

LINN BENTON COMMUNITY COLLEGE

ASBESTOS

O&M PROGRAM MANUAL

6500 SW Pacific Blvd

Albany, Or 97321

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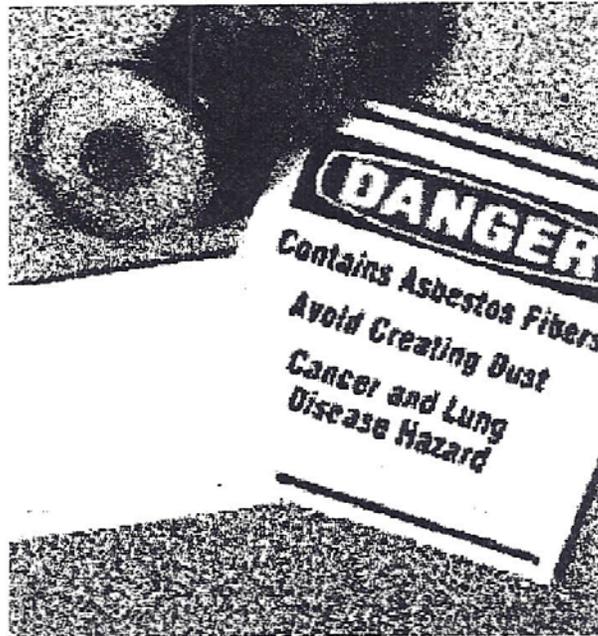


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PURPOSE

Linn-Benton Community College (LBCC) has developed the Asbestos Operation & Maintenance Program (O&M) to provide and ensure the safety of its employees when working around any asbestos-containing materials (ACM). Asbestos is a naturally occurring, flexible, fibrous mineral that forms hollow microscopic fibers that are resistant to heat, fire, and chemicals. Due to these properties, businesses in the US over the last century have used more than 30 million tons of asbestos in industrial, textile, automotive, and building products.

When a material containing asbestos is disturbed or damaged, it may release 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. The permissible exposure limits (PEL) for asbestos is defined by OSHA and has been grouped into the time-weighted average limit (TWA) and the excursion limit. The TWA for asbestos is any concentration of asbestos more than 0.2 fibers per cubic centimeter of air in an eight-hour time-weighted average. The excursion limit is defined as any concentration more than 1.0 fiber per cubic centimeter of air as averaged over a sampling period of thirty minutes. The permissible exposure level, determined by OSHA, has been set at 0.1 cubic feet. If this level or the excursion level is reached for a period of 30 days or more in a calendar year, individuals exposed must have medical surveillance.

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. To minimize exposure to building occupants and other personnel, LBCC manages in-place asbestos-containing materials in buildings and ensures proper and safe removal before renovations, maintenance, and demolitions.

I. SCOPE

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

III. DEFINITIONS

- *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 ratio of 3:1, under PLM.
- *Asbestos disposal* – requires specific packaging and labeling, and disposal at a landfill authorized to receive asbestos waste.

- *Chrysotile* – “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.

IV. RESPONSIBILITIES

A. LBCC Administration

- Provide commitment, leadership, and financial resources to support this program and reasonable assurance that all provisions of the asbestos program are met.
- Establish and approve the policy and procedures for asbestos management for LBCC.

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:

<p>DANGER Contains Asbestos Fibers. May Cause Cancer Causes Damage to Lungs. Do Not Breathe Dust.</p>
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- Provide necessary personal protective equipment (PPE) at no cost to the employee.
- Ensure employees doing Class II and IV asbestos work have received appropriate training. (Facilities Director acts as competent person supervising workers doing Class IV work)
- Ensure licensed contractors hired to conduct Class I or II work have been properly trained and certified.
- Post to areas which have asbestos-containing material (ACM) or presumed asbestos-containing material (PACM) with the following:

<p>DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS AUTHORIZED PERSONNEL ONLY</p>
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- Post to the entrances to rooms and/or areas where there is a potential for airborne asbestos fibers from ACM with the **following**:
- Work with Safety & Loss Prevention and the Facilities Directors 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

<p>DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS AUTHORIZED PERSONNEL ONLY WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA See Safety & Loss Prevention Director or Facilities Director Prior to Entry for Instructions</p>

- Participate in training appropriate to your job duties (Class III or IV worker) and follow policies and procedures in this program.
- Know the location of areas where know ACM is present. See Appendix C for maps and the Site Asbestos Survey Results.
- Consult first with Safety & Loss Prevention personnel or Facilities Director before disturbing asbestos-containing material (ACM) or presumed asbestos-containing material (PACM) [applicable to all pre-1981 built buildings where no known abatement has been done]. Complete the Physical Assessment Data Recording Form for the area and submit it to the Facilities Director.
- OR-OSHA determined categories of asbestos work (LBCC employees will only fulfill work classifications highlighted in yellow) and associated training:

