

Asbestos Removal Procedures for Home Owners

How to Properly Remove

Cement Asbestos Board Siding

Single-Family, Owner-Occupied Residences Only

This publication details the steps necessary for the safe removal of cement asbestos board siding from a single-family, owner-occupied home. Be aware that no set of instructions can anticipate all possible situations and variables that a homeowner may encounter in an asbestos removal project.

It is essential that you read these instructions from start to finish, making sure you thoroughly understand them before cutting or disturbing your siding in any way. **Failure to do so poses a severe health risk to you and your family.**

Northwest Clean Air Agency strongly recommends that you hire a state-certified asbestos abatement contractor. The Washington State Department of Labor and Industries keeps a list of certified contractors, you can access this list at: <http://www.lni.wa.gov/Safety/Topics/AtoZ/Asbestos/contractorlist.asp> However, if after reading this instruction manual you still choose to do the work yourself, it is critical that you follow each step completely and carefully -- from site preparation to disposal -- so that your removal project is effective, safe, and legal.



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Exposure to airborne asbestos may cause cancer or other lung diseases. Northwest Clean Air Agency assumes no liability or responsibility for house damage, injuries, illnesses or related health problems arising from you performing an asbestos removal project. You assume all risks involved.

Note: This publication is limited to the removal of cement asbestos-board siding, one of the four most common asbestos abatement projects attempted by homeowners. Northwest Clean Air Agency also provides free removal procedure information for popcorn ceilings, "octopus" furnace and duct insulation, and sheet vinyl flooring. To access this information, visit www.nwcleanairwa.gov or contact NWCAA at 360-428-1617.

Are you prepared to take on this project?

It is essential that you are aware of all the challenges and risks of tackling an asbestos removal project yourself. It can be time consuming, messy, expensive, and dangerous to your health, if not correctly performed.

Before you begin any asbestos removal project, you must be able to answer "yes" to all the following questions:

- **Are you sure your siding contains asbestos?**

Submit a small sample for laboratory analysis. Cost for such testing is minimal, typically \$25-\$50 per sample. Laboratories are listed in the phone book yellow pages under "Asbestos--Consulting and Testing."

To take a sample: wearing rubber gloves, wet and break off a small piece of siding (about one square inch) and place it in a re-sealable plastic bag. Take or send the sample to a local asbestos testing lab.

If the laboratory results are negative, meaning less than one percent asbestos was found in the sample, take two additional samples and have them tested to confirm the analysis.

If you decided not to check for asbestos, assume the siding contains asbestos and treat it accordingly.

- **If your siding contains asbestos, is removal the best option?**

Remember, asbestos is only a problem if fibers are released to the air. Unless cement asbestos-board siding is being disturbed, it will not release asbestos fibers. The safest, easiest and least expensive option may be to leave it alone.

Sometimes it is possible to work around asbestos without removing it. However, if asbestos-containing siding must be disturbed as part of a remodeling project, then removal may be your only option.

- **Are you prepared to accept the serious health risks associated with asbestos removal?**

Airborne asbestos is a serious health hazard.

Breathing asbestos fibers can cause lung cancer and other diseases.

When disturbed, asbestos breaks down into fibers up to 1,200 times thinner than a human hair. If released into the air, asbestos cannot be seen and quickly circulates through your home. When inhaled, these fibers become trapped in lung tissues. Medical research tells us that up to 30 years after inhalation, asbestos fibers can cause **lung cancer, mesothelioma**, a related terminal cancer of the tissue that lines the chest cavity, and **asbestosis**, a condition that can lead to breathing problems and heart failure.

There is no known safe level of asbestos exposure. That's why medical, environmental health, and regulatory organizations stress the need to protect health by minimizing exposure to airborne asbestos fibers, particularly at elevated levels -such as can occur during a remodeling project.

Without proper ventilation, equipment and body coverage at all times when working with

asbestos, you or anyone in the vicinity of the removal area may be at serious risk.

The removal procedures described in this publication are intended to help homeowners minimize health risks associated with do-it-yourself asbestos removals. However, it should be understood that with any removal project some release of asbestos fibers into the air is unavoidable and there are no known safe levels of asbestos exposure.

- **Are you prepared to assume the challenge of do-it-yourself asbestos removal and disposal?**

The work will be difficult, requiring the purchase of safety equipment.

Even under the best of circumstances, do-it-yourself asbestos projects can be physically demanding and potentially dangerous.

- Breathing through a respirator is more difficult than normal breathing and places additional stress on heart and lungs.
- Protective clothing can be hot and uncomfortable.
- Work can involve ladders and high spaces.
- Eye protection often results in reduced visibility.
- Caution must be taken with wiring and electrical power because of all the water being used to wet the asbestos.

