

## Chapter 1 - *Asbestos Control Program*

### Subchapter

- A Scope, Application, Definitions and Variances
- B Training and Certification Provisions
- C Reporting and Filing Requirements, Plans and Fees
- D Air and Bulk Sampling, Monitoring and Analysis
- E Personnel Protection and Equipment Specifications
- F Large Asbestos Project Procedures
- G Pre-Demolition Abatement Activity Procedures

### Subchapter A

#### *Scope, Application, Definitions and Variances*

##### **§1-01 Scope and Application**

##### **§1-02 Definitions**

##### **§1-03 Variances**

**§1-01 Scope and Application.** (a) The following asbestos control program regulations, § 1-01 et seq., shall apply to all asbestos abatement activities occurring within the City of New York.

(b) Every owner of a building where asbestos abatement activity occurs shall be responsible for the performance of the asbestos abatement activities by his/her agent, contractor, employee, or other representative.

(c) Every contractor and worker engaged in asbestos abatement activities shall comply with the provisions of this chapter except as otherwise specified.

(d) Every investigator engaged to identify the presence and evaluate the condition of asbestos in a building or structure shall comply with the provisions of this chapter except as otherwise specified.

(e) No person shall knowingly make a false statement or submit a false document to the Department as to any matter concerning an asbestos project or any document required to be filed under these Rules.

(f) The Department may inspect at a reasonable time and in a reasonable manner anything which affects or may affect the emission or release of asbestos fibers or the disturbance of asbestos-containing material, including but not limited to the premises where an asbestos project is being conducted, or the premises for which a notification has been filed under § 1-21 - § 1-26 of these Rules, or the premises where an application has been filed with the Department

of Buildings for a plan or permit approval.

(g) No person shall interfere with or obstruct any employee of the Department in the performance of their official duties, including but not limited to the performance of inspections.

### **§1-02 Definitions.**

**Abatement.** “Abatement” shall mean any and all procedures physically taken to control fiber release from asbestos-containing materials. This includes removal, encapsulation, enclosure and repair.

**Abatement activities.** “Abatement Activities” shall mean all activities from the initiation of work area preparation through successful clearance air monitoring performed at the conclusion of an asbestos project or minor project.

**Aggressive sampling.** “Aggressive Sampling” shall mean a method of sampling in which the individual collecting the air sample creates activity by the use of mechanical equipment during the sampling period to stir up settled dust and simulate activity in that area of the building.

**AIHA.** “AIHA” shall mean the American Industrial Hygiene Association.

**Airlock.** “Airlock” shall mean a system for permitting entrance and exit while restricting air movement between a contaminated area and an uncontaminated area. It consists of two curtained doorways separated by a distance of at least three feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

**Air sampling.** “Air sampling” shall mean the process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure utilized for asbestos follows the NIOSH Standard Analytical Method 7400 or the provisional transmission electron microscopy methods developed by the USEPA and/or National Institute of Science and Technology which are utilized for lower detectability and specific fiber identification.

**Ambient air monitoring.** “Ambient air monitoring” shall mean measurement or determination of airborne asbestos fiber concentrations outside but in the general vicinity of the worksite.

**Amended water.** “Amended water” shall mean water to which a surfactant has been added.

**ANSI.** “ANSI” shall mean the American National Standards Institute.

**Area air sampling.** “Area air sampling” shall mean any form of air sampling or monitoring where the sampling device is placed at some stationary location.

**Asbestos.** “Asbestos” shall mean any hydrated mineral silicate separable into commercially usable fibers, including but not limited to chrysotile (serpentine), amosite (cummingtonite-grunerite), crocidolite (riebeckite), tremolite, anthrophyllite and actinolite.

**Asbestos-containing material.** “Asbestos-containing material” (ACM) shall mean asbestos or any material containing more than one percent asbestos.

**Asbestos-containing waste material.** “Asbestos-containing waste material” shall mean asbestos-containing material or asbestos-contaminated objects requiring disposal.

**Asbestos-contaminated objects.** “Asbestos-contaminated objects” shall mean any objects which have been contaminated by asbestos or asbestos-containing material.

**Asbestos handler.** “Asbestos handler” shall mean an individual certified by the Department who disturbs, removes, encapsulates, repairs, or encloses friable asbestos material.

**Asbestos handler supervisor.** “Asbestos handler supervisor” shall mean an individual certified by the Department who supervises the handlers during an asbestos project and ensures that proper asbestos abatement procedures as well as individual safety procedures are being adhered to.

**Asbestos Inspection Report.** “Asbestos Inspection Report” shall mean a report on the condition of a building or structure in relation to the presence and condition of asbestos therein.

**Asbestos investigator.** “Asbestos investigator” shall mean an individual certified by the Commissioner as having satisfactorily demonstrated his or her ability to identify the presence and evaluate the condition of asbestos in a building or structure.

**Asbestos project.** “Asbestos project” shall mean any form of work performed in connection with the alteration, renovation, modification or demolition of a building or structure which will disturb (e.g., remove, enclose, encapsulate) more than 25 linear feet or more than 10 square feet of friable asbestos-containing material.

**ASTM.** “ASTM” shall mean the American Society For Testing and Materials.

**Authorized visitor.** “Authorized visitor” shall mean the building owner and his/her representative, and any representative of a regulatory or other agency having jurisdiction over the project.

**Boiler room equipment.** “Boiler room equipment” or “fuel-burning equipment” shall mean equipment designed to burn fuel for the purpose of generating hot water, steam, and/or heat, including all ancillary equipment and associated piping. For boiler rooms other than those located in electric and steam utility generating stations, the ancillary equipment and associated piping shall be limited to that within the room containing the main equipment; or where there is no such room, located on the floor where the main equipment is located.

**Building owner.** “Building owner” shall mean the person in whom legal title to the premises is vested unless the premises are held in land trust, in which instance building owner means the person in whom beneficial title is vested.

**Certified industrial hygienist.** “Certified industrial hygienist” (CIH) shall mean an individual with a minimum of five years experience as an industrial hygienist and who has successfully completed both levels of the examination administered by the American Board of Industrial Hygiene and who is currently certified by that Board.

**Certified safety professional (CSP).** “Certified safety professional” (CSP) shall mean an individual having a bachelor’s degree from an accredited college or university and a minimum of four years experience as a safety professional and who has successfully completed both levels of the examination administered by the Board of Certified Safety Professionals and who is currently certified by that Board.

**Clean room.** “Clean room” shall mean an uncontaminated area or room which is part of the worker decontamination enclosure system with provisions for storage of workers’ street clothes and protective equipment.

**Clearance air monitoring.** “Clearance air monitoring” shall mean the employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers, and shall be performed as the final abatement activity.

**Commissioner.** “Commissioner” shall mean the Commissioner of the New York City Department of Environmental Protection.

**Contractor.** “Contractor” shall mean a public authority or any other governmental agency or instrumentality thereof, self-employed person, company, unincorporated association, firm, partnership or corporation and any owner or operator thereof, which engages in an asbestos project or employs persons engaged in an asbestos project.

**Curtained doorway.** “Curtained doorway” shall mean a device which consists of at least three overlapping sheets of plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets shall have weights attached to the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.

**Decontamination enclosure system.** “Decontamination enclosure system” shall mean a series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of workers, materials, waste containers, and equipment.

**Demolition.** “Demolition” shall mean the dismantling or razing of a building, including all operations incidental thereto (except for asbestos abatement activities), for which a demolition permit from the New York City Buildings Department is required.

**Department or DEP.** “Department” or “DEP” shall mean the New York City Department of Environmental Protection.

**Disturb.** “Disturb” shall mean any action taken which may alter, change, or stir, such as but not limited to the removal, encapsulation, enclosure or repair of asbestos-containing material.

**ELAP.** “ELAP” shall mean the Environmental Laboratory Approval Program administered by the New York State Department of Health.

**Encapsulant (sealant) or encapsulating agent.** “Encapsulant (sealant) or encapsulating agent” shall mean pigmented (non-transparent) liquid material which can be applied to asbestos-containing material or the bare surfaces exposed after an abatement which temporarily controls the possible release of asbestos fibers from the material or surface either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).

**Encapsulation.** “Encapsulation” shall mean the coating or spraying of asbestos-containing material or the bare surfaces exposed after an abatement with a pigmented (non-transparent) sealant.

**Enclosure.** “Enclosure” shall mean the construction of airtight walls and ceilings between the ACM and the facility environment, or around surfaces coated with ACM, or any other appropriate procedure as determined by the Department which prevents the release of asbestos fibers.

**EPA.** “EPA” or “USEPA” shall mean the United States Environmental Protection Agency.

**Equipment room.** “Equipment room” shall mean a contaminated area or room which is part of the worker decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.

**Fiber.** “Fiber” shall mean an acicular single crystal or a similarity elongated polycrystalline aggregate which displays some resemblance to organic fibers by having such properties as flexibility, high aspect ratio, silky luster, axial lineation, and others, and which has attained its shape primarily through growth rather than cleavage.

**Fixed object.** “Fixed object” shall mean a unit of equipment or furniture in the work area which cannot be removed from the work area.

**Friable asbestos material.** “Friable asbestos material” shall mean any asbestos or any ACM that can be crumbled, pulverized or reduced to powder when dry, by hand or other mechanical pressure.

**Glovebag technique.** “Glovebag technique” shall mean a method for removing friable asbestos-containing material from heating, ventilation and air conditioning (HVAC) ducts, short

pipings runs, valves, joints, elbows, and other nonplanar surfaces. The glovebag assembly is a manufactured device consisting of a large bag (constructed of at least 6-mil transparent plastic), two inward-projecting long sleeve gloves, one inward-projecting waterwand sleeve, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process.

**HEPA filter.** “HEPA filter” shall mean a high efficiency particulate air filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers mass median aerodynamic equivalent diameter.

**HEPA vacuum equipment.** “HEPA vacuum equipment” shall mean vacuuming equipment with a HEPA filter.

**Holding area.** “Holding area” shall mean a chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.

**Homogeneous work area.** “Homogeneous work area” shall mean a portion of the work area which contains one type of asbestos-containing material and/or where one type of abatement is used.

**Industrial hygiene.** “Industrial hygiene” shall mean that science and art devoted to the recognition, evaluation and control of those environmental factors or stresses, arising in or from the work place, which may cause sickness, impaired health and well being, or significant discomfort and inefficiency among workers or among the citizens of the community.

**Industrial hygienist.** “Industrial hygienist” shall mean an individual having a college or university degree or degrees in engineering, chemistry, physics, or medicine or related biological sciences who, by virtue of special studies and training, has acquired competence in industrial hygiene. Such special studies and training must have been sufficient in all of the above cognate sciences to provide the abilities:

- (1) To recognize the environmental factors and to understand their effect on people and their well being; and
- (2) To evaluate, on the basis of experience and with the aid of quantitative measurement techniques, the magnitude of these stresses in terms of ability to impair people’s health and well being; and
- (3) To prescribe methods to eliminate, control or reduce such stresses when necessary to alleviate their effects.

**Isolation barrier.** “Isolation barrier” shall mean the construction of partitions, the placement of solid materials, and the plasticizing of apertures to seal off the work place from surrounding areas and to contain asbestos fibers in the work area.

**Large asbestos project.** “Large asbestos project” shall mean an asbestos project involving the disturbance (e.g., removal, enclosure, encapsulation) of 260 linear feet or more of friable asbestos-containing material or 160 square feet or more of friable asbestos-containing material.

**Log.** “Log” shall mean an official record of all activities that occurred during the project and it shall identify the building owner, agent, contractor, and workers, and other pertinent information (e.g., equipment malfunctions, contamination beyond the work area, etc.).

**Minor project.** “Minor project” shall mean a project involving the disturbance (e.g. removal, enclosure, encapsulation, repair) of 25 linear feet or less of friable asbestos containing material or 10 square feet or less of friable asbestos containing material.

**Movable object.** “Movable object” shall mean a unit of equipment or furniture in the work area which can be removed from the work area.

**Negative air pressure equipment.** “Negative air pressure equipment” shall mean a portable local exhaust system equipped with HEPA filtration. The system shall be capable of creating a negative pressure differential between the outside and inside of the work area.

**NIOSH.** “NIOSH” shall mean the National Institute for Occupational Safety and Health.

**NYSDOH.** “NYSDOH” shall mean the New York State Department of Health.

**Occupied Area.** “Occupied area” shall mean an area of the worksite where abatement is not taking place and where personnel or occupants normally function or where workers are not required to use personal protective equipment.

**OSHA.** “OSHA” shall mean the United States Occupational Safety and Health Administration.

**Outside air.** “Outside air” shall mean the air outside the work place.

**Person.** “Person” means any individual, partnership, company, corporation, association, firm, organization, governmental agency, administration or department, or any other group of individuals, or any officer or employee thereof.

**Personal air monitoring.** “Personal air monitoring” shall mean a method used to determine employees’ exposure to airborne fibers. The sample is collected outside the respirator in the worker’s breathing zone.

**Personal protective equipment.** “Personal protective equipment” (PPE) shall mean appropriate protective clothing, gloves, eye protection, footwear, head gear.

**Phase contrast microscopy.** “Phase contrast microscopy” (PCM) shall mean the

measurement protocol for the assessment of the fiber content of air. (NIOSH Method 7400).

**Physician.** “Physician” shall mean an individual licensed or otherwise authorized under Article 131 §65.22 of the New York State Education Law.

**Plasticize.** “Plasticize” shall mean to cover floors and walls with plastic sheeting as herein specified or by using spray plastics as acceptable to the Department.

**Polarized light microscopy.** “Polarized light microscopy” (PLM) shall mean the measurement protocol for the assessment of the asbestos content of bulk materials. (Interim Method for the Determination of Asbestiform Materials in Bulk Insulation Samples- 40 CFR Part 763, Subpart F, Appendix A as amended on September 1, 1982)

**Professional engineer.** “Professional engineer” (PE) shall mean an individual licensed or otherwise authorized by the New York State Department of Education, Division of Professional Licensing Services, to practice engineering and use the title Professional Engineer.

**Qualitative fit test.** “Qualitative fit test” shall mean the individual test subject’s responding (either voluntarily or involuntarily) to a chemical challenge outside the respirator face piece. Three of the most popular methods include:

- (1) Irritant smoke test;
- (2) Odorous vapor test;
- (3) Taste test.

**Quantitative fit test.** “Quantitative fit test” shall mean exposing the respirator wearer to a test atmosphere containing an easily detectable, nontoxic aerosol, vapor or gas as the test agent. Instrumentation, which samples the test atmosphere and the air inside the face piece of the respirator, is used to measure quantitatively the leakage into the respirator. There are a number of test atmospheres, test agents, and exercises to perform during the tests.

**Registered architect.** “Registered architect”(RA) shall mean an individual licensed or otherwise authorized by the New York State Department of Education, Division of Professional Licensing Services, to practice architecture and use the title Registered Architect.

**Removal.** “Removal” shall mean the stripping of any asbestos-containing materials from surfaces or components of a facility or taking out structural components in accordance with 40 CFR 61 Subparts A and M.

**Renovation.** “Renovation” shall mean an addition or alteration or change or modification of a building or the service equipment thereof, that is not classified as an ordinary repair as defined in §27-125 of the Administrative Code of the City of New York.

**Repair.** “Repair” shall mean corrective action using specified work practices e.g. glovebag, plastic tent procedures, etc. to minimize the likelihood of fiber release from minimally

damaged areas of ACM.

**Replacement material.** “Replacement material” shall mean any material used to replace ACM that contains less than .01 percent asbestos.

**Shift.** “Shift” shall mean a worker’s, or simultaneous group of workers’, complete daily term of work.

**Shower room.** “Shower room” shall mean a room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.

**Small asbestos project.** “Small asbestos project” shall mean an asbestos project involving the disturbance (e.g., removal, enclosure, encapsulation) of more than 25 and less than 260 linear feet of friable asbestos-containing material or more than 10 and less than 160 square feet of friable asbestos-containing material.

