ASBESTOS MAINTENANCE PROGRAM

OCCUPATIONAL SAFETY AND HEALTH MANUAL

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Scope:	All Employees	**Training Needed:**	Yes
Associated Form:	n/a	**Training Frequency:**	At hire and annually for related positions

ASBESTOS MAINTENANCE PROGRAM

OAR 437, Division 2, Subdivision Z (1910.1001)

The purpose of this program is to ensure compliance with Oregon OSHA's Asbestos Standard. We have asbestos containing building materials which require that a basic asbestos program be maintained. The elements of a program include:

1. Inventory of asbestos-containing materials in our facilities.
2. Procedures for periodic examination of asbestos-containing materials to detect deterioration and need for repair or proper removal.
3. Written procedures for handling asbestos materials during maintenance and renovation activities.
4. Procedures for proper asbestos waste disposal.
5. Procedures for dealing with asbestos-related emergencies.
6. General asbestos awareness training will be provided to all maintenance staff who may come into contact with asbestos or be project managers ensuring that the outside asbestos abatement contractors follow our, Oregon OSHA, and DEQ procedures.

Note: This program does not meet DEQ asbestos worker training certification requirements nor is it intended to meet all possible Oregon OSHA Asbestos Requirements.

PROCEDURES FOR CONDUCTING ASBESTOS BUILDING INVENTORIES

1. Exposed building materials that are likely to contain asbestos will be tested by an outside source. The Supervisor will see that appropriate testing is done. The testing results will be retained by the management for 30 years. Sprayed on ceiling material containing asbestos and pipe insulation will be labeled.
2. Additional sampling will be done prior to removal, demolition, or renovation on all potential asbestos containing materials.
3. While many of our building materials have been tested, not all material may have been. Thus it is our policy to test any of the following suspect building materials prior to removal.
    a. Pipe Insulation Materials.
    b. Floor Tiles and Mastic (tiles, mastic for molding, mastic for tiles or carpeting).
    c. Sprayed on Asbestos containing ceiling materials.

    d. Asbestos Containing Pipe.
4. Asbestos material inventory results are maintained by facility maintenance and are available for review. The inventories are done individually for each building.
5. Any removal and testing of asbestos containing materials will be done by outside contractors and testing labs who are certified asbestos removal contractors. In order to eliminate employee exposure to asbestos dust and materials, we have chosen to have outside contractors deal with these materials. They will practice appropriate containment procedures, including sealing off the area and separating the work from HVAC/ventilation systems.

INSPECTION PROCEDURES

- Outside asbestos abatement and inspection contractors who have asbestos certified staff have taken samples and either repaired or properly removed asbestos containing materials.
- The maintenance staff is expected to note the condition of asbestos insulation and ceiling materials as part of their routine building maintenance. If upon visual inspection material is cracking, fraying, broken, or damaged they will report this to the Facility Manager.
- Custodial staff is to immediately report broken insulated pipes and any broken or friable materials labeled as asbestos to their supervisor immediately.
- If necessary, an asbestos abatement/inspection con-tractor's certified supervisor will determine the scale of the work. The work will be done by outside asbestos contractor(s). The asbestos supervisor will discuss interim measures necessary to protect all personnel that may be exposed to the material with management.

REINSPECTION

Reinspection of all visible asbestos materials will be done by certified asbestos contractors based on frequency noted in the previous inspection report.

NOTICE TO ALL BUILDING OCCUPANTS

Any damage to pipe insulation or other building surfaces and materials is to be reported to Management for review, in relationship to potential asbestos content. All asbestos insulation is labeled. Occupants in buildings with sprayed on asbestos containing ceiling material will be notified by the Management or the Building Manager. The building inventories will be available to all occupants by contacting Management.

HANDLING ASBESTOS MATERIALS DURING MAINTENANCE AND RENOVATION ACTIVITIES

Asbestos containing materials improperly handled can cause employee exposures to asbestos fibers and lead to building and surface contamination. It is our policy that asbestos containing materials will only be handled or removed by certified asbestos contractors with proper equipment, training, and controls.

Asbestos Cement Pipe Work: Jobs that entail removal of less than three square feet or three linear feet of asbestos-containing material (where the removal of asbestos is not the primary objective and methods of removal are in compliance). The work does not have to be performed by certified asbestos abatement workers. Employees who work on asbestos cement pipe must strictly follow the Department of Environmental Quality Standards on cutting or tapping the pipe. Power tools cannot be used to cut A-C pipe.