Work Classification	Description	Training	
		Initial	Annual
Building Inspector	- Identifies asbestos hazards in workplace. - Conducts the physical assessment of suspect material. - Collects bulk samples for analysis.	Three-day, Mock building inspection, exam.	Half day
Project Designer	- Interprets results of physical assessment. - Prioritizes hazards. - Determines plan of action for abatement. - 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. - Ensures worker safety and health during abatement. - Done by contractor certified by OR-DEQ.	Five-day, Hands-on training, exam.	One day

Competent Person of Class III and IV Workers	<ul style="list-style-type: none"> - Ensures worker safety and health while working with asbestos. - 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	<ul style="list-style-type: none"> - Removes thermal system insulation (TSI) and surfacing materials asbestos-containing materials (ACM). - Done by contractor certified by OR-DEQ. 	Four-day, including 14 hours of hands-on training, exam	8 hours
Abatement Worker, Class II	<ul style="list-style-type: none"> - Removes all other types of asbestos such as flooring and roofing materials. - Done by contractor certified by OR-DEQ. 	Four-day, Hands-on training, exam	8 hours
LBCC O & M Worker, Class III	<ul style="list-style-type: none"> - Maintenance, custodial, and IS workers who may disturb ACM through their work - Only trained and certified LBCC employees, who are able to remove less than three linear or three square feet of asbestos as part of the specific repair operation without the material becoming friable and licensed contractors will do this work. 	Two-day, Hands-on training, exam.	4 hours
LBCC O & M Worker, Class IV	<ul style="list-style-type: none"> - Maintenance, custodial, IS work that may come in contact with, but do not disturb ACM or PACM. 	Two hour Awareness training	Two hour

D. Safety & Loss Prevention

- Assist departments in obtaining evaluation of potential asbestos exposures, facilitate employee training, make necessary program revisions, and provide updates to affected employees.
- Facilitate the provision of air monitoring, as needed.

V. CATEGORIES OF ASBESTOS-CONTAINING MATERIALS (ACM)

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.

Some common building materials that were used at LBCC are: sheet floor covering containing chrysotile, sprayed fibrous fireproofing containing chrysotile, vinyl floor tile containing chrysotile, breeching containing chrysotile and amosite, and mastic containing chrysotile.

VI. METHODS OF COMPLIANCE (General Rules)

Employers must follow several provisions to comply with the OR-OSHA asbestos standard. For material containing more than 1% asbestos and where there is either 10% or more of distributed damage to the material or 25% or more local damage, protective action must be taken. 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).

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.
- Any work to interior walls or hard ceilings in pre-1981 built buildings should have a sampling done prior to work beginning to check for ACM and the level of asbestos contained within. Consult the Facilities Director for sampling to be done.
- During automotive brake and clutch inspection, disassembly, repair and assembly operations, LBCC shall institute engineering controls and work practices to reduce employee exposure using a negative pressure enclosure/HEPA vacuum system method or low pressure/wet cleaning method
- Stripping of finishes on asbestos-containing flooring shall be conducted using low abrasion pads at speeds lower than 300 rpm and wet methods.
- Burnishing or dry buffing may be performed only on asbestos-containing flooring which has sufficient finish so that the pad cannot contact the asbestos-containing material.

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 or vacuuming without using a HEPA filter containing ACM and PACM.
- Sanding of asbestos-containing floor material.
- Employee rotation to reduce employee exposure.

Respiratory protection

Use half mask, air-purifying respirator equipped with HEPA/P100 cartridges or PAPR (positive air pressure 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. Protective clothing would include disposable Tyvek suits for Class III work.

Hygiene practices

No smoking is allowed in the areas where any asbestos work is being done.

Medical Surveillance

Employees assigned duties that may bring them into contact with asbestos above the permissible limit of .1 fiber/cubic centimeter of air must complete a medical evaluation and respirator screening prior to beginning these duties.

Using a respirator may place a physiological burden on an individual that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the individual. Therefore, medical evaluations are required for all LBCC employees who wear a respirator while performing their duties. In addition, a chest roentgenogram and pulmonary function test will be conducted for those employees working in areas with potential exposure to asbestos above the permissible limit. The medical evaluations establish an employee's base-line pulmonary and lung condition and determine the individual's medical and physical ability to wear and use a respirator. They **must** be conducted prior to the employee being fit-tested or using the respirator to work in areas with potential exposure to asbestos, and annually thereafter.

For employees working in areas where any potential exposure to asbestos is at or below the permissible limits, no medical evaluation is required unless the employee will be wearing a respirator. If wearing a respirator, the employee must complete the respirator screening as outlined in the College's Respiratory Protection Program. If there is an exposure to asbestos at or above the permissible limit of .1 fiber/cubic centimeter of air, LBCC will provide an examination by a licensed occupational medicine physician to include:

- Medical and work histories with emphasis on symptoms of the respiratory system, cardiovascular system, and digestive tract.
- Completion of the respiratory disease questionnaire contained in Appendix D.
- A physical examination including a chest roentgenogram and pulmonary function test.
- Any laboratory or other test/s that the examining physician deems necessary by sound medical practice.

LBCC will provide the physician a copy of this plan, a description of the employee's duties as they relate to asbestos exposure, the employee's level of exposure to asbestos, a description of PPE used,

and information from any previous medical examinations of the affected employee.

