

How to Properly Remove Cement Asbestos-Board Siding From Owner-Occupied, Single-Family Residences Only

This publication details the steps necessary for the safe removal of cement asbestos-board siding from an owner-occupied single-family home. The term *single-family home* includes houses, mobile homes, trailers, detached garages, houseboats, and houses with a “mother-in-law apartment” or “guest room.” This term does not include rental property or multiple-family units, nor does it include any mixed-use building that contains a residential unit. 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 disturbing your cement asbestos-board siding in any way. **Failure to do so poses a severe health risk to you and your family.**

Puget Sound Clean Air Agency strongly recommends that you hire a state-certified asbestos abatement contractor. 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.

Exposure to airborne asbestos may cause cancer or other lung diseases.

Puget Sound 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.

This publication is limited to the removal of cement asbestos-board siding, one of the three most common asbestos abatement projects attempted by homeowners. Puget Sound Clean Air Agency also provides free information about removing “popcorn” ceilings and asbestos-backed sheet vinyl flooring. This publication can be downloaded from our web site at www.pscleanair.org.

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 performed correctly.



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

Y

N

Are you sure your cement siding contains asbestos?

Not all siding contains asbestos. To know for sure, submit a siding sample for laboratory analysis. Cost for such testing is minimal, typically \$25 per sample. Laboratories are listed in the yellow pages of your phone book under “Asbestos—Consulting and Testing.”

If you decide not to check for asbestos, assume the siding contains asbestos and answer “Yes.”

To take a cement siding sample for analysis you will need:

a spray bottle, liquid detergent, resealable plastic bags, rubber gloves, and pliers or other tool to break the siding.

Take at least one sample (three are recommended) of each type of siding.

1. Fill a spray bottle with water mixed with a few drops of liquid detergent.
2. Wet a small area of the siding with the spray bottle and break off about one square inch.
3. Place the sample in the plastic bag and seal it. Take the samples in a random area throughout the siding.
4. Take the samples to an asbestos testing lab.

In order to reduce the analysis cost, you may instruct the lab to test the samples only until they find the first positive sample for asbestos. Since any one positive sample of siding indicates that the entire type of cement siding is asbestos, it may not be necessary to test all the samples. If a sample contains more than 1% asbestos, the asbestos regulations apply.

Y

N

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

Asbestos is a problem only if fibers are released to the air. Unless cement asbestos-board siding is disturbed, it will not release asbestos fibers. Hence, 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.



Y

N

Are you prepared to accept the serious health risks associated with doing the asbestos removal yourself?



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 in and around 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 breathing 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 TAKE ON THIS PROJECT? (CONT.)

Y

N

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.

The work will be time consuming.

The total time it takes to remove siding can be substantial. Time estimates to complete an average removal project (1-story, 2- or 3-bedroom house) are:

- Collect supplies – ½ day
- Set up containment area – 1 hour for each day of removal project
- Removal and clean up – 4 to 5 days (250 to 400 square feet of siding per day)
- Disposal – ½ day

The work may cause damage to your home.

These procedures may result in damage. For example, water may seep through to inside walls.

Y

N

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 from your single-family residence. 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 and identification of asbestos debris, correct transport (in a covered vehicle), and disposal **ONLY** at disposal sites or transfer stations authorized to receive such waste. These regulations protect your community from the harmful effects of asbestos.

The Washington State Department of Labor and Industries has regulations that may also apply. Call 800-4-BE-SAFE or visit www.lni.wa.gov/wisha 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.

The following two steps must be taken care of before you start your removal project.



BEFORE YOU BEGIN ASBESTOS REMOVAL (CONT.)

1. Complete a notification.

Prior to removing friable asbestos, you are required to mail a Notice of Single-Family Residence Asbestos Removal notification to the Agency with the \$25 processing fee. Be sure to keep a copy of the notice and post it on site during the project as no copy will be provided back to you. This form can be downloaded from our web site at www.pscleanair.org.

We anticipate after May 1, 2007, all asbestos project notifications, including single family residence, will only be accepted by submitting online on our web site www.pscleanair.org.

2. Gather essential personnel and supplies.

Workers

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

Although it is possible for one homeowner to do a siding removal job, it is preferable to have 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 by wearing an appropriate respirator, disposable coveralls, goggles, disposable gloves, and rubber boots.



Proper Face Gear



Before beginning your project, you'll need to obtain the following items. All items marked with a triangle (▲) must be purchased at special stores that carry approved health and safety equipment used for asbestos removal.

Check the yellow pages of your phone book under “Safety Equipment and Clothing” for a list of safety equipment vendors.

- ▲ **Respirators** — Half-face, dual-cartridge respirators, each equipped with a pair of HEPA filters are required. One respirator is required for each person working within the containment 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.

- ▲ **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 the work area, coveralls should be wetted and disposed of in a properly sealed asbestos waste disposal bag.
- **Rubber boots** — Laceless, 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.
- **Eye protection** — Each worker performing siding removal work should be equipped with non-fogging goggles or safety glasses.
- **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 WORK AREA.** Every time a worker leaves the removal area during a project, these gloves should be wetted and disposed of in an asbestos waste disposal bag.



