

ASBESTOS POLICY

WHAT IS ASBESTOS?

Asbestos is a widely used, mineral-based material that is resistant to heat and corrosive chemicals. It is found in virtually every home and factory and has more than 3,000 commercial uses.

There are six naturally-occurring fibrous minerals which OSHA (Occupational Safety and Health Administration) defines as asbestos: chrysotile (white substance), crocidolite (blue substance), amosite (brown asbestos), tremolite, anthophyllite and actinolite. They are members of a family called silicates and they differ from one another by their chemical composition. Commercially, chrysotile is the most common form of asbestos used, with most of the chrysotile used in the U.S. being imported from Canada.

How is it harmful?

Airborne concentrations of asbestos fibers*, when inhaled, presents a health hazard.

Some individuals exposed to asbestos over a long period of time (20 years or more) may experience impairment of lung function. (For example, the volume of air inhaled and/or exhaled may be less than that normally expected for their age group.) Other complications of exposure include asbestosis (fibrosis in the lower lobes of the lungs, around the asbestos fiber(s)), premalignant changes in the areas of fibrosis and mesothelioma. Other diseases that may be associated with exposure to asbestos include lung and esophageal cancer, cancer of the colon and rectum, cancer of the stomach, cancers of the kidney, larynx and/or pharynx.

Not everyone exposed to asbestos will develop lung problems. However, the probability does increase with amount and duration of exposure, usually 15-35 years after the first exposure, with an individual's susceptibility and with cigarette smoking. The type of asbestos may also play a role in problem development; it is not certain whether all forms carry an equal risk. Therefore, all forms are to be handled with caution.

MIOSHA, OSHA, NESHA and the EPA regulate the proper handling and disposal of asbestos. In Michigan, employee protection is regulated under the Michigan Department of Public Health.

The current PEL (permissible exposure level) for airborne concentrations of asbestos is 2.0 fibers/cc for an 8-hour, time-weighted average exposure. The ceiling limit is 10 fibers/cc. The PEL is expected to be lowered to 0.5 fibers/cc or lower for an 8-hour, time-weighted average exposure, in the future, and the ceiling limit is expected to be dropped.

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IDENTIFICATION - Visual Inspection

Prior to removal:

1. Notify Safety, Plant Engineering Departments and building occupants of intent to remove samples of suspected material.
2. Submit a sufficient number of bulk samples of the suspect materials from various areas around the pipe, etc., to the Safety Department or qualified lab (i.e., Clayton Environmental) for analysis as soon as possible before a removal project is begun.
3. Remember, the employee(s) must be properly protected during the sample collection process in case the sample is found to contain asbestos.
4. If it is determined that the material to be removed contains asbestos, it may be necessary to notify the EPA of intent to remove asbestos. Demolition and, under certain conditions. Renovation of facilities or equipment containing asbestos materials requires written notification to the EPA prior to commencement of the removal project.

NOTIFICATION

There are two styles of EPA notification requirements, as follows:

1. Asbestos "Renovation" means the removing or stripping of friable* asbestos materials from any pipe, duct, boiler, tank, reactor, turbine, furnace or non-load-supporting structural member, such as ceilings and non-load-supporting walls.

Notification for renovation is not required unless more than 80 meters (M) (260 linear feet) of pipe insulation or 15 square meters (M squared) (160 square feet) of asbestos-containing material are removed. When notification is required, the Administrator of the EPA must be given notice as soon as possible prior to commencement of renovation.

Proposed changes to the EPA notification requirements were recently published. Briefly, the proposal requires notification if asbestos is removed from ceilings, regardless of the amount of asbestos-containing ceiling materials removed.

2. Asbestos "Demolition" means the wrecking or removal of any load-supporting structural member, such as beams and load-supporting walls, and any related removing or stripping of friable* asbestos materials.

Notification for demolition is always required. Notification is required 20 days prior to commencement of demolition if the amount of asbestos-containing material is less than 80 M or 15 M-squared. Notification is required 10 days prior to commencement of demolition if the amount of asbestos-containing material is more than 80 M or 15 M-squared. In the case of emergency demolition, notification is required as soon as possible prior to demolition. With rare exception, all demolition work shall be considered planned demolition.

