ENVIRONMENTAL HEALTH & SAFETY
REED COLLEGE
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# Asbestos Management Program

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## I. Purpose

Asbestos is a naturally occurring, flexible, fibrous mineral that takes the form of hollow microscopic fibers that are nearly indestructible. It is resistant to heat, fire, and chemicals; does not conduct electricity; and pound for pound is stronger than steel. As a result, in the last century businesses in the United States used more than 30 million tons of asbestos in over 3000 different consumer, industrial, textile, maritime, automotive, scientific, and building products.

When a material containing asbestos is disturbed or damaged, it may release the fibers that can remain in the air for hours or even days. Regrettably, workers may easily inhale these microscopic fibers, unbeknownst to them. As asbestos accumulates in the lungs, several types of slowly progressive diseases can develop. The fibers can scar the lungs, cause cancer, disability, and death. There is no safe level of exposure.

Asbestos is only dangerous when it becomes airborne. As long as asbestos-containing materials (ACM) are not damaged, the fibers do not become air-borne and do not pose a health hazard to building occupants. For this reason, Reed College manages in-place asbestos-containing materials in buildings and ensures proper and safe removal before renovations, maintenance, and demolitions.

## II. Scope

The Asbestos Management Program applies to all employees who do construction, maintenance, custodial work, and contractors exposed to asbestos at Reed College. It also applies to employees who might disturb or damage presumed asbestos-containing materials.

## III. Responsibilities

### A. Reed College Administration

- Provides commitment, leadership, and financial resources to support this program and reasonable assurance that all provisions of the asbestos program are met.
- Establishes and approves the policy and procedures for asbestos management for Reed College.

### B. Supervisors

- Inform employees of the location and the hazards of asbestos.
- Label products and containers of asbestos, including waste containers, and installed asbestos products, with the following:

**DANGER**
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

- Provide necessary personal protective equipment (PPE) at no cost to the employee.
- Ensure Class III and Class IV asbestos workers receive appropriate training and are medically qualified to use a respirator.
- Post the entrances to rooms and areas which have asbestos-containing material (ACM) or presumed asbestos-containing material (PACM) with the following:

**DANGER**
Asbestos
Cancer and Lung Disease Hazard
Authorized Personnel Only

- Work with Environmental Health and Safety (EHS) to identify ACM or PACM and to review and update the Asbestos Program as needed.
- Inform contractors about the Asbestos Program and coordinate all operations.

### C. Affected Employees

- Participate in training and follow policies and procedures in this program.
- Consult first with the Maintenance Manager in Facilities Services before disturbing asbestos-containing material (ACM) or presumed asbestos-containing material (PACM).

### D. Environmental Health and Safety

- Assist departments in evaluating potential asbestos exposures, facilitating employee training, making necessary program revisions, and providing updates to affected employees.
- Provide for air monitoring, as needed.

## IV. Categories of Asbestos-Containing Building Materials

The OR-OSHA identifies three categories of ACM used in buildings:

1. **Surfacing Materials**
   ACM that is sprayed, troweled, or otherwise applied to surfaces (walls, ceilings, structural members) for acoustical, decorative, or fireproofing purposes. This includes plaster and fireproofing insulation.

2. **Thermal System Insulation (TSI)**
   Insulation used to inhibit heat transfer or prevent condensation on pipes, fittings, boilers, tanks, ducts, and various other components of hot and cold water systems and heating, ventilation, and air conditioning (HVAC) systems.

3. **Miscellaneous Materials**
   Other largely non-friable products and materials such as floor tile, ceiling tile, roofing felt, concrete pipe, outdoor siding, and fabrics.

Asbestos-containing building materials (ACBM) installed outside a building (e.g., roofing felt and siding) and most fabric materials are exempt from inspection as defined by the Asbestos Hazard Emergency Response Act (AHERA).

**Friable vs. Non-friable ACM**
Friable contains more than 1% asbestos and is easily "crumbled, pulverized, or reduced to powder in your hand when dry." Friable asbestos has the potential to release asbestos fibers that can become airborne and create a health hazard. A licensed contractor must remove friable asbestos.
Non-friable asbestos will not crumble or reduce to powder by hand pressure.