BEFORE YOU BEGIN ASBESTOS REMOVAL (CONT.)

- ▶ **Asbestos waste disposal bags** — These special bags will be used to contain asbestos contaminated debris and materials if removed siding is to be bagged rather than wrapped. You will need one dozen bags per 100 square feet of siding removed. If siding is to be wrapped rather than bagged, disposal bags may be needed only for daily disposal of sheet plastic ground cover, disposable coveralls, gloves, etc.
- ▶ **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 6-mil plastic. You may need to special-order these from a safety supply store because few carry them in stock. Plan accordingly.

Tools and Supplies

- **Water sprayer** — A quart-sized spray bottle or garden pump sprayer is needed to wet exposed asbestos-containing materials. This will also be used to spray workers upon exiting the asbestos removal area.
- **Garden hose with automatic shut-off spray nozzle** – This will be needed to supply water to the work area.
- **Liquid dishwashing detergent** – To be mixed with water to produce the best results when wetting asbestos.
- **Siding 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 scissors to cut polyethylene sheeting.
- **6-mil polyethylene plastic sheeting** – This will be used to cover a 6-foot strip of ground at the base of walls from which siding is being removed and to create a 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.
- **Debris containers** — Cardboard boxes or burlap bags will be needed to help keep the sharp edges and corners of siding debris from puncturing plastic disposal bags. **PLASTIC BAGS OR PLASTIC SHEETING THAT HAS BEEN PUNCTURED WILL NOT BE ACCEPTED BY WASTE DISPOSAL SITES.**



Asbestos Waste Disposal Bag

- Permanent marker pen** — You must write your last name, address, and removal date on each waste disposal bag or sticker.
- Duct tape** — Numerous rolls will be needed for sealing waste disposal bags or wrapped debris.
- Clean, disposable rags** — A large supply should be on hand for assorted removal and clean-up purposes.
- Bucket** — You will need a bucket for washing tools at the end of the project.
- Ladder and/or scaffolding** — You will need a ladder to reach the upper portion of walls. More-complex scaffolding may be required for 2-story homes.

SITE PREPARATION

3. Prepare the removal area.

As you prepare to remove the siding, remember that your primary objective is to keep asbestos fibers out of the air. To do this, you will need to: **minimize breakage, keep the siding wet, and contain all debris.**

- Post asbestos signs** warning friends, family, and others who might visit to stay well away from the work area. Make sure pets cannot come near the work site.
- Hang these instructions like a calendar.** Select a location within the work area, yet away from where you'll be spraying water, to hang these instructions. You need to be able to stay on the plastic work strip when reading these instructions.
- Label asbestos waste disposal bags or stickers** using a permanent marker pen. Write your last name, address, and date of removal on each. It is easier to label bags prior to filling them. These bags must also specify the asbestos warning sign required by Labor and Industries or OSHA.
- Lay a 6-foot wide plastic strip along the side of the house.** To the extent that landscaping and terrain will allow, lay a 6-foot wide strip of 6-mil sheet plastic along the side of the house where removal is to occur. Try to work in the shade so the wetted siding will remain wet.

SITE PREPARATION (CONT.)

- Create an entry/exit “transition” zone to the work area** by laying down an additional 6-foot by 6-foot piece of sheet plastic in a convenient location next to the plastic strip along the wall.
- Fill the tank sprayer or spray bottles with water and detergent.** Mix approximately one 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.
- Place supplies at the entry/exit point.** Have a water sprayer, clean wet rags, a bucket, and asbestos waste disposal bags at the entry/exit location.
- Thoroughly wet about 50 square feet of siding** using a garden hose or a tank sprayer.

PROTECT YOURSELF

4. Put on protective clothing and equipment.

- Put on coveralls, gloves, goggles, and respirator.** Those who will enter the work area to do the removal must put on disposable coveralls while standing on the entrance/exit “transition” area plastic. They should then put on gloves, goggles, and respirators equipped with HEPA filters.
- Tape your gloves to the sleeves of your disposable coveralls** around the wrists to ensure your arms and wrists remain covered.

If you must leave the plastic removal area during the project, use the spray bottle to wet down and remove protective equipment and clothing while standing on the plastic just outside the entrance/exit to the work area. Place coveralls and gloves in an asbestos waste disposal bag, then step off the plastic. Upon returning, put on new coveralls and gloves.





goggles

**respirator with
HEPA filters**

**rubber
gloves**

**disposable
coverall**

**rubber
boots**

**gloves taped
to sleeves**



Person in proper protective clothing

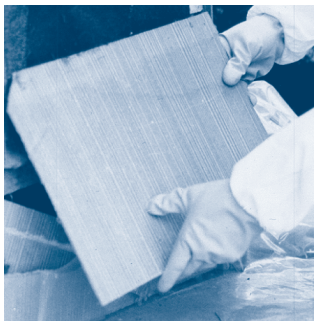
ASBESTOS REMOVAL



Prying Siding



Removing Nail



Removing Siding

5. Remove the siding.

- Remove pieces of siding by pulling nails or cutting nail heads 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 spray water bottle or garden pump sprayer. Breakage releases asbestos fibers into the air.

