

ASBESTOS ABATEMENT

Part 1 – General

The following asbestos-containing materials (ACM) have been confirmed in the project renovation areas: aircell pipe insulation and associated fittings, fittings associated with fiberglass-insulated pipes, backing board behind perimeter radiators, floor tile and mastic, and window caulk.

The intent of this specification is to engage an asbestos abatement contractor to perform abatement in order to facilitate the Department of Veterans Affairs (VA) project, “Renovations for Women’s Health Clinic”. In addition to this specification, Drawings 1-ASB-191 and 1-ASB-192 define the locations of asbestos materials and abatement plan for the 9th Floor, respectively. Drawing 1-ASB-1P1 defines the locations of asbestos materials and abatement plan for the Penthouse Mechanical Room. Drawings for Level 8 are not yet available, as they are not yet part of this scope.

1.1 Description

- A. This section specifies administrative and procedural requirements and the scope of work for asbestos abatement and related items of work.
- B. Furnish all labor, materials, licenses, facilities, equipment, services, employee training and testing, notifications, variances, permits and agreements necessary to perform the work required for asbestos removal, repair and installation of replacement materials in accordance with these specifications, the latest regulations from the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the State of Pennsylvania, The Asbestos Control Regulation of the City of Philadelphia Board of Health and the recommendations of the National Institute of Occupational Safety and Health (NIOSH), Standard 241 of the National Fire Protection Association (NFPA), VA Hospital asbestos abatement requirements and any other applicable federal, state, and local government regulations. Whenever there is a conflict or overlap of the above references, the most stringent provision shall apply.
- C. The work specified herein shall be performed by competent persons trained, knowledgeable and qualified in state-of-the-art techniques of asbestos abatement, handling, and the subsequent cleaning of contaminated areas. All abatement workers must be licensed by the City of Philadelphia as Asbestos Workers who are employed by a Philadelphia-licensed Asbestos Abatement Contractor.

- D. The contractor shall retain the services of a Certified Safety Professional, Certified Industrial Hygienist or other designated qualified individual, as needed to ensure that the contractor complies with all applicable OSHA standards and to review the contractor's work practices, and ensure that workers are adequately protected from all construction hazards including but not limited to electrical and fall hazards at all times while working on this project. All Supervisors must have attended OSHA 30 Hour Construction Safety Training. All Laborers must have attended OSHA 10 Hour Construction Safety Training.

1.2 Scope of Work

A. General

1. It is the intended scope of this project to remove all asbestos-containing materials within the boundaries of the renovation areas. The contractor is required to field-verify all site conditions and material quantities as needed to ensure that all specified materials are accounted for and removed. The contractor shall notify Owner or Owner's representative if suspect ACM other than those noted in Section 1.2.B of this specification are observed.
2. **Negative Pressure Containment.** Asbestos work defined herein shall be conducted using best industry practice, including use of negative air pressure containments. Negative air pressure containment requirements include but are not limited to pre-cleaning and sealing all critical barriers and use of HEPA-filtered exhaust machines as needed to generate a static negative air pressure of 0.02 inches of water column (minimum). Negative air pressure systems shall operate in accordance with "Guidance for Controlling Asbestos-Containing Materials in Buildings", Appendix J, Specifications and Operating Procedures for Use of Negative Pressure System for Asbestos Abatement, EPA Report # 560/5-85-024 (1985). Negative air pressure equipment shall be in compliance with ANSI Z9.2 (1979), (Local Exhaust Ventilation). Contractor shall measure negative air pressure using negative pressure gauges (digital manometer). Negative pressure gauges shall be positioned as needed to verify that all portions of the work area, including elevated work area locations (when applicable), are under specified negative air pressure. For work areas greater than 200 square feet, contractor shall provide and install at least one negative pressure gauge at each isolation barrier.

A sufficient number of HEPA-filtered exhaust machines shall be installed in each negative air pressure containment to achieve a minimum of four air changes per hour.

Note that to the extent allowed by the City of Philadelphia, minor repair work may not require negative pressure enclosures. Contractor shall provide a work plan that defines work practices and controls planned for the specified repair work.

