

How To Properly Remove Cement Asbestos-Board Siding For Owner-Occupied, Single-Family Residences Only

This publication details the steps necessary for the safe removal of an asbestos-containing cement asbestos-board siding from an owner-occupied, single-family residence by the residing homeowner.

Note: *An owner-occupied, single-family residence is a non-multiple unit building containing living space that is currently occupied by one family who owns the property as their permanent and primary residence. Spokane Regional Clean Air Agency (Spokane Clean Air) interprets "currently occupied" to mean that the owner of the home lives in the residence both prior to and after the renovation and demolition activities (assuming a new residence is constructed after demolition). This term includes houses, mobile homes, trailers, detached garages, outbuildings, houseboats, and houses with a "mother-in-law apartment" or "guest room". This term does not include rental property, multiple unit buildings (e.g., duplexes and condominiums with two or more units) or multiple-family units, mixed-use buildings (e.g., a business being operated out of a residence), structure, or installation that contains a residential unit. For these types of properties you must contact Spokane Clean Air prior to any renovation or demolition project.*

Be aware that no set of instructions can anticipate all possible situations and variables that a resident homeowner may encounter in an asbestos abatement (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 cement asbestos-board siding in any way. **Failure to do so poses a health risk to you and your family.**

Exposure to airborne asbestos may cause cancer or other lung diseases. Spokane Clean Air strongly recommends that resident homeowners hire state-certified asbestos abatement contractors. 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. Spokane Clean Air 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. Guidance publications are also available for removing Asbestos-Backed Sheet Vinyl Flooring and Spray-on Popcorn Ceilings. For information, call (509) 477-4727 or visit www.spokanecleanair.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:

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. Laboratories are listed in the yellow pages of your phone book under "Environmental Services" and Laboratories - Testing."

Note: *If you decide not to take a sample, assume the siding contains asbestos and answer "Yes."*

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

a spray bottle, liquid dishwashing detergent, rubber gloves, pliers or other tool for breaking off siding, and a resealable plastic bag

1. Fill a spray bottle with water mixed with one teaspoon of liquid dishwashing detergent.
2. Wet a small area of siding.
3. To take a sample, break off a small piece of wet siding (about one square inch).
4. Place the sample inside a resealable plastic bag.
5. Take or send sample to a local asbestos testing lab.

If the laboratory results are negative, meaning that less than or equal to one percent asbestos was found in the sample, we suggest taking in two additional samples from different areas and having them tested to confirm the analysis.



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 should 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.

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Are you prepared to accept the 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 asbestos containing materials are disturbed, asbestos fibers, up to 1,200 times thinner than a human hair, can be released into the air. When 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. This is why medical, environmental health and regulatory organizations stress the need to protect health by minimizing exposure to airborne asbestos fibers, particularly at elevated levels, that 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 risk.

The removal procedures described in this publication are intended to help resident 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 your heart and lungs.
- Protective clothing can be hot and uncomfortable.
- Work spaces become very humid due to the water used in wetting the asbestos.
- 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.

Understand that as a resident 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 remove siding can be substantial. Time estimates to complete a 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 – 4-5 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?

You are liable. Your only legal options in having asbestos removed from your home are to hire a certified asbestos abatement contractor or do the work yourself.



Asbestos Waste Disposal Bag

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. Resident homeowners may remove asbestos themselves, provided they follow applicable standards. 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 licensed 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 1-800-4-BE-SAFE or visit www.lni.wa.gov 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.

Contact Spokane Clean Air for a list of contractors and/or service providers. Call (509) 477-4727 or visit www.spokanecleanair.org.

Before You Begin Asbestos Removal



Before any removal of asbestos is done, you must fill out the Waste Shipment Record form available on our website under the Asbestos main page, and click on Resources at the bottom of the page.



Common sense dictates that unique and particularly challenging projects should not be undertaken by the resident 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 steps should be taken care of before your start your removal project.

1. 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 the removal process.


Although it is possible for one resident homeowner to do a siding removal job, it is preferable to have two workers. With two workers (both must be reside in the house being worked on), 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.


Note: 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 phone book yellow pages 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 (color coded purple) 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 removal work should be equipped with non-fogging goggles.

-  **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.

-  **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 plastic. You may need to special-order these from a safety supply store because few carry them in stock. Plan accordingly.



