum of one hour of reserve air must be provided for emergency evacuation.
  - b. Emergency evacuation procedures to be followed in the event of compressor failure shall be posted at all work area entrances and shall be explained by the asbestos handler supervisor to all workers prior to commencement of work.
  - c. The following shall be attached to the air compressor:
    - Breathing air temperature control
    - Continuous monitor and alarm against CO in breathing air-stream
    - Pressure gauge
  - d. Safety inspections of airline hoses shall be conducted as determined by the Engineer.
  - e. The maximum air hose length used shall be 300 feet.
6. Any Abatement Contractor using a breathing air compressor of greater than 30 cubic feet capacity and over 100 psi shall obtain a permit from the New York City Fire Department, Local District Office, 250 Livingston Street, Brooklyn, New York 11201. An operator to whom a certificate of fitness has been issued by the New York City Fire Department shall be located in close proximity to the breathing air system at all times when in use.

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7. Negative air pressure systems shall be operated in accordance with “Specification and Operating Procedures for the use of Negative Pressure Systems for Asbestos Abatement”, Guidance for Controlling Asbestos Containing Materials in Buildings, EPA report number 560 / 5-85-024 (1985). The negative pressure ventilation equipment shall operate continuously, 24 hours a day, from the establishment of isolation barriers through successful work area final air clearance.
8. A static negative air pressure of 0.02 inches (minimum) water column shall be maintained at all times in the work place during abatement to ensure that contaminated air in the work area does not filter back to uncontaminated areas.
9. A dedicated power supply for the negative pressure ventilation units shall be utilized. On loss of negative pressure or electric power, abatement shall stop immediately and shall not resume until power is restored and negative pressure ventilation equipment is operating again.
10. Negative pressure ventilation equipment shall be exhausted to the outside of the building away from occupied areas.
11. All vacuum cleaners shall be equipped with HEPA (High Efficiency Particulate Air) filters.

D. Personal Air Monitoring:

1. The Contractor shall provide personal air monitoring in accordance with OSHA (Occupational Safety and Health Administration) standards, 29 CFR 1926 . 58 (f). Such records shall be made available to HPD upon request. The Contractor shall provide a qualified air sampling professional to conduct personal air monitoring in accordance with the NIOSH The (National Institute for Occupational Safety and Health) Standard Analytical Methods for asbestos P&CAM 239, 7400 method.
2. Personal air monitoring shall be conducted during the first full day of abatement on large asbestos projects to determine accurately the airborne concentrations of asbestos to which workers may be exposed. Additional personal air samples shall be taken when the type of material being removed or the location changes.

1D.14 WORK PLACE PREPARATION

A. Work Area Preparation for Large Asbestos Project and/or Full Containment:

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

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- a. Caution signs shall be provided and displayed in accordance with section 1926.58(k)(1) of the OSHA Regulations.
  - b. The abatement Contractor shall build or supply an approved decontamination facility at all entrances and exits to the work area.
  - c. The abatement Contractor shall establish and familiarize all workers with emergency and fire evacuation procedures.
3. The following preparations for large asbestos project and / or full containment shall be performed in the stated order utilizing protective clothing and approved respirators:
- a. Before the work is begun, the abatement Contractor shall clean with a vacuum equipped with High Efficiency Particulate Air (HEPA) filters all items, debris and equipment. These items and equipment shall be removed from the work area and returned after abatement has been completed. The work area must be decontaminated as required by the specifications contained within this contract. Keep all stored items in an orderly arrangement allowing maximum access, no impediment to traffic, and providing the required protection. Cloths and filters used for cleaning shall be disposed as asbestos contaminated waste.
  - b. All areas to be completely sealed off, including but not limited to ducts, floor drains, shaft-ways, flues, doorways, corridors, windows and skylights, with 2 layers of 6-mil plastic sheeting taped securely in place.
  - c. All non-removable items, shall have air tight covering made from 2 layers of 6-mil thick plastic sheeting taped securely in place.
  - d. All floors and wall surfaces in the full isolation area must have two layers of 6-mil plastic sheeting taped securely in place to protect all surfaces from water damage and to prevent contamination of all surfaces. All floor drains shall be sealed individually prior to installation of the plastic sheeting.
  - e. Remove 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 listed to HPD.
  - f. Remove all asbestos containing waste, including all heating, ventilating and air conditioning system filters and pack and seal them in two 6-mil minimum thickness plastic bags, and dispose all asbestos-bearing waste. The filters should be replaced with new filters only after successful clearance and air monitoring.