As a homeowner, you do not have the specialized equipment, materials, and experience of an asbestos abatement contractor to perform this work. Unlike contractors, who have special machines with high-efficiency filters to remove fibers from the workplace air, you have few, if-any, safety "back-ups" if something goes wrong.

The work will be time consuming.

The total time it takes to complete a cement asbestos board siding removal can be substantial. Time estimates for the completion of an average size (10 x 10) room removal project are:

- File a notification form and pay associated fee with the Northwest Clean Air Agency: (<http://nwcleanairwa.gov/permits-and-services/asbestos/>)
- Collect supplies - % day.
- Set up containment area - 1 day
- Removal and clean-up - 2 days
- Disposal - % day

- **Are you aware of the legal issues involved?**

During removal

The law prohibits you from hiring anyone other than a certified asbestos abatement contractor to perform -- or assist with -- asbestos removal work in your single-family residence. Family members and friends may participate, provided they do so on a voluntary, no-pay basis. Homeowners may remove asbestos themselves. But as stated above, this option is difficult, time-consuming, and dangerous to your health if prescribed work procedures are not strictly followed.

During disposal

If you choose to remove asbestos yourself, you take on the legal liability of ensuring proper bagging (**labeled, double bagged in 6 mil thick plastics bags, sealed with duct tape**) and identification of asbestos debris, correct transport (in a covered vehicle), and disposal ONLY at disposal sites or transfer stations licensed to receive such waste. These regulations are intended to protect your community from the harmful effects of asbestos.

The Washington State Department of Labor and Industries has regulations that may also apply. Call 1-360-902-5514 or visit: <http://www.lni.wa.gov/TradesLicensing/LicensingReq/Asbestos/default.asp> for more information.

If you answered "No" to any of the above questions, and if you still wish to have asbestos removed from your home, YOU MUST CONTACT A STATE-CERTIFIED ASBESTOS REMOVAL CONTRACTOR. This is the quickest, safest, and most reliable way to remove asbestos from your home

Before You Begin Asbestos Removal

No set of instructions can address all possible situations and variables that a homeowner may encounter in an asbestos removal project. This publication is intended to address the common steps and most important issues involved in removing cement asbestos-board siding.

Common sense dictates that unique and particularly challenging projects should not be undertaken by the homeowner. In such cases, avoid the possibility of asbestos contamination by abandoning the "do-it-yourself" approach and hiring a state-certified asbestos abatement contractor.

These first two steps should be taken care of well before you start any area preparation.

1. Complete an application.

Prior to removing asbestos, visit the Northwest Clean Air Agency website at www.nwcleanairwa.gov to download and submit a notification form for your asbestos removal project. Once your application is submitted and the appropriate fee is collected, the agency will issue you a case number. Once a case number has been assigned by the agency, the form becomes your permit to legally remove asbestos and dispose of it at specified asbestos disposal sites (**you must show this form when disposing of asbestos debris**). For additional information or direction you can call the Northwest Clean Air Agency at 360-428-1617.

2. Gather essential personnel & supplies

WORKERS

It is illegal to hire anyone other than a state-certified asbestos abatement contractor to perform, or assist in, the removal of asbestos.

Although it is possible for one homeowner to do a siding removal job, the task can be more effectively carried out by two workers. With two workers, one can concentrate on carefully removing pieces of siding while the other keeps the materials wet and packages debris as it is generated.

• PROTECTIVE EQUIPMENT AND CLOTHING

During removal, all workers must be protected from breathing or spreading asbestos fibers. Each person must wear an appropriate respirator, disposable coveralls, goggles, disposable gloves and rubber boots.

Before beginning your project, you'll need to obtain the following items.

Check your phone book yellow pages under "Safety Equipment and Clothing" for a list of safety equipment vendors. Note which items must be purchased at special stores (i.e. safety equipment store) which carry approved health and safety equipment used for asbestos removal and which may be widely available.

A) Respirators -- Half-face, dual-cartridge respirators, each equipped with a pair of HEPA filters

(color coded purple) are required. One respirator is required for each person working within the removal area. Respirators provide little protection if they do not fit properly, so request a fit test from the vendor.

Persons with beards often cannot be adequately fitted with this type of respirator and should not work within contaminant areas.

B) Coveralls -- Several pairs of disposable coveralls with built in booties should be purchased for each person who will be in the work area. Oversized coveralls make it easier for workers to move around.

NEW COVERALLS WILL BE NEEDED FOR EACH ENTRY INTO THE REMOVAL AREA. Every time a worker leaves a removal area, coveralls should be wetted and disposed of in a properly sealed asbestos disposal bag.

C) Rubber boots - Lace less, pull-on rubber boots without fasteners will protect coverall booties so they do not wear through. Rubber boots can be washed off later or disposed of as contaminated debris.

D) Eye protection - Each worker performing cement asbestos- board siding removal work should be equipped with non-fogging goggles or other safety-approved eyewear protection.