CONTROL MEASURES

1. We will hire contractors who use approved asbestos abatement methods. Projects may include either small scale or large-scale removal. Examples of Class II to IV projects include:
    a. Pipe repair.
    b. Valve replacement.
    c. Installing electrical conduits.

    d. Installing or removing drywall, roofing and other general building maintenance.
    e. Renovation which is small scale.
    f. Removal of asbestos containing insulation on pipes using a glove bag.
    g. Removal of small quantities of asbestos containing insulation on beams or above ceilings.
2. Safe Methods for Removal
    a. The methods of removal need to involve one or a combination of the following practices and engineering controls which are capable of reducing employee exposure to below the action level of 0.1 fiber/cubic centimeter.
        i. Wet method (asbestos containing pipes)
        ii. Glove bag for small isolated repairs
3. Maintenance staff will not use the following procedures when working with or around asbestos containing materials:
    a. Drill holes in asbestos material.
    b. Sand asbestos containing floor tiles.
    c. Dust surfaces that may contain asbestos with dry brushes or booms.
    d. Use regular vacuum cleaners to collect asbestos dust or debris.
    e. Remove material without proper respiratory protection and the proper type of clothing.
    f. Damage asbestos containing materials when moving or conducting general maintenance.
    g. Install curtains, drapes, or other dividers into asbestos containing materials.

CERTIFIED AND TRAINED ASBESTOS PERSONNEL

Staff or contractors selected to remove or repair asbestos containing materials will be in compliance with the Oregon OSHA rules and Department of Environmental Quality (DEQ) Standards.

ASBESTOS WASTE DISPOSAL

Our staff will follow the OR-OSHA, DEQ, and the available asbestos land fill requirements. Building materials containing asbestos can be legally disposed of using a disposal company to remove the waste bags and transport them to approved Oregon landfills. All asbestos abatement contractors will follow our rules as well as Oregon OSHA and DEQ's.

POTENTIAL ASBESTOS EMERGENCIES

Type of Emergencies:

- Damage to asbestos containing building materials due to willful activities of the occupants or the public; or maintenance activities resulting in unplanned contact with asbestos materials.

Emergency Procedures:

- Staff discovering an emergency will notify their super-visor, who will notify the entity's manager.
- Seal off area or contain the problem. Proper danger/warning signs and area security will be implemented.
- All clean-up, repair or removal will be done by an asbestos abatement contractor who is licensed and can be used on an emergency basis.
- All Oregon OSHA and DEQ regulations will be followed and only asbestos certified workers with approved equipment will be allowed to contain and clean-up the emergency.

GENERAL ASBESTOS AWARENESS TRAINING

What is asbestos?

Asbestos is a generic term applied to naturally occurring fibrous hydrated mineral silicates. These minerals are regarded as hydrated because they are formed by their affinity for water.

Asbestos has been used widely in building materials and in products that needed to be fireproof. The EPA estimated in 1985 there were 31,000 schools and 733,000 commercial buildings that had asbestos products in them. Asbestos was used because the mineral is:

- Fire Resistant.
- May be woven or used to provide strength and consistency to a product.
- Resistant to chemicals.

In the United States two primary forms of asbestos were widely used:

1. Amosite
   - Resistant to heat and chemicals, and found extensively in pipe insulation, friction materials, roofing and flooring materials.
   - Characteristically a rigid, brittle fiber which cannot be woven.
   - Now banned in the U.S. due to the higher cancer health risk associated with amosite.
2. Chrysotile
   - A long, wavy, hair-like fiber that is easily woven. Chrysotile is used in asbestos clothing products and extensively in many forms of insulation.
   - The shorter mill-end material is now being substituted for amosite applications.

Primary Health Effects

The primary effects from exposure to asbestos are to the respiratory system. Asbestos exposure is also linked to effects on the gastrointestinal system.

Particle Size

Asbestos is made up of fibers which are bundles of smaller and smaller fibers called fibrils. When asbestos material is disturbed countless numbers of very small fibrils, microns in size (millionths of a meter), are released into the air. Fibers 75 microns in size will get trapped in the nose and, Fibers 1-5 microns in size are trapped in the bronchioles and lungs.

The actual particle size of the asbestos that is released is important because:

- Once a small particle becomes airborne it can remain suspended almost indefinitely, even in a very small environment.
- Particles of this size are carried into the deepest part of the lungs, past the protective mechanisms in the nose, sinuses, and larynx.
- The asbestos fibers are crystalline minerals and are very persistent, which means that the fibers do not degrade in biological tissue. Once breathed deep into the lungs, the fibers may remain there indefinitely.
- The mechanism of damage to tissue appears to be associated with the mechanical irritation caused by the sharp ends of the fibers.