3. **Electrical and HVAC Isolation.** All electrical and HVAC systems must be shut down and locked out prior to commencement of work in all areas.
4. **Base Scope Items.** This project consists of six tasks comprising the base project scope and one alternate task, as defined below.
5. **Project Phasing.** In order to accommodate construction of the Ante Room in accordance with the ICRA Plan, the abatement must be conducted in two phases as outlined on Drawing No. 1-ASB-192. All ACM abatement in the small Phase 1 work area (as detailed on Drawing No. 1-ASB-191) must be completed first, during off-hours (between 5:00 pm Friday and 6:00 am Monday) in order to accommodate construction of the Ante Room which will remain in place for the remainder of construction activities. Contractor shall provide temporary protection for all off-hours work.

B. Specific Items of Work

- **Scope Item No. 1 – Pre-Abatement Demolition**
After establishing the negative air pressure containment within each abatement area (indicated on Drawing No. 1-ASB-192) in accordance with the Section VI.B of the City of Philadelphia Asbestos Control Regulation and this specification, Contractor shall perform all ceiling demolition within the contained area. In addition, contractor shall perform demolition of all pipe chases where asbestos-insulated risers are suspected as indicated on Drawing No. 1-ASB-191. Any pipe insulation debris, other than fiberglass insulation encountered during ceiling removal or pipe chase insulation, shall be considered ACM. ACM debris or contaminated demolition debris encountered during pre-abatement demolition shall be disposed of as ACM waste. Non-contaminated demolition debris may be disposed of as C&D waste.
- **Scope Item No. 2 – Aircell Pipe Insulation and Associated Fittings Above Ceiling**
Contractor shall remove all asbestos-containing aircell pipe insulation and fittings above the ceiling in the vestibule, main hallway, Room 901A and as connecting pipes into a

number of rooms as indicated on Drawing 1-ASB-191. The insulated piping and fittings comprise numerous lines of varying diameters that total approximately 240 linear feet.

All piping systems that are abated shall be reinsulated in accordance with the MEPFP Specifications for this project.

- **Scope Item No. 3 – ACM Sealant on Fiberglass Pipe and Pipe Fitting Insulation**

An asbestos-containing white sealant material was identified on non-ACM pipe fitting insulation associated with fiberglass-insulated pipes above the ceiling of the vestibule and main hallway on the 9th floor.

This sealant may have been applied on seams of straight run pipe insulation. Therefore, the Contractor shall remove all fiberglass pipe and pipe fitting insulation in the locations indicated on Drawing 1-ASB-191. The estimated quantity of pipe insulation is approximately 200 linear feet of pipe and associated fittings.

All piping systems that are abated shall be reinsulated in accordance with the MEPFP Specifications for this project.

- **Scope Item No. 4 – Pipe Insulation Risers and Fittings**

Contractor shall remove all asbestos-containing pipe insulation risers and fittings (both aircell and fiberglass with ACM fittings) that are believed to be concealed in pipe chases where shown on Drawing 1-ASB-191. The insulated piping and fittings are estimated at approximately 250 linear feet.

All piping systems that are abated shall be reinsulated in accordance with the MEPFP Specifications for this project.

- **Scope Item No. 5 – Backing Board Behind Lower Wall-Mounted Radiators**

It is believed that an asbestos-containing backing board is present behind each of the wall-mounted radiators along the perimeter of the floor. Contractor shall remove the asbestos backing material in the locations shown on Drawing 1-ASB-191. The estimated quantity of this material is approximately 90 square feet.

- **Scope Item No. 6 – Asbestos Containing Floor Tile and Mastic**

Contractor shall remove asbestos-containing floor tile and mastic in the locations indicated on Drawing No. 1-ASB-191. The vinyl floor tile is present beneath the carpet in the hallway, vestibule, 901A (conference room) and in the photocopy room A906. Contractor shall remove all carpet in areas with ACM floor tile. Carpet shall be disposed of as ACM waste. The ACM floor tile and mastic cover a plan area of approximately 1,100 square feet.

- **Scope Item No. 7 – Asbestos-Containing Window Caulk**

Window caulking is present on the original east and south window openings and was confirmed to be ACM. The caulk is on the brickwork around the opening. The window openings support windows, fan units or have been blocked off. There is approximately 110 linear feet of caulk. Contractor shall remove all asbestos-containing window caulk in the locations indicated on Drawing 1-ASB-1P1 using tent procedures in accordance with Section VI.C.4 of the City of Philadelphia Asbestos Control Regulations.