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- g. All existing ventilating systems in the work area shall be sealed throughout the abatement operation, and an alternate ventilation system must be supplied. Install negative pressure ventilation units utilizing appropriate HEPA filters to exhaust air from the work area. These units should be sized according to the area being worked. Provision shall be provided for air to enter the work area, and to replace the air exhausted through these units.

1D.15 WORK AREA PREPARATION FOR GLOVE-BAG PROCEDURES

- A. The following work area preparations shall be followed prior to the conduct of abatement activities by glove-bag procedures:
  - 1. Abatement shall not commence until work area preparation is completed as stated in Specification.
  - 2. The workplace shall be vacated by tenants prior to any work area preparation and until the project is completed.
  - 3. Signs and hazard tape shall be posted on doorways leading to the workplace in accordance with OSHA 29CFR 1926 . 58 (k) (1).
  - 4. HVAC systems, shaft ways, flues and stairwells shall be isolated by the sealing of all vents within the workplace with a double layer of 6-mil plastic.
  - 5. Pipe insulation shall be wrapped in 6-mil polyethylene sheeting and sealed airtight with duct tape.
  - 6. Debris shall be removed within a three-foot radius of the floor area directly below the area to be abated. If this debris contains asbestos material, it shall be treated appropriately as specified elsewhere in this specification.

1D.16 WORK AREA PREPARATION FOR TENT PROCEDURES

- 1. Tent procedures shall be limited to the abatement.
- 2. The workplace shall be vacated prior to any work in the area, upon full completion.
- 3. Signs and hazard tape shall be posted on doorways leading to the work place in accordance with OSHA 29CFR 1926 . 58 (k) (1).
- 4. HVAC systems, shaft ways, flues and stairwells shall be isolated by the sealing of all vents within the work area with a double layer of 6-mil plastic.

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5. Tent procedures shall be accomplished in a constructed plastic tent. The tent shall be of 6-mil PVC at a minimum, with seams heat-sealed, or double-folded, stapled and taped airtight and then taped flush with the adjacent tent wall. This is a single use barrier and shall not be reused once dismantled or collapsed.
6. The tent shall be attached to the surface with an airtight seal except for an appropriate section to allow fresh air into the tent.

1D.17 DECONTAMINATION

A. Worker Decontamination Enclosure System:

1. The Contractor shall provide a decontamination enclosure system in accordance with applicable standards. The standards shall consist of a serial arrangement of rooms or spaces adjacent to work areas. Each area shall be clearly identified and separated from the other areas by plastic sheet curtained doors, approved air locks, or other arrangements designed to minimize fiber or air transfer as people pass between areas.
2. Full containment procedures developed for abatement of quantities of ACM in the large asbestos project size shall require a full decontamination enclosure system facility.
3. For full containment procedures developed for abatement of quantities of ACM in the small asbestos project size shall require at a minimum, a clean room and a shower room separated from each other by an airlock.
4. Glove-bag, tent and non-friable procedures will require a shower and clean room.
5. The decontamination rooms are described below:
  - a. Clean Room: In this room persons remove and leave all street clothes and put on clean disposable protective clothing. Approved respiratory protection equipment is also picked up in this area. **NO ASBESTOS CONTAMINATED ITEMS ARE EVER PERMITTED IN THIS ROOM.**
  - b. Shower Room: Workers wearing protective clothing enter this room in transit from the clean room and to exit the work area, showing after they have undressed in the equipment room. **THIS IS A CONTAMINATED AREA.**
  - c. Equipment Room: Work equipment, tools, footwear, and all contaminated work clothing are left here. This is a change and transit area for people. **THIS IS A CONTAMINATED AREA.**

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6. The Contractor shall provide a permanently bound log book of minimum 8-1/2" x 11" size that shall contain on title page the project address; name, address and phone number of abatement contractor; emergency numbers including, but not limited to local Fire / Rescue Department. The log shall contain day-to-day record of personnel entering the work area, and any significant events occurring during the abatement project.
  