**Staging area.** “Staging area” shall mean the work area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

**Strip.** “Strip” shall mean to remove friable asbestos materials from any part of the facility.

**Structural member.** “Structural member” shall mean any load-supporting member of a facility, such as beams and load-supporting walls, or any nonload-supporting member, such as ceiling and nonload-supporting walls.

**Surface barriers.** “Surface barriers” shall mean the plasticizing of walls, floors, and fixed objects within the work area to prevent contamination from subsequent work.

**Surfactant.** “Surfactant” shall mean a chemical wetting agent added to water to improve penetration.

**Transmission electron microscopy (TEM).** “Transmission electron microscopy (TEM)” shall mean the measurement protocol for the assessment of the asbestos fiber content of air. (Interim Transmission Electron Microscopy Analytical Methods-40 CFR Part 763, Subpart E, Appendix A)

**Visible emissions.** “Visible emissions” shall mean any emissions containing particulate material that are visually detectable without the aid of instruments.

**Washroom.** “Washroom” shall mean a room between the work area and the holding area in the equipment decontamination enclosure system where equipment and waste containers are wet cleaned and/or HEPA vacuumed prior to disposal.

**Waste decontamination enclosure system.** “Waste decontamination enclosure system” shall mean the decontamination enclosure system designated for the controlled transfer of

materials and equipment, consisting of a washroom and a holding area.

**Wet cleaning.** “Wet cleaning” shall mean the removal of asbestos fibers from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water.

**Wet methods.** “Wet methods” shall mean the use of amended water or removal encapsulants to minimize the generation of fibers during ACM disturbance.

**Work area.** “Work area” shall mean designated rooms, spaces, or areas of the building or structure where asbestos abatement activities take place. For glovebag procedures, the work area shall also include the areas contiguous to where the procedure takes place.

**Worker.** “Worker” shall mean asbestos handler and/or asbestos handler supervisor.

**Worker decontamination enclosure system.** “Worker decontamination enclosure system” shall mean that portion of a decontamination enclosure system designed for controlled passage of workers, and other individuals and authorized visitors, consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area by airlocks and curtained doorways.

**Work place.** “Work place” shall mean the work area and the decontamination enclosure system(s).

**Work site.** “Work site” shall mean premises where asbestos abatement activity is taking place, and may be composed of one or more work areas.

**§1-03 Variances.** (a) Application for any variance from these rules or Part 56 of Title 12 of New York Codes, Rules and Regulations (Subparts 56-4 through 56-17) shall be made directly to the Department at least two weeks prior to the commencement of work. Work involving a variance may not commence prior to the receipt of the Department’s approval of the application.

(b) The Department’s “Asbestos Variance Application” (ACP9) form shall be submitted by the building owner or authorized agent, and shall include the following information:

(1) Identification of those portions of the rules for which a variance is requested, providing each numbered section and subsection;

(2) Explanations as to why the procedures required by the rules cannot be used;

(3) The alternative procedures the applicant will employ to satisfy each requirement as modified; and

(4) A copy of any asbestos inspection report previously filed. If the applicant has not previously filed an asbestos inspection report, such report shall be filed with the

application together with the applicable fee specified in §1-25(c).

(c) For each variance application where the combined amount (total of both square and linear feet on the ACP7) of ACM is less than 5000 feet, payment of the variance processing fee shall accompany the application and shall conform with the payment schedule as follows:

(1) Request to waive seven day notification requirement: \$300 fee.

(2) Request to modify no more than one lettered subdivision in any section category listed in subdivision (e) below: \$400 fee.

(3) For each additional subdivision in any category listed in subdivision (e): \$200 fee.

(4) The maximum fee: \$1200.

(d) For each variance application where the combined amount (total of both square and linear feet on the ACP7) of ACM is greater than or equal to 5000 feet, payment of the variance processing fee shall accompany the application and shall conform with the payment schedule as follows:

(1) Request to waive seven day notification requirement: \$400.

(2) Additional variance requests shall adhere to the following schedule:

(i) Request to modify no more than one lettered subdivision in any section category listed in subdivision (e): \$600.

(ii) For each additional subdivision in any category listed in subdivision (e):\$300.

(iii) The maximum fee: \$1800.

(e) Section categories shall be as follows:

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CATEGORY	NYC Asbestos Control Program Section #s	12 NYCRR Part 56 Section #s
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Air Monitoring	71-85	56-17
Materials and Equipment	61	56-7

Work Place Preparation	81-83	56-8
Work Place Procedures	91-94	56-4, 5, 6, 9, 10, 11
Abatement Procedures	101-106	56-12, 13, 14, 16
Clean-up Procedures	111-112	56-15
Pre-Demolition Abatement Activity Procedures	120-129	---

Other unlisted section categories of the New York City Administrative Code and New York State Industrial Rule 56.

(f) Any violation of the terms of any variance issued under this section shall be considered a violation of the lettered subdivision modified by the variance.

## **Subchapter B**

### *Certification Provisions*

#### **1 Certification Procedures**

##### **Part 1**

##### *Certification Procedures*

- §1-11 Asbestos Handler Certificate**
- §1-12 Renewal of Asbestos Handler Certificate**
- §1-13 Restricted Asbestos Handler Certificate**
- §1-14 Asbestos Handler Supervisor Certificate**
- §1-15 Renewal of Asbestos Handler Supervisor Certificate**
- §1-16 Asbestos Investigator Certificate**
- §1-17 Renewal of Asbestos Investigator Certificate**

**§1-11 Asbestos Handler Certificate.** (a) No individual shall engage in an asbestos

project or in asbestos abatement activities on a minor project, for compensation, unless that individual is certified as an asbestos handler by the department and has an "Asbestos Handler Certificate" issued by the department which shall be posted in the clean room.

(b) The department shall issue an asbestos handler certificate in the form of a photo identification card which shall be valid for two years from the date of issuance to applicants who meet the following conditions:

(1) Applicant shall be at least eighteen (18) years of age at the date of application; and

(2) Applicant shall submit a completed application provided by the department accompanied by a fee of one hundred dollars (\$100); and

(3) Applicant shall submit documentation of successful completion within the prior 12 months of a NYSDOH- approved Asbestos Handler training course; and

(4) Applicant shall achieve a passing grade on a departmental examination.

**§1-12 Renewal of Asbestos Handler Certificate.** (a) The handler shall apply for renewal of the certificate at least 60 days prior to the date of its expiration.

(b) Application for renewal shall be made on a form approved by the department and shall be accompanied by a fee of one hundred dollars (\$100) and proof of successful completion within the prior 12 months of a NYSDOH- approved Asbestos Handler Refresher training course; and

(c) Applicant shall achieve a passing grade on a departmental examination.

**§1-13 Restricted Asbestos Handler Certificate.** (a) This section shall apply to individuals involved in the construction of the containment barriers of a work area (e.g., carpenters), or who otherwise enter the contained work area for a limited period of time to perform certain specialized tasks in preparation for, or ancillary to, the actual abatement (e.g., electricians); and for whom asbestos handler certification would otherwise be required. This section shall not apply to individuals performing abatement handling of ACM.

(b) The department shall issue a restricted asbestos handler certificate, in the form of a photo identification card which shall be valid for two years from the date of issuance to applicants who comply with the requirements of §§1-11(b)(1)-(4), except that the fee shall be \$50.

(c) An individual certified as a restricted asbestos handler by the department shall perform only those particular job functions specified by the department in the application for certification.

**§1-14 Asbestos Handler Supervisor Certificate.** (a) No individual shall supervise asbestos handlers engaged in an asbestos project, for compensation, unless that individual is certified as an asbestos handler supervisor by the department.

(b) The department shall issue an asbestos handler supervisor certificate, in the form of a photo identification card which shall be valid for two years from the date of issuance, to applicants who meet the following conditions:

(1) Applicant shall be at least twenty-one (21) years of age at the time of application; and

(2) Applicant shall submit a completed application provided by the department accompanied by a fee of one hundred dollars (\$100); and

(3) Applicant shall submit documentation of successful completion within the prior 12 months of a NYSDOH-approved Asbestos Supervisor training course.

(4) Applicant shall submit additional credentials as follows:

- (i) A professional engineer, registered architect, certified industrial hygienist, or certified safety professional shall submit a copy of the licensing credentials or certification, and documentation of one month post-graduate experience in asbestos abatement activities.
- (ii) A graduate from an accredited college or university possessing a bachelor's or advanced degree in engineering, architecture, environmental health science, industrial hygiene, occupational health and safety or a related science shall submit a copy of the degree, and documentation of three months post graduate experience in asbestos abatement activities.
- (iii) A graduate from an accredited college of university possessing an associate's degree in applied science and technology, environmental health science, public health, industrial health or a related science shall submit a copy of the degree, and documentation of six months post-graduate experience in asbestos abatement activities.
- (iv) All other applicants shall submit documentation of one year of experience in asbestos abatement activities.

The applicant's experience in asbestos abatement activities shall be listed chronologically and shall include each contractor's name/address/phone number; the number of hours worked per week on asbestos abatement activities; the applicant's job title and a brief description of duties; and

(5) Applicant shall achieve a passing grade on a departmental examination.

(c) The department may consider applicants who submit additional credentials which are not identical to the categories specified in subdivision (b)(4) above, but who present an equivalent combination of familiarity with abatement activities and demonstrated competence.

**§1-15 Renewal of Asbestos Handler Supervisor Certificate.** (a) The supervisor shall apply for renewal of the certificate at least 60 days prior to the date of its expiration.

(b) The supervisor shall submit the following items for renewal:

(1) A completed application provided by the department accompanied by a fee of \$100; and

(2) Documentation of successful completion within the prior 12 months of a NYSDOH-approved Asbestos Handler Supervisor Refresher training course.

(c) Applicant shall achieve a passing grade on a departmental examination.

**§1-16 Asbestos Investigator Certificate.** (a) (1) No individual shall engage in building survey and hazard assessment for asbestos unless that individual is certified as an asbestos investigator by the department.

(2) A non-certified individual may participate in an asbestos survey being conducted by a NYC certified investigator only if such individual works in the presence of the investigator and under his/her direct and continuing supervision.

(3) The investigator shall assume that some or all of the areas investigated contain ACM, and for each area that is not assumed to contain ACM, collect and submit for analysis bulk samples in accordance with §§1-36, 1-37 and 1-44 and EPA publications 560/5-85-024 and/or 560/5-85-030A.

(b) The department shall qualify applicants to be asbestos investigators. The applicant shall satisfy one of the following five sets of conditions:

(1) A professional engineer, a registered architect, a certified industrial hygienist or a certified safety professional shall submit a copy of licensing credentials or certification.

(2) A graduate from an accredited college or university possessing a doctorate or master's degree in architecture, engineering, environmental science, environmental health science, occupational health and safety, industrial hygiene or related environmental science shall submit a copy of the degree and documentation of six months post-graduate experience in building survey/hazard assessment for asbestos.

- (3) A graduate from an accredited college or university possessing a bachelor's degree in architecture, engineering, environmental science, environmental health science, occupational health and safety, industrial hygiene or a related environmental science shall submit a copy of the degree and documentation of one year post-graduate experience in building survey/hazard assessment for asbestos.
- (4) A graduate from an accredited college or university possessing an associate's degree in architecture, engineering technology, environmental health, public health, industrial health, applied science and technology or a related environmental science shall submit a copy of the degree and documentation of one year post-graduate experience in building survey/hazard assessment for asbestos and an additional two years of building survey-related experience.
- (5) An individual with extensive experience in asbestos investigation on a professional level shall submit documentation demonstrating two years of experience in building survey/hazard assessment for asbestos and an additional three years of other building survey-related experience.

(c) The department shall issue an asbestos investigator certificate in the form of a photo identification card which shall be valid for two years from the date of issuance to qualified applicants who submit the following:

- (1) A completed application provided by the Department accompanied by a fee of two hundred fifty dollars (\$250); and
- (2) Documentation of successful completion within the prior 12 months of a New York State Restricted Asbestos Handler-III Inspector Training course, and a passing grade on the required investigator training course; and
- (3) Documentation of a medical examination performed by a physician within the prior 12 months, which shall include at a minimum a pulmonary function test, evaluation of a recent chest x-ray and a physician's recommendation as to whether the applicant is able to wear a respirator in the performance of his/her job; and
- (4) Documentation of a qualitative or quantitative fit test performed within the prior three months, which shall include brand name and type of respirator, date and location of test, and the signature of the industrial hygienist administering the test.
  - (i) Qualitative fit test may be used only for fit testing of half-mask negative pressure respirators.
  - (ii) Quantitative fit test shall be performed on all full-face negative pressure

respirators.

(d) Applicant shall achieve a passing grade on a departmental examination.

(e) Under special circumstances the department may consider applicants who submit additional credentials which are not identical to the categories specified in subdivision (b)(1) through (5) above.

(f) *Investigator's seal requirement.* (1) No NYC-certified asbestos investigator shall submit any plan or report to any client or any city, state, or federal agency that does not have the investigator's seal and signature affixed to it. Photocopies of the seal and signature are not acceptable.

(2) Seals used by certified asbestos investigators shall be circular in shape, approximately one and three quarter inches in diameter, with three concentric circles. The inner circle shall contain an accurate representation of the great seal of the City of New York. The legend at the top of the outer band shall read "CITY OF NEW YORK" and at the bottom "CERTIFIED ASBESTOS INVESTIGATOR". In the inner circle above the great seal of the City of New York shall be shown the name of the certified asbestos investigator.

(3) Any plan or report submitted without the investigator's seal and signature shall be considered invalid.

(4) Use of personal valid "professional engineer" or "registered architect" seal in lieu of investigators' seal by certified investigators is allowed.

**§1-17 Renewal of Asbestos Investigator Certificate.** (a) The investigator shall apply for renewal of the certificate at least 60 days prior to the date of its expiration.

(b) The investigator shall submit the following items for renewal:

(1) A completed application provided by the Department accompanied by a fee of \$250 payable to the Department; and

(2) Documentation of successful completion within the prior 12 months of a NYSDOH-approved Asbestos Inspector Refresher course; and

(3) Documentation of a medical examination performed by a physician within the prior 12 months, which shall include at a minimum a pulmonary function test, evaluation of a recent chest x-ray and a physician's recommendation as to whether the applicant is able to wear a respirator in the performance of his/her job; and

(4) Documentation of a qualitative or quantitative fit test performed within the prior three months, which shall include brand name and type of respirator, date and

location of test, and the signature of the industrial hygienist administering the test.

- (i) Qualitative fit test may be used only for fit testing of half-mask negative pressure respirators.
  - (ii) Quantitative fit test shall be performed on all full-face negative pressure respirators.
- (c) Applicant shall achieve a passing grade on a departmental examination.

## **Subchapter C**

### *Reporting and Filing Requirements, Plans and Fees*

#### **§1-21 Notifications, Reports, Plans, and Fees**

#### **§1-22 Permits**

#### **§1-23 Alterations/Renovations/Modifications**

#### **§1-24 Projects Requiring NYC Buildings Department Plan Amendment**

#### **§1-25 Projects Not Requiring Any Buildings Department Plan Approvals or Permits**

#### **§1-26 Emergency Asbestos Project Notification**

#### **§1-27 Record Keeping Requirements for Investigators**

**§1-21 Notifications, Reports, Plans, and Fees.** (a) For the purpose of determining whether there has been compliance with any reporting or filing requirement established in §§1-22 through 1-26, the size and scope of the overall project shall control, with particular reference to the total amount of friable asbestos-containing material which will be disturbed. Such requirements may not lawfully be avoided or lessened through the performance of work in incremental or piecemeal fashion.

