ASBESTOS

OPERATIONS and MAINTENANCE PROGRAM



1906 College Heights Boulevard
Bowling Green, Kentucky 42101

OBJECTIVE

ASBESTOS MANAGEMENT POLICY

It is the policy of Western Kentucky University (WKU) to comply with the regulations of the Commonwealth of Kentucky, the federal Occupational Safety and Health Administration, and the Environmental Protection Agency that pertains to asbestos in the workplace and environment. All asbestos management or response actions in all properties owned or maintained by WKU involving training, analytical, consulting, design, removal, or disposal shall be approved by the WKU Environment, Health and Safety Department prior to the response being performed and shall adhere to all guidelines set forth by the WKU Asbestos Operations and Maintenance Program and all other applicable asbestos regulations.

The following document is an Asbestos Operations and Maintenance Program for effectively managing asbestos-containing building materials. The parameters of this program are to be implemented while conducting building cleaning, maintenance, renovation, demolition, and general day-to-day operations for all properties owned or maintained by Western Kentucky University. This program establishes specific guidelines and procedures that shall be followed when working in areas that contain known or presumed asbestos materials.

The purposes of the Asbestos Operations and Maintenance Program are to control fiber release, clean existing contamination, safely remove asbestos-containing materials when necessary, and to maintain asbestos-containing building material in a suitable condition. These goals shall be met by the utilization of an asbestos awareness training program, designating Departmental Asbestos Coordinators, implementing safe work practices, providing an Asbestos Management Request system, maintaining a record keeping system, posting warning labels and signs, assuring plans and specifications for new or renovated WKU buildings specify that no asbestos-containing materials are to be used in construction, and various other activities as defined within this document. Cooperation from all areas of Western Kentucky University is essential in making this an effective program.

The WKU Asbestos Operations and Maintenance Program is coordinated and maintained by the WKU Asbestos Program Coordinator and Liaison. All asbestos related correspondence, including but not limited to, plans and specifications, price contracts, requests for bids, notifications of abatement, demolition, or renovation, notices of violations, and/or any other documents or correspondences pertaining to all University asbestos related issues shall be directed through the WKU Asbestos Program Coordinator and Liaison concerning any asbestos related activities for all properties owned or maintained by WKU.

Please email all asbestos related correspondence, documents, comments, questions, suggestions, or concerns to the WKU Asbestos Program Coordinator and Liaison at:

WKU Asbestos Program Coordinator

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ASBESTOS MANAGEMENT PROGRAM

ABBREVIATIONS

For purposes of this Operations and Maintenance Program:

ACM - Asbestos-Containing Material

ACBM- Asbestos-Containing Building Material

AHERA - Asbestos Hazard Emergency Response Act

AMR - Asbestos Management Request

AOMP- Asbestos Operations and Maintenance Program

APC - WKU Asbestos Program Coordinator

APL- WKU Asbestos Program Liaison

CFR - Code of Federal Regulations

DAC - WKU Departmental Asbestos Coordinator

DAQ - Kentucky Division for Air Quality

DOT- Department of Transportation

EHS - WKU Environment, Health and Safety Department

EPA - Environmental Protection Agency

FR - Federal Register

f/cc - Fibers per Cubic Centimeter

HEPA- High-Efficiency Particulate Air

KRS - Kentucky Revised Statutes

NESHAP- National Emission Standards for Hazardous Air Pollutants

OSHA- Occupational Safety and Health Administration

PACM - Presumed Asbestos-Containing Material

PDC- WKU Planning, Design, and Construction Department

PM- WKU Project Manager

RWP- Recommended Work Practice

TSCA - Toxic Substances Control Act

TSI - Thermal System Insulation

TWA - Time-Weighted Average

WKU - Western Kentucky University

DEFINITIONS

For purposes of this Operations and Maintenance Program:

Accessible when referring to ACM means that the material is subject to disturbance by building occupants, custodial, or maintenance personnel in the course of their normal work activities.

Accredited or accreditation when referring to a person means that person is accredited in accordance with section 40 CFR Part 763, Appendix C to Subpart E, Asbestos Model Accreditation Plan.

Air erosion is the passage of air over friable ACM, which may result in release of asbestos fibers.

Asbestos means the asbestiform varieties of Chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonite grunerite); anthophyllite; tremolite and actinolite.

Asbestos-containing material when referring to buildings means any material or product that contains more than 1 percent asbestos.

Asbestos-containing building material means surfacing ACM, thermal system insulation ACM, or miscellaneous ACM found in or on structural members or other parts of a building.

Asbestos debris means pieces of ACM identified by color, texture, or composition, or means dust, if the dust is determined by an accredited inspector to be ACM.

Asbestos Management Request is an online form used by Departmental Asbestos Coordinators and Project Managers for the foreseen management by the Asbestos Program Coordinator of suspect asbestos and asbestos-containing materials associated with demolition, maintenance, or renovation.

Asbestos Program Coordinator is the WKU representative that shall provide onsite implementation, coordination, management, and operations of the University's Asbestos Management Program.

Asbestos Program Liaison is the WKU representative appointed to provide notification of WKU renovation/demolition projects and act as a point-of-contact to the Kentucky Division for Air Quality.

Damaged friable miscellaneous ACM means friable miscellaneous ACM that has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be the separation of ACM into layers, or from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage, scrapes, gouges, or other signs of physical damage on the ACM.

Damaged friable surfacing ACM means friable surfacing ACM that has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or which has delaminated such that its bond to the substrate (adhesion) is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be the separation of ACM into layers, or from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage, scrapes, gouges, or other signs of physical injury on the ACM.

Damaged or significantly damaged thermal system insulation ACM means thermal system insulation ACM on pipes, boilers, tanks, ducts, and other thermal system insulation equipment where the insulation has lost its structural integrity, or its covering, in whole or in part, is crushed, water-stained, gouged, punctured, missing, or not intact such that it is not able to contain fibers. Damage may be further illustrated by occasional punctures, gouges or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed ACM ends or joints. Asbestos debris originating from the ACM in question may also indicate damage.

Departmental Asbestos Coordinator(s) is the WKU representative(s) that shall provide onsite implementation and coordination of the University's Asbestos Management Program to the Asbestos Program Coordinator, as it applies and pertains to their respective department or area of all properties owned or maintained by Western Kentucky University.

Encapsulation is the treatment of ACM with a material that surrounds or embeds asbestos fibers in an adhesive preventing fiber release, the encapsulant creates a membrane over the surface (bridging encapsulant) or penetrates the material binding its components together (penetrating encapsulant).

Enclosure means an airtight, impermeable, barrier around ACM to prevent the release of asbestos fibers into the air.

Fiber release episode means any uncontrolled or unintentional disturbance of ACM resulting in visible emission.

Friable is material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, including previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

High-efficiency particulate air refers to a filtering system capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 microns in diameter or larger.

Homogeneous area means an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture.

Miscellaneous ACM means miscellaneous material that is ACM, building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

Nonfriable means material which when dry may not be crumbled, pulverized, or reduced to powder by hand pressure.

Operations and Maintenance Program is a program of work practices to maintain friable ACM in good condition, properly remove ACM, ensure cleanup of asbestos fibers previously released, and prevent further release by minimizing and controlling friable ACM disturbance or damage.

Potential damage means circumstances in which:

- Friable ACM is in an area used by building occupants, including maintenance personnel, in the course of their normal activities.
- There are indications that there is a reasonable likelihood that the material or its covering will become damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.