Caulk that is abated shall be replaced with like material that meets the requirements of Federal specification TT-S 001 543A (Com-NBS) class A for silicone building sealants, Federal specification TT-S 00230C (Com-NBS) class A for one-component building sealants, ASTM Specification C 920 Type S, Grade NS, Class 50, Uset NT, G, A and O.

C. **Material Disposal**

All ACM waste load-out must be conducted off-hours.

All waste generated on this project will be transported and disposed of as friable asbestos waste. The waste hauler and landfill used must be properly insured, licensed and permitted per EPA, State of Pennsylvania and City of Philadelphia requirements.

D. **General Requirements**

1. **Pre-construction Submittals:** The contractor shall provide the following submittals to the owner's representative prior to commencement of work:

a. **Insurance certificates:**

- Certificates of insurance shall be assigned to Colden Corporation as additional insured and contain a waiver of subrogation. The additional insured requirement applies to all coverage's except Workers' Compensation, Employers Liability and Professional Liability. The waiver of subrogation applies to all coverages.

- Contractor shall maintain insurance limits specified by the VA.
- b. MSDSs for all materials to be brought on site.
- c. Copies of EPA, State and Local project notifications and permits.
- d. Worker documentation including:
 - Asbestos certifications and licenses
 - Proof of current respirator fit test
 - Proof of medical clearance to wear a respirator
 - Proof of 10 Hour OSHA Construction Safety Training for all Laborers
 - Proof of 30 Hr OSHA Construction Safety Training for all Supervisors
 - Other site specific health and safety training as required
- e. A project-specific work plan shall consisting of the following:
 - Abatement means and methods.
 - Staging of all equipment, materials, waste and waste transport route from the work area to exterior waste receptacle.
 - Work sequence and schedule defining days and hours worked with anticipated manpower for each scheduled work-shift.
 - An example form to be used by the contractor at the start of work shifts to inform the owner's representative of expected progress for the shift. The form shall also define a progress report of percent complete for the prior work day.
 - Water control and water leak response plan.
 - Fire watch and fire extinguisher placement plan.
 - Means to prevent solvent odor entrainment into to building fresh air intake.
 - Quantity and location of HEPA exhaust units to be installed. And calculations used to define number of units required to achieve specified air changes per hour.
- f. Statement by the officer of the company that written programs have been implemented to address all hazards associated with this project
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- g. The name of the waste hauler and landfill to be used on the project and documentation that they are properly insured, licensed and permitted per EPA, State of Pennsylvania and City of Philadelphia requirements.

h. Site Specific Water Control Plan:

The contractor shall have a site-specific water control plan. The plan shall define what actions will be taken and by whom in the event of a water emergency and address the following:

- Response actions for leaking pipes or hoses
 - Response actions for water leaking from the containment or decon
 - Shutting off temporary water supply to work area & decontamination facilities at the end of a shift
2. The contractor shall supply adequate lighting for all work areas. Minimum illumination intensity shall be 200-foot candles.
 3. The contractor is responsible for protecting the building from damage resulting from the work specified. The contractor shall implement precautions as needed to prevent water leakage and damage to surfaces and systems in and outside the work area. The contractor is responsible for controlling the amount of water used in the work area. Airless sprayers or water restricting spray nozzles with amended water shall be used at all times. Water shall not be allowed to accumulate on the floor of the work area at any time. Contractor shall take appropriate measures to ensure that the interior surfaces of ductwork present in the work area do not become wet, a condition that can contribute to mold growth.
 4. Use of pressure washers is prohibited.

1.3 *Asbestos Hazard*

- A. Asbestos-containing material when damaged or disturbed is friable.
- B. Strict compliance with each of the provisions outlined in these specifications for the removal and handling of asbestos-containing material is of great importance, because:
 1. The inhalation of airborne asbestos fibers can cause very serious and often fatal disease.
 2. Workers may not be aware they are inhaling asbestos fibers.
 3. Symptoms of the disease do not appear for many years.

- C. Only the contractor and his employees can prevent the inhalation of asbestos fibers and the development of asbestos-related disease.