(b) When alternative calculations (i.e., linear feet and square feet) of the size and scope of an asbestos project result in that project coming within the definition of more than one sub-classification of asbestos project, the calculation with the higher absolute number shall determine the sub-classification of asbestos project procedures to be followed.

(c) For the purpose of §§1-21 through 1-26, the term “work” shall be understood as in the common construction usage, i.e. not specifically related to asbestos abatement activities.

**§1-22 Permits.** (a) This section shall apply to applications for the following NYC Department of Buildings permits:

- (1) Demolition permits, except that the provisions of this section shall not apply to the demolition of a one-story garage with a 2-car maximum capacity which is not

supplied with water lines, or to the legalization of demolition work which occurred prior to April 1, 1987.

- (2) Plumbing permits, except that applications for alteration and repair slips shall be subject to the provisions of this section only when such applications are for the installation, alteration, or removal of fuel-burning equipment.

The installation, alteration or removal of unit heaters, gas ranges, and gas dryers shall be exempt from the provisions of this section.

(b) Each building owner shall be responsible for determining the amount of friable asbestos-containing material which will be disturbed during the course of the permitted activity.

(c) The owner of the building or her/his authorized agent shall comply with the following notification requirements regarding friable asbestos-containing material which will be disturbed during the course of performing work authorized by the permit:

- (1) *“Not an Asbestos Project” notification.* If the work for which a permit is sought is not an asbestos project, a NYC-certified asbestos investigator shall complete, sign, and affix his or her seal to the “Not an Asbestos Project” form which shall be submitted with an additional fee of \$15.00 together with the permit application to the NYC Buildings Department.

(2) *Asbestos project notification.*

- (i) *Small asbestos projects.* If the cumulative total of all surfaces affected by the work for which the permit is sought is a small asbestos project, the department’s “Asbestos Inspection Report,” completed by the building owner or authorized agent, and listing each work area within the building separately, shall be submitted to the NYC Buildings Department, together with the permit application and a department filing fee in the following amounts:
  - (A) For work which will disturb more that 25 linear feet but less than 100 linear feet or more than 10 square feet but less than 50 square feet of friable asbestos-containing material, the fee shall be \$200.
  - (B) For work which will disturb at least 100 linear feet but less than 260 linear feet or at least 50 square feet but less than 160 square feet of friable asbestos-containing material, the fee shall be \$400.
- (ii) *Large asbestos projects.* If the cumulative total of all surfaces affected by the work for which the permit is sought is a large asbestos project, the department’s “Asbestos Inspection Report,” completed by the building owner or authorized agent, and listing each work area within the building separately, shall be submitted to the NYC Buildings Department, together

with the permit application and a department filing fee in the following amounts:

- (A) For work which will disturb at least 260 linear feet and less than 1,000 linear feet, or at least 160 square feet and less than 1,000 square feet of friable asbestos-containing materials, the fee shall be \$800.
  
- (B) For work which will disturb 1,000 linear feet or more, or 1,000 square feet or more, of friable asbestos-containing material, the fee shall be \$1,200.

(d) Modification of or deviation from the information provided in any notification submitted to the Department of Buildings under this section shall immediately be reported in writing directly to DEP if the change refers to the identity of the building owner or ACM removal contractor or the air monitoring firm; or the amount of ACM to be removed; or the dates of the project; or the specific project location. A notification may be modified no more than twice. A modification is valid only if it is received by the DEP prior to the previously filed date of completion, except for start date changes which must be received by the original start date. Thereafter, a new notification submitted directly to the department will be required. A notification to Department of Buildings or DEP shall be valid for one year from the date of original filing.

**§1-23 Alterations/Renovations/Modifications.** As early as possible before an alteration, renovation, or modification takes place, or changes in an alteration, renovation or modification occur, the building owner shall be responsible for determining the absence or presence of friable asbestos-containing material which will be disturbed during the course of the alteration, renovation or modification activities. The owner of the building or the authorized agent shall comply with the notification requirements of this section regarding friable asbestos-containing material.

(a) *Exceptions.* The following activities do not constitute an alteration, renovation or modification of a building or structure; therefore, the filing of a notification shall not be required as a pre-requisite for issuance of a Buildings Department plan approval. However, if friable asbestos-containing material is discovered during the course of any of the following activities, an “Asbestos Inspection Report” shall be filed immediately with DEP according to §§1-25 or 1-26.

Accessory Parking

Awnings

Candy or News Stands

Certificate of Occupancy requiring no work

Change of use or legalization requiring no work

Cranes

Curb Cuts

Debris chutes (not to be used for ACM)

Elevator equipment (not including construction & enclosure of shaft)

Emergency power not involving hard wiring (i.e. battery packs)

Erecting of fire escape

Exterior concrete work (e.g. sidewalks)

Exterior Scaffolding

Exterior trenching and drainage

Flagpoles

Kiosks

New finish material

New storefronts in existing masonry openings

Parapet Walls

Radio antenna (towers) free-standing

Relocating parking lot sheds

Replacing exterior water tanks

Replacing roof-top air conditioning unit not involving modification or removal of ductwork

Retaining Walls

Sealing Buildings

Sealing of dumbwaiters

Sidewalk Sheds, Bridges, Fences, Elevators, Hoists, and Cafes Signs

Subdivision of an existing tax lot

Swimming pools (outdoor)

Tents

Erection of Temporary Structures (e.g., trailers, etc.) supplied with electric and water lines only

Underpinning of Buildings

Zoning lot reapportionment

(b) *“Not an Asbestos Project” notification.* If the cumulative total of all surfaces

affected by the work for which plan approval is sought is not an asbestos project, a NYC-certified asbestos investigator shall complete, sign, and affix his or her seal to the “Not an Asbestos Project” form which shall be submitted with an additional fee of \$15.00 together with the appropriate Buildings Department application form(s) to the NYC Buildings Department.

(c) *Asbestos project notification.* (1) *Small asbestos projects.* If the cumulative total all surfaces affected by the work for which plan approval is sought is a small asbestos project, the department’s “Asbestos Inspection Report,” completed by the building owner or authorized agent, and listing each work area within the building separately, shall be submitted to the NYC Buildings Department, together with the appropriate Buildings Department application form(s) and a department filing fee in the following amounts:

- (i) For work which will disturb more than 25 linear feet but less than 100 linear feet, or more than 10 square feet but less than 50 square feet of friable asbestos-containing material, the fee shall be \$200.
- (ii) For work which will disturb at least 100 linear feet and less than 260 linear feet, or at least 50 square feet and less than 160 square feet of friable asbestos-containing material, the fee shall be \$400.

(2) *Large asbestos projects.* If the cumulative total of all surfaces affected by the work for which plan approval is sought is a large asbestos project, the Department’s “Asbestos Inspection Report,” completed by the building owner or authorized agent, and listing each work area within the building separately, shall be submitted to the NYC Buildings Department, together with the appropriate Buildings Department application form(s) and a Department filing fee as follows:

- (i) For work which will disturb at least 260 linear feet and less than 1000 linear feet, or at least 160 square feet and less than 1000 square feet of friable asbestos-containing material, the fee shall be \$800.
- (ii) For work which will disturb 1000 linear feet or more, or 1000 square feet or more, of friable asbestos-containing material, the fee shall be \$1200.

(d) Modification of or deviation from the information provided on any notification submitted to the Department of Buildings under this section shall immediately be reported in writing directly to DEP if the change refers to the identity of the building owner or ACM removal contractor or the air monitoring firm; or the amount of ACM to be removed; or the dates of the project; or the specific project location. A notification may be modified no more than twice. A modification is valid only if it is received by the DEP prior to the previously filed date of completion, except for start date changes which must be received by the original start date. Thereafter, a new notification submitted directly to the department will be required. A notification to Department of Buildings or DEP shall be valid for one year from the date of original filing.

### **§1-24 Projects Requiring NYC Buildings Department Plan Amendment.**

(a) If the amendment is for work at the same work area(s) covered in the original application, a copy of the originally-submitted “Not an Asbestos Project” form or “Asbestos Inspection Report” shall be submitted together with the amendment to the NYC Buildings Department.

(b) If the amendment is for work at (a) work area(s) not covered in the original application, the applicant shall file according to the §1-23 procedures for an original Building Alteration/Renovation/Modification application.

**§1-25 Projects Not Requiring Any Buildings Department Plan Approvals or Permits.** The purpose of this section is to require that notification of asbestos projects be provided directly to the DEP in circumstances where filing for Buildings Department plan approval or permit issuance is not required. This includes instances where filings with the Buildings Department are for other than plan approval or permit issuance; where no filing is required because the Buildings Department has decided not to require it; and where no filing is required because the Buildings Department is without authority to do so.

(a) This section shall apply to the following categories:

(1) Removal, encapsulation, enclosure or replacement of asbestos-containing materials (including insulation); and

(2) Work in or into plenum spaces of existing buildings (e.g. electrical, ventilation, cable, sheet metal work, etc.); and

(3) Removal of asbestos-covered structures and equipment such as boilers, pipes, etc.; and

(4) Other miscellaneous activities not previously exempted.

(b) *Work not constituting an asbestos project.* If the work is not an asbestos project, no notification or fee payable to the department shall be required, unless notification and fees are otherwise required by these regulations.

(c) *Asbestos Projects.* If the cumulative total of all surfaces affected by the work is an asbestos project, the department’s “Asbestos Inspection Report,” completed by the building owner or authorized agent, and listing each work area within the building separately, shall be submitted directly to the Department of Environmental Protection one week in advance of the start of the work along with a filing fee in the following amounts:

(1) For work which will disturb more than 25 linear feet but less than 100 linear feet, or more than 10 square feet but less than 50 square feet, of friable asbestos-containing material, the fee shall be \$200.

- (2) For work which will disturb at least 100 linear feet and less than 260 linear feet, or at least 50 square feet and less than 160 square feet, of friable asbestos-containing material, the fee shall be \$400.
- (3) For work which will disturb at least 260 linear feet and less than 1,000 linear feet, or at least 160 square feet and less than 1,000 square feet, of friable asbestos-containing material, the fee shall be \$800.
- (4) For work which will disturb 1,000 linear feet or more, or 1,000 square feet or more, of friable asbestos-containing materials, the fee shall be \$1,200.

(d) Modification of or deviation from the information provided in any notification submitted to the Department of Environmental Protection under this section shall immediately be reported in writing directly to DEP if the change refers to the identity of the building owner or ACM removal contractor or the air monitoring firm; or the amount of ACM to be removed; or the dates of the project; or the specific project location. A notification may be modified no more than twice. A modification is valid only if it is received by the DEP prior to the previously filed date of completion, except for start date changes which must be received by the original start date. Thereafter, a new notification submitted directly to the department will be required. A notification to DEP shall be valid for one year from the date of original filing.

**§1-26 Emergency Asbestos Project Notification.** (a) An emergency asbestos project involves the removal, enclosure or encapsulation of friable asbestos-containing material that was not planned but is undertaken when sudden unexpected event(s) result in a situation in which any delay in abatement would pose an immediate danger to public safety and health.

(b) When such an emergency asbestos project occurs, immediate telephone notification shall be provided to DEP's Asbestos Control Division. Telephone notification shall include:

- (1) Name, affiliation and telephone number of caller;
- (2) Nature of the emergency;
- (3) Type of asbestos work to be performed;
- (4) Exact location of the project including street address and borough;
- (5) Name, address, and telephone number of the employer of the workers handling the asbestos-containing material; and
- (6) Starting and projected completion dates.

(c) Written notification must be received as soon as possible, but not later than 48 hours after the project begins, at the DEP's Bureau of Air Resources' Asbestos Control Division.

Written notification shall be via the Asbestos Inspection Report (Form ACP7) with a cover letter stating:

- (1) "This is notification for an emergency asbestos project"; and
- (2) The nature of the emergency.

**§1-27 Record Keeping Requirements for Investigators.** (a) The asbestos investigator shall maintain a permanent record as required under this section for every building survey/hazard assessment for asbestos that is conducted pursuant to or submitted in accordance with §§1-22 through 1-27 of this chapter.

(b) For each building survey/hazard assessment conducted prior to preparation of either DEP Forms ACP7 or ACP5, the investigator shall compile a record which shall include at a minimum:

- (1) A detailed written description of procedures employed to detect the presence or absence of ACM; and
- (2) A blueprint, diagram, drawing, or written description of each building or portion thereof inspected by the investigator that identifies clearly each location and approximate linear or square footage of any area where material was sampled for ACM, and the exact locations where bulk samples were collected, the date of collection, and location of any areas assumed to have ACM; and
- (3) The printed name and signature of any and all persons who collect bulk samples for the purpose of determining the presence of ACM, the name and address of the laboratory analyzing the samples, the date of analysis, the results of the analysis, the method of analysis and the name and signature of the person performing the analysis; and
- (4) A detailed written description of any proposed demolition, renovation, alteration or modification work to be performed, including the techniques to be used and a description of affected facility components.

(c) The investigator shall indicate in each record all instances in which work was performed by a non-certified individual pursuant to §1-16(a)(2), and shall include such individual's name, address, telephone number, and a specific description of all activities performed by such individual.

(d) The investigator shall maintain these records for thirty (30) years.

(e) The investigator shall make these records available during normal business hours without cost or restriction for inspection by a representative of the Department.

## **Subchapter D**

### *Air and Bulk Sampling, Monitoring and Analysis*

- 1 Applicability**
- 2 Personnel Qualifications and Equipment Specifications**
- 3 Monitoring Procedures**

#### **Part 1**

##### *Applicability*

#### **§1-31 Performance of Air and Bulk Sampling, Monitoring and Analysis**

**§1-31 Performance of Air and Bulk Sampling, Monitoring and Analysis.** Air sampling, monitoring, and analysis on asbestos projects, and bulk sampling and analysis to determine asbestos content, shall be performed in accordance with the provisions of the following §§1-31 through 1-45 inclusive.

#### **Part 2**

##### *Personnel Qualifications and Equipment Specifications*

- §1-36 Persons Qualified to Perform Sampling and Analysis**
- §1-37 Sampling Equipment Requirements**

#### **§1-36 Persons Qualified to Perform Sampling and Analysis.**

- (a) Sampling and analysis shall be performed by:
  - (1) a third party who is contracted by the building owner and is completely independent of all parties involved in the asbestos project. The person who conducts sampling shall possess a valid New York State Asbestos Project Air Sampling Technician Certificate when performing air sampling; or
  - (2) sampling and analysis staff which may not be independent of the building owner but are independent of the abatement contractor involved in the asbestos project, but only if such staff:
    - (i) performs in conjunction with a third party quality assurance program in

which 10 percent of the samples, except for bulk samples initially found to contain ACM, from each project are randomly selected and will be analyzed by both entities; and

(ii) in the case of air sampling, possesses valid New York State Asbestos Project Air Sampling Technician Certification.

(3) Sampling and analysis staff of a public service corporation with respect to asbestos projects that involve electric, steam or gas generation, distribution or transmission facilities provided that the requirements of subparagraphs (I) and (ii) of paragraph 2 of this section are complied with.

(4) Only persons certified by the Department as asbestos investigators or by New York State Department of Labor as Asbestos Inspectors may select and collect bulk samples for analysis.

(b) Bulk sample analysis (PLM) shall be performed by laboratories with accreditation in the ELAP.

(c) Air Sample Analysis (PCM) shall be performed by laboratories with the following attributes:

(1) Successful completion by the laboratory's active analysts of the NIOSH 582 training course which outlines the NIOSH 7400 method; and

(2) Active analysts with skills in the appropriate methodology and proficiency in the NIOSH PAT Program for PCM analysis; and

(3) Accreditation in ELAP.

(d) Air Sample Analysis (TEM) shall be performed by active analysts who possess skills in TEM analysis and participate in an in-house quality assurance program using the National Institute of Standards and Technology (NIST SRM 1876) or traceable standard.