Potential significant damage means circumstances in which:

- Friable ACM is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.
- There are indications that there is a reasonable likelihood that the material or its covering will become significantly damaged, deteriorated, or delaminated due to factors such as changes in building use, changes in operations and maintenance practices, changes in occupancy, or recurrent damage.
- The material is subject to major or continuing disturbance, due to factors including, but not limited to, accessibility or, under certain circumstances, vibration or air erosion.

Preventive measures mean actions taken to reduce disturbance of ACM or otherwise eliminate the reasonable likelihood of the material becoming damaged or significantly damaged.

Project means any undertaking or plan of action that has the possibility of impact on building materials associated with demolition, construction, modification or renovation (i.e. painting, carpet replacement, wall removal or additions, alterations to HVAC systems, electrical systems etc.) of any size by a contractor, service worker or others providing work on buildings owned or maintained by WKU.

Project Manager is anyone responsible for demolition, construction, or renovation of any size project regardless of their job title (ie. painting, carpet replacement, whole building construction or renovation, wall removal or additions, alterations to HVAC and electrical systems, etc.).

Removal means the taking out or the stripping of substantially all ACM from a damaged area, a functional space, or a homogeneous area.

Repair means returning damaged ACM to an undamaged condition or to an intact state to prevent fiber release.

Response action means a method, including removal, encapsulation, enclosure, repair, or operations and maintenance that protect human health and the environment from friable ACM.

Routine maintenance area means an area, such as a boiler room or mechanical room, that is not normally frequented by the general public and in which maintenance employees or contract workers regularly conduct maintenance activities.

Significantly damaged friable miscellaneous ACM means damaged friable miscellaneous ACM where the damage is extensive and severe.

Significantly damaged friable surfacing ACM means damaged friable surfacing ACM in a functional space where the damage is extensive and severe.

Surfacing ACM means surfacing material that is ACM.

Surfacing material means material in a building that is sprayed-on, troweled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Thermal systems insulation means material in a building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, water condensation, or for other purposes.

Thermal system insulation means thermal system insulation that is ACM.

Vibration means the periodic motion of friable ACM, which may result in the release of asbestos fibers.

Asbestos Management Personnel

Department of Environment, Health and Safety

Asbestos Program Coordinator

Laura Hale ~ Office 270-745-2236

Asbestos Program Liaison

Primary – Laura Hale ~ Office 270-745-2236
Secondary – vacant

Departmental Asbestos Coordinators

Agricultural Farm Complex

Primary – Joey Reynolds ~ Cell 270-991-5982

Facilities Management

Building Services – Carla Nally ~ Office 270-745-3253

Maintenance Services – Mark Updegraff ~ Office 270-745-5821
Plant Operations – Mark Allen ~ Office 270-745-6179

Housing and Residence Life

Primary – Allen Mansfield ~ Cell 270-779-9627

Information Technology Division

Primary – Vacant

Planning, Design & Construction

Primary - Ben Johnson ~ Office 270-745-2075

Telecommunications
Network & Computing Support

Primary – Todd Hughes ~ Office 270-745-2822

ASBESTOS OPERATIONS and MAINTENANCE PROGRAM

PURPOSE

This program is for the specific purpose of controlling and managing asbestos-containing material (ACM) at Western Kentucky University (WKU). Employees of the University and designated supervisors of outside employees whose work may involve existing ACM in properties owned or maintained by WKU shall be informed of the Asbestos Operations and Maintenance Program (AOMP) and the associated guidelines in the AOMP prior to commencement of work. Contract employers and employees are required to follow the guidelines contained herein as well. The AOMP may be viewed and obtained at the WKU Department of Environment, Health and Safety (EHS) web site:

Western Kentucky University Asbestos Operations and Maintenance Program

This AOMP provides a set of specific procedures for cleaning and controlling the release of asbestos fibers. There are special procedures implemented for building cleaning, maintenance, renovation, and general day-to-day operations that may involve ACM. It should be noted that the AOMP is an interim control of asbestos materials.

Proper training of personnel who participate in the AOMP is essential. The WKU Asbestos Program Liaison (APL) shall provide notification of all WKU maintenance, demolition, and renovation projects involving ACM, and act as a point-of-contact, to the Kentucky Division for Air Quality (DAQ). The Asbestos Program Coordinator (APC) shall provide onsite implementation, coordination, management, and daily operations of the WKU AOMP. The Departmental Asbestos Coordinator (DAC) shall assure onsite implementation, coordination, and participation of the AOMP as it applies and pertains to their respective department or area of all properties owned or maintained by WKU.

The AOMP includes provisions for dealing with each type of asbestos found in WKU facilities. These categories are:

- *Surfacing Material* - ACM sprayed or troweled on surfaces. This may include acoustical plaster on ceilings and spray applied fireproofing on structural members.
- *Thermal System Insulation* - ACM applied to pipes, boilers, tanks, and ducts to prevent heat loss or gain and/or water condensation.
- *Other Miscellaneous* - ACM floor tiles, ceiling tiles, wallboard, siding, textiles, packings, gaskets, adhesives, etc.

Materials found in the first two categories are of the most importance, these materials are usually more likely to become friable when disturbed, creating the possibility of releasing airborne fibers. There must be special precautions utilized during the handling of non-friable materials to prevent rendering them as friable. Non-friable materials may release fibers if sanded, drilled, sawed, pulverized, or otherwise manipulated from their binder. Strict adherence to this AOMP will ensure control of asbestos fiber.

The three basic functions of the University's AOMP are:

- To clean existing contamination and control future fiber release.
- To implement specific asbestos activities and procedures.
- To defer more permanent abatement action.

The elements of the University's AOMP include:

- Data assimilation and record keeping
- Training, notification and warning labels
- Respiratory protection and medical surveillance
- Asbestos Management Requests
- Special cleaning and work practices
- Asbestos removal and emergency response procedures
- Periodic surveillance

FEDERAL AND STATE REGULATIONS

Federal and state governments regulate ACM within the Commonwealth of Kentucky.

OSHA Standard 29 CFR 1910.1001 addresses asbestos occupational health impact, by specifying limitations of workers' exposure through engineering controls, protective equipment, monitoring, and training. The OSHA standard also provides requirements for the specifications and posting of warning signs, labels, and respiratory protection guidelines.

The Environmental Protection Agency (EPA) regulates the emission standard for asbestos (40 CFR Part 61, Subpart M) and addresses the requirements for the manufacturing, application, removal, and disposal of asbestos. The sections of the EPA regulations that pertain to the University are those that govern removal from maintenance, renovation, or demolition areas and the disposal of asbestos.

Kentucky KRS 401 KAR 58:025 adopts by reference the federal National Emission Standards for Hazardous Pollutants (NESHAP) regulation 40 CFR 61, Subpart M. It provides standards for commercial use of asbestos, demolition, and renovation of facilities, and waste disposal. It also serves as a basis for 401 KAR 58:040 to ensure that entities performing asbestos abatement in Kentucky are fully qualified. It requires that these entities be certified to perform asbestos abatement projects that are subject to 401 KAR 58:025 and establishes specific work practices.

Kentucky KRS 401 KAR 58:005 and 401 KAR 58:010 are based on federal Asbestos Hazard Emergency Response Act (AHERA) laws, which are different from the NESHAP-based regulations. 401 KAR 58:005 requires accreditation of individuals performing work in public, commercial, and school buildings. 401 KAR 58:010, based on the federal AHERA, requires that the location and condition of all the asbestos-containing building materials in school buildings be identified and a strategy for controlling the asbestos is provided. The WKU AOMP is based on an approved modified version of 401 KAR 58:010.