E) Rubber gloves - Several pairs of durable, disposable rubber gloves should be purchased for each worker. Rubber gloves must be worn by each person working within the removal area.



NEW GLOVES ARE REQUIRED WITH EACH RE-ENTRY INTO THE REMOVAL AREA. Every time a worker leaves a removal area during a project, these gloves should be wetted and disposed of in an asbestos disposal bag.

TOOLS AND SUPPLIES

A) Tank sprayer (2-3 gallons) - This will be your means of wetting exposed asbestos-containing materials.

B) Garden hose with automatic shut-off nozzle. A hose equipped with an automatic shut-off spray nozzle, will be needed to supply water at the entrance to the work area.

C) Liquid dishwashing detergent -Mixed at 1cup per 5 gallons of water for best results in wetting.

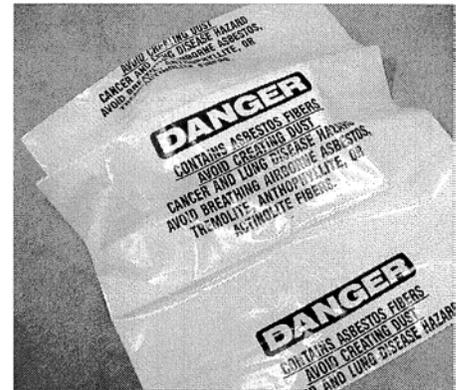
D) Removal tools:

- A pry bar for lifting nails. A bar equipped with a blade at least two inches wide is best.
- A nail puller or nail-head cutter.
- A knife or scissor to cut polyethylene sheeting.

E) Six-mil Polyethylene plastic sheeting - This will be used to cover a six foot strip of ground at the base of walls from which siding is being removed and transition zone for entering and exiting the work area. Other uses may include wrapping containers of removed siding if pre-marked asbestos waste disposal bags are not used for this purpose.

F) Debris containers - Cardboard boxes, burlap bags, or other sturdy containers will be needed to help keep the sharp edges and corners of siding debris from puncturing plastic disposal bags. Plastic bags or sheeting that has been punctured will not be accepted by waste disposal sites.

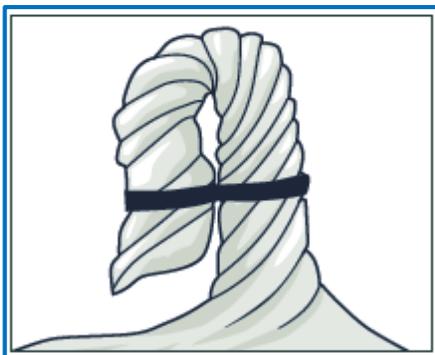
G) Asbestos waste disposal bags - These special bags will be used to contain asbestos contaminated debris and materials. The bags should be sized 33 inches by 50 inches and be made of 6-mil polyethylene. Each should be pre-printed with required asbestos warnings



H) Asbestos waste disposal stickers - These special stickers can be used to tag larger items of debris that do not fit in the bags, but are double wrapped and taped in plastic.

I) Permanent marker pen -You must write your last name, address, and removal date on each waste disposal bag or sticker.

J) Duct tape -Numerous rolls will be needed for sealing waste disposal bags (twist top of bag, and wrap tape around twisted area – see illustration listed below) and holding some of the removal area plastic in place.



K) Clean, disposable rags- A large supply should be on hand for assorted removal and clean-up purposes.

L) Bucket -You will need a bucket for washing tools at the end of the project.

TIP: Hang these Basic Rules like a calendar in the work area.

Worker protection: During removal, you will need to protect yourself from breathing or spreading asbestos fibers by wearing an appropriate respirator, disposable coveralls, goggles, disposable gloves, and rubber boots (or shoes that may need to be thrown out after the project).

Wetting: Wetting is critical to asbestos fiber control. Before, during, and after removal, asbestos siding should be thoroughly wetted with water in order to keep asbestos fibers out of the air. Once removed, asbestos debris should be kept wet until packaged and sealed for disposal.

Containment: You will need to contain your asbestos debris and minimize the release of asbestos fibers. The ground at the base of walls from which siding is removed must be covered with plastic sheeting to ensure that all debris is captured and contained for disposal.

Avoiding breakage: Minimizing the breakage of asbestos siding during removal and handling will help keep asbestos fibers from being released into the air.

SITE PREPARATION

As you prepare to remove the siding, remember that your safety objectives are to keep asbestos fibers out of the air. To accomplish this, you will need to minimize breakage, keep the siding wet, and contain all debris.