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NOTIFICATION - Format for Written Notification

Notification shall include the following information in accordance with 40 CFR 61.146:

1. Name of facility owner or operator.
2. Address of owner or operator.
3. Description of the building, structure, facility or installation to be demolished or renovated. Include all of the following information: size, age, prior use of the structure and the approximate amount of friable asbestos materials present.
4. Address or location of the building, structure, facility or installation.
5. Scheduled starting and completion dates of demolition or renovation.
6. Nature of planned demolition or renovation and method(s) to be employed.
7. Procedures to be employed to meet the requirements of 40 CFR Part 61, Subpart M (the National Emission Standard for Asbestos) regarding renovation, demolition and waste disposal of asbestos-containing materials.
8. The name and address or location of the waste disposal site where the friable asbestos waste will be deposited.
9. Name, title and authority of the State or local governmental representative who has ordered a demolition which is subject to 40 CFR Part 61, Subpart M, regarding a building that is structurally unsound and in danger of imminent collapse.

WORK PRACTICES

The following procedure must be followed whenever asbestos or suspect asbestos material is removed to ensure that maximum safety precautions are taken and that compliance with all pertinent regulations.

Personal Protective Equipment

Persons engaged in the removal or demolition of pipes, structures or equipment covered or insulated with asbestos and in the removal or demolition of asbestos insulation or coverings shall be provided with respirator equipment and protective clothing as outlined below.

Respirators shall be provided for medically qualified workers by their employer. An employer shall ensure that his respirator program meets the requirements of ANSI Z88.2-1969.

Special clothing (preferably disposable clothing) such as coveralls or similar whole body clothing, head coverings, gloves and foot

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coverings are required and shall be provided by the worker's employer. Openings around wrists and ankles shall be taped to prevent asbestos fibers from irritating skin and contaminating clothing beneath the protective covering. Goggles shall also be used and where safety practices deem it necessary.

AREA PREPARATION

The area in which renovation or demolition is to take place shall be sealed off (by means of ropes or barricade) and enclosed (by means of plastic curtains, preferably mounted to a frame to form a tent-like enclosure) to prevent the spread of airborne asbestos fibers to other areas.

Asbestos removal Caution signs conforming to 1910.93a (g) (1) (i,ii) shall be displayed at all approaches to areas where asbestos is to be removed and airborne concentrations are expected to be in excess of the permissible exposure limits.

Post asbestos removal Caution signs and "Do Not Enter" signs in a 60'x60' area around outdoor removals with "Caution Asbestos Removal" tape. The tape should be installed so that it is not possible to enter the removal area without breaking, walking over or ducking under the tape.

REMOVAL

Throughout the stripping process, friable asbestos materials shall be kept adequately wet* to prevent asbestos fibers from becoming airborne.

The friable asbestos materials being removed from pipes, ducts, boilers, tanks, reactors, turbines, furnaces or structural members may be removed as units or in sections provided they are adequately wetted during the cutting or disjoining operation. Such units shall not be dropped or thrown to the ground, but shall be carefully lowered to the ground level. Friable asbestos materials removed more than 50 feet above ground level, and not removed as units or in sections, shall be transported to the ground via dust-tight chutes or containers.

All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the exposure limits (including, but not limited to, saws, scorers, abrasive wheels and drills) shall be provided with local exhaust ventilation systems as detailed above.

For removal of insulation from horizontal, vertical cool and some high temperature piping, the cleanest approach is to use a glove bag. Said procedure is as follows:

- Cut the sides of the glove bag to fit the size pipe and insert the tools to be used into the inner tool pocket.
- Attach the bag to the pipe by folding the open edges together and sealing with staples and tape. Support the bottom of the bag as required to hold the weight of the insulation and water that will drop into the bag.

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- Seal the edges of the glove bag to the pipe with tape. Slice open the side port to allow entry of the utility sprayer nozzle and the HEPA vacuum nozzle. Reseal the opening with tape.
- Thoroughly wet the insulation with a penetrating encapsulant or a mixture of water and surfactant.
- Using the gloves, remove the insulation from the pipe inside the bag. Continue to wet the insulation as the cuts are made. Cuts should be square and even to allow the ends to be properly sealed.
- After the insulation is removed, collapse the bag with the HEPA vacuum. Cut the bag off the pipe and remove the tools from the pocket. Add penetrating encapsulant to the bag until there is excess liquid. Twist seal the bags and place them in a second bag until they are full and deliver them to the landfill for proper disposal.

