**Guidelines for Asbestos Abatement Projects**

**For University System of Georgia Facilities - (Revised November 2013)**

**INTRODUCTION:**
These guidelines provide University System of Georgia (USG) institutions with recommended procedures and information to facilitate the successful completion of asbestos abatement projects. The guidelines are not “model specifications”, nor do they establish new mandatory requirements for conducting asbestos abatement projects at USG institutions. If an institution already has good procedures and practices in place for conducting asbestos abatement projects, this document should simply be used as supplemental information. Individual project circumstances may vary greatly depending on factors such as the type(s) of asbestos-containing material (ACM) present and whether the facility will remain occupied during the project. However,, this document addresses general procedures that most significant asbestos abatement projects should have in common. It should be noted that this document assumes that a proper asbestos survey, in accordance with industry standards, will be completed by an AHERA accredited asbestos inspector prior to planning the abatement project. The document does not address methods for conducting asbestos surveys or managing asbestos in-place. The document is structured in specification language format to assist campuses in the preparation of bid packages for asbestos abatement projects.

**1.0 SUMMARY OF GENERAL PROVISIONS:**

1. The practices specified in this document shall generally apply to asbestos abatement projects performed under public works contracts in USG facilities.
2. For most larger ACM abatement projects, the college/university shall retain an accredited third party environmental consultant to prepare project drawings and specifications and to oversee the abatement work through completion. This consultant shall prepare bid documents and shall function as the college/university representative for the project.
3. The college/university and/or their representative shall reserve the right to accept or reject any or all bids submitted.
4. All appropriate campus disciplines shall be involved in ACM abatement project pre-planning including Physical Plant, Environmental Safety, Facilities Planning and the affected department(s).

**1.01 ABATEMENT CONTRACTOR GENERAL RESPONSIBILITIES:**

1. The contractor shall furnish all legal and qualified labor, materials, facilities, equipment, services, insurance, and incidentals necessary to remove all specified asbestos within the work area as indicated in the project specifications and on project drawings provided by the college/university or their representative.
2. The contractor shall be responsible for restoring the work area and auxiliary areas utilized during the asbestos abatement project to conditions equal to or better than original.
3. Contractors shall be required to complete a pre-bid walk-through of the project area before being allowed to bid on the project.
4. The contractor shall comply with industry standards and use accepted state-of-the-art materials and products throughout all phases of the project.
5. The contractor shall complete all appropriate state asbestos project notifications, shall keep the project notification updated as required, shall give the third party consent copies in a timely manner, and shall pay all notification fees

**2.0 REGULATORY REFERENCES:**

1. All work shall be performed in compliance with current federal and state regulations, including U.S. EPA, OSHA, Georgia EPD and any other accepted state-of-the-art industry standards. The most recent edition of relevant regulations, standards, documents, or codes shall be in effect including:
	* Georgia Asbestos Safety Act, O.C.G.A Section 12-12-1 et seq.
	* Asbestos Removal and Encapsulation Rules of the Georgia Department of Natural Resources, Environmental Protection Division (Chapter 391-3-14)
	* U.S. Environmental Protection Agency (EPA) Regulations for Asbestos, Title 40 CFR, Part 61, *National Emission Standards for Hazardous Air Pollutants,* Subparts A and M.
	* Solid Waste Management Rules of the Georgia Department of Natural Resources, Environmental Protection Division (Chapter 391-3-4.01(5) and 391.3-404(8))
	* U.S. EPA Asbestos Model Accreditation Plan (Training of Asbestos Supervisors Workers), Title 40 CFR 736.92(a)(2)
	* U.S. EPA Worker Protection Rule, Title 40 CFR 763 Subpart G
	* Occupational Safety and Health Administration (OSHA), U.S. Department of Labor (Toxic and Hazardous Substances - Asbestos), Title 29 CFR Section 1926.1101
	* OSHA, U.S. Department of Labor (Respiratory Protection), Title 29 CFR Section 1910.134
	* OSHA, U.S. Department of Labor (Access to Employee Exposure and Medical Records), Title 29, CFR, Section 1910.20
	* OSHA, U.S. Department of Labor (Hazard Communication for the Construction Industry), Title 29, CFR, Section 1926.59
	* The Asbestos School Hazard Abatement and Reauthorization Act (ASHARA) - 15 USC 2641-2656
	* Transportation, Title 49, CFR, Parts 171 and 172
2. Any conflicts or overlap of these requirements shall be governed by the more stringent regulation or standard.
3. Neither the college/university or their representative shall be responsible for acts or omissions of the contractor, its subcontractors, or any of its agents or employees performing any of the ACM abatement related tasks.

