

Northwestern

Asbestos Management

Environmental Health and Safety

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I. Purpose

This program establishes the processes and procedures designed to protect the Northwestern community from the hazards associated with exposure to asbestos through evaluation, reporting, training, notification, and abatement.

II. Scope

This program applies to Northwestern employees and contractors who perform service or maintenance activities and may encounter asbestos-containing materials (ACM) or presumed asbestos-containing materials (PACM). This program also applies to the removal and disposal of asbestos from campus property.

III. Work Class Descriptions

A. Class I

Activities involving the removal of thermal system insulation (TSI) and surfacing ACM and PACM. Northwestern employees are not permitted to perform Class I activities.

B. Class II

Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics. Northwestern employees are not permitted to perform Class II activities.

C. Class III

Repair and maintenance operations where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed. Northwestern employees are not permitted to perform Class III activities.

D. Class IV

Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste, and debris resulting from Class I, II, and III activities. Northwestern employees may perform maintenance and custodial activities during which employees contact but do not disturb ACM or PACM, with adequate training (see **Section X – Training**). Northwestern employees are not permitted to perform activities to clean up dust, waste, and debris resulting from Class I, II, and III activities.

IV. Responsibilities

A. Environmental Health and Safety (EHS)

- i. Adhere to the requirements of this program.
- ii. Review and revise this program, as necessary.
- iii. Coordinate and/or administer training (see **Section X – Training**).
- iv. Provide consultation and guidance, as necessary and upon request, to identify, evaluate, and control potential exposure to asbestos.
- v. Investigate asbestos-related concerns and provide guidance related to potential asbestos fiber release incidents.
- vi. Review abatement project scopes to ensure they meet University and regulatory requirements.

- vii. Maintain an inventory of the type, quantity, and location of known or presumed ACM, building materials that have been tested for asbestos content, and ACM that has been removed, encapsulated, enclosed, or repaired.
 - viii. Coordinate with Facilities Operations, Facilities Capital Projects, and other departments to facilitate material sampling and analysis, abatement, and air monitoring, as necessary.
- B. Departments and Units**
- i. Adhere to the requirements of this program.
 - ii. Ensure that employees complete all required training (see **Section X – Training**).
 - iii. Ensure that employees do not perform Class I, II, or III activities, or activities to clean up dust, waste, and debris resulting from Class I, II, or III activities (see **Section III – Work Class Descriptions**).
 - iv. Inform employees and contractors of the location of known or suspected ACM where employees or contractors may be exposed to asbestos.
 - v. If suspected ACM is discovered and may be disturbed by work activities, stop work, and contact EHS to coordinate sampling, analysis, and abatement, if necessary, before work is continued.
 - vi. Provide resources and funding for material sampling, laboratory analysis, abatement, and air monitoring, when necessary.
 - vii. Coordinate with EHS and qualified and licensed contractors to identify project scopes, material sampling and analysis, abatement, and air monitoring.
 - viii. Provide material sampling results, reports, abatement plans, and air monitoring results to EHS for review.
- C. Project Managers and Supervisors**
- i. Adhere to the requirements of this program.
 - ii. Complete all required training (see **Section X – Training**).
 - iii. Notify EHS of any known or suspected ACM that has been disturbed, damaged, appears deteriorated, or may be disturbed by planned activities.
- D. Employees**
- i. Adhere to the requirements of this program.
 - ii. Complete all required training (see **Section X – Training**).
 - iii. May perform maintenance and custodial activities during which employees may contact but do not disturb ACM or PACM, when trained (see **Section III – Work Class Descriptions** and **Section X – Training**).
 - iv. Are not permitted to disturb any material that may contain or is presumed to contain asbestos.
 - v. Notify supervisor or EHS immediately if ACM or PACM has potentially been disturbed.
- E. Contractors (e.g., Maintenance, Operations, Custodial, Construction)**
- i. Adhere to the requirements of this program.
 - ii. Ensure that subcontractors adhere to the requirements of this program.
 - iii. Ensure that employees complete all applicable asbestos training, as required.
 - iv. Inform employees and Northwestern project managers of the location of known or suspected ACM where employees may be exposed to asbestos.
 - v. Are not permitted to disturb any material that may contain or is presumed to contain asbestos.
 - vi. Notify a Northwestern project manager immediately if ACM or PACM has potentially been disturbed.

F. **Environmental Health Consultants and Abatement Contractors**

- i. Adhere to the requirements of this program.
- ii. Perform work in accordance with all applicable federal, state, and local rules and regulations.
- iii. Ensure that subcontractors adhere to the requirements of this program.
- iv. Ensure that employees are appropriately licensed, qualified, and trained for the scope of work.
- v. Coordinate material sampling and abatement activities with Facilities Operations, Facilities Capital Projects, EHS, and project managers, as necessary.
- vi. Perform air monitoring, as necessary (see **Section VII – Abatement**).
- vii. Provide thorough project scopes, testing, analysis, reporting, recommendations, and records of service(s) performed on Northwestern property.