ASSIMILATION OF SURVEY DATA

WKU Asbestos Records Center maintains all asbestos activity documentation. Asbestos records are located and may be reviewed at the *Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046*. These records shall include but not limited to:

- Asbestos training records
- Asbestos building inspections
- Asbestos hazard prevention plans and specifications
- Asbestos Management Requests
- Asbestos abatement records

Locations of ACM are recorded for use by maintenance and custodial personnel, service workers or other parties of interest. The "WKU Known Asbestos Location List" is continually revised and provides readily available and current ACM location information and can be obtained at the WKU Department of Environment, Health and Safety web site:

Western Kentucky University Known Asbestos Location List

It shall be noted that particularly for renovation projects, asbestos survey results were obtained by a non-destructive manner. Other hidden unknown asbestos-containing materials may be exposed during demolition, renovation, and/or maintenance activities of areas not readily accessible without extensive damage to the building or component. If at any time during a project, suspect asbestos-containing materials not previously identified are encountered, do not disturb these materials. Contact your WKU Project Manager and/or the WKU Asbestos Program Coordinator.

In some instances, material shall be considered and listed on the "WKU Known Asbestos Location List" as presumed ACM, particularly gasket and roofing. Prior to the implementation of any maintenance, renovation or demolition activity involving WKU building components listed as presumed, the material shall be tested to prove the absence of asbestos. An online "Asbestos Management Request" (AMR) is provided to request all phases of assistance or support with all asbestos-related issues pertaining to properties owned or operated by WKU. These online requests shall be completed by the Departmental Asbestos Coordinator for their respective department or area and responded to by the WKU Asbestos Program Coordinator. The "Asbestos Management Request" shall be completed online at the WKU Department of Environment, Health and Safety website:

Western Kentucky University Asbestos Management Request

LOCATION NOTIFICATION AND WARNING

The purpose of the ACM location notification and warning program is to inform WKU employees, building occupants, contractors, service workers, or others that may have potential contact with the ACM. If proper procedures are not followed during maintenance and renovation activities, ACM may be disturbed. WKU has a notification system that will effectively warn workers of ACM. This location notification serves two functions:

- It will alert affected personnel to the potential asbestos hazard in the building's construction materials.
- It generates a broad involvement with personnel. Accidental disturbance is less likely to occur with location awareness.

All employees have the right to know and be aware of asbestos-containing materials in buildings. WKU employee notification shall be provided by, but not limited to, verbal communication, warning labels or signs, or the "WKU Known Asbestos Location List". The EPA Guide for Reducing Exposure to Asbestos shall be made available to all university employees. The "Guide for Reducing Exposure to Asbestos" is Appendix B of this document. Asbestos location information, verbal description and printed copy, shall be provided to WKU maintenance and custodial personnel utilizing the annual asbestos awareness training provided by the WKU Environment, Health and Safety Department.

Warning labels or signs shall be attached to asbestos-containing components or in routine maintenance areas such as boiler rooms, mechanical rooms, and crawlspaces. All labels or signs are to be displayed in readily visible locations and shall remain posted until ACM is removed. Not all areas where ACM is located will have posted warning labels or signs, these situations rely on the "WKU Known Asbestos Location List" as the location reference. An example of an asbestos warning label or sign commonly used in WKU buildings:



Some pipes are insulated with materials other than asbestos-containing products with ACM on the fittings only. It is not practical or feasible to label all fittings. Before proceeding with work always, check the most current "WKU Known Asbestos Location List" for the area of concern. Especially if building components are located in other than routine maintenance areas. Each warning label or sign location shall be checked periodically by EHS. Damaged or missing labels or signs shall be replaced during these inspections.

Contractors, service workers, or others not employed by WKU that may have the potential to disturb ACM at WKU shall be made aware of its presence prior to beginning work. This shall be accomplished with a joint effort utilizing the WKU Asbestos Program Coordinator along with the appropriate WKU Project Manager (PM) associated with the contractor, service worker or others providing work on WKU buildings that may have the potential to disturb ACM. The "Demolition and Renovation Contractors Asbestos Location Notification", shall be used for this purpose and is Appendix A of this document.

TRAINING

Awareness training shall be provided to all WKU maintenance and custodial staff that may work in any building that contains known or presumed ACM, whether or not they are required

to work directly with ACM. The WKU EHS provides AHERA style 2-hour asbestos awareness education to all new custodial, maintenance, or other interested employees within 60 days of employment and an annual refresher course for the duration of their employment at the University, educational sessions are held monthly to assure OSHA compliance. The WKU Asbestos Awareness Program shall be accomplished with a joint effort utilizing the WKU Asbestos Program Coordinator along with the workers designated WKU Departmental Asbestos Coordinator. An overview of the WKU "Asbestos Awareness Training" is Appendix C of this document. Asbestos awareness training shall include but not limited to:

- Information regarding asbestos and its various uses and forms.
- Information on the health effects associated with asbestos exposure.
- Locations of ACM identified throughout each building in which they may be assigned to work.
- Recognition of damage, deterioration, and delaminating of ACM and means to report such damage.
- Information regarding asbestos materials locations at WKU.
- Name and telephone number of the WKU Asbestos Program Coordinator.

All registrations for Asbestos awareness training at WKU shall be completed by the individual workers designated WKU Departmental Asbestos Coordinator utilizing an online registration system provided by the University EHS department. The WKU "Asbestos Awareness Training Program" description is readily available and registration can be completed at the WKU Department of Environment, Health and Safety web site:

https://www.wku.edu/ehs/asbestos/asbestosawarenesstraining.php

Asbestos Awareness training may be presented in various specialized forms to accomplish awareness to the vast range of workers involved at the University. Training sessions may consist of verbal instruction, guest speakers, printed documents, pamphlets, video-graphics, or other means. Asbestos Awareness Training may consist of various combinations; all shall meet or exceed the AHERA and OSHA requirements along with explaining the WKU "Asbestos Management Program".

Upon completion of awareness training, each attending employee shall sign an acknowledgement indicating training participation and comprehension of the information presented. The "Certification of Receipt and Comprehension of AHERA 2-Hour Asbestos Awareness Training" is Appendix D of this document.

A records center maintains all relative asbestos training documentation. Asbestos training records are located and may be reviewed at the *Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046.*

WKU provides AHERA asbestos awareness training to staff with the intent of preventing activities that result in the unplanned unnecessary disturbance of ACM. Additional, OSHA mandated and approved, detailed training for the specialized task of maintaining and removing select non-friable miscellaneous ACM is provided to WKU workers that may be assigned to activities involving specific asbestos-containing materials.

In August 1994, OSHA published revised asbestos standards for materials commonly maintained at WKU by WKU workers. OSHA has determined that intact asbestos-containing resilient floor tile and properly trained WKU workers using the “Recommended Work Practice”

(RWP) for each operation can remove asbestos-containing vertical surface glue-dots at WKU under a "negative exposure assessment" in compliance with the revised standards. Automotive type brake inspection and servicing conducted by the WKU automotive mechanics utilize the "Wet Method" mandated by OSHA 29 CFR 1910.1001 (f)(d). The WKU "Asbestos-Containing Floor Tile and Mastic Removal" Appendix M, "Asbestos-Containing Brake Inspection and Servicing" Appendix O, and "Asbestos-Containing Vertical Surface Glue-dot Removal" Appendix P *Safe Operating Procedures* (SOP) are required to be utilized for these specific tasks and are Appendices of this document.