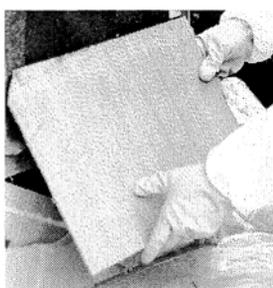
Prepare the house:

- **Post signs** warning any "drop-in" friends, family, and other visitors of the work taking place.
- **Lay a six-foot wide strip of 6-mil sheet plastic** along the side of the house where removal is to occur, to the extent that landscaping and terrain will allow. Try to work in the shade so the wetted siding will remain wet.
- **Create an entrance/exit "transition" zone** to the work area by laying down an additional six-foot by six-foot piece of sheet plastic in a convenient location next to the plastic strip along the wall. Keep a plastic disposal bag at this location.
- **Thoroughly hose down about 50 square feet of siding.**
- **Mix approximately 1 teaspoon of liquid dish-washing detergent** with water in the pint size spray bottle or about one half cup of detergent in a garden pump sprayer.
- **Get dressed.** Removal workers should now put on a pair of disposable coveralls. They should then put on gloves, goggles, boots, and respirators equipped with HEPA filters.

Removing the Siding

- **Remove pieces of siding** by pulling nails or cutting nail heads so as to minimize breakage.
If necessary, carefully lift siding pieces with pry tool to expose nail heads.
- **If siding should begin to crack or crumble**, immediately wet the cracked or broken areas with the pint size spray bottle or garden pump sprayer. **Breakage releases asbestos fibers.**
- **Wet the back of each piece of siding** as it is removed.
- **Carefully lower removed siding to the ground.** Do not throw or drop it.
- **Keep all debris on the plastic strip** at the base of the wall and keep it wet until packaged and sealed.

Note: Once removal work begins, do not leave the plastic without first removing disposable coveralls and other protective equipment at the "transition zone." Each re-entry onto the plastic will require a new pair of coveralls and gloves.



CLEANING UP

Once removed, asbestos debris should be kept wet until packaged and sealed for disposal.

- **Load wetted debris and other contaminated materials** into sturdy containers like cardboard boxes or burlap sacks. If cardboard boxes are used, line each box with 6 mil polyethylene and leave enough excess plastic to cover the debris and seal the plastic-covered debris with duct tape. Boxes should then be wrapped in one or more layers of 6-mil plastic or inserted into a single pre-marked asbestos waste disposal bag.
- **Double bag or wrap** other filled containers in pre-marked 6- mil asbestos waste disposal bags. Twist top of each filled bag, bend twisted part in half and seal it with duct tape. If containers are to be wrapped rather than bagged, use 6-mil polyethylene plastic and ensure all seams are sealed with duct tape. Affix an asbestos warning label to each sealed package.
- **Re-wet any debris on the strip of plastic** next to the wall, at the end of each work shift. While continuing to stand on the plastic strip next to the wall where the removal is being done, double bag or wrap all debris as described above. Then wrap or roll up the strip of plastic along the wall, working your way back-to the entrance/exit "transition zone" strip of plastic. Step onto the transition zone plastic and double bag or wrap the last of the strip plastic.

Decontamination

- While standing on this last piece of plastic sheeting, spray yourself (or each other) with water to wet down any asbestos debris/fibers on the outside of your respirator and disposable coveralls.
- Remove boots. Then remove your disposable gloves and coveralls by peeling them off and turning them inside out as you remove them. Leave these contaminated items on the transition zone plastic for disposal. Step off the last plastic sheet.
- Take off respirators and remove their filters for disposal. Then wash off and wipe down the tools used in removal, along with your respirators, goggles and boots. Move each item off the plastic as it is cleaned.
- Double bag remaining debris, transition zone plastic and disposable items in properly labeled asbestos disposal bags or double wrap them in 6-mil plastic sheets. Tightly seal each bag or package tightly with duct tape. Use wet rags for any further clean-up. **Never attempt to vacuum or sweep up asbestos debris.** This will cause any fibers present to become airborne.
- Take a shower.

Disposal

- Asbestos debris from an asbestos project must be disposed of at disposal sites or transfer stations licensed to receive such waste. A list of such sites may be obtained by calling 360-428-1617 or 800-622-5202 or visit www.nwcleanair.org. Call the individual sites for disposal fees.
- A copy of your Northwest Clean Air Agency approved application, with assigned case number, must be presented at the disposal facility.
- All debris must be sealed in two layers of 6-mil polyethylene plastic. Remember, siding pieces have sharp edges that can perforate this plastic material unless the siding is first loaded into sturdy containers. **Packaged debris in punctured plastic will not be accepted** by waste disposal sites. You must write your last name, address, and date of removal on each container. Check with the disposal site for any additional requirements.
- Debris must be legally disposed of within 10 calendar days of being generated. If you must store the packaged debris prior to disposal, store it in a secured area, such as a locked basement or garage.
- All double-bagged or wrapped debris must be hauled to the disposal site or transfer station in a covered vehicle.