7. Workers and visitors shall observe the following work area entry and exit procedures:
  - a. All individuals who enter the work area shall sign a log, located in the clean room, upon each entry and exit.
  
  - b. All individuals who enter a clean room shall remove street clothing, and put on clean disposable protective clothing, then additional clothing as needed, and respirator.
  
  - c. Any additional clothing worn must be treated as contaminated and left in the decontamination unit. Under no circumstances shall an individual enter the work area without having protective clothing on.
  
  - d. After putting on protective clothing, individual shall proceed to work area.
  
  - e. Before leaving the work area, each individual shall remove all gross contamination and debris from the coveralls and outside of the respirators by wet cleaning, and/or HEPA vacuuming.
  
  - f. The individual shall proceed to the equipment room and remove all protective equipment except the approved respirator. Extra work clothing may be stored in this room. Disposable coveralls are placed in a bag for disposal with other material. The worker shall then proceed into the shower room. Respirators shall be taken off after they have been washed free of dust to prevent inhalation of fibers deposited on the respirator during removal/abatement.
  
  - g. After showering, the individual shall move to the clean room and dresses in street clothing prior to exiting.
  
  - h. Respirators shall be picked up, washed thoroughly, dried, wrapped and stored in the clean room.
  
8. 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. The usage of the respirator filter shall not exceed the manufacturer's recommendation.

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9. Work footwear shall remain inside the contaminated area until completion of the job and should be thoroughly cleaned at that time.
10. The Asbestos Contractor shall provide clean change areas for the workers. Change areas shall be equipped with separate storage facilities for protective clothing and street clothing.

1D.18 WORKER DECONTAMINATION SYSTEM FOR GLOVEBAG, TENT AND NON-FRIABLE MATERIALS ABATEMENT PROCEDURES

- A. Glovebag, tent and non-friable materials abatement procedures will require a remote shower and clean room separated from each other by an airlock.
- B. Upon completion of work and before exiting the work area, all workers shall follow the decontamination procedures as modified herein:
  1. Outer layer of protective clothing and respirator shall be wet wiped and HEPA vacuumed inside the work area.
  2. Outer layer of protective clothing shall be removed and bagged before exiting the project work area.
  3. Worker shall proceed to remote shower for decontamination.
  4. Inner layer of protective clothing shall be removed inside the shower leaving the respirator to be removed last after wetting of the respirator face piece and head of the worker.
- C. In the event that the decontamination unit (with shower and clean room) is adjacent to the work area, the worker shall HEPA vacuum and wet clean the disposable protective equipment.

1D.19 WASTE DECONTAMINATION ENCLOSURE SYSTEM

- A. The Waste Decontamination Enclosure System shall be developed and used as outlined in the regulations promulgated under Title 15, Chapter 1 Rules of the City of New York.
- B. The waste decontamination enclosure system shall be developed when required by regulations promulgated under Title 15, Chapter 1 Rules of the City of New York for compliance during the performance of full isolation procedures.

1D.20 ABATEMENT PROCEDURES

- A. ACM Disturbance, Handling and Removal Procedures:

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1. The following procedures shall be followed during the conduct of all abatement activities required by this scope of services unless otherwise specified elsewhere in this scope:
    - a. Abatement of asbestos containing materials shall be by wet methods. The asbestos containing 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 or equivalent as approved by Architect/Engineer. The contractor shall follow manufacturers instructions for the mixing and application of the product. Spraying shall be done immediately prior to asbestos removal. The asbestos material shall be kept wet throughout its removal and storage.
    - b. Removal of the asbestos containing material shall be done in small sections by two-person teams, on staging platforms if needed. The wet material from each section shall be immediately packed and promptly sealed into labeled 6-mil plastic bags. Water-soaked fallen material shall not be left out of bags overnight, or for more than one hour on hot days, to prevent loss of its water content due to evaporation. The outside of all containers shall be wet-cleaned or HEPA vacuumed before leaving the equipment area.
    - c. Since plastic bags will not be effective when wood or wire lath and similar sharp-edged materials are involved in asbestos removal, the use of lead-tight drums shall be required for the packing of such materials. The packing of the lead-tight drums shall occur promptly upon removal of the double-bagged waste from the decontamination enclosure system. The drums shall be lined with 6-mil plastic to prevent contamination and thus to allow for drum reuse. Bags and drums shall be marked with the label prescribed by 29 CFR 1926.58 (K) (2).
- NOTE:
- [1] The plastic bags must be free of punctures.
  - [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.
2. After completion of all stripping work, surfaces from which asbestos-containing materials have been removed shall be cleaned.
  3. When all asbestos removal is completed, the entire work area shall be cleaned as specified in section 6.0. All plastic coverings of fixtures and non-removable equipment shall be removed and packaged for disposal as asbestos waste. All disposable equipment shall be packaged for disposal as asbestos waste.