### **§1-37 Sampling Equipment Requirements.**

(a) *Bulk sampling requirements.* (1) Bulk samples shall be taken by whatever method minimizes the potential for fiber release.

(2) Any material which remains exposed as a result of the sampling procedure shall be sealed.

(b) Area air sampling equipment for Phase Contrast Microscopy (PCM) shall be utilized in accordance with the equipment and sampling procedures specified within the NIOSH 7400 Method modified for area sampling.

(c) Area air sampling equipment for Transmission Electron Microscopy (TEM) shall be utilized in accordance with the sampling procedures specified within 40 CFR Part 763, Subpart E, Appendix A - Section II Mandatory Transmission Electron Microscopy Method, Subsection B - Sampling.

### Part 3

#### *Monitoring Procedures*

**§1-41 Air Sampling Schedule**

**§1-42 Monitoring Requirements**

**§1-43 Post-Abatement Clearance Air Monitoring**

**§1-44 Analysis and Reporting Results**

**§1-45 Action Criteria**

**§1-41 Air Sampling Schedule.** (a) At a minimum, air sampling shall be conducted in accordance with the following schedule:

Abatement Activity	Pre-Abatement	During Abatement	Post-Abatement
Equal to or Greater than 10,000 ft. <sup>2</sup> or 10,000 linear ft. of ACM	PCM	PCM	TEM
Less than 10,000 ft. <sup>2</sup> or 10,000 linear ft. of ACM and greater than 10 square ft. or 25 linear ft.	PCM	PCM	PCM
Exceptions to the above:			
Boiler Rooms		PCM	PCM
Tent and Glovebag Procedures		PCM	PCM <sup>1</sup>
Demolitions		PCM	PCM

1. See §1-41(d)

*Note:* TEM is acceptable wherever PCM is required.

(b) *Pre-Abatement.* Prior to commencement of abatement activities, the number of samples specified below shall be taken during normal occupancy activities and circumstances at the work site. Samples shall be located within and at the barriers to the proposed work area.

(1) For large asbestos projects, a minimum of five.

(2) For small asbestos projects, a minimum of three.

(c) *During abatement.* Frequency and duration of the air sampling during abatement

shall be representative of the actual conditions during the abatement. The size of the asbestos project will be a factor in the number of samples required to monitor the abatement activities. The following minimum schedule of samples shall be required daily during the work shift.

(1) For asbestos projects not solely employing the glovebag and/or tent procedures, area air sampling shall be performed at the following locations:

- (i) Two area samples outside the asbestos project work area in uncontaminated areas of the building, remote from the decontamination facilities.
  - (A) Primary location selection shall be within 10 feet of isolation barriers.
  - (B) Where negative ventilation exhaust ducting runs through uncontaminated building areas, one of the area samples will be required in these areas to monitor any potential fiber release.
  - (C) Where adjacent non-work areas do not exist, an exterior area sample shall be taken; and
- (ii) One area sample within the uncontaminated entrance to each worker decontamination and waste decontamination enclosure system; and
- (iii) One area sample within 5 feet of the unobstructed exhaust from a negative pressure ventilation system exhausting indoors.

(2) For abatement projects at demolition sites not solely employing glovebag and/or tent procedures, area air sampling shall be performed at the following sampling locations:

- (i) One area sample taken outside the work area within 10 feet of isolation barriers; and
- (ii) One area sample taken within the uncontaminated entrance to each worker decontamination and waste decontamination enclosure system.
- (iii) One area sample within 5 feet of the unobstructed exhaust from a negative pressure ventilation system exhausting indoors.

(3) For glovebag and tent procedures, one baseline area sample shall be taken near each entrance to the work area. Area air samples shall be taken daily no less than 10 feet nor more than 15 feet from the glovebag(s) or tent actively being used in the abatement, or a similar appropriate and representative distance, using the following guidelines:

- (i) For glovebag procedures:
  - (A) For more than 260 linear feet and less than 500 linear feet of pipe lagging to be removed - a minimum of two continuous samples shall be taken concurrently with the abatement.
  - (B) At least 500 linear feet of pipe lagging to be removed - a minimum of three continuous samples shall be taken concurrently with the abatement, for each 1000 linear feet of pipe lagging removal.
    - (C) For more than 25 linear feet and less than 260 linear feet, a minimum of 2 samples (one baseline area sample and one active abatement area sample) shall be taken in each homogeneous work area.
  - (ii) For tent procedures where more than 25 linear feet or 10 square feet of ACM is disturbed, a minimum of three continuous samples shall be taken concurrently throughout abatement.
- (4) For boiler room equipment projects not solely employing the glovebag and/or tent procedures and not part of a pre-demolition abatement activity, the procedures outlined in §1-41 (c)(1) shall be followed.

(d) *Post-abatement.* Post-abatement clearance air monitoring shall include at a minimum the number of area samples specified below, to be taken inside each homogeneous work area.

- (1) For small asbestos projects, a minimum of three.
- (2) For large asbestos projects, a minimum of five. In addition to the 5 sample minimum, one representative area sample shall be collected for every 5,000 square feet above 25,000 square feet of floor space when ACM has been abated.
- (3) When TEM analysis is employed a minimum of 5 samples from outside the work area shall also be collected.
- (4) For small asbestos projects solely employing glovebag procedures, post-abatement clearance air monitoring is not required, unless the integrity of the glovebag was compromised or visible emissions were detected outside the glovebag and/or levels exceeded 0.01 f/cc during abatement or 0.05 f/cc for pre-demolition abatement activities. In such cases, post-abatement clearance air monitoring procedures outlined in the applicable subdivision of §1-41(d) shall be followed.

**§1-42 Monitoring Requirements.** Monitoring requirements and procedures for other than post-abatement clearance air monitoring are as follows:

(a) The sampling zone for indoor air samples shall be representative of the building occupants' breathing zone.

(b) If possible, ambient samplers should be placed about 6 feet above the ground surface in reasonable proximity to the building and away from obstructions and drafts that may unduly affect airflow.

For outdoor samples, if access to electricity and concerns about security dictate a rooftop site, locations near vents and other structures on the roof which would unduly affect airflow shall be avoided.

(c) Air sampling equipment shall not be placed in corners of rooms or near obstructions such as furniture.

(d) Samples shall have a chain of custody record.

(e) (1) In accordance with the above criteria, area samples (see §1-41) shall conform to the following schedule:

Samples for Analysis by	Minimum Volume	Flow Rate
PCM 25 mm	560 Liters	5 to 15 liters/min.
TEM 25 mm	560 Liters	1 to 10 liters/min.
TEM 37 mm	1,250 Liters	1 to 10 liters/min.

(2) For glovebag and tent procedures, the selected pump flow rate shall be consistent with the duration of the procedure; however, area sampling pump flow rates shall not be less than 10 liters per minute for the glovebag or tent procedures expected to be completed within 2 hours. In such cases, sampling shall extend beyond the procedure completion to obtain the minimum volume necessary.

(f) For glovebag and tent procedures, sampling shall start with glovebag/tent installation and shall run concurrently with the procedure.

**§1-43 Post-Abatement Clearance Air Monitoring.** Post-abatement clearance air monitoring requirements are as follows:

(a) (1) Sampling shall not begin until a visual inspection confirms that all containerized waste has been removed from work and holding areas and there is no visible ACM debris or residue on or about all abated surfaces; and

- (2) Sampling shall not begin until at least 1 hour after the area is dry from the third cleaning (see §1-112(e)) and no visible pools of water or condensation remain.

For pre-demolition asbestos abatement activity, sampling may begin 1 hour after the area is dry and no visible pools of water or condensation remain.

(b) Samplers shall be placed at random around the work area. If the work area contains the number of rooms equivalent to the number of required samples based on floor area, a sampler shall be placed in each room. When the number of rooms is greater than the required number of samples a representative sample of rooms shall be selected.

(c) The representative samplers placed outside the work area but within the building shall be located to avoid any air that might escape through the isolation barriers and shall be approximately 50 feet from the entrance to the work area, and 25 feet from the isolation barriers.

(d) The following aggressive sampling procedures shall be used within the work area during all clearance air monitoring:

(1) Before starting the sampling pumps, use forced air equipment (such as a 1 horsepower leaf blower) to direct exhaust air against all walls, ceilings, floors, ledges and other surfaces in the work area.

(i) For asbestos projects: this pre-sampling procedure shall take at least 5 minutes per 1,000 sq. ft. of floor area; then install one 20-inch fan per 10,000 cubic feet of room space. Then immediately place the fan on slow speed and point it toward the ceiling.

(ii) For pre-demolition asbestos abatement activity, this pre-sampling procedure shall take at least three minutes, after which the 20-inch fan shall be left running unattended in the work area throughout sampling. This procedure shall be acceptable when the floor area of the work area is less than 500 square feet. At or above 500 square feet of floor area within the work area, the aggressive sampling procedures specified in this subdivision (d) for asbestos projects shall be conducted.

(2) Start the sampling pumps and sample for the required time or volume.

(3) Turn off the pump and then the fan(s) when sampling is completed.

(e) For post-abatement monitoring, area samples shall conform to the following schedule:

Area Samples for Analysis by	Minimum Volume	Flow Rate
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Area Samples for Analysis by	Minimum Volume	Flow Rate
PCM	1,800 Liters	5 to 15 liters/min.
TEM	1,250 Liters	1 to 10 liters/min.

(f) Each homogeneous work area which does not meet the clearance criteria shall be thoroughly recleaned using wet methods, with the negative pressure ventilation system in operation. New samples shall be collected in the work area as described above. The process shall be repeated until the work site passes the test.

(g) For an asbestos project with more than one homogenous work area, the release criterion shall be applied independently to each work area.

**§1-44 Analysis and Reporting Results.** Laboratory analyses and reporting shall be considered evidence of compliance with this chapter only if they conform to the following requirements:

(a) PCM area air samples shall be analyzed and reported in accordance with the NIOSH 7400 method using “A” Counting Rules.

(b) TEM area air samples shall be analyzed and reported in accordance with the mandatory or non-mandatory Electron Microscopy Methods set forth at 40 CFR Part 763, Subpart E, Appendix A.

(c) Bulk samples shall be analyzed and reported in accordance with Interim Method for the Determination of Asbestiform Materials in Bulk Insulation Samples found in 40 CFR Part 763, Subpart F, Appendix A as amended on September 1, 1982, or other methods approved by the National Institute of Standards and Technology, the National Institute of Occupational Safety and Health, the United States Environmental Protection Agency, or New York State Department of Health.

(d) Bulk and air sampling results/reports shall be submitted directly to the Department upon request within five calendar days.

**§1-45 Action Criteria.** (a) When visible emissions occur outside the work area, glovebag or tent, or any area air sample has indicated a determinant level of fiber concentrations greater than the larger of baseline levels or 0.01 f/cc, or 0.05 f/cc for abatement activities which are part of a pre-demolition abatement activity, work shall stop for inspection.

(1) For large or small asbestos projects, the integrity of barriers, if disturbed, shall be restored. Clean-up of surfaces outside of the work area using HEPA vacuums or wet cleaning techniques shall be done prior to resuming abatement activities.

(2) For glovebag and tent procedures, HVAC systems to or in the work area shall be

shut down and the work area shall be wet cleaned or HEPA vacuumed until the area air samples indicate the fiber concentration is below the determinant level. If fiber concentrations remain above the determinant level for longer than 24 hours, isolation barriers and engineering controls shall be installed and maintained.

(b) *Clearance and/or reoccupancy criteria.* (1) The clearance criteria shall be applied to each homogeneous work area independently.

(2) For PCM analysis involved in alteration or renovation projects, the clearance air monitoring shall be considered satisfactory when every sample is less than or equal to 0.01 f/cc or less than the ambient concentration, whichever is larger.

(3) For PCM analysis involved in pre-demolition abatement activities, the clearance air monitoring shall be considered satisfactory when every sample is less than or equal to 0.05 f/cc or less than the ambient concentration whichever is larger.

(4) For TEM analysis, the clearance monitoring will be considered satisfactory if conducted in accordance with 40 CFR Part 763, Subpart E, Appendix A — Section IV— Mandatory Interpretation of Transmission Electron Microscopy Results to Determine Completion of Response Actions.

(5) Clearance air monitoring results shall be submitted directly to the Department within 24 hours of request.

## **Subchapter E**

### *Personnel Protection and Equipment Specifications*

#### **1 Worker Protection**

#### **2 Equipment Specifications**

### **Part 1**

#### *Worker Protection*

#### **§1-51 Worker Protection Requirements**

**§1-51 Worker Protection Requirements.** (a) Prior to project initiation, all workers engaged in abatement activities on an asbestos project or minor project must be certified by DEP.

(b) At least one asbestos handler supervisor shall be present at the work site while abatement activities are being conducted on an asbestos project.

(c) Personal protective equipment shall be worn by all individuals inside the work place during abatement activities, except that gloves need not be worn during those work place preparation activities which do not involve the disturbance of ACM.

Personal protective equipment shall meet the following specifications:

- (1) Disposable clothing including head, hand, foot and full body protection shall be provided by the contractor in sufficient quantities and adequate sizes for all workers and authorized visitors.
- (2) Hard hats, protective eyewear, gloves, rubber boots and/or other footwear shall be provided by the contractor as required for workers and authorized visitors. Safety shoes and hard hats shall be in accordance with ANSI Z89.1 (1969) and ANSI Z41.1 (1967).
- (3) Contaminated clothing shall be sealed in impermeable bags and the bags shall be appropriately labeled.

(d) Personal air monitoring shall be performed in accordance with OSHA standards, 29 CFR 1926.58(f). Such records shall be made available to any authorized Department inspector upon request.

(e) Personal Hygiene at the work site shall meet the following requirements:

- (1) There shall be no smoking, eating, drinking or chewing of gum or tobacco or application of cosmetics inside the work place.
- (2) Jewelry shall not be worn in contaminated areas.
- (3) The contractor shall provide clean change areas for the workers. Change areas shall be equipped with separate storage facilities for protective clothing and street clothing.
- (4) If lunch areas are provided, they shall be located outside the work place in an area in which the airborne concentrations are below 0.01 f/cc.

(f) The contractor shall have available the following information in the clean room(s) at the work site:

- (1) A copy of the U.S. Environmental Protection Agency Regulations for Asbestos, 40 CFR 61 Subparts A and M and a copy of OSHA Asbestos Regulations, 29 CFR 1926.58, and
- (2) A list of telephone numbers for local hospital, location of hospital and/or emergency squad, local fire department, the building owner (or

representative) and the N.Y.C. Asbestos Control Program, and

- (3) A copy of these Rules, the most recent Asbestos Inspection Report (Form ACP 7) filed including amendments, any variance application (Form ACP 9) and DEP approval thereof, and
- (4) A copy of all Material Safety Data Sheets (MSDS) for hazardous chemicals used during the asbestos project, and
- (5) New York City Asbestos handler and supervisor certificates of all workers in the work site, and
- (6) A copy of the current New York State Department of Labor asbestos handling license of the contractor.

(g) The contractor shall post signs during all abatement activities. Signs shall be posted at all approaches to the work place including internal doorways which provide access to the work place. These signs shall bear the following information:

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

(h) Warning labels shall be affixed to all waste containers containing asbestos material in and shall bear the following information:

**DANGER  
CONTAINS ASBESTOS FIBERS  
AVOID CREATING DUST  
CANCER AND LUNG DISEASE HAZARD**

## **Part 2**

### *Equipment Specifications*

#### **§1-61 Materials and Equipment**

**§1-61 Materials and Equipment.** The materials and equipment used during all abatement activities shall conform with the following:

(a) During abatement activities, replacement materials shall be stored outside the work area in a manner to prevent contamination.

(b) When asbestos-containing material that has been used for fireproofing or insulation is removed, the replacement material shall comply with all applicable provisions of the New York City Administrative Code and regulations.