SECONDARY REMOVAL TECHNIQUE

Under some circumstances, the glove bag removal is not feasible or practical. Such cases include high temperature piping, vertical piping, vessels and complex piping arrangements with many hangers and fittings close to one another. These cases require the following procedure:

- Insure that enough polyfilm and tape has been installed under the removal area to catch excess water that may drain off the asbestos. This water will contain asbestos fibers and should be treated as such.
- HEPA vacuum any loose dust or debris off the asbestos surface.
- Wet asbestos surface with a fine mist of water/surfactant or penetrating encapsulant.
- Insulation: Take extra care cutting the asbestos to minimize dusting. Continue misting the insulation with a water/surfactant or an encapsulant mixture under low pressure as cuts are made. Hold a pipe cleaning attachment on a HEPA vacuum near the cut if possible. Cuts should be square and even.
- Hold the poly bags used for disposal directly under the insulation being removed to catch the insulation so that it does not fall to the floor.
- When removals are complete, add penetrating encapsulant to the poly bags containing the asbestos until there is excess liquid.
- Seal exposed ends of asbestos insulation with water based encapsulant coating by gently brushing the coating onto the insulation until it is saturated and a good seal is formed.

CLEAN UP

Proper clean up of an area where asbestos has been removed is essential and must be carried out immediately after the job is completed.

- Pick up and dispose of any pieces of asbestos that may have fallen during the removal as quickly as possible.
- Vacuum all surfaces (horizontal and vertical) in the removal area with a HEPA vacuum. (Wet cleaning may be substituted only when electricity is not available.)
- Wet clean the polyfilm in the removal area using a damp rag.
- Remove polyfilm and dispose of it and the rags with the asbestos.

Caution should be used in handling all asbestos-contaminated items. Any reusable tools or devices used for removal of asbestos must be thoroughly rinsed immediately after use and before the worker has removed his protective clothing and respirator. In addition, goggles and hard hats, if used, should be cleaned with mild soap and water after clothing is removed by before the worker's respirator is removed.

- Remove bag from vacuum and prefilters from negative air machine and dispose of bag and filters with asbestos.
- Remove suit and dispose with asbestos.
- Remove respirator, clean body and dispose of cartridges.

Disposal of asbestos wastes is currently controlled by the National Emission Standards for Hazardous Air Pollutants (NESHAP-40 CFR Part 61, Subpart M, promulgated under the Clean Air Act). NESHAP requires that the collection, processing, transporting and disposal of asbestos wastes be carried out so that there are no visible emissions of asbestos fibers at the production site, in transit or at the disposal site. The best way to achieve this goal is to keep the asbestos waste material(s) wet during removal and throughout the bagging procedure.

Special impermeable plastic bags, pre-labeled for asbestos disposal (in accordance with 1910.93a(g)(2)(i,ii)) are preferred for disposal. The label should read:

CAUTION
Avoid Creating Dust
Breathing Asbestos Dust May Cause Serious Bodily Harm

During the above procedures, no unauthorized personnel shall enter the barricaded areas.

DISPOSAL

The following phase of the removal is as important as the removal itself. This phase is hauling to the landfill. When handling bags or containers, care should be taken not to puncture or destroy containers.

Contact of landfill should be no less than one day prior to disposal. During this contact, responsibilities of the handling of the waste materials by landfill personnel should be reviewed:

They must be qualified to receive hazardous waste materials, and must handle waste with care.

One hole must be dug large enough to hold amount being delivered.

After delivery is made, the hole must be covered immediately.

SAFETY POINTS

No matter which control method is used, several safety points should be remembered:

1. Make sure area is properly sealed to prevent the escape of asbestos fibers.
2. Look for punctures in the polyfilm and repair/patch them.
3. All protective gear should be worn while in the work area from the time the work area is sealed until the final clean up.
4. Be aware of the dangers of walking on wet plastic covered floors.
5. Know what to do in any emergency before it happens.
6. Always clean wet with no dry sweeping.

Asbestos has become a problem for all of us, but it is a problem that is controllable and that can be solved through proven methods and professional application of these methods.

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Asbestos fibers: Asbestos fibers are defined as fibers longer than five micrometers.

Friable asbestos: Friable asbestos material means any material that contains more than 1% asbestos by weight and that can be crumbled, pulverized or reduced to powder (when dry) by hand pressure.

"Adequately wet": Wetting agents (surfactant), combined with water, are more effective than water alone and may be sprayed onto insulation from a mechanical sprayer under low pressure.

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