**3.0 GUIDELINES FOR PRE-ABATEMENT PLANNING:**

1. The work area shall be clearly defined by the project documents. All areas and conditions included as part of the work area shall be identified and shall be included in the pre-bid project walk-through.
2. Areas with known ACM shall be identified at the pre-bid walk-through and shall be clearly identified on project drawings. Any suspected ACM not previously identified shall be sampled by the college/university or their representative in advance and any necessary modifications shall be made to the scope of work for the project at that time.
3. The contractor shall be responsible for verification of all quantity measurements on project drawings or in project descriptions due to the fact that quantities indicated may be estimates.
4. The contractor shall be required to establish barricades, post warning signs and coordinate with the college/university or their representative to plan and schedule work activities to minimize the impact of asbestos abatement on any areas that may remain occupied during the project.
5. The contractor shall be required to seal the work area, ensure that critical barriers are placed over all openings to the regulated area, ensure the heating, ventilation and air-conditioning (HVAC) system in the work area is turned off from initial ACM disturbance through the final clearance phase of the project, ensure that all steam and hot pipes are cooled prior to set up and work and neutralize all mechanical hazards (such as moving belts or shafts) in the work area.

**4.0 SUBMITTALS**

**4.01 PRE-WORK SUBMITTALS:**

NOTE: The college/university or their representative may elect to require abatement contractors to submit any or all of the following prior to beginning work on the project:

1. The following documents shall be submitted to the college/university or their representative at the mandatory pre-construction conference before beginning any asbestos abatement work:
	1. A detailed plan describing the procedures proposed for use in complying with the requirements of the project specifications. The plan shall include the location and layout of decontamination areas, the sequencing of asbestos work and methods to be used to assure the safety of building occupants, workers, and visitors to the site. The plan shall also include methods for controlling visible emissions in the work area and the containerization of asbestos debris.
	2. Medical examination reports for each employee of the contractor who will be on site (standard form from examining physician). These reports shall be less than or equal to 12 months old at the end of the project.
	3. Documentation that the contractor is currently licensed by the Georgia State Department of Natural Resources for asbestos abatement. ***Note: License documentation is mandatory prior to beginning any work.***
	4. Documentation of timely notification to State DNR/EPD and documentation of project fees paid.
	5. Certificates of accreditation (training) for each employee of the contractor who will be on site.
	6. Documentation of respirator training and fit testing for each employee of the contractor who will be on site. Fit test documentation shall be < or = 12 months old at the end of the project.
	7. Letter from a US EPA and Georgia EPD -approved disposal site to be used indicating that the ACM removed from the site will be accepted for disposal.
	8. A listing of authorized personnel to be granted access to work area.
	9. All necessary permits, licenses, and insurance (in accordance with Board of Regents and institution requirements).
	10. Documentation of contractor’s notifications to appropriate campus departments (Physical Plant, Environmental Safety, Facilities Planning, etc.) regarding the abatement project schedule.
	11. A brief written description of any legal proceedings, lawsuits or claims which have been filed or levied against the contractor or any of their present or past employees for asbestos related activities.
	12. A brief written description of any U.S. EPA, Georgia EPD, OSHA or other regulatory agency citations.
	13. At least ten (10) different references (with names and phone numbers) of other asbestos abatement projects the contractor has performed.
	14. The names and numbers of person(s) to be contacted on behalf of the contractor in cases of emergency.
	15. Material Safety Data Sheets (MSDSs) for all chemicals that will be used or that will be present at the job site.
	16. A notarized statement that no ACM will be installed during the project.