V. Identification and Sampling

- A. Departments, supervisors, or project managers must notify EHS of any suspected ACM, known ACM, or PACM that may be disturbed, has been disturbed, or must be disturbed to facilitate repairs, maintenance, or renovation projects.
- B. ACM that is in good condition that does not present a danger to students, staff, faculty, or contractors, as determined by EHS or a qualified environmental health consultant, may be left in place with appropriate signage (see **Section VI – Labeling and Signage**) and recordkeeping (see **Section XI – Recordkeeping**).
- C. All activities that may disturb suspected ACM must stop until:
 - i. Analysis confirms that the material is not asbestos, or
 - ii. If the material is confirmed asbestos, appropriate abatement is complete (i.e., removal, encapsulation, enclosure, or repair).
- D. Departments must inform EHS of all material sampling and coordinate efforts with EHS, when requested.
- E. A qualified and licensed contractor must collect an appropriate number of samples for analysis in accordance with ASTM E2356-18 Standard Practice for Comprehensive Building Asbestos Surveys.
- F. Survey reports must include analytical results and recommendations for abatement, and must be communicated to EHS, project managers, and applicable departments, including Facilities Operations and Capital Projects, as necessary.

VI. Labeling and Signage

- A. Facilities Operations is responsible for securing and affixing asbestos danger labels and signs in areas identified by EHS or a qualified environmental health consultant.
- B. Labels must be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers.
- C. Thermal System Insulation (TSI) Labeling
 - i. TSI on ductwork, piping, and other systems that is known or presumed to contain asbestos must be appropriately labeled with an asbestos danger label.
 - ii. Labels must be applied where confusion may occur, such as close to valves or flanges and adjacent to changes in direction, branches, and where pipes pass through walls, floors, or ceilings.
 - iii. Labels must be applied at the beginning and end of continuous ductwork and pipe runs.

- iv. Labels must be placed at reasonable intervals (e.g., every 75-feet) on unobstructed continuous ductwork and pipe runs.
 - v. Labels must be affixed in a manner and size that is clearly visible and legible.
 - vi. Asbestos danger labels must include the following information: DANGER: CONTAINS ASBESTOS FIBERS; MAY CAUSE CANCER; CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST; AVOID CREATING DUST (see **Appendix A – Danger Labeling and Signage Example**).
- D. Danger Signage
- i. In lieu of the labeling requirements in **Section VI.B-V.**, danger signage may be posted at the entrances to areas (e.g., mechanical and boiler rooms) known to contain ACM or PACM.
 - ii. If danger signage is posted in lieu of labels, a list of ACM or PACM must be kept in the area and made accessible to room entrants.
 - iii. Danger signage must contain the same information as labels in **Section VI.vi**.
 - iv. Danger signs must be affixed in a manner and size that is clearly visible and legible.

VII. Abatement

If known or presumed ACM is in poor condition, may be disturbed by planned work activities, or otherwise presents a risk of exposure, it must be abated.

- A. Asbestos abatement must be performed by a licensed and qualified contractor, in accordance with all federal, state, and local rules and regulations.
- B. The preferred method of abatement is removal, when feasible.
- C. When removal is not feasible, ACM may be encapsulated, enclosed, or repaired.
- D. ACM that is not removed must be appropriately labeled (see **Section VI – Labeling and Signage**) and documentation of the type, quantity, and location of the ACM must be maintained (see **Section XI – Recordkeeping**).
- E. Prior to abatement, EHS and the project manager must review the contractor’s scope of work to ensure University and regulatory requirements are adhered to.
- F. The project manager must provide advanced notification to potentially affected building occupants, departments, contractors, and EHS of the dates, locations, nature, extent of asbestos, abatement process, and scope of work.
- G. The abatement contractor must make all necessary state and local notifications detailing the nature and extent of the abatement. Copies of all notifications must be forwarded to the project manager and EHS.
- H. Areas where Class I, I, or III activities are performed must be designated as regulated areas.
 - i. Only qualified abatement contractors may enter and work in regulated areas; Northwestern employees and unqualified contractors are not permitted to enter or work in regulated areas.
 - ii. Abatement contractors must adhere to the requirements of 29 CFR 1926.1101(e) for regulated areas, including but not limited to area demarcation, posting signage, restricting access, enforcing prohibited activities, and ensuring that contractors wear personal protective equipment, including appropriate respiratory protection.
- I. Air monitoring must be performed during abatement, as necessary, and is the responsibility of the abatement contractor.