RESPIRATORY PROTECTION and MEDICAL SURVEILLANCE

OSHA 29 CFR 1926.1101 (c)(l), 1910.1001 and 1910.134 states that employees exposed to 0.1 f/cc of airborne asbestos shall be involved in a respiratory protection program. In the WKU AOMP, any employee with a significant potential for exposure to airborne asbestos shall be involved in a respiratory protection program. In accordance with the above-mentioned regulation, any employee who is exposed to at least 0.1 f/cc of asbestos for 30 or more calendar days per year or any employee required to wear a negative pressure (cartridge) respirator must be involved in a medical surveillance program. In the WKU AOMP, required use of negative pressure respirators mandates medical surveillance for these employees, not asbestos exposure above the permissible level stated above.

Workers participating in the WKU AOMP are thoroughly trained in asbestos awareness and shall utilize safe work practices that assure airborne asbestos exposure below 0.1 f/cc as a time weighted average (TWA). Other factors in place that help ensure workers are not exposed to airborne asbestos above 0.1 f/cc time weighted average are:

- Minimal friable asbestos-containing surfacing material is in damaged condition; damaged ACM shall be promptly cleaned and repaired.
- All known damaged thermal system insulation shall be kept in good repair.
- No WKU employee shall knowingly be required, or allowed, to perform work activities that would cause exposure to asbestos fibers in excess of 0.1 f/cc as a time weighted average.

New Construction Exclusion

Federal regulation 40 CFR 763 Subpart E provides exclusions for new construction at WKU. Paragraph (7) states that, "An architect or project engineer responsible for the construction of a new … building built after October 12, 1988, or an accredited inspector signs a statement that no ACBM was specified as a building material in any construction document for the building, or, to the best of his or her knowledge, no ACBM was used as a building material for the building."

As of CY 2011, in order to meet this exclusion, a letter as defined in Appendix Q "New Construction Exclusion Letter" must accompany any new buildings constructed at WKU or similar letter or document to specify the building is asbestos-free.

ASBESTOS MANAGEMENT REQUEST
DEMOLITION, MAINTENANCE, or RENOVATION ACTIVITIES

If proper procedures are not followed during demolition, maintenance, and renovation activities, ACM may be disturbed and possibly raise levels of airborne asbestos. Workers are prohibited from conducting any work in a manner that may disturb ACM without proper training. A management system for demolition, maintenance, and renovation work at WKU is instituted to ensure proper procedures are employed whenever there is a possibility of disturbing ACM. To assure compliance with all regulations pertaining to the dangers associated with the disturbance of asbestos-containing materials, WKU EHS strongly recommends all demolition, maintenance, or renovation work activities be conducted utilizing the WKU Department of Facilities Management or WKU Planning, Design, and Construction for all project oversight. The AOMP includes provisions for each type of ACM that is present in buildings at WKU and shall be strictly adhered to for all properties owned or maintained by Western Kentucky University.

It is often one of the most difficult tasks to minimize inadvertent disruption of ACM during a work activity. To better control this situation at WKU, a system requiring all work that disturbs or has the potential to disturb ACM be documented by an online "Asbestos Management Request" prior to beginning the work. This AMR shall be completed by the designated Departmental Asbestos Coordinator for the worker anticipating the service work, allowing the Asbestos Program Coordinator sufficient time for completion of the required asbestos survey, hazard prevention plan, or abatement plan. The WKU Asbestos Program Coordinator shall review the AMR and direct, advise, mandate or provide guidance concerning the correct procedure required to manage or abate the ACM for that particular project or job. All proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall strictly adhere to this procedure for controlling ACM during these actions. In addition to the initial AMR, in a case where the scope of work is revised during progression of the project, the Departmental Asbestos Coordinator shall contact the Asbestos Program Coordinator to ensure that previously unaffected asbestos-containing material in the work area is not disturbed.

Anyone at WKU whose job duties include or take upon themselves the demolition, construction, modification, or renovation (i.e. painting, carpet replacement, wall removal or additions, alterations to HVAC systems and electrical systems, etc.) of WKU properties for any project regardless of their job title are considered a WKU Project Manager for purposes of this AOMP. All WKU Project Managers shall proceed as directed in the "Asbestos Management for Project Managers" Appendix E of this document prior to that activity.

EMERGENCY RESPONSE PROCEDURES

As long as ACM remains in a building, an asbestos fiber release episode may possibly occur. WKU workers shall report to their supervisor, DAC or APC the presence of suspected asbestos debris on the floor, water or physical damage to the ACM, or any other evidence of possible asbestos fiber release.

Asbestos fiber release episodes can occur during maintenance or renovation projects. If such an event should occur, workers shall leave the area and contact the Departmental Asbestos Coordinator with oversight of the affected area and/or the WKU Asbestos Program Coordinator immediately. The WKU APC shall make the determination of response action required to proceed safely. The WKU DAC for the work being performed shall assist, support, and comply with the procedure recommended by the APC for the duration of the response action. The APC shall make the determination for re-entry into the area of concern before any occupants or workers resume activities.

Minor Release Episodes such as a small section of asbestos-containing insulation (less than 3 linear feet) becomes dislodged from a pipe or broken asbestos-containing ceiling tile (less than 3 square feet), shall be treated with standard wet cleaning. Before cleanup, the worker(s) shall report the incident to their supervisor, DAC or APC. The WKU APC or a person designated by the APC shall provide the determination and coordination of planned action. If the determination is made to clean the area utilizing WKU workers, the area shall be treated with the following wet method cleaning action:

- Trained workers shall thoroughly saturate the debris with amended water using a mister with a very fine spray wearing disposable gloves; the debris shall then be placed in a pre-labeled 6-mil asbestos disposal bag for disposal. This should be done immediately after finding the debris.
- The disposal of ACM shall be in a manner acceptable to all governmental and WKU regulations specified in this AOMP.
- The damaged ACM shall be repaired by a qualified asbestos abatement contractor with asbestos-free spackling, plaster, cement, insulation, or, sealed with latex paint or an encapsulant, or abated.
- HEPA vacuuming shall be required in carpeted areas.

Major Release Episodes are created when greater than 3 linear or square feet of ACM is dislodged or delaminated from its substrate. The worker(s) shall report the incident to their supervisor, DAC or APC. The WKU APC or a person designated by the APC shall provide the determination and coordination of planned action. The following procedure shall be used:

- The area shall be isolated as soon as possible after the ACM is discovered; the WKU APC shall be contacted immediately. The APC shall take appropriate actions, the areas can be sealed by doors, they shall be locked from the inside (escape corridors must remain in operation) with approved warning signs posted to prevent unauthorized personnel from entering the work area stating, **"DANGER ASBESTOS CANCER AND LUNG DISEASE HAZARD AUTHORIZED PERSONNEL ONLY RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA"**.
- The air-handling system shall be shut off or temporarily modified to prevent the distribution of asbestos fibers from the work site to other areas of the building. Doors, windows, and air registers shall be sealed with 6-mil plastic sheets and tape.
- Further response action for any major fiber release episode shall be designated by persons accredited for asbestos response actions and conducted by persons accredited to conduct asbestos response actions.

Each known asbestos fiber release occurrence shall be responded to, coordinated by, documented, and recorded by the WKU APC or a person designated by the APC. The "Asbestos Fiber Release Occurrence Report" for this purpose is Appendix F of this document.

If a fiber release occurrence is the direct result of work by an outside contractor or service worker, which had previously been made aware of the location of asbestos-containing material in the work area and signed Appendix A, a company representative shall submit an incident report to the WKU APC. The incident report must include a description of the incident, corrective actions to clean up the disturbance, and a pro-active plan to prevent future occurrences at WKU on any subsequent projects in which they may be awarded.