**4.02 PROJECT CLOSEOUT SUBMITTALS:**

The college/university or their representative may elect to require abatement contractors to submit any or all of the following upon completion of the ACM abatement project:

1. The following documents shall be submitted at the conclusion of the project to the college/university or their representative:
	1. Copies of daily project sign-in/sign-out logs and daily project log forms (including descriptions of unique or unusual events during the project).
	2. A copy of final clearance certification (see "SECTION 11.0 AIR SAMPLING AND FINAL CLEARANCE CERTIFICATION”).
	3. A copy of the Completion Certification to the Georgia EPD.
	4. Copies of waste manifests, disposal documents and any other relevant records.
	5. Documentation certifying that all replacement materials are asbestos-free.

**5.0 SITE SECURITY MEASURES:**

1. The college/university and their representative shall have access to the work area for inspection at all times.
2. Supervision of the ACM abatement work shall be performed by an accredited Competent Person (as defined by OSHA 29 CFR 1926.1101) employed by the contractor and on site at all times while the work is being performed. All asbestos abatement workers shall be properly trained and accredited in accordance with all applicable rules.
3. The ACM work area shall be restricted to authorized, trained, and properly protected personnel.
4. Entry into the work area by unauthorized individuals shall be reported immediately to the project supervisor and the college/university representative and shall be documented in the project log.
5. The contractor shall remain in compliance with all rules, codes, standards, and regulations governing the safety of all individuals at the worksite and shall be solely responsible for any injuries, accidents, exposures or liabilities occurring due to non-compliance or failure to secure the work area.

**6.0 STOP WORK ORDERS:**

The college/university or their representative may issue a stop work order at any time if concerns arise regarding employee or occupant safety, the integrity of the work area, security, regulatory non-compliance or other related concerns. If the college/university or their representative issues a verbal or written “stop work order” due to personnel, environmental or property safety risks, or violations of rules or regulations, the contractor shall immediately stop all work and shall have no right to project delay claims. The contractor shall not recommence work until authorized to do so by the college/university or their representative.

**7.0 PERSONNEL PROTECTION PRACTICES:**

1. Worker protection measures, including protective clothing, respirators and other equipment shall be the responsibility of the contractor. The college/university and/or their representative shall review and reserves the right to reject worker protection measures and methods prior to the beginning the project.
2. The contractor shall have, in effect on the project site, a written OSHA Hazard Communication Program as required by 29 CFR Section 1926.59.
3. The contractor shall have, in effect on the project site, a written contingency/emergency plan.
4. The contractor shall have, in effect on the project site, a written safety program for all employees.
5. Air sample results from the contractor’s previous projects shall not be accepted by the college/university or their representative as justification to eliminate the need to collect air samples on the project. The contractor shall conduct personal and area air sampling for a minimum of two days on the project before any decision to terminate sampling will be made. Such air sampling shall continue until the college/university or their representative notifies the contractor that it may be discontinued.

**8.0 CHANGE ORDERS:**

No work beyond the specified scope shall be performed without written permission by the college/university and an official approved change order.