(c) For plasticizing, polyethylene sheeting with 6-mil thickness or greater, in sizes to minimize the frequency of joints, shall be employed.

(d) Duct tape and selected adhesive shall be capable of sealing joints of adjacent sheets of polyethylene, facilitating attachment of polyethylene sheets to finished or unfinished surfaces, and of adhering under both dry and wet conditions, including during the use of amended water.

(e) Airtight and watertight containers shall be provided to receive and retain any asbestos-containing waste materials. Plastic bags used for waste storage or disposal shall be a minimum of 6-mil in thickness. All containers shall be labeled in accordance with OSHA Regulation 29 CFR 1926.58K(2)(ii) and (iii).

(f) Materials used to enclose ACM shall be impact resistant and assembled to be airtight. Gypsum panels taped at the seams, tongue and groove boards, and boards with spline joints all qualify.

(g) Hand power tools used to drill, cut into, or otherwise disturb ACM shall be equipped with HEPA filtered local exhaust ventilation.

(h) Ladders or scaffolds of sufficient dimension and quantity shall be available so that all work surfaces can be easily and safely reached by inspectors. Scaffold joints and ends shall be sealed with tape to prevent incursion of asbestos fibers.

(i) Electrical equipment shall be Underwriters Laboratory listed and approved.

(j) Equipment and materials may be substituted for those specified in this chapter only if determined to be equivalent after review by the Department.

## **Subchapter F**

### *Large Asbestos Project Procedures*

- 1 Applicability**
- 2 Work Place Preparation**
- 3 Work Place Procedures**
- 4 Abatement Procedures**
- 5 Clean-up Procedures**

## **Part 1**

### *Applicability*

#### **§1-71 Applicability**

**§1-71 Applicability.** In addition to §§1-01 through 1-61, the following sections 1-81 through 1-83, 1-91 through 1-94 and 1-111 and 1-112 shall apply to abatement activities on large asbestos projects. Sections 1-101 through 1-106 shall apply to all asbestos abatement activities.

## **Part 2**

### *Work Place Preparation*

#### **§1-81 General Work Place Preparation Requirements**

#### **§1-82 Worker Decontamination Enclosure System**

#### **§1-83 Waste Decontamination Enclosure System**

**§1-81 General Work Place Preparation Requirements.** The following procedures shall be followed during the conduct of abatement activities on large asbestos projects:

(a) The building owner or designated representative shall provide notification to all occupants of the work place and immediate adjacent areas of the asbestos project. Information provided in the notification shall include contractor, project location and size, amount and type of ACM, abatement procedure, dates of expected occurrence and the NYC-DEP telephone number. Postings of this notification shall be in English and Spanish, at eye level, in a conspicuous, well-lit place, at the entrances to the work place and immediate adjacent areas. The notice shall have the following heading: **NOTICE OF ASBESTOS ABATEMENT**, in a minimum of one inch sans serif, gothic or block style lettering, with the balance of the lettering of the notice to be of the same type lettering in a minimum of one quarter inch size. The notices shall be posted 7 calendar days prior to the start of the project and shall remain posted until clearance air monitoring is satisfactorily concluded. A lessee initiating an asbestos project shall give 10 calendar days notice to the owner of the subject building.

(b) The work place shall be vacated by the occupants prior to work place preparation and until successful clearance air monitoring.

(c) Electric power to all work areas shall be shut down and locked out except for electrical equipment that must remain in service. Safe temporary power and lighting shall be provided in accordance with all applicable codes. All power to work areas shall be brought in from outside the area through ground-fault interrupter at the source. Stationary electrical equipment within the work area, which must remain in service shall be adequately enclosed and ventilated.

(d) The worker decontamination enclosure system shall be installed or constructed prior to plasticizing the work area or before disturbing ACM. The waste decontamination enclosure system shall be installed or constructed prior to commencement of abatement. The area in which these systems are located shall require HVAC system isolation and plasticizing of electrical outlets and equipment that are within 6 inches of floor level.

(e) (1) Prior to erection of partitions, ACM that may be disturbed during this activity shall be:

(i) removed using a tent procedure (including engineering controls); and/or

(ii) treated via wet methods.

(2) Removal by the above procedures shall be limited to a maximum of a one foot wide strip running the length and/or height of the partition and is allowed only to facilitate erection of the partitions.

(f) Heating, Ventilation and Air Conditioning (HVAC) System Isolation methods are listed below in order of preference; the more complex and potentially problematic methods may be used when the more preferred procedures are impractical.

(1) Shut down and lock out HVAC systems and install isolation barriers (see §1-81(k)) to prevent contamination and fiber dispersal to other areas of the structure, or

(2) isolate locally and provide temporary HVAC, or

(3) Positive pressurization of the HVAC system. This procedure shall be applied only under the direction and control of a professional engineer, or other knowledgeable licensed professional, after approval by the Department.

(g) Abatement shall not commence until work place preparation has been completed.

(h) Movable objects within the proposed work areas shall be pre-cleaned (i.e., prior to commencing general abatement) using HEPA filtered vacuum equipment and/or wet cleaning methods and such objects shall be removed from the work area. If carpeting is left in place, it shall be covered with 6-mil plastic sheeting, and then ¼ in. rigid flooring prior to normal plasticizing.

(i) Fixed objects which will remain within the proposed work areas shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclosed with 6-mil plastic sheeting sealed to protect from re-contamination.

(j) Prior to plasticizing, the proposed work areas shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning methods. Methods that raise dust, such as sweeping or vacuuming with equipment not equipped with HEPA filters, are prohibited.

(k) The isolation barriers (i.e., sealing off of all openings, including but not limited to windows, corridors, doorways, barriers, skylights, ducts, grills, diffusers, and any other penetrations of the work place) shall be installed with two layers of 6-mil plastic sheeting sealed with tape. All seams of HVAC or other system components that pass through the work place shall also be sealed.

(l) The work area shall be segregated from the remainder of the work site by construction of temporary structural partitions as follows:

- (1) Partitions shall be constructed of conventional 2 x 3 (minimum) wood or metal stud framing, 16"CC maximum, to support barriers in all openings larger than 32ft<sup>2</sup>, except where any one dimension is 1 foot or less, or where openings are exits covered in subdivision (p) below.
- (2) A solid construction material (e.g. plywood) of at least 1/2" thickness shall be applied to the work side of the framing. In secure interior areas where partitions are not subject to access from the public, an additional layer of 6-mil plastic sheeting may be substituted for the solid construction material.
- (3) The partitions shall be caulked/sealed at the floor, ceiling, walls, joints and fixtures to form an airtight seal.

(m) In addition to the isolation barriers, floor and wall surfaces shall be sealed with a minimum of two layers of 6-mil plastic sheeting, except where the only ACM being abated in the project is vinyl asbestos floor tile, in which case the floor need not be sealed. The plastic layers on the floor shall extend 6 inches up the walls. Walls shall be covered with plastic sheeting down to the floor level, thus overlapping the floor material by a minimum of 6 inches. There shall be a distance of at least 6 inches between seams of adjacent layers.

(n) After isolation barriers are in place, ceiling-mounted objects not previously sealed that will interfere with ACM abatement shall be removed and cleaned. Amended water spraying or HEPA filtered vacuum equipment shall be used during fixture removal to reduce fiber dispersal.

(o) Suspended ceiling tiles and T-grid components, contaminated by ACM, shall remain in place until the work area has been fully prepared as outlined in this section and electrical and HVAC systems have been shutdown. Suspended ceiling components shall be removed and disposed of as asbestos-containing waste or retained for reuse after wet cleaning/HEPA vacuuming.

(p) Emergency and fire exits from the work areas shall be maintained, or alternative exits shall be established in accordance with applicable NYC Code(s) and regulations. Exits shall be checked daily against exterior blockage or impediments to exiting.

(q) Entrances to the work place that will not be used for worker entry or emergency

exits shall be locked to prevent unauthorized entry.

(r) Floor drains shall be sealed individually with two layers of 6-mil plastic sheeting and tape, and then covered as all other floor surfaces. Pits, sumps, etc., shall be covered with adequate plywood sheeting and secured to floor slabs in a manner which prevents a tripping hazard, prior to required plasticizing.

(s) Elevators running through the work area shall conform to the following:

(1) The elevator door in the work area shall be enclosed with conventional 2 x 4 stud framing, covered with 1/2" plywood sheeting and sealed at all edges and seams. The barrier shall be covered and lapped for 8 inches with two layers of 6-mil plastic sheeting adhered individually with edges taped for air tightness.

(2) Elevators not remaining in service shall have the fuses removed and the power switch locked in the open position.

(3) Elevators that remain in operation shall conform to the following additional procedures to minimize the piston effect that results:

(i) Elevator control shall be modified to bypass the work area.

(ii) A final larger layer of 6-mil plastic sheeting is to be taped airtight but with slack forming a larger perimeter diaphragm. Air leakage across the barrier shall be corrected upon discovery, and the elevator shaft shall be checked for airborne asbestos contamination.

(iii) This system shall be smoke tested daily.

(4) Elevator shafts shall not be used as waste chutes.

(t) Adequate toilet facilities shall be provided in the vicinity of the clean room external to the work place. Where such facilities do not exist, portable service shall be provided.

**§1-82 Worker Decontamination Enclosure System.** The following procedures shall be followed during the conduct of abatement activities on large asbestos projects:

(a) Worker decontamination enclosure systems shall be located outside the work area and attached to all locations where workers will enter or exit the work area. One system at a single location for each contained work area is preferred. These systems may consist of existing rooms outside of the work area, that offer direct access to the work area and general egress from the work place. When this situation does not exist, enclosure systems may be constructed or may consist of prefabricated or trailer units. Adequate heat and light shall be safely provided.

(b) The worker decontamination enclosure system shall consist of a clean room, a

shower room, and an equipment room, in series, separated from each other by airlocks and from the work area and non-work place by curtained doors (see Illustrations I & II).

(c) Worker decontamination enclosure systems shall be fully lined utilizing two layers of 6-mil opaque plastic sheeting at a minimum, or the equivalent.

(d) When the decontamination enclosure is constructed outdoors or in areas with public access it shall be fully framed and plywood sheathed or equivalent to prevent unauthorized entry. When located outdoors, it shall be waterproof and windproof.

(e) Prefabricated or trailer decontamination units:

(1) shall at a minimum, have functionality and security equivalent to constructed decontamination enclosure facilities, and

(2) shall be completely decontaminated prior to removal from the work site.

(f) The clean room:

(1) shall contain secure crew lockers or shelves, and clean sealable plastic bags for storage of street clothes, and

(2) shall contain shelves or appropriate facilities for storage of respirators, and

(3) shall contain clean disposable clothing, replacement filters for respirators, towels and other necessary personal protective equipment, and

(4) shall not be used for storage of tools, equipment or materials, other than personal protective equipment, nor used as office space, and

(5) shall be equipped with a lockable door to secure the work place during off-shift hours.

(g) The shower room:

(1) shall contain a minimum of one shower per 8 workers calculated on the basis of the largest shift, and

(2) shall have shower heads supplied with hot and cold water adjustable at the shower, and

(3) shall be constructed to ensure against water leakage, and

(4) shall contain liquid bath soap, shampoo, and clean dry towels in sufficient quantity for each worker for each showering.

(h) Shower water shall be drained, collected and filtered through a system with a least

5.0 micron particle size collection capability. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filtration system by large particles.

- (1) Filtered wastewater shall be discharged either to a sewer or drummed and then properly disposed.
- (2) Used filters shall be disposed of as asbestos-containing waste material.
- (i) The equipment room:
  - (1) shall be used for storage of equipment and tools used on the job that have been cleaned previously in the work area, and
  - (2) may contain a limited supply of replacement filters (in sealed containers until used) for HEPA vacuums and pressure ventilation equipment, extra tools, containers of surfactant and other materials and equipment that may be required during the abatement activity, and
  - (3) shall contain labeled 6-mil plastic bags for collection of disposable clothing, and
  - (4) shall be used to store contaminated footwear (e.g. rubber boots and other reusable footwear) and contaminated clothing for reuse for the duration of the abatement activity or until disposed.

**§1-83 Waste Decontamination Enclosure System.** The following procedures shall be followed for removal of asbestos-containing waste material and equipment during the conduct of abatement activities on large asbestos projects:

- (a) A waste decontamination enclosure system shall consist of two totally enclosed chambers and shall also comply with the following requirements:
  - (1) the washroom shall be constructed with an airlock doorway to the work area and an airlock doorway to the holding area (see Illustration III); and
  - (2) the holding area shall be constructed with an airlock doorway to the washroom and a lockable door to the outside (see Illustration III); if remote from the washroom, it shall comply with all applicable NYC Department of Sanitation regulations pursuant to Local Laws 70 of 1985 and 21 of 1987.
- (b) Where there is only one means of egress from the work area:
  - (1) the holding area of the waste decontamination enclosure system may branch off from the equipment/decontamination room (see Illustration IV). Thus the equipment room alternates as a waste washroom. In this case the waste

washroom shall be equipped with a drain, installed to collect water and deliver it to the shower drain where it is filtered, or

- (2) where total asbestos-containing material disturbed in the asbestos project is less than 1,000 linear feet or 1,000 square feet, the shower room may be used as a waste washroom, and
  - (i) the clean room, in the configuration shown in Illustration I, may not be used for waste storage but is used for waste transfer to carts, which are stored outside the clean room in a designated holding area.
  - (ii) the holding area of the waste decontamination enclosure system may branch off from the shower room of the worker decontamination enclosure system (see Illustration II).

(c) The waste decontamination enclosure system shall be constructed to meet the requirements of §§1-82 (a), (c), (d), (e), (f)(3) and (h).

### **Part 3**

#### *Work Place Procedures*

##### **§1-91 Engineering Controls**

##### **§1-92 Work Place Entry and Exit Procedures**

##### **§1-93 Equipment and Waste Container Decontamination and Removal Procedures**

##### **§1-94 Maintenance of Decontamination Enclosure Systems and Barriers**

**§1-91 Engineering Controls.** The following procedures shall be followed during the conduct of abatement activities on large asbestos projects:

- (a) All large asbestos projects shall utilize negative pressure ventilation equipment.
- (b) The negative pressure ventilation equipment shall operate continuously, 24 hours a day, from the establishment of isolation barriers through successful clearance air monitoring. If such equipment shuts off, adjacent areas shall be monitored for asbestos fibers.
- (c) 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.
- (d) If more than one ventilation unit is installed, units shall be turned on one at a time while checking the integrity of all barriers for secure attachment and the need for additional reinforcement.
- (e) A dedicated power supply for the negative pressure ventilating units shall be utilized.

(f) On loss of negative pressure or electric power to the negative pressure ventilating units, abatement shall stop immediately and shall not resume until power is restored and negative pressure ventilation equipment is operating again. When power failure or loss of negative pressure equipment lasts or is expected to last longer than one-half hour:

- (1) the make-up air inlets shall be sealed airtight, and
- (2) the decontamination systems shall be sealed airtight after the evacuation of workers and/or authorized visitors from the work area, and
- (3) all adjacent areas shall be monitored for asbestos fiber concentration upon discovery of, and subsequently throughout, the power failure.

(g) Negative pressure ventilation equipment shall be installed and operated to provide at least one air change in the work area every 15 minutes, except during clearance air monitoring when at least one air change in the work area every 30 minutes shall be provided.

(h) Openings made in the isolation barrier to accommodate these units shall be made airtight. The units shall remain within the work area unless located securely outside the building.

(i) Negative air pressure equipment shall be in compliance with ANSI Z9.2 (1979), Local Exhaust Ventilation.

(j) Negative air pressure systems shall be operated in accordance with “Specifications 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).

(k) Negative pressure ventilation equipment shall be exhausted to the outside of the building away from occupied areas.