## V. Work Classification and Training

OR-OSHA and OR-DEQ designate the following categories of asbestos work:

| Work Classification | Description | Training | |
|---|---|---|---|
| | | Initial | Annual Refresher [1, 2] |
| Building Inspector | - Identifies potential asbestos hazards in workplace.<br>- Conducts *physical assessment* of suspect material.<br>- Collects bulk samples for analysis. | Three-day, Mock building inspection, exam. | Half day |
| Project Designer | - Interprets results of *physical assessment*.<br>- Conducts *Hazard Assessment; prioritizes hazards.*<br>- Determines plan of action for abatement.<br>- Done by certified or licensed contractor. | Three-days, Workshop, field trip, exam. | One day |
| Supervisor of Class I and II Workers | - Has the authority to *correct hazards* as determined by project designer.<br>- *Ensures worker safety and health during abatement.*<br>- Done by contractor certified by OR-DEQ. | Five-day, Hands-on training, exam. | One day |
| Competent Person of Class III and IV Workers | - Ensures worker safety and health while working with asbestos.<br>- *Inspect the job site frequently while work is done.* | Equivalent in length and content to 16-hour Class III training | 4 hours |
| Abatement Worker, Class I | - *Removes thermal system insulation* (TSI) and surfacing materials asbestos-containing materials (ACM).<br>- Done by contractor certified by OR-DEQ. | Four-day, including 14 hours of hands-on training, exam | 8 hours |
| Abatement Worker, Class II | - *Removes all other types* of asbestos such as flooring and roofing materials.<br>- Done by contractor certified by OR-DEQ. | Four-day, Hands-on training, exam | 8 hours |
| O & M Worker, Class III | - Maintenance or custodial workers *who may disturb* ACM through their work<br>- Only trained and certified Reed employees, who remove less than three linear or three square feet of asbestos as part of the specific repair operation, and licensed contractors will do this work. | Two-day, Hands-on training, exam. | 4 hours |
| O & M Worker, Class IV | - Maintenance and custodial work that *may come in contact with*, but do not disturb ACM or PACM. | Two hour Awareness training | Two hour |

## VI. Methods of Compliance (General Rules)

Employers must follow several provisions to comply with the OR-OSHA asbestos standard. The following practices and procedures are minimum requirements. Additional safeguards may also be used.

### Employee exposure limits

No employee exposure shall exceed an air-borne concentration of 0.1 fibers per cubic centimeter (0.1f/cc) in an eight (8) hour time-weighted average (TWA).

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[1] See http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=27289

[2] See http://www.orosha.org/pdf/pubs/fact_sheets/fs30.pdf

No employee exposure shall exceed an air-borne concentration of 1 fibers per cubic centimeter (1f/cc) averaged over 30 minutes of sampling time.

**Control measures**
For all covered work, employers must use engineering controls and work practices for all operations, regardless of exposure levels:

- Vacuum cleaners equipped with high efficiency particulate air (HEPA) filters to collect debris and dust.
- Wet methods to control employee exposure.
- Prompt cleanup and disposal of asbestos-contaminated wastes and debris in leak-tight containers.

The following work practices may **never be used** regardless of the level of exposure:

- High-speed abrasive disc saws that are not equipped with a point-of-cut ventilator or enclosures with HEPA-filtered exhaust air.
- Compressed air to remove ACM, unless used in conjunction with an enclosed ventilation system to capture all dusts.
- Dry sweeping, shoveling, or other dry clean-up of dust and debris containing ACM and PACM.
- Employee rotation to reduce employee exposure.

**Respiratory protection**
Use respirators for the following:

- Class III jobs where asbestos-containing thermal insulation or surfacing material is cut, abraded, or broken.
- Class IV work within a regulated area where respirators are required.

**Protective clothing**
Employers must provide and require the proper use of protective clothing for any employee exposed to asbestos.

**Hygiene practices**
Employers must ensure that employees performing *any* class of asbestos work do not smoke in work area with asbestos exposure.