CLEANING PROCEDURES

Proper cleaning of asbestos contamination is one of the primary objectives of this AOMP if an asbestos fiber release occurs. All cleanup of asbestos contamination or debris in all properties owned or maintained by WKU shall be performed by qualified trained workers for the specified work activity. The WKU APC or a person designated by the APC shall have oversight of all cleanup actions in all properties owned or maintained by WKU.

Dry brooms, mops, and cloths re-suspend asbestos fibers into the air and shall not be used for this purpose, it is essential that specialized cleaning procedures be mandated. Wet methods shall be the primary methods of cleaning. Utilizing wet cloths or mops will allow ACM to be cleaned while still not promoting dispersion of fibers into the air. High Efficiency Particulate Air (HEPA) vacuums equipped with special filters that trap asbestos fibers with up to 99.97% efficiency (for particles 0.3 microns or larger in diameter). HEPA vacuums shall be used for clean-up of asbestos contamination or debris in all properties owned or maintained by WKU as deemed necessary by the WKU APC or a person designated by the APC.

RECORDKEEPING

All written records relating to asbestos management discussed in this section shall be maintained, as required by applicable regulations, in the *Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046* for review, these include:

- The written AOMP itself, including approved work practices
- Asbestos hazard prevention plans and specifications
- Asbestos survey information
- Asbestos Management Requests
- Abatement specifications and records
- Asbestos training programs and records
- Asbestos Exposure Assessment
- Medical surveillance records
- Written respiratory protection program and records

ACM - TYPES OF MATERIALS

The AOMP shall deal with surfacing material that is sprayed or troweled on surfaces and includes acoustical plaster on ceilings and spray applied coatings. Thermal system insulation (TSI) shall include pipe insulation, boiler insulation, breeching, and duct insulation, as well as other forms of insulation. Miscellaneous materials include floor tiles, adhesives, ceiling tiles, gaskets and packing, cementitious materials, caulking and fireproofing compounds and materials.

Surfacing Material may be texture coats, stipple coats, or acoustic plasters typically used for ceilings and beams. Some of these products encapsulated with paint or other coatings may be considered non-friable in place and only become friable when disturbed. Other products in this group can be very soft and extremely friable.

Thermal System Insulation is insulation used on tanks or pipes and generally confined to crawl spaces, boiler rooms, and pipe tunnels but may be located in some classroom areas as well as corridors and restrooms. Pipe chases in walls and between restrooms have a high potential to house TSI that contains asbestos. Great care shall be exercised when dealing with these materials as their friability may be greater when disrupted or disturbed.

The WKU Asbestos Program Coordinator shall immediately be made aware of suspected hazard situations or potentially hazardous situations involving surfacing materials and TSI. The "Asbestos Management Request" system shall be strictly adhered to during demolition, maintenance, or renovation to avoid inadvertent disturbance of asbestos-containing materials during work on buildings owned or maintained by WKU.
Miscellaneous Materials for the most part are non-friable and require unique handling and removal to avoid making them friable. Breaking, drilling, sanding, scraping, burning, or grinding ACM shall be prohibited. All work activities that disrupt the location or create movement of miscellaneous ACM or floor tile shall use the online "Asbestos Management Request" system during demolition, maintenance, or renovation to avoid inadvertent disturbance. Typical custodial actions, including waxing of asbestos-containing flooring pose no problem when performed on a routine basis by custodial personnel. "Guidelines for Managing Asbestos-Containing Floor Tile in Place" is Appendix G of this document.

Asbestos-containing packings and gaskets are throughout our facilities and are usually non-friable but may become friable if damaged or removed not fully intact. **Breaking, drilling, sanding, scraping, burning, or grinding packing and gasket materials shall be prohibited.** It is the University's intent to remove all asbestos packings and gaskets and replace them with non-asbestos material during routine and emergency maintenance repairs. Service work related to packings and gaskets shall use the online "Asbestos Management Request" system during demolition, maintenance, or renovation to avoid inadvertent disturbance.

Cementitious asbestos board is another common ACM used on WKU facilities. It may be found used as acoustical panels, flue pipes, wallboard, fascia, and the underside of eaves of some buildings or structures. It is non-friable and will remain as such but may become friable if damaged or removed not fully intact. **Breaking, drilling, sanding, scraping, burning, or grinding cementitious materials shall be prohibited.** Where cementitious products exist, caution shall be exercised not to break holes, hang pictures, or otherwise damage, or disturb these materials. Service work related to cementitious products shall use the online "Asbestos Management Request" system during demolition, maintenance, or renovation to avoid disturbance during work on buildings owned or maintained by WKU.

WORK PRACTICES for DEMOLITION, MAINTENANCE, RENOVATION, REMODELING or REDECORATING PROJECTS

Demolition, maintenance, or renovation of buildings or building system replacements can cause major disturbance of ACM. Demolishing buildings or structures, removing walls, replacing flooring, steam, heating, plumbing or air conditioning systems, etc. involve breaking, cutting, or otherwise disturbing ACM that may be present. Prior planned asbestos management or removal of ACM, by accredited asbestos personnel, shall be performed in these situations as required by NESHAP. If prior planned asbestos management or removal is not undertaken, the entire project shall be considered an asbestos removal project. All EPA, OSHA, and WKU required procedures and precautions for accredited asbestos management or removal shall be utilized on buildings owned or maintained by WKU.

To assure compliance with all regulations pertaining to the dangers associated with the disturbance of ACM, WKU EHS strongly recommends all demolition, maintenance, or renovation work activities be conducted utilizing the WKU Department of Facilities Management or WKU Planning, Design, and Construction for all project oversight. A key step in a project is utilizing the online "Asbestos Management Request" system in the planning stage of the project. This will aid with information such as the location and type of ACM that may be affected. Because of this, it is essential that the Asbestos Program Coordinator participates in all renovation project planning. To control this situation at WKU, a system requiring all work that disturbs or has the potential to disturb ACM is documented by an online "Asbestos Management Request" (AMR) prior to beginning the work. All proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall strictly adhere to this procedure.

Remodeling or redecorating implies less dramatic structural alteration. However, disturbance of ACM or materials contaminated with asbestos fibers is still possible. Remodeling or redecorating may involve direct contact with ACM when painting over or covering ACM, removing chalk or bulletin boards, etc. Precautions shall be taken to avoid disturbance or inadvertent disruption of ACM such as:

- Do not hang items from ACM, i.e. hanging pictures on asbestos-containing cementitious walls or spray applied surfacing material ceilings.
- Use caution breaking into cavities where unidentified ACM may exist.
- Do not break, drill, sand, scrape, burn, or grind ACM.