Diseases Associated with Asbestos Exposure

Asbestosis of the lung: A fibrotic degeneration of the lung usually associated with chronic exposure to asbestos. The disease restricts the ability of the lungs to expand and causes scarring of the lung tissue. This causes progressive shortness of breath, respiratory failure, and cardiac decompensation, which is the heart's inability to

maintain circulation because of reduced oxygen levels. The disease is progressive even in the absence of continued exposure to asbestos.

Lung Cancer: Cancers of the lung are seen at higher incidence rates in individuals who have been exposed to asbestos. The incidence rate is 90 times greater for workers who smoked tobacco and were exposed to asbestos than workers only exposed to asbestos.

Mesothelioma of the lung pleura: A rare form of cancer which is almost entirely related to asbestos exposure. The disease is not curable and individuals with mesothelioma rarely live more than one year after diagnosis. Mesothelioma is not associated with smoking and may occur following exposure to low levels of asbestos and a level of dust exposure defined as a "safe" level for lung cancer risks.

Gastrointestinal Cancers: Asbestos workers exhibit higher rates of cancers of the stomach, intestines, bowel, and rectum.

Pleural Plaques: Plaques are seen on the X-Rays of asbestos workers. These are dense strands of collagen (connective tissue proteins) showing as opaque patches on the X-Rays. These plaques can be seen with no disease and do not reflect severity of disease tissue but indicate asbestos exposure.

Asbestos: There are those who contend that there is no safe limit for exposure to asbestos. The current epidemiological studies, however, do suggest a typical dose-response relationship for most of the asbestos related diseases. Thus, the higher the exposure, the higher the incidence of disease is seen. Studies have also indicated a higher incidence of disease associated with amosite-type asbestos.

Relationship of Smoking and Asbestos Exposure

The 1985 Surgeon General's report on "The Health Consequences of Smoking: Cancer and the Chronic Lung Disease in the Workplace", reports on the research findings about the risk of developing lung cancer and lung diseases among asbestos exposed workers and asbestos exposed workers who smoke. The following conclusions were drawn by the report:

> Asbestos exposure can increase the risk of developing lung cancer in both cigarette smokers and nonsmokers. The risk in cigarette-smoking asbestos workers is greater than the sum of the risks of the independent exposures.
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> - The risk of developing lung cancer in asbestos workers increases with increasing number of cigarettes smoked per day and increasing cumulative asbestos exposure.
> - The risk of developing lung cancer declines in asbestos workers who stop smoking; however, the risk of developing lung cancer appears to remain significantly elevated even 25 years after cessation of exposure.
> - Cigarette smoking and asbestos exposure appear to have an independent and additive effect on lung function decline. Nonsmoking asbestos workers have decreased total lung capacities (restrictive disease). Cigarette-smoking asbestos workers develop both restrictive lung disease and chronic obstructive lung disease.
> - Asbestos exposure is the predominant cause of interstitial fibrosis (asbestosis) in populations with substantial asbestos exposure.
> - The promotion of smoking cessation should be an intrinsic part of efforts to control asbestos-related death and disability. For workers for whom asbestos exposure has ceased, the single most important intervention that would alter their future disease risk is the cessation of cigarette smoking.

Latency of Disease to Exposure

Asbestos related diseases typically develop 30-40 years subsequent to the beginning of the exposure. Workers who have been heavily exposed have shown symptoms within 5-10 years, but this is not typical.

Personal Protective Equipment

Only asbestos abatement contractors who meet the PPE and respiratory protection rules shall be used. Contact the Supervisor for more details on the program requirements.

MEDICAL SURVEILLANCE

There is no need for our employees to be part of an asbestos medical surveillance program but there is a requirement that the contractor's ensure that their employees are part of a comprehensive medical program.

RECORDKEEPING

Exposure Measurements (records need to include):

- Date of measurements.
- The operation tested.
- Sampling and analytical method used.
- Number, duration, and results of the samples.
- Type of protective devices worn.
- Name, social security number, and exposure of the employees whose exposures are represented.
- The records need to be maintained for 30 years.
- Where the records are stored.

Medical Surveillance: The employer must ensure that the employees' medical records are maintained. The record needs to include:

- Name and social security number.
- Copy of the medical exams results.
- Physician's written opinion.
- Any employee medical complaints which relate to asbestos exposure.
- Copy of information supplied to the physician.
- The records need to be maintained for the duration of employment plus 30 years.
- Where and how the records will be securely stored.

Training Records: The training records need to be retained for one year beyond the last date of employment by that employee. Records are to be made available to Oregon OSHA, affected employee, former employee, and designated representatives.