**Housekeeping**
Collect and dispose of asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing in sealed, labeled, impermeable bags or other closed container. Employees must use HEPA filtered vacuuming equipment and empty it to minimize asbestos reentry into the workplace.

## VII. References


- Agency for Toxic Substances and Disease Registry (ATSDR). Cigarette Smoking, Asbestos Exposure, and Your Health. June 2006.
- Environmental Protection Agency (EPA). Asbestos Worker Protection Rule. 40 Code of Federal Regulations (CFR) Part 763 Subpart G. 2000.
- Environmental Protection Agency (EPA). Asbestos-in-Schools Rule. 40 CFR Part 763 Subpart E. 2004.
- Environmental Protection Agency (EPA). National Emission Standards for Hazardous Air Pollutants (NESHAP). 40 CFR 61 Subpart M. 2006.
- Occupational Safety and Health Administration (OSHA). General Industry Standard 29 CFR 1910.1001. 2008.
- Occupational Safety and Health Administration (OSHA). Construction Standard 29 CFR 1926.1101. 2012.
- Oregon Department of Environmental Quality (OR-DEQ). OAR 340.248. Asbestos Requirements. 2015.


## VIII. Glossary

***Asbestos-Containing Material*** (ACM) – any material that contains more than 1% asbestos by polarized light microscopy (PLM).

***Asbestos in Schools Hazard Abatement Reauthorization Act*** (ASHARA) – reauthorized AHERA in 1990 and applied regulations for asbestos to public and commercial buildings.

***Asbestos Hazard Emergency Response Act*** (AHERA) – in 1986, signed into law as Title II of the Toxic Substance Control Act (TSCA).

***Asbestosis*** – a disabling, progressive, long-term, and often fatal scarring of the deep portions of the lung caused by exposure to all types of asbestos; develops 10 to 30 years after initial exposure.

***Asbestos fibers*** – generally, fibers whose length is greater than five microns with an aspect ration of 3:1, under PLM.

***Asbestos disposal*** – requires specific packaging and labeling, and disposal at a landfill authorized to receive asbestos waste.

***Chrystolite*** – "white asbestos," the only asbestiform mineral which contains approximately 40% each of silica and magnesium oxide; the most common form of asbestos used in buildings in the U.S.

***Hazard assessment*** – the AHERA interpretation and evaluation of physical assessment data in order to set abatement priorities and rank areas for response actions.

***Hazard communication*** – employers are required to make available to all workers, information about all hazardous chemicals on the job site. This usually takes the form of MSDS sheets, collected in a book, and made available to workers.

***Mesothelioma*** – a malignant cancer that develops in the lining of the chest or abdomen and has no cure; considered to be exclusively related to asbestos exposure; latency period is often 30 – 40 years.

***Polarized light microscopy*** (PLM) – an optical microscopic technique used to distinguish between different types of asbestos fibers by their shape and unique optical properties.

***Presumed asbestos-containing material*** (PACM) -- thermal system insulation (TSI) and surfacing material found in a building constructed no later than 1980. OSHA requires that building owners identify PACM in their buildings and treat the PACM as asbestos-containing materials (ACM) until the materials are proven not to contain asbestos.

## XI. Attachment: Recording Form for Physical Assessment Data

Building: _____

Functional Space #: _____ Type: _____ Location: _____

Type of Suspect Material: _____ Surfacing, _____ TSI, _____

Other_____

Approximate amount of material (linear or square ft.): _____

**Condition**

Percent Damage: _____%, _____ Localized _____ Distributed

Type of Damage: _____ Deterioration, _____Water, _____Physical

Description: _____

_____

Overall Rating: _____Good, _____ Fair, _____ Poor

**Potential for Disturbance**

Frequency of Potential Contact: _____High, _____ Moderate, _____ Low

Description: _____

_____

Influence of Vibration: _____High, _____ Moderate, _____ Low

Description: _____

_____

Potential for Air Erosion: _____High, _____ Moderate, _____ Low

Description: _____

_____

Overall Rating: _____ Potential for Sig. Damage _____ Potential for Damage _____ Low Potential for Damage

Comments: _____

Signed: _____ Date: _____