An online "Asbestos Management Request" shall be completed in the preplanning stages of all demolition, maintenance, renovation, remodeling or redecorating of buildings, and building system replacements. The AMR shall be completed by the designated Departmental Asbestos Coordinator for the worker(s) or contractor(s) anticipating the work activity, allowing the APC sufficient time for completion of the required asbestos survey, hazard prevention plan, or

abatement plan. The WKU APC shall review the AMR and provide direction, advice, regulatory requirements, or guidance concerning the correct method required to manage or abate the ACM for that particular project or situation. "Asbestos Management Requests" are available online at the WKU EHS web site:

https://www.wku.edu/ehs/asbestos/asbestos_mgt_form.php

RESPONSE ACTIONS

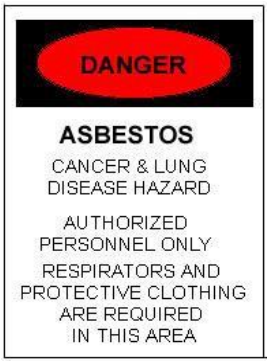
A response action is the project design, removal, encapsulation, enclosure, repair, or operations and maintenance that protect human health and the environment from friable ACM. This applies to all building activities involving asbestos, whether planned or episodic and includes emergency responses as well as all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU. *All asbestos-containing material response actions including project design, removal, encapsulation, enclosure, repair, or other ACM disturbance shall be performed by persons accredited per KRS 401 KAR 58:005 to conduct such response actions.*

At the conclusion of any response action, the WKU Asbestos Program Coordinator or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. If regulations require air sampling, or are determined by the APC to be conducted, a WKU approved air sampling firm shall collect air samples to monitor the air for clearance. Air sampling shall be in accordance with 40 CFR 763 Subpart E Section 763.90 (i)(6), which refers to the use of Phase Contrast Microscopy (PCM) for air clearance purposes.

A response action shall be deemed complete when it meets the applicable criteria set forth in 40 CFR 763 subpart E Section 763.90 with the exception of Sections (i)(3) and (4).

ABATEMENT WORK PRACTICES

All asbestos removal(s) or response action(s) shall be performed by an accredited asbestos abatement contractor utilizing accredited asbestos workers with current Commonwealth of Kentucky accreditations. WKU workers specifically trained within the prior 12 months for that specific ACM(s) work activity may be utilized as well. This shall be applicable for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.
All planned asbestos removal or response actions shall be conducted utilizing demarcated "regulated areas" and shall display appropriate warning signs. This sign shall be used for all asbestos activity regulated areas:



Asbestos Contractor Qualification Questionnaire shall be completed by all potential asbestos related contractors and approved by the WKU APC prior to bidding all proposed asbestos related demolition, maintenance, renovation, abatement, removal, and service work activities conducted on properties owned or maintained by WKU. This shall be accomplished with a joint effort utilizing the WKU APC along with the appropriate WKU PM associated with the contractor, service worker or others providing proposed asbestos work activities on properties owned or maintained by WKU. The "Asbestos Contractor Qualification Questionnaire" is Appendix H of this document.

Certificate of Worker Acknowledgement for Asbestos Abatement Work shall be completed by each asbestos worker prior to commencing work activities. This shall be accomplished with a joint effort utilizing the WKU APC along with the appropriate WKU PM associated with the contractor, service worker or others providing proposed asbestos work activities on properties owned or maintained by WKU. The "Certificate of Worker Acknowledgement for Asbestos Abatement Work" is Appendix I of this document.

Certificate of Worker Release for Asbestos Abatement Work shall be completed by each Asbestos Worker prior to commencing work activities. This shall be accomplished with a joint effort utilizing the WKU APC along with the appropriate WKU PM associated with the contractor, service worker or others providing proposed asbestos work activities on properties owned or maintained by WKU. The "Certificate of Worker Release for Asbestos Abatement Work" is Appendix J of this document.

General Wet Removal of Surfacing Material and other friable ACM shall be conducted utilizing negative pressure containment per KRS 401 KAR 58:040., and all applicable regulations including WKU EHS requirements by thoroughly wetting the ACM to be removed, prior to disturbance, by a fine mist of amended water. Saturate material sufficiently to wet the substrate without causing excess dripping. Allow the amended water to penetrate material thoroughly, spraying repeatedly during the work process to maintain a continuously wet condition. Mist work areas with amended water whenever necessary to reduce airborne asbestos fiber levels and remove saturated ACM in small sections. Do not allow material to dry out. As it is removed, simultaneously pack ACM while still wet into pre-labeled 6-mil asbestos disposal bags. Twist neck of bags, bend over, and seal with minimum three wraps of duct tape. Clean outside of bag and move to decontamination unit for additional disposal bagging. Waste materials, which do not fit into 6-mil disposal bags, shall be double wrapped with 6-mil polyethylene sheeting, sealed, and labeled as specified. Evacuate air from disposal bags and wraps with a HEPA filtered vacuum before sealing.

Removal of Asbestos-Containing Resilient Floor Tile and Adhesive for demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall utilize a "regulated area" and "wet methods" with strict adherence to all Federal, State, and Western Kentucky University regulations. University policy directs adhesive removal shall be included with all asbestos-containing floor tile removals and that all asbestos-containing floor tile adhesive be removed with floor tile removals regardless of the intent of the venture or project.

Before beginning work in the regulated area, air registers, diffusers, and any return air ducts located within the project area shall be sealed airtight. **The HVAC system shall be shut down in the regulated work area, critical barriers and a negative pressure atmosphere shall be established in the regulated work area.** Cover all windows, doors, openings, horizontal surfaces, porous vertical surfaces, fixtures and furniture, and any openings in the regulated work area with 6-mil poly sheeting.

All work related to the release and removal of asbestos-containing resilient floor tile shall be performed wet in a manner that will prevent the unnecessary release of asbestos fibers. Release of asbestos fibers may occur when tiles are broken or torn, pulverized, or abraded. Breaking of tiles into large pieces probably cannot be avoided but shall be continuously controlled and held to a minimum. **Pulverizing or abrading shall not be permitted.**

Workers shall be properly trained and equipped with the necessary safety gear while working inside the regulated area. Workers shall be equipped with all proper respiratory protection and protective clothing required by WKU EHS. **Under no circumstances shall the floor tile be removed by sawing, sanding, grinding, other prohibited methods, or by unqualified workers.**

Disposable coveralls, including head covers and foot covers, shall be worn. Respiratory protection shall be, as a minimum, the minimum respiratory protection allowed by the Kentucky Department for Occupational Safety and Health and WKU Environment, Health and Safety Department.

Immediately before floor tile removal begins, the floor area to be removed shall be sprayed with amended water to reduce the potential for release of asbestos fibers from broken files. The floor surface shall be kept wet throughout removal operations but not allowed to puddle on the floor or run off to other areas, especially to the floor below. Resilient floor tiles shall be released from the floor surface in whole tiles, as much as possible, using straight scrapers in a manual operation. Should dust become visible at any time during the removal operation, the area shall be immediately misted with a garden type pump sprayer filled with amended water. Releasing of floor tile debris shall cease until dust has been properly controlled.

Whole tiles and pieces broken during release from floor shall be swept using wetted brooms and scoop shovel in a manner that will not create dust. Removed materials shall be kept wet and immediately placed in pre-labeled 6-mil asbestos disposal bags or leak-tight drums located in the work area, which have been lined with two (2), pre-labeled 6-mil plastic asbestos disposal bags. When the specified double bags or leak-tight drums have been filled, the plastic bags shall be sealed airtight and/or the drum lid installed and properly sealed with tape.

Proper warning labels shall be affixed to each bag/drum in preparation for transportation and disposal as asbestos waste. No bags/drums shall be removed from the work area without proper labels.

When all loose debris has been removed from the floor and placed in specified bags/drums, the floors shall be wet scraped with flat scrapers to remove accumulations of adhesive, which may also contain asbestos. Use amended water during scraping to reduce the concentration of asbestos fibers. After scraping, floors shall be HEPA vacuumed to remove all visible debris.

Removal of asbestos-containing and/or asbestos contaminated resilient floor tile adhesive for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall be conducted utilizing a "regulated area" and "wet methods" with strict adherence to all Federal, State, and local regulations.