LBCC will obtain a written opinion from the examining physician containing the results of the medical examination, the physician's opinion as to whether the employee has any detected medical conditions that would place him/her at an increased risk of exposure-related disease, any recommended limitations on the employee or on the use of personal protective equipment, and a statement that the employee has been informed by the physician of the results of the medical examination and of any medical conditions related to asbestos exposure that require further explanation or treatment. This written opinion must not reveal specific findings or diagnoses unrelated to exposure to asbestos, and a copy of the opinion must be provided to the affected employee.

Completion of the medical questionnaire and evaluation will be administered confidentially during the employee's normal working hours. Corvallis Clinic Occupational Medicine in Corvallis and Albany is available to provide this service. The LBCC supervisor must contact the Exposure Control Officer (Assistant HR Director) in Human Resources, 541-917-4426, prior to the employee making the appointment with Occupational Medicine.

Employees will have the opportunity to discuss the questionnaire and examination results with the physician or licensed health care professional (LHCP).

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. Contact the Safety & Loss Prevention Director to coordinate pick-up of ACM debris.

Areas where exposed asbestos-containing fireproofing is present should be cleaned on a regular basis to prevent accumulations of excess dust, dirt, and debris by Class III trained personnel.

VII. INSPECTIONS AND NOTIFICATION

Annual Re-inspections

To monitor the condition of identified asbestos-containing materials in the building, a program of periodic inspection has been adopted. This program includes annual re-inspections by in-house personnel.

The Facility Area Lead Facilities Director will conduct periodic visual inspections of identified ACM and maintain vigilance for the possibility of locating new ACM.

A written record of periodic inspections using the Semiannual Inspection Form (Appendix B) will be kept by the Asbestos Program Manager (Facilities Director).

Notification

In the event that a building is to be demolished or renovation projects by a contractor will disturb more than 160 square feet of friable ACM (or 260 linear feet on pipes), the EPA or the state (depending if the state has been delegated authority under the EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP)) should be notified of.

- Name and address of the building owner or manager
- Description and location of the building
- Estimate of the approximate amount of friable ACM present in the facility

- Scheduled starting and completion dates of ACM removal
- Nature of planned demolition or renovation and methods to be used
- Procedures to be used to comply with the requirements of the regulation
- Name, address, and location of the disposal site where the friable asbestos waste material will be deposited.

VIII. TRAINING

See worker classification and training requirements under **IV. C. Affected Employees**

Initial and annual awareness training will include (Class IV Asbestos Workers and Supervisors):

- Asbestos characteristics and the location of ACM on LBCC
- Health effects of ACM fibers and the synergistic effects of smoking and ACM exposure
- Purpose of an O&M Program and asbestos regulations. Quantity, location, and storage of ACM at LBCC; engineering controls and work practices associated with the employee’s job assignment; specific procedures implemented to protect employees from exposure; the purpose, proper use, and limitations of respirators and PPE as related to work that would be done on site by LBCC employees.
- Recognition of damaged ACM and how to respond, notify, and document the evidence
- Release response instructions
- Awareness training is available online at LBCC Safety Training Moodle site at <http://elearning.linnbenton.edu/course/category.php?id=67>

Class III Asbestos Worker Training:

- Will be conducted by a certified trainer for asbestos work
- Initial and annual refresher training is required.

IX. LOCATION OF ACM AT LBCC (see Appendix C for specifics)

Gypsum board – wall & ceiling, Calapooia Center	Vinyl floor tile/mastic/sheet vinyl – SC, IA, Tadena, SSH, MK, CC, CC Core, RCH, RCH Core, AC
Pipe fitting insulation, <1%, IA - CC Core, MK Hall Core	Sprayed fibrous fireproofing debris - CC Core, MK Hall Core, Forum Core, & Forum Core access closets
Textured sound proofing materials - Forum	

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. 2006.
- Oregon Department of Environmental Quality (OR-DEQ). OAR 340.248. Asbestos Requirements. 2007.

Appendix

A. PHYSICAL ASSESSMENT DATA RECORDING FORM

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 _____ Potential _____ Low Potential
Sig. Damage for Damage for Damage

Comments: _____

Signed: _____ Date: _____

B. ANNUAL INSPECTION FORM

DATE: _____ **BLD. NAME:** _____

ROOM: _____ **INSPECTOR:** _____

The most recent accredited AHERA inspection is used as a basis for this survey

Asbestos Materials	Unchanged	Contact Damage	Water Damage
	Y/N	Y/N	Y/N

COMMENTS:

ACTION TAKEN:

ACTION APPROVED BY: _____ **DATE::** _____

Locate and report any tears or breaks in the wrap on hard pipe fittings, or any water damage to the fittings. Asbestos flooring with water damage (loose tiles), cracked tiles, or broken tiles should be noted. **A contractor should repair damage.**

C. LBCC SURVEY REINSPECTION REPORT

To view a full copy of the report, see the Facilities Director.

If viewing this plan electronically, the report can be accessed by clicking the document icon:



Maps and Sample Results