- Wet the back of each piece of siding as it is removed. Carefully lower removed siding to the plastic on the ground. DO NOT THROW OR DROP IT. Keep all debris on the plastic strip at the base of the wall.
- Continue to spray the debris while you work to keep the siding wet until it is packaged and sealed.

CLEANING UP

6. Place all debris into sturdy containers and seal in plastic.

Because cement asbestos-board siding has sharp or pointed edges that can puncture plastic, you must place the debris into sturdy containers – cardboard boxes or burlap sacks – BEFORE sealing them in 6-mil plastic.

- **Load wetted debris and other contaminated materials** into sturdy containers, using method A for cardboard boxes, or method B for burlap bags.



Placing Debris into Cardboard Boxes

Method A. Place debris into cardboard boxes.

Line each box with 6-mil polyethylene plastic and leave enough excess plastic to generously cover the debris. Place the debris into the plastic-lined box, then seal the debris within the plastic with duct tape. Boxes must be inserted into a single pre-marked asbestos waste disposal bag or wrapped in one or more layers of 6-mil plastic with an asbestos warning sticker affixed to the side. Seal all bagged or plastic-wrapped debris with duct tape.

Method B. Place debris into burlap bags.

Place contaminated materials into the burlap bag, then double bag in pre-marked 6-mil asbestos waste disposal bags. Twist the top of each filled bag, then bend twisted part in half and seal it with duct tape.

or

If the filled burlap bags are too awkward to be placed into an asbestos waste disposal bag, you may double wrap them in 6-mil polyethylene plastic, sealing all seams with duct tape. Properly label and affix an asbestos warning sticker to each sealed package.

- **Remove plastic along wall.** At the end of the work session, re-wet any debris on the strip of plastic next to the wall. While continuing to stand on the plastic strip next to the wall where the removal is being done, double bag or wrap any remaining 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. **DO NOT REMOVE THE EXIT AREA PLASTIC UNTIL YOU ARE INSTRUCTED TO DO SO IN STEP 7.**

CLEANING UP

7. Decontaminate.



Never attempt to vacuum or sweep up asbestos debris. This will cause any fibers present to become airborne in and around your house.

- Stand on the last piece of plastic sheeting outside the designated exit area.**
- 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, gloves, and coveralls.** If you wish to save the boots, set them on the plastic. If not, double bag them in asbestos waste disposal bags. Remove your disposable gloves and coveralls by peeling them off and turning them inside out as you remove them. Double bag them in asbestos waste disposal bags. Step off the last plastic sheet.
- Remove respirators and take out their filters.** Discard the filters with other asbestos waste.
- Clean safety gear.** Using clean wet rags, wash off and wipe down your respirator, goggles, and boots used in the removal. Move each item off the plastic as it is cleaned.
- Wipe off tools.** Place tools in a bucket for more thorough cleaning later.
- Double bag all remaining debris,** including all cleaning rags, disposable items, and the last plastic sheet, in properly labeled asbestos waste disposal bags.
- Tightly twist the tops of each bag, bend the twisted part in half, and seal with duct tape.**
- Take a shower.**

DISPOSAL

8. Prepare and check all waste disposal bags.



Plastic bags or plastic sheeting that has been punctured will not be accepted by waste disposal sites.

All debris must be properly packaged for disposal. As described in Step 6, siding pieces have sharp edges that can perforate plastic material. Siding must be placed into sturdy containers before being double bagged inside pre-labeled 6-mil bags designed specifically for asbestos waste disposal or sealed in layers of 6-mil polyethylene plastic. Tops and openings must be twisted and securely taped down. If you haven't already done so, use a permanent marker pen to write your last name, address, and date of removal on each bag or on asbestos waste disposal stickers affixed to each wrapped box. These bags must also specify the asbestos warning sign required by Labor and Industries or OSHA.

9. Transfer bags to an approved disposal site.



Don't forget to complete and asbestos waste material shipment record which can be downloaded from our web site at www.pscleanair.org.

All double-bagged or wrapped debris must be hauled to the disposal site or transfer station in a covered vehicle within 10 calendar days of being removed.

Asbestos debris from an asbestos project must be disposed of only at disposal sites or transfer stations authorized to receive such waste. A list of disposal sites can be found on our web site www.pscleanair.org. Call individual sites for disposal fees and any additional requirements they may have for disposal.

Debris must be legally disposed of within 10 calendar days of being removed. If you must store the packaged debris prior to disposal, store it in a secured area, such as a locked basement or garage.



1904 3rd Avenue
Suite 105
Seattle, WA 98101-3317
(206) 343-8800
(800) 552-3565