Adhesive removal shall be accomplished with no-odor solvent type removers. A Safety Data Sheet (SDS) for the remover shall be issued to, and the approval to use shall be determined by, the WKU APC or a person designated by the APC for any solvent-type remover to be used on the project. The proposed solvent-type remover shall not cause the waste material generated classified as hazardous waste under existing federal, state, or local regulation. Workers shall be equipped with proper respiratory protection and protective clothing. **Under no circumstances shall the adhesive be removed by sanding, grinding, shot blast, or other prohibited methods.**

Apply adhesive dissolving solvent, using manufacturer's instructions, to small areas at a time within the workspace. Scrape or mop dissolved adhesive from work area as required. Care must be taken to ensure that no material leaks from the work area to areas below or splashed on walls and painted surfaces. Continue with this procedure until the adhesive has been removed from the entire work area. Repeat sequence as necessary until all visible adhesive has been removed from work area. At no time should solvent be allowed to pool or puddle in work area.

Removed adhesive waste materials shall be kept wet and immediately placed in pre-labeled 6-mil disposal bags or leak-tight drums located in the work area, which have been lined with two (2), 6-mil plastic asbestos disposal bags. When the specified double bags or leak-tight drums have been filled, the disposal bags shall be sealed airtight and/or the drum lid installed and properly sealed with duct tape. Proper warning labels shall be affixed to each bag/drum in preparation for transportation and disposal as asbestos waste. No bags/drums shall be removed from the work area without proper labels.

At the conclusion of the project, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. Upon approval air curtained doorways, seals, warning signs, and barriers shall be removed, and HVAC system shall be restored. Dispose of all asbestos related waste in a regulatory compliant method.

Removal of Asbestos-Containing Roofing Materials for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU shall be conducted utilizing a "regulated area" and "wet methods" with strict adherence to all Federal, State, local, and Western Kentucky University regulations.

Before beginning work, fresh air intakes or other air handling registers located within the

regulated area shall be sealed with 6-mil polyethylene sheeting, taped, and made airtight or the HVAC system shut down. The Contractor shall demarcate the work area by utilizing banner tape and appropriate warning signs.

Workers shall be properly trained and equipped with the necessary safety gear while working inside the regulated area and shall be equipped with all proper respiratory protection and protective clothing required by WKU EHS. **Under no circumstances shall the asbestos-containing roofing be removed by sawing, sanding, grinding, other prohibited methods, or unqualified workers.** Disposable coveralls, including head covers, shall be worn. Respiratory protection shall be, as a minimum, the minimum respiratory protection allowed by the Kentucky Department for Occupational Safety and Health and the WKU Environment, Health and Safety Department.

Work shall begin by applying a fine mist of amended water to the surface being abated. The roofing material shall be removed in whole pieces where possible. Roofing components shall be kept sufficiently wet during removal operations so that no visible emissions are released. Caution shall be exercised in the application of water to avoid any entry of water into the interior of the building.

Remove sections of roofing materials and place into two pre-labeled 6-mil disposal bags or wrap all waste in a minimum of two layers of 6-mil polyethylene sheeting for disposal purposes. All material shall be disposed of as ACM waste. Tape and seal bags or polyethylene sheeting completely, place appropriate warning labels on the wrapped waste packages as required by applicable regulations. Asbestos waste materials shall be lowered from the roof via lifts or cranes or shall be placed directly into a plastic lined dumpster via an enclosed chute.

Asbestos waste materials shall be loaded into an appropriate container for transportation. This may be a polyethylene lined dumpster or dump truck provided approval has been obtained from the disposal site. Roofing components shall be kept sufficiently wet during loading and disposal operations so that no visible emissions are released. Dispose of all asbestos related waste in a regulatory compliant method.

At the conclusion of the project, the WKU Asbestos Program Coordinator or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. Upon approval air intakes or other air handling registers, warning signs, and barriers shall be removed, and HVAC system shall be restored.

Gross Removal of Thermal System Insulation shall be conducted utilizing negative pressure containment per KRS 401 KAR 58:040., and all applicable regulations including WKU EHS requirements. All work shall be conducted by a Kentucky accredited abatement contractor utilizing accredited workers specifically trained in the removal procedure being utilized for the specific ACM(s) for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.

Accredited workers shall spray with a mist of amended water to saturate material to substrate. Cut bands holding pre-formed TSI (if present), slit jacket at seams, remove blocks or sections and hand-place in a labeled 6-mil asbestos disposal bag, do not drop to floor. Remove any residue on pipe, tank, or fitting with stiff bristle nylon hand brush and amended water. In containment locations where TSI is removed from joints or elbows with straight runs insulated with fibrous glass or other non-asbestos-containing fibrous material, all insulating materials shall be removed as ACM. KRS 401 KAR 58:040. shall be strictly adhered to for the duration of the project. Dispose of all asbestos related waste in a regulatory compliant method.

At the conclusion of the project, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. Encapsulation of the substrate shall be performed with a lock-down or bridging encapsulant applied to all surfaces from which friable asbestos materials have been removed or edges remain. Encapsulation shall be performed prior to removal of primary barrier sheeting. Maintain pressure differential system in operation during this encapsulation work. Perform encapsulation only after the requirements of the visual inspection have been met.

When the entire work area is dry, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed, clearance sampling shall commence as specified. Upon approval by the WKU APC or a person designated by the APC the negative pressure containment, warning signs, and barriers shall be removed, and HVAC system shall be restored. Dispose of all asbestos related waste in a regulatory compliant method.

Removal of Thermal System Insulation by Glove-bag Procedure shall be conducted by a Kentucky accredited asbestos abatement contractor utilizing accredited workers for the removal of TSI. Glove bagging shall be permitted only where permitted under 29 CFR 1926.1101. Glove-bagging procedures shall be conducted in accordance with 29 CFR Part 1926 for all proposed demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.

All glove-bag procedures shall be performed in regulated areas that are isolated with critical barriers. Access to the glove-bag area shall be sealed with a curtain doorway. Clean up any gross debris, which may have accumulated on the floor using HEPA vacuum and/or wet cleaning procedures as described in this AOMP prior to commencing glove-bag. For wetting ACM, use amended water.

Place polyethylene sheeting directly under area where glove bagging is to occur. Prior to setting up glove-bag, place all necessary tools for removal and cleaning into glove-bag. Wrap glove-bag around the TSI to be removed, and seal top edge and sides airtight with duct tape. Insert nozzle of sprayer and hose of HEPA vacuum into glove-bag ports and seal each opening with tape.

Thoroughly wet ACM with amended wetting solution while carefully cutting material, continue spraying in seams wetting all material. Slowly allow the saturated material to fall to the bottom of the bag. Completely clean pipe or substrate with a nylon brush and amended water. Place tools in tool pouch of glove-bag and squeeze glove-bag below the pouch, separating work portion from waste portion, twist, and seal with tape.

Start the connected HEPA vacuum, collapsing bag while removing all airborne material from

the enclosure. Remove glove-bag by carefully cutting from substrate after bag has been properly evacuated with vacuum while supporting from the bottom. Hand-place in a pre-labeled 6-mil asbestos disposal bag, twist neck of bag, bend over, and seal with minimum three wraps of duct tape, do not drop to floor. Carefully place into another pre-labeled 6-mil asbestos disposal bag, twist neck of bag, bend over, and seal with minimum three wraps of duct tape. Clean outside of bag and dispose of in a regulatory compliant method. A lock-down encapsulant shall be applied to all surfaces from which friable asbestos materials have been removed. Dispose of all asbestos related waste in a regulatory compliant method.