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4. All accessory equipment shall be cleaned, moved to the equipment room and decontaminated or sealed in two layers of six mil plastic for removal to non-contaminated areas of the building.
5. All accumulated water (in contaminated areas) shall be collected and placed into plastic lined leak-tight drums for disposal or shall be filtered to five microns prior to discharge to a waste line.
6. Plastic sheeting used to protect floors and walls shall be carefully removed and rolled up with the contaminated portion inside and disposed of as asbestos bearing waste.
7. Final clean up of work area may commence after completion of these cleaning operations.
8. The following steps may be performed without utilizing protective clothing:
  - a. After the area is found to be in compliance with this Scope of Services, the following work shall be performed by the contractor:
    - All entrances and exits shall be unsealed.
    - Plastic sheeting, tape and any other debris shall be disposed of in sealable plastic bags labeled as contaminated waste.
    - Cloths or sponges used in the cleaning operation shall be disposed of as contaminated waste.

1D.21 GLOVE-BAG REMOVAL PROCEDURES

- A. The following procedures shall be followed during the conduct of abatement activities by glove-bag procedures:
  1. Stationary glove-bag procedures on pipe lagging shall be done using commercially available glove-bags of a minimum of 6-mil clear plastic, appropriately sized for the project. These glove-bags shall not be shifted, moved, re-installed or re-used once used for ACM removal.
  2. Glove-bag procedures shall be conducted by workers specifically experienced in glove-bag procedures.
  3. The glove-bag procedure shall be performed in accordance with the following:
    - a. All necessary tools and materials shall be brought into the work area before the glove-bag procedure begins.

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- b. The pipe insulation diameter worked on shall not exceed one half of the bag working length above the attached gloves.
- c. The ACM within the secured glove-bag shall be wetted with amended water prior to stripping.
- d. The bag shall be attached with duct tape, placed securely around the insulation, forming a smooth seal. A gasket material may be inserted between the tape and bag to facilitate bag movement. The bag shall be securely attached to the insulation in a manner to prevent air transfer.
- e. The integrity of the glove-bag seal shall be smoke tested. The contents of the smoke tube shall be aspirated through the water port access sleeve of the bag. After twist sealing the access sleeve, the bag shall be squeezed gently to check for leakage points which are then taped airtight.
- f. After the insulation has been removed, the pipe shall be sprayed with amended and brush-scrubbed to remove all visible ACM. The pipe, the interior of the bag, and the tools shall then be sprayed with amended water. The enclosed volume shall be misted and time shall be allowed for the mist to settle out before breaking the seal to shift or remove the glove-bag.
- g. Any pipe insulation of non-asbestos bearing materials which is to remain in place, that is adjacent to the asbestos containing pipe insulation being removed, shall have one foot of the adjacent length removed as asbestos waste.
- h. Any pipe insulation ends created by this procedure shall be:
  - sealed with encapsulant prior to bag removal, or
  - thoroughly wetted before bag removal and sealed with wettable cloth and caps and spray glue or any combination of these materials immediately following bag removal or shifting.
- i. Upon removal of air in the bag with a HEPA vacuum, the tool pouch shall be separated from the bag prior to disposal by twisting it by the wall to which it is attached several times, and taping the twist to hold it in place, thus sealing twist. Alternatively, the tools can be pulled through with one or both glove insets, thus turning the gloves inside out. The glove(s) is / are then twist sealed forming a new pouch, tape and served mid-seal forming two separate bags.