- (1) At no time shall the negative pressure ventilation unit exhaust within 40 feet of a receptor or adversely affect the air intake ports, louvers, or entrances for the building or adjacent buildings.
- (2) Heavy duty ducting of equivalent, or larger, shape and dimension as that of the negative pressure ventilation exhaust port shall be used to exhaust to the outside of the structure.
- (3) All ducting shall be sealed and braced or supported to maintain airtight joints.

(l) Where ducting to the outside is not possible, a second negative pressure ventilation unit compatible with the primary unit’s capacity shall be connected in series. The area receiving the exhaust shall have sufficient, non-recycling exhaust capacity to the outside of the structure.

(m) Careful installation shall be done to ensure that the ducting does not release fibers

into uncontaminated building areas.

(n) Routine smoke testing, air monitoring and daily inspections shall be performed by the Asbestos Handler Supervisor to ensure that the ducting does not release fibers into uncontaminated building areas.

**§1-92 Work Place Entry and Exit Procedures.** The following procedures shall be followed during the conduct of abatement activities on large asbestos projects:

(a) *Entrance procedures.* (1) All workers and authorized visitors shall enter the work area through the worker decontamination enclosure system.

(2) All individuals who enter the work area shall sign the log located in the clean room, upon each entry and exit. The log shall be permanently bound and shall identify fully the facility, owner, agents, contractor(s), the project, each work area and worker respiratory protection employed. The log shall be available for examination during general business hours by the Department, the owner and the workers.

(3) All individuals before entering the work area, shall be familiar with all posted regulations, personal protection requirements and emergency procedures. The log headings shall indicate, and the signatures shall be used to acknowledge, that the regulations and procedures have been reviewed and understood by all persons prior to entering the work area. The postings and log headings shall be in English and in the language of the majority of the asbestos handlers.

(4) All individuals shall proceed first to the clean room, remove all street clothing, store these items in clean sealable plastic bags or a locker and don personal protective equipment. Clean personal protective equipment shall be provided and utilized by each individual for each separate entry into the work area.

(b) *Exit procedures.* (1) Before leaving the work area, each individual shall remove the gross contamination from the outside of the respirators and protective clothing by wet cleaning, and/or HEPA vacuuming.

(2) In the equipment room, all personal protective equipment except respirators shall be removed. Disposable clothing shall be deposited into labeled containers for disposal. Reusable contaminated clothing, footwear, and/or head gear shall be stored in the equipment room when not in use.

(3) Still wearing a respirator, each person shall proceed to the shower room, clean the outside of the respirator and the exposed face area under running water prior to removal of the respirator, and then fully and vigorously shower and shampoo to remove residual asbestos contamination. Respirators shall be washed thoroughly with soap and water or a suitable sanitizing agent. Various types of respirators may require slight modification of these procedures.

- (4) After showering and drying, personnel shall proceed to the clean room and don clean disposable clothing if returning to the work area or street clothing if remaining outside the work area.

### **§1-93 Equipment and Waste Container Decontamination and Removal Procedures.**

The following procedures shall be followed whenever equipment or containers are removed from the work area during a large asbestos project:

(a) When the worker decontamination enclosure system shown in Illustration I alternates as a waste decontamination enclosure system, the clean room shall be considered a holding area during the period of active waste transfer only for the purpose of the loading of carts. Storage of waste and carts in the clean room is prohibited.

(b) Where the waste decontamination enclosure system is part of the worker decontamination enclosure system (see Illustrations II & IV), waste removal shall not occur during worker shift changes or when workers are showering or changing. Care shall be taken to prevent short circuiting and cycling of air outward through the shower and clean room.

(c) Where only one means of egress exists and the shower room is used as a waste washroom, workers are to be stationed in each room/area of the decontamination enclosure to transfer/process (see subdivisions (d), (h) and (I) of this section) the containers and equipment to or from adjacent sections. These workers are not to cross into the adjacent areas/rooms until the waste/equipment transfer is finished for that period and the workers have gone through decontaminations required by §1-92 of this chapter. The clean room/holding area workers shall have entered from uncontaminated areas with appropriate personal protective equipment; or prior to the start of waste transfer, these workers shall have exited the work area, fully decontaminated, and subsequently donned clean personal protective equipment.

(d) External surfaces of contaminated containers and equipment shall be cleaned by wet cleaning and/or HEPA vacuuming in the work area before transferring such items into the decontamination enclosure system. Contaminated workers shall not enter the washroom during this procedure.

(e) The cleaned containers of ACM and equipment shall be placed in uncontaminated leak-tight plastic bags or sheeting as the item's physical characteristics demand. Air volume shall be minimized and the bags or sheeting shall be sealed. Items that may puncture or tear the plastic bags or sheeting shall be placed in a hardwall container and sealed.

(f) The clean recontainerized items shall be moved into the airlock for subsequent transfer to the holding area. The washroom workers shall not enter this airlock or the work area until waste removal is finished for that period.

(g) Recontainerized items and cleaned equipment shall be removed from the airlock to the holding area by workers who have entered from uncontaminated areas with appropriate personal protective equipment.

(h) The recontainerized items of ACM and cleaned, bagged equipment shall be placed in open top, watertight plastic carts. These carts shall be held in the holding area pending removal. The carts shall be HEPA vacuumed or wet-cleaned following the removal of the containers of ACM from them.

(i) The exit from the waste decontamination enclosure system shall be secured to prevent unauthorized entry.

(j) The carts shall be stored in a holding area of the work site.

**§1-94 Maintenance of Decontamination Enclosure Systems and Barriers.** The following procedures shall be followed during the conduct of abatement activities on large asbestos projects:

(a) All plastic barriers inside the work place and partitions constructed to isolate the work area from occupied areas shall be inspected by the asbestos handler supervisor at least twice per shift.

(b) Smoke tubes shall be used to test the integrity of the work area barriers and the decontamination enclosure systems daily at a minimum both before abatement activity begins and at the end of each shift. A visual inspection of the barriers, including the use of differential manometers, shall be considered acceptable as a back-up test.

(c) Damage and defects in the decontamination enclosure system shall be repaired immediately.

(d) At any time during the abatement activity, if visible emissions are observed, or elevated asbestos fiber counts outside the work area are measured, or if damage occurs to barriers, abatement shall stop. The source of the contamination shall be located, the integrity of the barriers shall be restored, and visible residue shall be cleaned up using appropriate HEPA vacuuming and wet cleaning procedures immediately.

(e) Inspections, observations, and unusual incidents (e.g. barrier damage, contamination beyond the work area, etc.) shall be documented in the log by the asbestos handler supervisor.

## **Part 4**

### *Abatement Procedures*

#### **§1-101 Applicability**

**§1-102 ACM Disturbance, Handling and Removal Procedures**

**§1-103 Encapsulation Procedures**

**§1-104 Enclosure Procedures**

**§1-105 Glovebag Procedures**

**§1-106 Tent Procedures**

**§1-101 Applicability.** The following §§1-102 through 1-106 inclusive shall apply to all abatement activities.

**§1-102 ACM Disturbance, Handling and Removal Procedures.** The following procedures shall be followed during the conduct of abatement activities:

(a) Abatement of asbestos-containing materials shall be by wet methods. Dry removal of asbestos-containing material is prohibited, unless EPA approval has been obtained. The EPA-approved alternate removal plan shall be submitted to the Department for approval a minimum of 15 days before work is scheduled to begin or begins. The plan shall explain and justify why ACM must be removed dry and how asbestos fibers will be controlled to prevent their release.

(b) When amended water is used, the ACM shall be sprayed with sufficient frequency and quantity for enhanced penetration. Sufficient time shall be allowed for penetration to occur prior to removal action or other disturbance taking place. Accumulation of standing or free water is prohibited. Fluffy friable materials shall be saturated. Non-hygroscopic materials, such as tremolite or amosite, shall be thoroughly wetted on all surfaces while work is being conducted.

(c) When used, removal encapsulants that minimize fiber generation and enhance penetration, shall be applied per manufacturer's specifications and in accordance with federal guidelines (see §1-103).

(d) ACM on detachment from the substrate is to be bagged directly or dropped onto a flexible catch basin and promptly bagged. Excess air in the bag shall be minimized and the bag shall be sealed. Non-hygroscopic materials shall not be dropped. ACM shall not be dropped from a height greater than 10 feet. Above 10 feet in height dust-free enclosed inclined chutes may be used. Vertical or near vertical chutes are prohibited. Maximum inclination from horizontal shall be 60 degrees.

(e) Large components removed intact that cannot be containerized shall be maintained wet, wrapped (minimizing excess air) in at least one layer of 6-mil polyethylene sheeting, and secured by sealing with tape.

(f) After completion of all stripping work, surfaces from which asbestos-containing materials have been removed shall be cleaned (e.g. wet-brushed and/or wet-cleaned) to remove all visible residue.

(g) After the work area has been rendered free of visible residues, a thin coat of a

pigmented (non-transparent) encapsulating agent shall be applied to all surfaces in the work area from which ACM was removed, to seal in nonvisible residue.

**§1-103 Encapsulation Procedures.** The following procedures shall be followed for the encapsulation of ACM:

(a) Damaged and/or missing areas of existing fireproofing or insulation materials shall be repaired with appropriate replacement materials. The replacement material shall adhere to existing surfaces and provide a base for application of encapsulating agents.

(b) Loose or hanging asbestos-containing materials shall be removed in accordance with the requirements of §1-102: "Disturbance, Handling, and Removal."

(c) Only pigmented (non-transparent) encapsulants shown to be ratable as acceptable or marginally acceptable on the basis of Battelle Columbus Laboratory test procedures and rating requirements developed under the 1978 USEPA contract shall be used for encapsulation.

(d) The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon.

(e) Latex Paint with solids content greater than 15 percent may be used as an encapsulant only as follows:

(1) as a lockdown sealant for coating all non-metallic surfaces, or

(2) for sealing of cementitious ACM.

(f) Encapsulants shall be field tested prior to use by applying each to a small area to determine suitability of the material to be encapsulated.

(1) Testing is to occur only after the isolation barriers are in place.

(2) Testing shall be by the USEPA method specified in the appendix of "Guidelines for the Use of Encapsulants on Asbestos-Containing Materials" (June, 1981) or ASTM Standard Test Method E736-80. The encapsulated materials shall achieve a cohesive/adhesive strength of 100 lb/ft perpendicular to the surface.

(g) Application of bridging encapsulants over ACM shall provide the manufacturer's specified number of inches or minimum dry film thickness.

(h) A different color for each coat of encapsulant (per manufacturer's specifications) shall be used.

(i) Penetrating encapsulants shall be applied to penetrate existing asbestos-containing materials to the substrate. During treatment with a penetrating encapsulant, selected random core samples of the asbestos-containing materials shall be removed to check the depth of penetration. The resulting space shall be treated as outlined (in subdivision (a)) above and re-

encapsulated.

(j) Encapsulants shall be applied using airless spray equipment.

- (1) Spraying shall occur at the lowest pressure range possible to minimize fiber release from encapsulant impact at the surface. It shall be applied with a consistent horizontal or vertical motion.
- (2) Each subsequent coat of encapsulant shall be applied at a right angle to the preceding coat application or per manufacturer's specifications.

(k) Encapsulated asbestos-containing materials shall be identified (e.g. using labels, signs or color coding) in order to warn building maintenance personnel in the event encapsulated materials must be disturbed.

(l) The following maintenance procedures are recommended:

- (1) A periodic inspection and maintenance program, consisting of an inspection at least annually to check for damage to all encapsulated surfaces. Recoating and repairs are to be performed according to procedures in this section.
- (2) Maintenance of records by the building owner, on the locations and condition of the encapsulated material and on alteration, renovation, modification, or other procedures that resulted in disturbance of the encapsulated material.
- (3) When conditions change and encapsulation is no longer an appropriate method, additional abatement methods should be conducted.

**§1-104 Enclosure Procedures.** The following procedures shall be followed for the enclosure of ACM:

(a) Loose and hanging asbestos-containing materials that may be disturbed during the installation of hangers or other support/framing materials for the enclosure shall be removed by wet methods in accordance with §1-102: "Disturbance, Handling, and Removal".

(b) After installation of hangers, brackets or other enclosure supports and before installation of enclosure materials, damaged areas of fireproofing/thermal insulation shall be repaired using a replacement material.

(c) Utilities' service components shall be lowered or removed as necessary and reinstalled in a manner which permits proper utilization and does not disturb the integrity of the enclosures.

(d) Enclosed asbestos-containing materials shall be identified (e.g., using a sign, label, or color coding) in order to warn building maintenance personnel in the event that the enclosure must be disturbed.

- (e) The following maintenance procedures are recommended:
- (1) A periodic inspection and maintenance program, consisting of an inspection at least annually to check for damage to all enclosed surfaces. Re-enclosure and repairs are to be performed according to NYC Work Site Procedure regulations.
  - (2) Maintenance of records by the building owner, on the locations and condition of the enclosed material and on alteration, renovation, modification, or other procedures resulting in disturbance of the enclosed material.
  - (3) When conditions change and enclosure is no longer an appropriate method of asbestos abatement, additional abatement methods should be conducted.

**§1-105 Glovebag Procedures.** The following procedures shall be followed during the conduct of abatement activities:

(a) Glovebag procedures shall be done using commercially available glovebags of 6-mil clear plastic, appropriately sized for the project. Glovebags may not be shifted and shall not be moved from the initial surface to another surface, or reinstalled on the initial surface once removed.

(b) The glovebag procedure shall be performed in accordance with the following:

- (1) All necessary tools and materials shall be brought into the work area before the glovebag procedure begins.
- (2) Air monitoring shall be conducted in accordance with §§1-31 through 1-45.
- (3) Glovebag procedures shall be conducted by workers specifically trained in glovebag procedures and equipped with appropriate personal protective equipment.
- (4) The insulation diameter worked shall not exceed one half the bag working length above the attached gloves.
- (5) The ACM within the secured glovebag shall be wetted with amended water prior to stripping.
- (6) The bag shall be attached over duct tape which has been placed securely around the insulation, forming a smooth seal. The bag shall be securely attached to the insulation in a manner to prevent air transfer.
- (7) The integrity of the glovebag 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.

- (8) If the insulation adjacent to the section which will be worked on is damaged, or if the insulation terminates or is jointed or contains an elbow adjacent to the work section, the adjacent insulation shall be wrapped in 6-mil polyethylene sheeting and sealed airtight with duct tape.
  - (9) After the insulation has been removed, the surface shall be sprayed with amended water and brush-scrubbed to remove all visible ACM. The surface, the interior of the bag, the insulation and the tools shall then be sprayed with amended water. The enclosed volume shall be misted and time allowed for the mist to settle out before breaking the seal to remove the glovebag.
  - (10) Any insulation ends created by this procedure shall be:
    - (i) sealed with encapsulant prior to bag removal, or
    - (ii) thoroughly wetted before bag removal and sealed with wettable cloth end caps and spray glue or any combination of these materials immediately following bag removal.
  - (11) The tool pouch shall be separated from the bag prior to disposal by twisting it and the wall to which it is attached several times, and taping the twist to hold it in place, thus sealing the bag and the pouch which are severed at the midpoint of the twist. Alternatively, the tools can be pulled through with one or both glove inserts, thus turning the gloves inside out. The glove(s) is/are then twist sealed forming a new pouch, taped and several mid-seal forming two separate bags.
  - (12) A HEPA vacuum shall be used for evacuation of the glovebag in preparation for removal of the bag from the surface for clean-up in the event of a spill, and for post project clean-up.
  - (13) With the glovebag 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.
  - (14) A 6-mil plastic bag shall be slipped around the glovebag while it is still attached to the surface. The bag shall be detached from the surface by removing the tape or cutting the top with blunt scissors.
  - (15) 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 §§1-93 and 1-102 of this chapter.
- (d) Glovebag procedures which are large asbestos projects or part of a large asbestos project shall be conducted in accordance with all large asbestos project procedures.