Cleaning and Decontamination of all visible accumulation of debris shall be removed from areas where abatement has occurred. All surfaces of the removal area shall be wet-cleaned and HEPA vacuumed. All water from asbestos contaminated areas shall be filtered to 5 microns or less. Wet cleaning shall start by immersing a paper towel or rag into a bucket of amended water. Wring out excess liquid and fold into quarters, wipe surface once and refold to a fresh side. Proceed in this manner until all sides of paper towel or rag have been used. Do not re-immerse used rags or towels back in bucket to rinse out. If a used towel or rag is exposed to the cleaning solution in the bucket, empty bucket and refill. Dispose of paper towels or rags in a pre-labeled 6-mil asbestos disposal bag. Dispose of asbestos contaminated water as asbestos waste or filter to 5 microns or less prior to sanitary drain disposal, this water shall not be allowed in storm drains.

After cleaning, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed. If the entire area is not visibly clean, the entire work area shall be re-cleaned. When the work area is inside a gross-removal enclosure and determined to be visibly clean, encapsulation of the substrate shall be performed with a lock-down encapsulant applied to all surfaces from which friable asbestos materials have been removed. Encapsulation shall be performed prior to removal of primary barrier sheeting. Maintain pressure differential system in operation during this encapsulation work. Perform encapsulation only after the requirements of the visual inspection have been met. When the entire work area is dry, the WKU APC or a person designated by the APC shall visually inspect the area where the action was conducted to determine whether the action has been properly completed, clearance sampling shall commence as specified. Dispose of all asbestos related waste in a regulatory compliant method.

Encapsulation of Substrate shall be performed with a lock-down encapsulant applied to all surfaces from which friable asbestos materials have been removed. Encapsulation shall be performed prior to removal of primary barrier sheeting. Maintain pressure differential system in operation during this encapsulation work. Perform encapsulation only after the requirements of the preliminary inspection have met the following requirements:

- Surfaces to be encapsulated have met the requirements for a visual inspection as specified.
- Airborne fiber concentration in the area below 0.01 f/cc measured by PCM.

Clearance Air Sampling if required, or determined by the WKU APC to be conducted, a firm approved by WKU EHS shall collect air samples to monitor the air for clearance. Air sampling shall be done in accordance with 40 CFR 763 Subpart E Section 763.90 (i)(6), referring to use of Phase Contrast Microscopy (PCM) for air clearance purposes.

Final air-clearance sampling shall be conducted after all barrier sheeting has been determined to be satisfactorily clean and a lock-down encapsulant has been applied and allowed sufficient

time to dry. All warning signage, critical barriers, and containment polyethylene sheeting shall be left in place. Maintain pressure differential system in operation during collection of air samples to monitor the air for clearance.

Waste Disposal of all asbestos-containing waste generated from demolition, maintenance, renovation, abatement, removal, and service work activities conducted on properties owned or maintained by WKU shall be transported with the appropriate chain-of-custody and placed in an authorized site in accordance with regulatory requirements of NESHAP and applicable state and WKU guidelines and regulations.

All bagged or containerized waste shall be carefully loaded on trucks or trailers for transport. Exercise care before and during transport that no unauthorized persons have access to the material. The container used to store and/or transport asbestos-containing waste materials shall be of rigid construction, enclosed' and lockable. All containers shall be sealed inside with two (2) layers of 6-mil polyethylene. Label drums with same warning labels as asbestos disposal bags. Drums may be reused after decontamination if bags did not break. Treat drums that have been contaminated as asbestos-containing waste and dispose of in accordance with this AOMP.

Advise the sanitary landfill operator, at least twenty-four hours in advance of transport, of the quantity of material to be delivered. At the burial site, assure proper warning signs are posted while bags or sealed drums are carefully offloaded from the truck. If bags or drums are broken or damaged, leave all damaged material in the truck and clean entire truck and contents using "Cleaning and Decontamination Procedures" in this AOMP. All debris will then be treated as contaminated waste and disposed of as set forth in this section. Bags, boxes, barrels, or packages of ACM waste must be individually removed from transport containers. Do not dump truck boxes or dumpsters.

Delivery of the waste shipment record to the WKU Asbestos Program Coordinator shall be the responsibility of the WKU designated competent person for the disposal or the abatement contractor responsible for the waste shipment. Disposal records shall be delivered to *Laura Hale, Western Kentucky University, Asbestos Program Coordinator, Department of Environment, Health and Safety, Asbestos Management Office, Park Street House, Bowling Green, Ky., 42101-1046* as required by 40 CFR 61.150. This requirement provides for the tracking of asbestos waste records prior to shipment off-site and the return of copies signed by the disposal site operator as required by regulation. Waste records shall be in the possession of the WKU APC within 30 days after delivery of waste to the landfill.

Following removal of ACM from any structural or mechanical system, or in the case of a minor fiber release episode or cleanup of asbestos-containing debris all asbestos-containing waste generated shall be kept thoroughly wet with amended water. All asbestos-containing waste generated shall:

- Be kept wet and immediately placed in pre-labeled 6-mil asbestos disposal bags or leak-tight drums that have been lined with two (2) pre-labeled 6-mil plastic asbestos disposal bags. Waste materials that do not fit into 6-mil disposal bags shall be double wrapped with 6-mil polyethylene sheeting, sealed, and labeled as specified.
- Have all asbestos contaminated water from contaminated areas filtered to 5 microns or less.
- Have printed warning labels stating, ***"DANGER CONTAINS ASBESTOS***

FIBERS AVOID CREATING DUST CANCER AND LUNG DISEASE HAZARD".

- Have the exterior of the container clean of any debris.
- Be transported with a chain-of-custody that will include WKU as the generator, address of the specific pick-up site, the estimated quantity of the asbestos waste, types of containers used, and the destination of the waste. A copy of the form signed by the disposal transporter and site operator shall be returned to the WKU APC as required by applicable regulations.
- Be transported in vehicles having an enclosed carrying compartment. If mechanically sealed rigid containers are used an open vehicle with side panels and a tarpaulin covering the containers may be utilized upon approval. Labeling required by the DOT is mandatory for hauling all ACM.
- Transportation and disposal of bagged ACM waste without rigid containers will only be accepted after prior written approval from the Kentucky Division of Waste Management and the Western Kentucky University Asbestos Program Coordinator is granted to the ACM waste hauler.
- Not be transported in compactor vehicles.
- Require the chain of custody form be approved by the WKU APC to assure it is completed properly and the asbestos waste destination is an approved asbestos disposal site.
- Require a copy of the waste manifest be kept in the WKU asbestos records center as required by regulation.

Re-Establishing Occupancy of the Asbestos Response Action Area shall only occur following the approved completion of the asbestos response action. The Western Kentucky University Asbestos Program Coordinator or a person designated by the WKU APC shall approve the completion of all asbestos related response actions for all demolition, maintenance, renovation, and service work activities conducted on properties owned or maintained by WKU.

If air monitoring was conducted for the asbestos response action, all clearance air monitoring results shall be documented demonstrating no more than 0.01 f/cc of airborne asbestos in the asbestos response work area. Following satisfactory clearance of the work area, remaining polyethylene barriers shall be removed and disposed of as contaminated waste.

Barriers and signs shall only be removed after acceptance and final inspection, by the WKU Asbestos Program Coordinator or a person designated by the APC, of the area where the action was conducted to determine whether all action has been properly completed.

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Environmental Health and Safety Department
Western Kentucky University
Revised October 29, 2026

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