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- j. A HEPA vacuum shall be used for evacuation of the glove-bag in preparation for removal of the bag from the pipe or duct, for clean-up in the event of a spill, and for post project clean-up.
- k. With the glove-bag collapsed and the ACM in the bottom of the bag, the bag shall be twisted several times and taped to seal that section during bag removal.
- l. A 6-mil plastic bag shall be slipped around the glove-bag while it is still attached to the pipe. The bag shall be detached from the pipe by removing the tape or cutting the top with a blunt scissors.
- m. The asbestos-containing waste, the clean-up materials, and protective clothing shall be wetted sufficiently, double-bagged minimizing air content, sealed separately, and disposed of in conformance with this Scope of Services.

1D.22 TENT REMOVAL PROCEDURES

- A. The following procedures shall be followed during the conduct of abatement activities by tent procedures:
  - 1. The tent shall be attached to the surface to produce an airtight seal except for an appropriate section to allow for make-up air into the tent.
  - 2. A HEPA vacuum shall be used to continuously exhaust the enclosed area as specified under NYC Title 15, Chapter 1, Section 126. Engineering Controls, except that the negative air pressure in sub-section 116(c) of section 126 shall be demonstrated by smoke testing. The hose shall be attached securely and airtight through the tent wall at the most remote location possible from the ACM to be disturbed. A minimum of two volume changes per hour is required.
  - 3. Removal of ACM shall be by wet methods.
  - 4. ACM removed shall be immediately placed in a leak tight container without dropping it.
  - 5. Upon completion of abatement, and prior to tent collapse, the enclosed surfaces shall:
    - a. - be wet cleaned.
    - b. - be permitted sufficient time to dry.
    - c. - be lightly encapsulated to lockdown residual asbestos.

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6. Upon barrier disturbance, loss of engineering controls, or termination of tent usage, the tent and the enclosed surfaces shall be treated according this Scope of Services.
7. The bagged waste shall be wet cleaned or HEPA vacuumed and then transferred outside the tent, double bagged, and appropriately handled prior to disposal.
8. The outer disposable suit (if 2 suits are worn) shall be removed and remain in the tent upon exiting. After the completion of tent disposal and work site cleanup the workers shall immediately proceed to a shower at the work site. The inner disposable suit and respirator shall be removed in the shower after appropriate wetting. The disposable clothing shall be disposed of as asbestos-containing waste material. The workers shall then fully and vigorously shower with supplied liquid bath soap, shampoo, and clean, dry towels.
9. The HEPA vacuum shall be used to filter a minimum of 6 volume changes through the tent after completion of abatement but prior to collapse of the tent / barrier.
10. The tent shall be collapsed inward, enclosing the contaminated clothing. This contaminated material shall be disposed of in another plastic bag. The HEPA vacuum shall be decontaminated and sealed.

1D.23 NON-FRIABLE ACM REMOVAL PROCEDURES

- A. Architect/Engineer reserves the right to make the final determination of the friability of asbestos that shall include the following materials; built-up roof, roof shingle, flashing cement, parapet wall tar, linoleum floor sheeting and vinyl asbestos floor tile.
- B. These materials shall be abated in compliance with the NYCDEP Asbestos Control Program regulations under Title 15, Chapter 1 and / or NYSDOL Industrial Code 56, and any applicable variances (AV83, AV85, AV90, Attachment F, etc.). Only wet methods, manual labor, hand tools or an approved alternate will be used for abatement.
- C. Abatement of non-friable asbestos containing materials from roof shall not commence prior to coordinating the scheduled start and completion dates with General Contractor and Architect/Engineer.
- D. Personal protective equipment shall be used by all workers in accordance with this Scope of Services.
- E. A remote shower and clean room shall be used by all workers.
- F. All openings (including but not limited to windows, doors, ducts, grilles) on the roof level and the floor below shall be sealed with two layers of 6-mil plastic sheeting. The

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materials removed shall be disposed of as asbestos containing waste in accordance with this Scope of Services.

- G. Area air monitoring shall be performed by The Third Party Air Monitor. Visible emissions shall transform this abatement activity into an asbestos project of appropriate size at no additional cost to HPD.
- H. All other applicable provisions of NYS Industrial Code Rule 56 and NYC Title 15, Chapter 1 shall comply.