**§1-106 Tent Procedures.** Tent Procedures shall be conducted as follows:

(a) Tent procedures shall be limited to the removal at any one time of less than 260 linear feet and 160 square feet of ACM and shall not result in disturbance of ACM during tent erection. Tent procedures may not be used as part of a large asbestos project except as provided for in section 1-81(e).

(b) Tent procedures shall be accomplished in a constructed or commercially available plastic tent, plasticizing and sealing all surfaces not being abated within the tent periphery forming an enclosure. 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 that shall not be reused once dismantled or collapsed.

(c) Asbestos handlers involved in the tent procedure shall wear personal protective equipment as specified in §1-51(c), plus a second disposable suit. All street clothes shall be removed and stored in a clean room within the work site. The personal protective equipment with two disposable suits shall be used for installation of the tent and throughout the procedure if a decontamination unit with a shower is not contiguous to the work area. If decontamination unit (with shower and clean room) is contiguous to the work area, only one disposable suit shall be required; in this case, prior to exiting the tent the worker shall HEPA vacuum and wet clean the disposable suit.

(d) 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.

(e) Negative pressure ventilation equipment shall be used to continuously exhaust the enclosed area as specified under §1-91, Engineering Controls, except that the negative air pressure in §1-91(c) 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.

(f) Removal of ACM shall be by wet methods in accordance with §1-102.

(g) ACM removed shall be placed in a leak-tight container without dropping it.

(h) Upon completion of abatement, and prior to tent collapse, the enclosed surfaces shall:

(1) be wet cleaned using rags, mops or sponges; and

(2) be permitted sufficient time to dry, prior to HEPA vacuuming all substrates; and

(3) be lightly encapsulated to lockdown residual asbestos.

(i) Upon barrier disturbance, loss of engineering controls, or termination of tent usage, the tent and the enclosed surfaces shall be treated according to subdivision (h) above.

(j) The bagged waste shall be wet cleaned or HEPA vacuumed and then transferred outside the tent, double bagged, and appropriately handled prior to disposal.

(k) The outer disposable suit (if 2 suits are worn) shall be removed and remain in the tent upon exiting. Following 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.

(l) The negative pressure ventilation equipment 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. All required air monitoring must be successfully completed before the tent/barrier is collapsed.

(m) 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.

## **Part 5**

### *Clean-up Procedures*

#### **§1-111 Preliminary Clean-up Procedures**

#### **§1-112 Additional Clean-up Procedures (Final)**

**§1-111 Preliminary Clean-up Procedures.** The following clean-up requirements shall be followed during the conduct of abatement activities on large asbestos projects:

- (a) (1) Visible accumulations of loose asbestos-containing waste material shall be cleaned up:
- (i) whenever sufficient asbestos-containing waste material to fill a single leak-tight container of the type commensurate with the properties of asbestos-containing waste material has been removed, or
  - (ii) at the end of each work shift, whichever shall occur first. Visible material shall be maintained wet until cleaned up.
- (2) Visible accumulations of asbestos-containing waste material shall be containerized utilizing non-metallic dust pans 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.

(b) Accumulations of dust shall be cleaned off all surfaces of the work area on a daily basis, using HEPA vacuum or wet cleaning methods.

(c) The waste decontamination enclosure system shall be wet cleaned twice using wet cleaning methods upon completion of waste removal. When the worker 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.

(d) The worker decontamination enclosure system shall be wet cleaned/HEPA vacuumed, as appropriate, after each shift change and meal break.

(e) Excessive water accumulation or flooding in the work area shall require work to stop until the water is collected and disposed of properly.

(f) Spillage of asbestos-containing waste material in an elevator shaft shall require:

- (1) immediate evacuation, shut down and isolation of all elevators in the affected elevator bank, and
- (2) containerization of all spilled visible accumulations of asbestos-containing waste material from within the elevator car and shaft, and
- (3) HEPA vacuuming/wet cleaning of the contaminated surfaces in the elevator car and shaft in repetitive cycles until clearance air levels are achieved, and
- (4) one air sample to be taken at each terminus of the shaft to be analyzed by PCM on a continuing basis until clearance air levels are achieved.

**§1-112 Additional Clean-up Procedures (Final).** Additional clean-up procedures shall be performed in the order set forth below prior to commencement of clearance air monitoring.

(a) After removal of visible accumulations of asbestos-containing waste material, a HEPA vacuuming shall be performed on all surfaces. To pick up excess water and gross saturated debris, a wet-dry shop HEPA vacuum, dedicated to asbestos abatement, may be used.

(b) All surfaces in the work area shall be wet cleaned (first cleaning).

(c) 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.

(d) After the first cleaning, the work area shall be vacated for 12 hours to allow fibers to settle. Then, 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, while the isolation barriers shall remain in position.

(e) After 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.

(f) As a prerequisite to commencement of clearance air monitoring, a thorough visual inspection shall verify the absence of asbestos-containing waste material (e.g. dust).

(g) All containerized waste shall be removed from the work area through the decontamination enclosures and the holding area.

(h) 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.

(i) After successful clearance air monitoring (see §1-31 et seq.), the isolation barriers shall be removed in conjunction with the use of a HEPA vacuum.

## **Subchapter G**

### *Pre-Demolition Abatement Activity Procedures*

- 1 Applicability**
- 2 Work Procedures**

#### **Part 1**

##### *Applicability*

#### **§1-120 Applicability of Regulations to Pre-Demolition Abatement Activities**

**§1-120 Applicability of Regulations to Pre-Demolition Abatement Activities.** The following regulations shall apply to pre-demolition abatement activities:

§§1-01 through 1-61	General Regulations
1-82	Worker Decontamination Enclosure System
1-83	Waste Decontamination Enclosure System
1-91 through 1-94	Work Place Procedures
1-102	ACM Disturbance, Handling and Removal Procedures
1-105	Glovebag Procedure
1-106	Tent Procedure

**Part 2***Work Procedures***§1-125 Work Area Preparation****§1-126 ACM Procedures: Order of Work****§1-127 Lockdown Encapsulation Procedures****§1-128 Clean-up Procedures during Abatement****§1-129 Clean-up Procedures: Preparation for Clearance Air Monitoring**

**§1-125 Work Area Preparation.** The following work area preparation shall be followed during the conduct of pre-demolition abatement activities:

(a) Prior to the start of abatement activities, the building owner or designated representative shall post a general notification at all main entrances to the structure. Postings of this notification shall be in English and Spanish, at eye level in a conspicuous well-lit place that can be viewed by the public without obstruction. Information provided in the notification shall include contractor, project location, that the project is regulated by NYC DEP, and the NYC DEP Asbestos Control Program telephone number. The notice shall have the following heading: NOTICE OF ASBESTOS ABATEMENT, in a minimum of 2 inches sans serif, gothic or block style lettering, with the balance of the lettering of the notice to be of the same type lettering in a minimum of 1 inch size. The notification shall be posted throughout all abatement activities.

(b) The building shall be vacated prior to the start of abatement activities.

(c) Electric power to all work areas shall be shut down and locked out. Safe temporary power and lighting shall be provided in accordance with all applicable NYC Code(s) and Regulations. All power to a work area shall be brought in from outside the area through ground-fault interrupter at the source.

(d) The worker decontamination enclosure system shall be installed or constructed prior to plasticizing the work area and before disturbing ACM. The waste decontamination enclosure system shall be installed or constructed prior to commencement of abatement. The area in which these systems are located shall require HVAC system isolation and plasticizing of electrical outlets and equipment that are within 6 inches of floor level.

(e) Heating, Ventilation and Air Conditioning (HVAC) System shall be shut down and locked out. Isolation barriers shall be installed to prevent interior duct work contamination.

(f) Abatement shall not commence until work place preparation has been completed.

(g) Methods that raise dust, such as sweeping or vacuuming with equipment not equipped with HEPA filters, are prohibited.

(h) Objects which can be removed from the work area prior to abatement without disturbing friable ACM shall be pre-cleaned using HEPA-filtered vacuum equipment and/or wet cleaning.

(i) The isolation barriers (i.e. sealing off of all openings, including but not limited to windows, corridors, doorways, barriers, skylights, ducts, grills, diffusers, and any other penetrations of the work areas) shall be installed with 2 layers of 6-mil plastic sheeting separately sealed with tape. All seams of HVAC or other system components that pass through the work area shall also be sealed. Chimney effects in stacks, columns, flues, shafts, double-walled enclosures, etc., that impact the work area, shall be eliminated by sealing the accesses with solid material covered with a double layer of 6-mil plastic sealed with tape.

(j) Cinderblock and porous construction materials shall be covered with one layer of 6-mil plastic sheeting, sealed at edges and seams.

(k) Flooring within the work area shall be water-tight.

(l) Suspended ceiling tiles and T-grid components in proximity to friable ACM shall remain in place until the work area has been fully prepared as outlined in this section and electrical and HVAC systems have been shut down. Contaminated suspended ceiling components shall be removed prior to abatement and treated with a penetrating encapsulant.

(m) Emergency and fire exits from the work areas shall be maintained, or alternative exits shall be established in accordance with applicable NYC Code(s) and regulations. Exits shall be checked daily against exterior blockage or impediments to exiting.

(n) Entrances to the work area that will be used for worker entry or emergency exits shall be locked against unauthorized entry.

(o) Elevators running through the work area shall conform to the following:

(1) The elevator door in the work area shall be enclosed with conventional 2 x 4 stud framing, covered with 1/2" plywood sheeting and sealed at all edges and seams. The barrier shall be covered and lapped for 8 inches with two layers of 6-mil plastic sheeting adhered individually with edges taped for airtightness.

(2) Elevators not remaining in service shall have the fuses removed and the power switch locked in the open position.

(3) Elevators that remain in service shall conform to the following additional procedures to minimize the piston effect that results:

(i) Elevator control shall be modified to bypass the work area.

(ii) A final larger layer of 6-mil plastic sheeting is to be taped airtight but with

slack forming a larger perimeter diaphragm. Air leakage across the barrier shall be corrected upon discovery, and the elevator shaft shall be checked for airborne asbestos contamination.

(iii) This system shall be smoke tested daily.

(4) Elevator shafts shall not be used as waste chutes for asbestos-containing waste material.

(p) Adequate toilet facilities shall be provided in the vicinity of the clean room external to the work place. Where such facilities do not exist, portable service shall be provided.

**§1-126 ACM Procedures: Order of Work.** If ACM throughout the structure is not removed prior to start of the demolition work approved by the New York City Buildings Department Demolition Permit, the following Order of Work (schedule) shall be followed for abatement activities conducted in connection with a demolition.

Only after the ACM has been completely removed from the top three floors of the structure to be demolished may the topmost floor be demolished subject to the following limitations:

(a) None of the demolition activities shall compromise in any way ACM abatement being done on lower floors.

(b) None of the chutes or other procedures used to remove the demolition debris shall be routed through areas which are in the process of having ACM removed, or have been prepared for abatement of ACM.

(c) Demolition workers shall proceed through uncontaminated areas when approaching and leaving the areas where demolition is being performed. If the demolition workers must pass through the work area, passage-ways with appropriate air locks, through the area where ACM is being abated shall be provided to allow the demolition workers to approach and leave the area where demolition is being conducted.

(d) As ACM is removed from succeeding floors, additional floors may be demolished as long as ACM abatement is always maintained at least two floors below the level at which demolition is being conducted, until all the ACM has been removed.

(e) Removal of ACM from levels below street level may be done simultaneously with ACM removal from upper floors. However, when below street level abatement is conducted, ACM shall always be removed from the lowest floor first before ACM is removed from higher elevation floors.

(f) The street level floor shall be the last floor from which ACM is removed.

**§1-127 Lockdown Encapsulation Procedures.** The following procedures shall be followed to seal in nonvisible residue while conducting lockdown encapsulation on all surfaces from which ACM removed:

(a) Only encapsulants rated as acceptable or marginally acceptable on the basis of Battelle Columbus Laboratory test procedures and rating requirements developed under the 1978 USEPA contract shall be used for lockdown encapsulation.

(b) The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon unless reviewed and approved by DEP.

(c) Latex paint with solids content greater than 15 percent shall be considered a lockdown sealant for coating all non-metallic surfaces.

(d) Encapsulants shall be applied using airless spray equipment. Spraying is to occur at the lowest pressure range possible to minimize fiber release from encapsulant impact at the surface. It shall be applied with a consistent horizontal or vertical motion.

**§1-128 Clean-up Procedures during Abatement.** The following clean-up procedures shall be followed during conduct of pre-demolition abatement:

(a) (1) Visible accumulations of loose asbestos-containing waste material shall be cleaned up:

(i) whenever sufficient asbestos-containing waste material to fill a single leak-tight container of the type commensurate with the properties of asbestos-containing waste material has been removed, or

(ii) at the end of each work shift whichever shall occur first. Visible material shall be maintained wet until cleaned up.

(2) Visible accumulations of asbestos-containing waste material may be containerized utilizing rubber dust pans and rubber squeegees or HEPA vacuums. Metal shovels may also be used EXCEPT in the vicinity of isolation or surface barriers which could be perforated by these tools.

(b) Accumulations of dust shall be cleaned off all surfaces of the work area on a daily basis, using HEPA vacuum or wet cleaning methods.

(c) The waste decontamination enclosure system shall be wet cleaned twice using wet cleaning methods upon completion of waste removal. When the worker 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.

(d) The worker decontamination enclosure system shall be wet cleaned/HEPA vacuumed, as appropriate, after each shift change and meal break.

(e) Excessive water accumulation or flooding in the area shall require work to stop until the water is collected and disposed of properly.

(f) Spillage of asbestos-containing waste material in an operating elevator shaft shall require:

- (1) immediate evacuation, shut down and isolation of all elevators in the affected elevator bank, and
- (2) containerization of all spilled visible accumulation of asbestos-containing waste material from within the elevator car and shaft, and
- (3) HEPA vacuuming/wet cleaning of the contaminated surfaces in the elevator car and shaft in repetitive cycles until clearance air levels are achieved, and
- (4) one air sample to be taken at each terminus of the shaft to be analyzed by PCM on a continuing basis until clearance air levels are achieved.

**§1-129 Clean-up Procedures: Preparation for Clearance Air Monitoring.** The following final clean-up procedures for pre-demolition abatement shall be performed prior to commencement of clearance air monitoring:

(a) All visible accumulations of asbestos-containing waste material shall be removed and containerized. Metal shovels may be used to pick up or move accumulated waste EXCEPT in the vicinity of plastic sheet isolation and surface barriers which could be perforated by these tools. The areas around the plastic sheet isolation barriers shall be cleaned of visible accumulations utilizing rubber dust pans and rubber squeegees. To pick up excess water and gross wet debris, a wet-dry shop HEPA vacuum dedicated to asbestos abatement may be used.

(b) All containerized waste shall be removed from the work area through the decontamination enclosures and the holding area.

(c) All surfaces in the work area shall be wet cleaned using rags or mops. After allowing sufficient time for drying of the work area, HEPA vacuums shall be used to thoroughly clean all surfaces after gross clean-up.

(d) Where porous construction materials or cinder block-like materials have been plasticized for surface barrier containment, the plastic sheeting shall be cleaned as in subdivision (c) above, then sprayed with an encapsulant and removed when dry.

(e) All surfaces in the work area shall be sprayed with an encapsulant, which upon

drying will not dissolve upon rewetting. Sufficient time for drying shall be allowed.

(f) All tools and equipment shall be removed from the work area and decontaminated in the equipment decontamination enclosure system.

(g) After successful clearance air monitoring (see §1-71 et seq.) the isolation barriers shall be removed in conjunction with the use of a HEPA vacuum.