**Proper Respirator
& Goggles**



**Asbestos Waste
Disposal Bag**

Before You Begin Asbestos Removal (cont.)

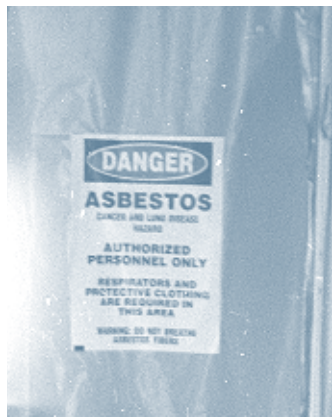
Tools and Supplies

- Permanent marker** – Use to write your last name, address and removal date on each waste disposal bag or sticker.
- Water sprayer** – A pint-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** – Needed to supply water to the work area.
- Liquid dishwashing detergent** – Mixed at ½ cup per 2 ½ gallons of water for best results in wetting.
- Removal tools** – A pry bar for lifting nails (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.**
- 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

2. 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.**



Warning Sign

- Post signs** warning friends, family and others who might visit to stay 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.
- 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.
- 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 one teaspoon of liquid dish-washing detergent with water in the pint size spray bottle or ½ cup of detergent in a tank 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.

TIP

Hang these instructions like a calendar. See instructions for details.

Protect Yourself



Proper Respirator & Goggles

3. 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 sheeting laid down for the containment 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.





Person in Proper Protective Clothing

Asbestos Removal



Removing Nail



4. 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 it wet until it is packaged and sealed.



Prying Siding



Removing Siding

Cleaning Up

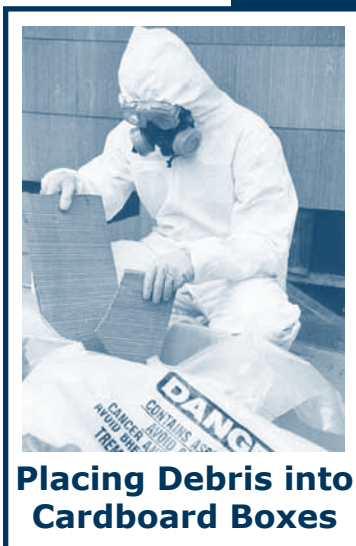
5. Place all debris into sturdy containers and seal in plastic.

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 plastic.

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

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 should then 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.



Placing Debris into Cardboard Boxes

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. 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 ENTRY/EXIT AREA PLASTIC SHEET UNTIL YOU ARE IN THE FINAL DECONTAMINATION SECTION.**

6. Decontaminate.

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

- Stand on the last piece of plastic sheeting outside the designated exit area.**
- Wipe down tools** with clean, wet rags after removing all asbestos material from project area. Place tools in a bucket for more thorough cleaning later.
- 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.** 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. Dispose of boots as contaminated waste or put them in a plastic bag for cleaning later. Step off the last plastic sheet.
- Remove respirators and take out their filters.** Discard the filters with other asbestos waste.



Cleaning Up (cont.)

- Clean safety gear.** Using clean wet rags, wipe down respirator and goggles used in the removal, and, if you elect to keep them, your boots. Place respirator and goggles in a bucket and your boots in a plastic bag for washing later.
- Dispose of all contaminated rags as asbestos debris** in a sealed asbestos waste disposal bag.
- Double bag all remaining debris,** including all cleaning rags, disposable items, and the entry/exit plastic sheet, in properly labeled asbestos waste disposal bags.
- Secure all waste debris bags by tightly twisting the tops of each bag, bending the twist part over and securing with duct tape.**
- Take a shower.**

Disposal

7. 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: double bagged inside pre-labeled 6-mil bags designed specifically for asbestos waste disposal. Tops should 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.





8. Transfer bags to an approved disposal site.

All double-bagged or wrapped debris must be hauled to a disposal site licensed to receive asbestos containing waste. 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 shed or garage.

Currently, the only site in Spokane County licensed to receive asbestos containing waste is Graham Road Recycling & Disposal Facility, 1820 S. Graham Rd, Medical Lake, WA 99022, (509) 244-0151. Prior to waste delivery, contact the site for disposal fees and any additional requirements they may have for disposal. A Waste Shipment Record/Manifest form is on our website, www.spokanecleanair.org



**Asbestos Waste
Disposal Bag**

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