1.4 Regulations, Codes and Standards

- A. The contractor shall comply with applicable federal, state, municipal, and local regulations including but not limited to:
 - 1. Title 29, Code of Federal Regulations, Part 1926.1101, OSHA, U.S. Department of Labor
 - 2. Title 40, Code of Federal Regulations, Part 61, Sub-parts A and M, National Emission Standards for Hazardous Air Pollutants, (EPA)
 - 3. City of Philadelphia Department of Public Health, Air Management Services (AMS) Asbestos Control Regulations (ACRs)
 - 4. City of Philadelphia Fire Code Revisions for Asbestos Projects: Section F-315.0 Fire Safety During Construction, Alteration and Demolition
 - 5. 29 CFR 1910.134 – Occupational Safety and Health Standards (Respiratory Protection)
 - 6. 29 CFR 1926.62 – OSHA Lead in Construction Standard
 - 7. 40 CFR Part 260 – Hazardous Waste Management System: General
 - 8. 40 CFR Part 261 – Identification and Listing of Hazardous Waste
 - 9. 40 CFR Part 262 – Standards Applicable to Generators of Hazardous Waste
 - 10. 40 CFR Part 263 – Standards Applicable to Transporters of Hazardous Waste
 - 11. 40 CFR Part 264 – Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
 - 12. 40 CFR Part 265 – Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

13. 40 CFR Part 50 – “National Ambient Air Quality Standards for Lead”
14. National Fire Protection Association (NFPA) guidelines (10A-1998)
15. 29 CFR 1926.150 – OSHA Fire Protection Standard
16. Philadelphia Fire Code (Section F-315.0)

The above listing is not intended to be exhaustive. The contractor is responsible for compliance with all applicable laws, rules and regulations whether or not they have been listed above.

1.5 Fire Protection

- A. Contractor must supply the work area with adequate quantity of charged and inspected fire extinguishers at designated locations within and outside the work area, and familiarize employees regarding the location and operation of the extinguishers in compliance with OSHA regulations (1926.150) and National Fire Protection Association (NFPA) guidelines (10A-1998) and Philadelphia Fire Code. OSHA requires at least one, 2A or greater extinguisher for each 3,000 square feet of work area.
- B. Extinguishers must have a record of inspection and service within the past 6 months.

1.6 Air Monitoring

- A. Air Monitoring (except for the Contractor’s OSHA compliance monitoring) will be performed by the Environmental Consultant (Colden Corporation).
- B. The Environmental Consultant will collect and have analyzed air samples in accordance with the Philadelphia Department of Health Air Management Services requirements.
- C. When visual work areas reviews and/or air monitoring is required, the Contractor shall notify the Owner and the Environmental Consultant, in writing, 48 hours in advance of the day and time when the Contractor will be ready for such inspections or monitoring.
- D. Air monitoring results generated by the Environmental Consultant shall not be used by the Contractor to represent compliance with regulatory agency

requirements for monitoring of worker's exposure to airborne asbestos, nor shall any other activity on the part of the Owner or Environmental Consultant represent the Contractor's compliance with applicable health and safety regulations.

1.7 Environmental Consultant

- A. The Environmental Consultant on this project will be Colden Corporation.
- B. The Environmental Consultant will be employed by the owner to perform air monitoring as required by Philadelphia Asbestos Control Regulation and to perform the following visual reviews of the asbestos work areas:
 - 1. Review the asbestos contractor activities whenever the contractor is engaged in activities that can potentially disturb asbestos. The purpose of the reviews is limited to verifying that the contractor is complying with applicable asbestos regulations while on site. Noted violations with applicable asbestos regulations will be communicated to the contractor's designated supervisor so that corrective action can be taken.
 - 2. Conduct reviews of the asbestos containment system prior to removal activities and on a daily basis to verify compliance with asbestos regulations. Noted violations with applicable asbestos regulations will be communicated to the contractor's designated supervisor so that corrective action can be taken.
 - 3. Conduct final visual review of the work area to verify that the area is ready for final clearance air monitoring. Final work area visual reviews will only be conducted after the contractor has completed an extensive visual inspection of the work area and can ensure that all specified asbestos materials and debris have been removed and the work area is clean as required by Philadelphia Asbestos Control Regulations.
- C. The Environmental Consultant will advise the owner in matters pertaining to the asbestos work and to act as the owner's technical liaison in technical matters involving the asbestos-related work performed at the site.
- D. The Environmental Consultant's role in advising the owner on environmental health matters does not relieve the Contractor's obligation to comply with all applicable health and safety regulations promulgated by the federal, state, or local governments. The environmental consultant will not engage in directing, managing or supervising the asbestos contractor's employees or subcontractor's in performance of the work. The environmental consultant will not under any circumstances review, inspect or take any

responsibility for the use or misuse of the contractor's or subcontractor's equipment including, but not limited to safety equipment.