# Large Asbestos Project (Small Asbestos Project Option) Worker Decontamination Enclosure System

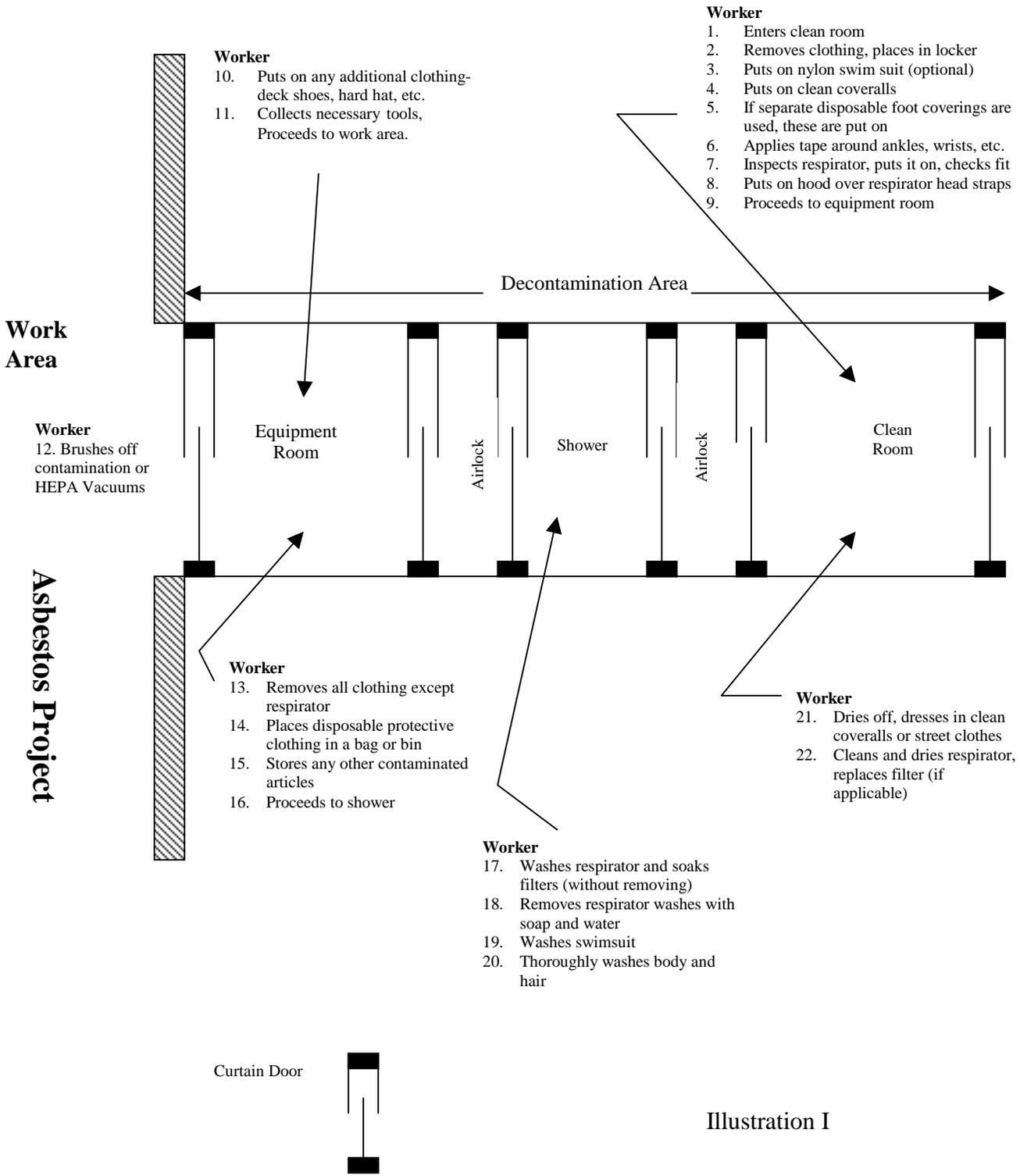


Illustration I

# Large Asbestos Project

## Parallel Worker and Waste Decontamination Enclosure Systems

The arrangement may be developed orthogonally from air lock 1 and/or 1a.

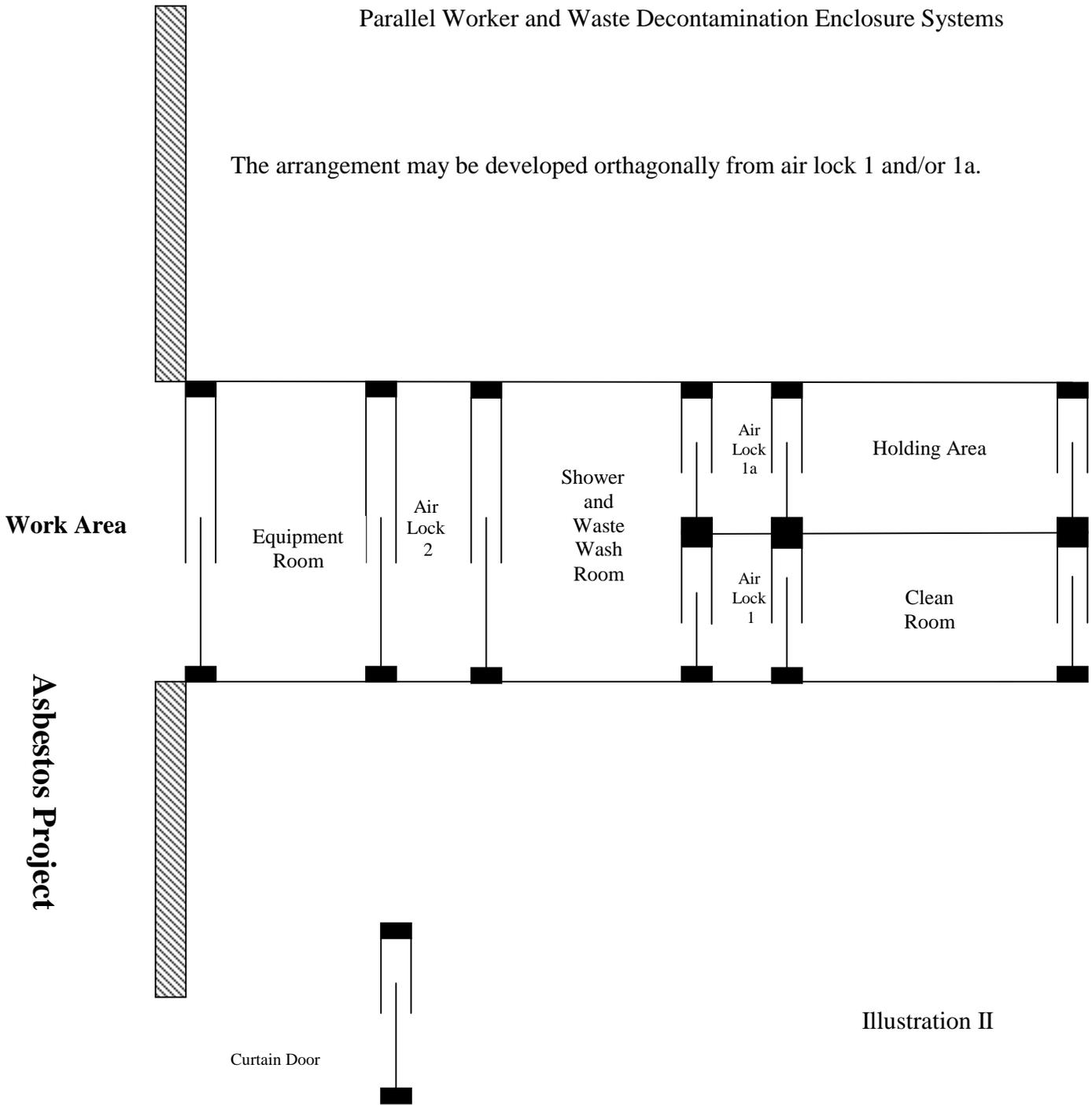


Illustration II

Large Asbestos Project  
(Small Asbestos Project Option)  
Waste Decontamination Enclosure System

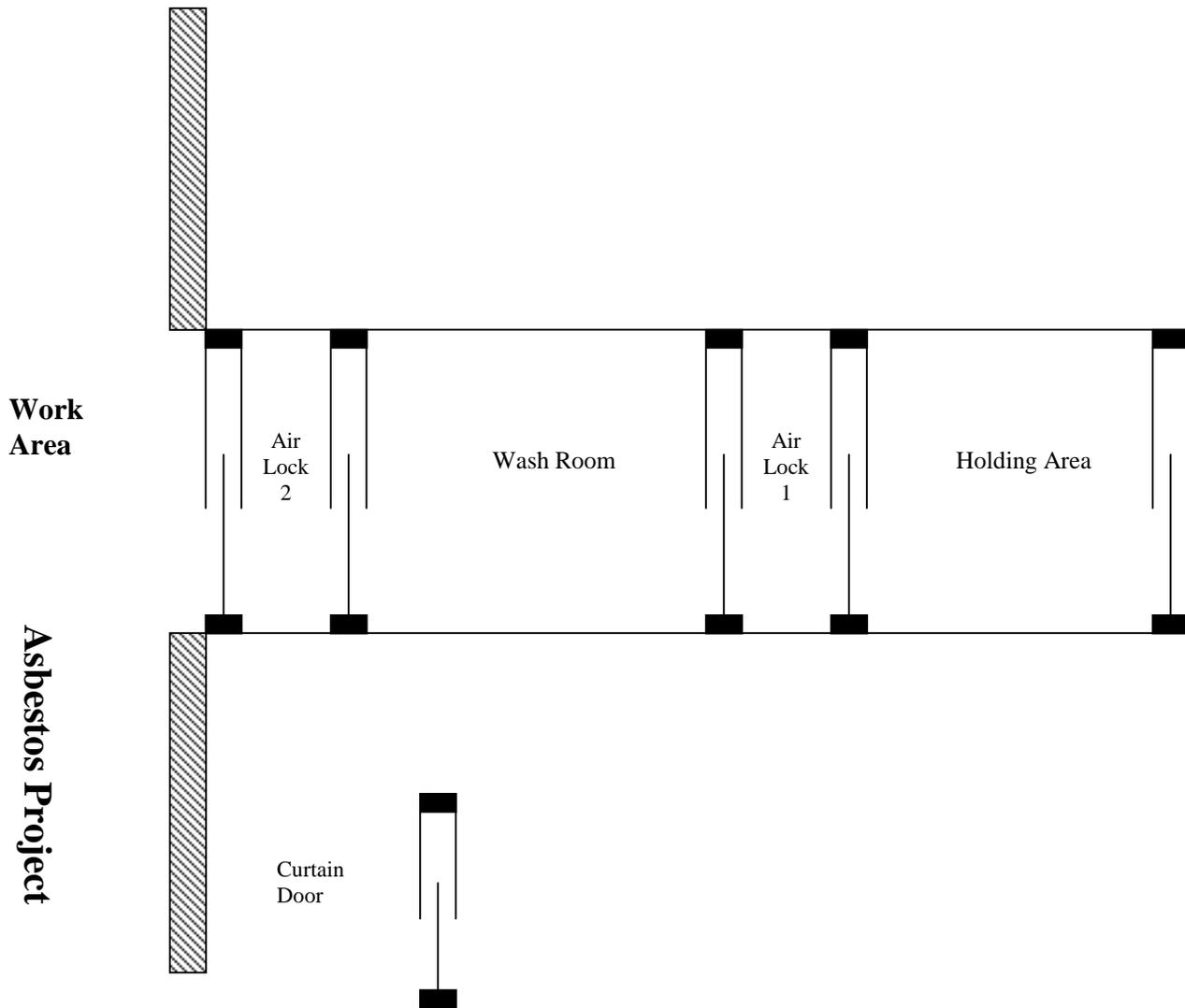


Illustration III

Large Asbestos Project  
(Small Asbestos Project Option)

Parallel Worker and Waste Decontamination Enclosure Systems

The arrangement may be developed orthogonally from the common equipment and waste wash room interface with air lock 2 and 2a

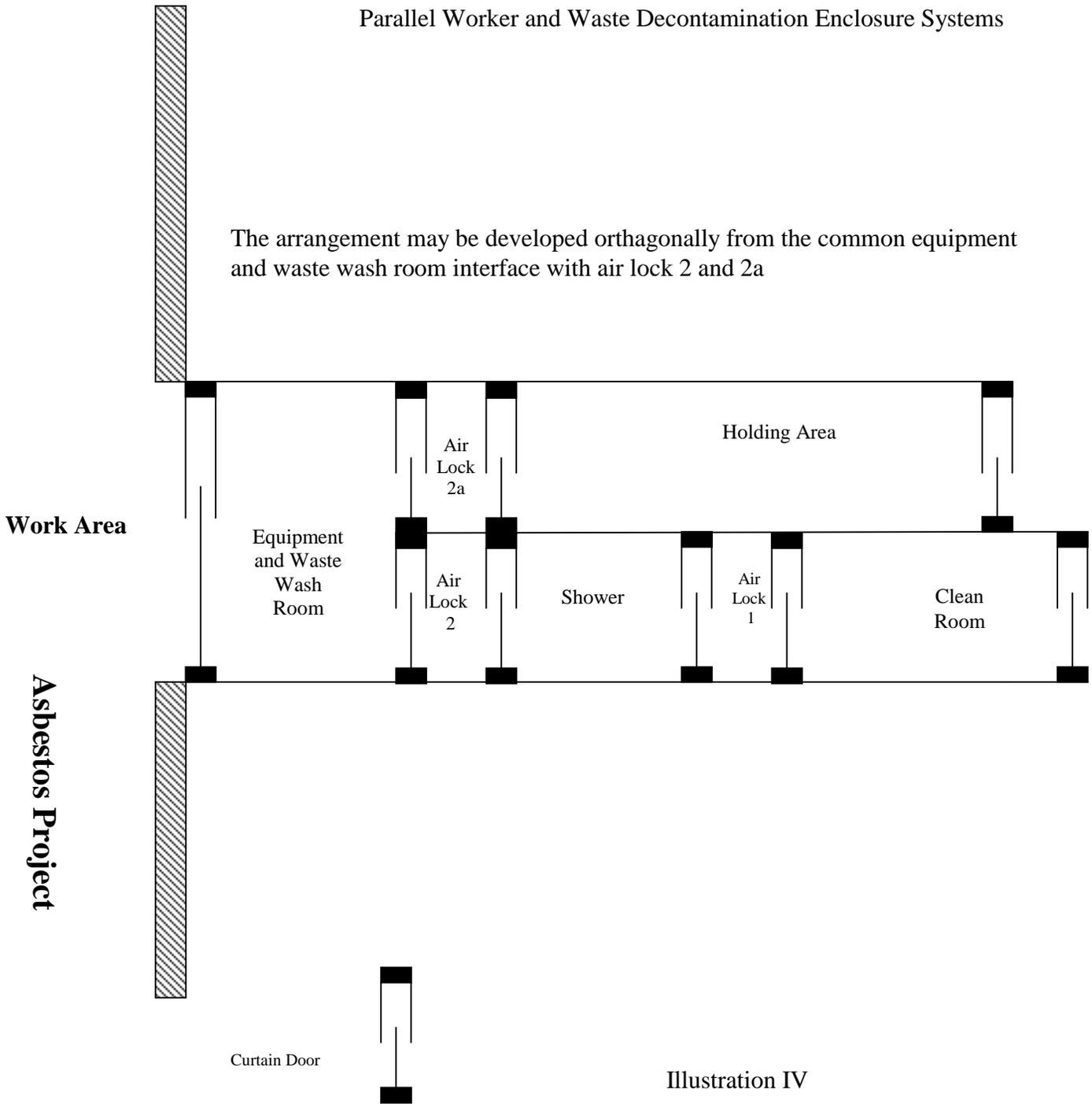


Illustration IV