**9.0 WORK AREA PREPARATION AND ASBESTOS REMOVAL METHODS:**

1. The contractor shall post asbestos warning signs at all entrances to the work area.
2. The contractor shall provide isolation of the work area from occupied areas of the building using polyethylene barriers and air locks. Anything or anyone leaving the work area shall be properly decontaminated.
3. Negative air pressure shall be maintained within the work area at a pressure differential of -0.02 inches of water relative to the outside environment by the use of high efficiency particulate air (HEPA) filtered negative air machines. A minimum of 4 air changes per hour shall be achieved within the work area throughout the project. HEPA filters used in negative air machines shall be replaced after no more than 600 hours of continuous use.
	1. The contractor shall be responsible for maintaining the required negative pressure environment within the work area. The contractor shall also be responsible for obtaining any legal certifications or licenses for any patented systems used on the project.
	2. Negative air pressure shall be maintained continuously in the work area from the beginning of the asbestos abatement project until final air clearance is achieved.
	3. If alternative containment method(s) is proposed to be used, the contractor shall submit written procedures for such method(s) for college/university review and approval before contract or work order issuance.
4. The college/university shall provide and/or disconnect electrical services as needed upon the written request of the contractor. The college/university shall also identify appropriate power sources for contractor’s use prior to beginning the project. The contractor’s electrical equipment shall be ground fault protected.
5. The contractor shall use industry-accepted asbestos removal procedures. All visible evidence of asbestos debris shall be removed using methods such as HEPA vacuuming, wet wiping, wet brushing, wet scraping and other state-of-the-art techniques or better. Dry sweeping or cleaning with compressed air or gases shall be prohibited in the work area. All areas and surfaces shall be cleaned and restored to original condition or better.
6. The contractor shall **not** seal or encapsulate any abated surfaces until final visual inspection and clearance test results are accepted by the college/university or their representative.
7. Pigmented sealants/encapsulants shall be sprayed on abated surfaces after asbestos has been removed and after acceptable final clearance has been achieved.
8. Projects involving contaminated soil in crawl space areas shall generally require a minimum of 3 inches of surface soil removal within a 6-foot distance of the asbestos source.
9. In preparation for ACM waste disposal, the contractor shall remove and properly containerize all asbestos-contaminated materials including disposable coveralls and polyethylene sheets. Contaminated materials shall be adequately wetted and packaged in sealed leak-tight containers with approved OSHA and US DOT labels, identifying the contents as asbestos materials. Wet asbestos waste shall be placed into labeled leak-tight wrappings and/or containers according to industry standards or better. The outside of the waste containers must be clean when removed from the regulatory area. All asbestos waste shall be kept wet until delivered to the approved disposal site.
10. ACM waste containers shall be transported in enclosed vehicles to a US EPA and Georgia EPD approved disposal site. The contractor shall complete the ***Asbestos Disposal Manifest Forms*** and shall send the appropriate copy to the Georgia EPD with a copy to the college/university or their representative at the same time that waste is sent for disposal.
11. All disposal fees shall be paid by the contractor.

**10.0 CLEANING STANDARDS:**

1. Inaccessible asbestos materials (e.g. in wall cavities, etc.) may be sealed or encapsulated in-place with prior approval of the college/university or their representative. All surfaces in the work area and decontamination unit shall be wet wiped, HEPA vacuumed, and cleaned and all debris shall be disposed of properly.
2. All areas of the abatement project shall be subject to visual inspection and air sampling by the college/university and/or their representative. Aggressive air sampling procedures shall be used as part of final clearance testing of work areas where required by the college/university or their representative.

**11.0 AIR SAMPLING AND FINAL CLEARANCE CERTIFICATION**

**11.01 PERSONAL (WORKER) AND AREA AIR SAMPLING REQUIREMENTS:**

1. The contractor shall conduct daily personal air sampling on abatement workers in compliance with OSHA 29 CFR 1926.1101.
2. The college/university or their representative may also conduct daily area air sampling in or around the work area to gauge the effectiveness of the abatement work methods and containment methods.
3. Any laboratory selected for analyzing air samples shall possess current certification verifying their participation in the National Institute of Standards and Technology (NIST), National Voluntary Laboratory Accreditation Program (NVLAP) and the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) program. The laboratory shall also have demonstrated ability in analyzing clearance air samples using Phase Contract Microscopy (PCM) and transmission electron microscopy (TEM). All analysts for the laboratory shall have successfully completed the National Institute for Occupational Safety and Health (NIOSH) 582 course (or equivalent) and show proficiency in the NIOSH 7400 analytical method for fiber counting as published in the NIOSH Manual of Analytical Methods.
4. A complete record of **all** air sampling results and other records such as pump calibration data shall be furnished to the college/university or their representative upon request.