- i. Area air monitoring at the perimeter of each regulated area must be performed daily. For regulated areas that include a decontamination unit, at least one sample must be collected at the entrance to the decontamination unit.
 - ii. Personal air monitoring must be performed in accordance with 29 CFR 1926.1101.
 - iii. Final air clearance monitoring must be performed following all abatement activities except for the following, unless deemed necessary by EHS:
 - a) glove bag operations where the glove bag is the sole means of removal or repair, or
 - b) the removal of intact, non-friable asbestos-containing materials
 - iv. Post-abatement final clearance air monitoring must be conducted by an IDPH-licensed contractor using aggressive methods in accordance with 77 IL Admin Code Section 855.220.
 - v. Air samples must be analyzed by Phase Contrast Microscopy (PCM, NIOSH method 7400) or Transmission Electron Microscopy (TEM, NIOSH Method 7402).
 - vi. All air monitoring results must be provided to the project manager and EHS within 24 hours of analysis.
- J. Regulated areas may not be removed or returned to normal occupancy until:
- i. All abatement work is complete,
 - ii. The area is determined to be free of visible dust, debris, and residue by an IDPH-licensed asbestos supervisor,
 - iii. Final clearance air monitoring, if necessary, has been performed and verifies that airborne asbestos concentrations are below the applicable regulatory limits, and
 - iv. All abatement-related waste, barriers, and equipment have been removed from the work area.
- K. Asbestos-containing waste, including protective clothing and equipment, will be containerized in watertight containers labeled “DANGER: CONTAINS ASBESTOS FIBERS; MAY CAUSE CANCER; CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST; AVOID CREATING DUST” (see **Appendix A – Danger Labeling and Signage Example**).
- L. Abatement contractors must complete a waste shipment record (i.e., manifest) and ensure the transport of ACM waste to an appropriately licensed disposal site in accordance with 40 CFR Part 61, Subpart M.
- M. A copy of the waste shipment record (i.e., manifest) signed by the owner or operator of the designated disposal site must be sent to the project manager and EHS within 35 days of the date the waste was accepted by the initial transporter.

VIII. Fiber Release Events

If known or presumed ACM is disturbed:

- A. Contact supervisor and EHS immediately.
- B. Restrict access to the area with signs, barrier tape, and locks, as necessary.
- C. Shut down or isolate the HVAC system serving the immediate area of the fiber release until clean-up and/or abatement is complete.
- D. Only EHS, qualified environmental health consultants, or other qualified or authorized individuals as determined by EHS, may enter the area, with appropriate training and personal protective equipment (PPE).
- E. Follow the abatement procedures listed in **Section VII – Abatement**.

- F. In the event an employee's body or clothing is contaminated with ACM or PACM:
 - i. Contact supervisor and EHS immediately.
 - ii. Wash hands and other potentially affected body parts immediately.
 - iii. Prevent spreading fibers by avoiding such activities as driving/riding in vehicles until clothing has been changed.
 - iv. When able, change clothing, and put contaminated clothing in a watertight bag or container, and dispose of in accordance with **Section VII – Abatement**.
 - v. Take a shower as soon as practical.

IX. Medical Surveillance Program

Northwestern employees are generally not required to be enrolled in a medical surveillance program for exposure to asbestos, which is required for all employees who for a combined total of 30 or more days per year are engaged in Class I, I, and III work or are exposed at or above a permissible exposure limit (PEL). However, if employee activities change in a way that requires employee enrollment in a medical surveillance program, EHS will develop such a program and ensure that the appropriate employees are enrolled.

X. Training

Northwestern employees must complete training, as follows:

- A. Online awareness-level asbestos training must be completed by employees biennially who may work near asbestos-containing material but do not perform activities that may potentially contact or disturb the asbestos.
- B. In addition to the requirements of **Section X.A.**, Employees who perform maintenance and custodial activities during which they may contact but do not disturb ACM or PACM must complete 2-hour awareness level asbestos training annually (see **Section III – Work Class Descriptions**).
- C. Additional training may be required in extenuating circumstances, as required, not defined in this program.

XI. Recordkeeping

- A. Project managers must forward all project scopes, sampling and analytical reports, abatement records, and air monitoring results to EHS for recordkeeping.
- B. EHS will maintain records of asbestos testing and the type, quantity, and location of all known ACM, PACM, and ACM that has been identified, removed, encapsulated, enclosed, or repaired.
- C. Training records will be maintained by EHS in myHR Learn.

XII. Regulatory Authority

Northwestern and its contractors will comply with Occupational Safety and Health Administration's (OSHA) standards and any other applicable codes and standards, including:

OSHA 29 CFR 1910.1001 – Asbestos
OSHA 29 CFR 1910.1001 – Toxic and Hazardous Substances – Asbestos
OSHA 29 CFR 1910.120 – Hazard Communications
OSHA 29 CFR 1926.1101 – Construction Standard – Asbestos
OSHA 29 CFR 1910.134 – Respiratory Protection Standard

US DOT Hazardous Material Regulation – 49 CFR Part 171
EPA 40 CFR 61 – National Emissions Standards for Hazardous Air Pollutants
EPA 40 CFR 763 – Asbestos Hazard Emergency Response Act
105 ILCS 105 – Asbestos Abatement Act
225 ILCS 207– Commercial and Public Building Asbestos Act
77ILL Adm. Code 855 – Asbestos Abatement for Public and Private Schools and Commercial and Public Buildings in Illinois
ASTM E2356-18 Standard Practice for Comprehensive Building Asbestos Surveys

XIII. Contact

For questions, contact Environmental Health and Safety at ehs@northwestern.edu.

Appendix A – Danger Labeling and Signage Example