Part 2 – Products

2.1 Materials

1. Deliver all materials in original packages, containers, or bundles bearing the name of the manufacturer and the brand name.
2. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.
3. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Materials that become contaminated shall be disposed of in accordance with applicable regulations.
4. Polyethylene **flame retardant** sheet, of six mil thickness shall be used unless otherwise specified. Polyethylene sheeting shall be sized to minimize the number of joints.

2.2 Encapsulants and Sealants

- A. Encapsulant materials shall be a penetrating type with the following characteristics:
 1. Encapsulants shall not be organic solvent-based or utilize a hydrocarbon in the liquid in which the solid parts of the encapsulant are suspended.
 2. Encapsulant shall not be flammable.
 3. Encapsulant shall be compatible with the anticipated asbestos replacement product; e.g. encapsulant application shall be UL certified and not void re-fireproofing warranty.
- B. A non-hardening lagging sealer shall be used for enclosing and sealing raw exposed edges and surfaces of asbestos-containing materials.
- C. Sealants shall be compatible with concrete, metals, wood, cable-jacketing, etc.

- D. Sealant shall prevent fire, smoke, water and toxic fumes from penetrating through sealants. Sealant shall have a flame spread, smoke and fuel contribution of zero, and shall be ASTM and UL rated for 3 hours.
- E. Noncombustible expanding foam shall be used to seal penetrations in work areas unless otherwise specified.
- F. If mastic removal solvents are used, solvent must be nonflammable with a flash point of at least 200 degrees F.

Part 3 – Execution

3.1 Pre-Construction Meeting

- A. The contractor shall attend a pre-construction conference at the job site at a date to be defined by the owner. The meeting shall be attended by the contractor supervisor who will be present on the project. The conference will be with the owner or the owner's authorized representative and the Environmental Consultant. Agenda for this conference will include, but not be limited to:
 - 1. Review of contractor submittals as defined in section 1.2 D
 - 2. In conjunction with the pre-construction conference, the contractor shall accompany the project monitor on a pre-construction walk-through, documenting existing condition of finishes and furnishings, reviewing overall work plan, location of fire exits, fire protection equipment, water supply, and temporary electrical tie-in location(s).

3.2 Utilities

- A. The contractor is responsible for providing a licensed electrician for all electrical disconnects. The building owner will provide a facilities representative to facilitate electrical disconnects. The contractor is responsible for providing a licensed electrician to connect temporary power panels.
- B. The owner will furnish water needed for construction. Shower water for the decontamination unit shall be individually adjustable hot and cold at the shower unit. The contractor shall provide a plumber and all necessary plumbing connections.
- C. The owner will pay the cost of the electricity needed for the project.

- D. All of the contractor's temporary lighting and electrical services for the work area shall be in weatherproof enclosures and shall be individually ground fault protected as required by local, state and federal regulatory agencies.
- E. The contractor shall provide an electrician and all GFI panels as required by the project.
- F. All wiring must be copper wire of an appropriate gauge to safely handle the load, voltages and current requirements of the equipment being operated.
- G. The contractor is responsible for providing a temporary hot water heater for the decontamination showers if hot water is not available from the building.

3.3 Asbestos Waste Disposal Requirement

- A. Waste Load Out
 - 1. All ACM waste load out must be conducted off-hours.
- B. Transportation and Disposal
 - 1. All asbestos containing waste generated from this project shall be treated and disposed of as friable asbestos waste. The waste hauler and landfill used must be properly insured, licensed and permitted per EPA, State of Pennsylvania and City of Philadelphia requirements.
- C. Waste Storage Container
 - 1. The owner will not provide a location for a waste storage container. Live load waste pick up is required.

3.4 Project Closeout

- A. Prior to final payment, the contractor shall provide one unbound and one bound copy of a project closeout manual, which shall include the following:
 - 1. Contractor supervisor log.

VA PHILADELPHIA
RENOVATIONS FOR WOMENS
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Documents- Addendum 2
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2. OSHA air monitoring data.
3. Copies of the waste transport permit(s) and EPA waste shipment records signed by the landfill that received the waste with acknowledgement of proper quantification and containerization of waste from this project.
4. Testing, guaranties warranties and bonds required by the General Conditions and any other extended guaranties or warranties stated in the technical sections of the specifications.

End of Section