1D.24 CLEAN-UP PROCEDURES

- A. Preliminary Clean-Up Procedures.
  - 1. The following clean-up requirements shall be implemented on large asbestos projects:
    - a. Visible accumulations of loose asbestos-containing waste material shall be cleaned up.
    - b. Material shall be maintained in a wet state until cleaned up.
  - 2. Visible accumulations of asbestos-containing waste material shall be containerized, utilizing non-metallic dustpans and non-metallic squeegees or HEPA vacuums.
  - 3. Metal shovels shall not be used to pick up or move accumulated asbestos-containing waste material or any other debris in the vicinity of isolation or surface barriers.
  - 4. The waste decontamination enclosure system shall be wet cleaned twice, by using wet cleaning methods upon completion of waste removal. When the decontamination enclosure shower room alternates as a waste container wash room, the shower room shall be washed immediately with cloths or mops saturated with a detergent solution prior to wet cleaning.
  - 5. The worker decontamination enclosure system shall be wet clean / HEPA vacuumed, as appropriate, after each shift change and meal break.
  - 6. Excessive water accumulation or flooding in the work area shall require work to stop until the water is collected and disposed of properly.

1D. 25 FINAL CLEAN UP OF WORK AREA

- A. Additional clean-up procedures shall be performed in the order set forth below prior to commencement of clearance air monitoring.

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1. After the removal of visible accumulations of asbestos-containing waste material, a HEPA vacuuming shall be performed on all surfaces. To pick up excess water and saturated debris, a wet-dry shop HEPA vacuum, dedicated to asbestos abatement, may be used.
2. All surfaces in the work area shall be wet cleaned (first cleaning).
3. The cleaned layer of the surface barriers shall be removed from walls and floors. The isolation barriers shall remain in place throughout cleanup. Decontamination enclosure systems shall remain in place and be utilized.
4. Upon completion of the first cleaning, the work area shall be vacated for 12 hours to allow fibers to settle. All objects and surfaces in the work area shall be HEPA-vacuumed and wet cleaned a second time. The remaining plastic surface barriers shall be removed.
5. Upon completion of the second cleaning, the work area shall be vacated for 4 hours before wet cleaning and/or HEPA vacuuming all surfaces in the work area for a third cleaning.
6. As a pre-requisite to commencement of clearance air monitoring, a thorough visual inspection shall verify the absence of asbestos-containing waste material (e.g. dust).
7. All containerized waste shall be removed from the work area through the decontamination enclosures and the holding area.
8. All tools and equipment shall be removed from the work area and decontaminated in the waste decontamination enclosure system. Cloths, mops, and other cleaning aids shall be disposed of as asbestos-containing waste material.
9. The Abatement Contractor shall request the Third Party Air Monitor (Certified Testing Laboratory) to perform clearance air monitoring within twenty-four (24) hours after completion of all cleaning work. If non-compliance occurs, the contractor shall repeat cleaning and measurement until the work area is in compliance with this Scope of Services.

NOTE: FINAL PHASE MICROSCOPY (PCM) FIBER COUNT BY NIOSH 7400 METHOD ANALYTICAL DATA, TO BE SUBMITTED TO ARCHITECT/ENGINEER

1D.26 WASTE DISPOSAL REQUIREMENTS

- A. Disposal of Asbestos Containing Waste

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1. The contractor shall transport all asbestos containing waste generated during all abatement activities, covered under this contract to a sanitary landfill disposal site approved by the U.S. Environmental Protection Agency.
2. All plastic bags containing asbestos waste shall be removed and placed in the approved landfill. If bags are damaged, they shall be placed in additional bag(s) and sealed or placed in leak tight drums. These drums shall not be used for any purpose except for transporting asbestos material. Contaminated drums shall be disposed of as asbestos waste.
3. Workers unloading the sealed drums and machinery operators will wear respirators when handling materials at the disposal site.
4. The bags may be removed from the drums into the burial site. The drums may be reused. However, if a bag is broken or damaged, the entire drum shall be buried.

1D.27 WASTE TRANSPORTER PERMIT

- A. 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.

NOTE: ALL COPIES OF THE MANIFEST, THAT DOCUMENT ASBESTOS WASTE AND INDICATING WHERE SAME WILL BE TRANSFORMED, ARE TO BE SUBMITTED TO ARCHITECT/ENGINEER.

- B. The Contractor will also be required to comply with U.S. Environmental Protection Agency regulations (29 CFR 1910 for collecting, packing, transporting and disposing of asbestos).

END OF SECTION