**11.02 FINAL CLEARANCE CERTIFICATION**

1. The college/university representative shall be responsible for conducting final project visual inspections and clearance testing.
2. Final clearance testing records shall be maintained by the college/university representative and shall include the results of visual inspections, equipment used, number of samples taken, sample locations, dates, airflow rates and time sampled.
3. All equipment, instruments and procedures used for final clearance testing shall be state-of-the-art.
4. Based on the size and configuration of the work area and the type of ACM being removed, the college/university representative shall determine the number and type(s) of visual inspections and the total number of air samples necessary to achieve final clearance certification for the project. In addition, the college/university representative shall determine whether aggressive or static air sampling will be required. (NOTE: It is recommended that a Certified Industrial Hygienist (CIH) be consulted to determine specific procedures.)
5. For smaller abatement projects, facilities that are not intended for re-occupancy and for certain limited non-friable ACM abatement projects, the work area shall be considered cleared when there is no visible residue present on work area surfaces and when the result of each air sample collected and analyzed by PCM is less than or equal to 0.01 fibers per cubic centimeter (cc) of air.
6. For larger abatement projects (especially those involving friable ACM) and for facilities that will be re-occupied, the work area shall be considered clean when there is no visible residue present on work area surfaces and when the result of each air sample collected and analyzed by TEM is less than 0.01 asbestos structures per cc of air.
7. **All asbestos abatement projects performed in or near occupied areas shall require aggressive air sampling with TEM analysis for final clearance tests.**
8. When the tested area(s) fail to meet the specified level of cleanliness, the area shall be recleaned by the contractor (at the contractor’s expense) and re-sampled under the supervision of the college/university representative. Repeated cleaning and clearance testing shall be required (at the expense of the contractor) until the acceptable final clearance level is achieved.
9. The college/university representative may require additional air samples and/or additional analysis as needed.
10. Any questions concerning the asbestos abatement specifications or clearance testing procedures shall be directed to the college/university representative.

**12.0 DAMAGE TO COLLEGE/UNIVERSITY PROPERTY**

The college/university and/or their representative and the contractor shall inspect the work area prior to start of work and note all existing conditions. Any damage to college/university property by the contractor shall be promptly repaired by the contractor and assessed as a condition of final project acceptance. The contractor shall be responsible for restoring all work areas and surfaces to their original condition or better.

**SUGGESTED CRITERIA FOR EVALUATING ASBESTOS CONTRACTOR QUALIFICATIONS**

1. Contractors should be able to provide, upon request, a list of references of persons or firms who can attest to the quality of their work.
2. Contractors should be able to provide, upon request, a list of prior asbestos abatement contracts, including names, addresses, and telephone numbers of building owners for whom the projects were performed.
3. Contractors should be able to provide, upon request, air monitoring data collected during and after completion of prior projects in accordance with project specifications and in compliance with 29 CFR 1926.1101-OSHA Construction Industry Standard for Asbestos.
4. Contractors should possess and maintain on-site written standard operating procedures and employee protection plans which include specific reference to all applicable OSHA, U.S. Environmental Protection Agency (EPA) and Georgia Environmental Protection Division (EPD) regulations.
5. Contractors should possess and maintain all necessary federal and state certifications, accreditations and licenses for the performance of asbestos abatement projects (must be licensed in Georgia).
6. Contractors should provide, upon request, information on any asbestos abatement projects they have previously worked on which were prematurely terminated.
7. Contractors should provide, upon request, a list of any contractual penalties they have paid for breach or non-compliance with contract specifications such as overruns or liquidated damages.
8. Contractors should submit, upon request, a list of any citations levied against them by any federal, state, or local government agencies for violations related to asbestos abatement. The list should include the name(s) or location(s) of the project, the date(s) and an explanation of how the allegations were resolved.
9. Contractors should submit, upon request, a description of any legal proceedings, lawsuits or claims which have been filed or levied against them or any of their past or present employees for asbestos-related activities.
10. Contractors should submit, upon request, a list of equipment that they have available for asbestos work. Examples of such equipment include negative air machines, HEPA vacuum cleaners, decontamination facilities, disposable clothing, respirators, polyethylene sheeting, scaffolding, water filters, etc.
11. Contractors should possess asbestos liability, worker’s compensation, and other necessary insurance coverage as required by the Board of Regents and/or the institution’s contract documents.

Reference: “Guidance for Controlling Asbestos-Contaminated Materials in Buildings”, U.S. EPA, Office of Pesticides and Toxic Substances, EPA 560/5-85-024, Washington, D.C. 20460, June 1985 (Appendix K).

**Document History**

Revision 2 (November 30, 2013): Minor changes to reflect current best practices & regulations and addition of 4.01(A)(16) “A notarized statement that no ACM will be installed during the project.”

Original (March 2000)