



HOW TO REMOVE NONFRIABLE CEMENT ASBESTOS PRODUCTS

Guide for Meeting DEQ Rules

Exposure to asbestos fibers can result in severe health impacts and the Department of Environmental Quality (DEQ) regulates the removal, handling and disposal of asbestos-containing materials (ACM) during construction, remodeling, and demolition. This document outlines handling procedures for removing cement asbestos products.

The safest way to handle cement asbestos is to make sure the material stays in a nonfriable condition. Friable asbestos materials will easily release fibers when crushed. Nonfriable asbestos materials have a binder that holds the asbestos fibers within a solid matrix and will not allow asbestos fibers to release easily, unless mishandled, damaged, or in badly weathered condition. In most cases, cement asbestos products are considered nonfriable.

Nonfriable asbestos materials in good condition are exempt from some DEQ rules. You **do not** need to be a DEQ licensed asbestos contractor or DEQ certified asbestos worker to do nonfriable asbestos removal. If you remove cement asbestos products following this guide, the cement products should remain in nonfriable condition.

Nonfriable material must be handled, transported, and disposed of in a way that prevents it from becoming friable and releasing asbestos fibers. For more information about the asbestos rules or if you have questions contact one of the DEQ regional offices:

Eastern Region Bend at (541) 388-6146, ext. 226

Eastern Region Pendleton at (541) 278-4626

Eugene LRAPA (541) 736-1056, ext. 222

Northwest Region in Gresham at (503) 667-8414 x 55022, x 55018, or (800) 452-4011

Western Region Salem at (503) 378-5086, or (800) 349-7677

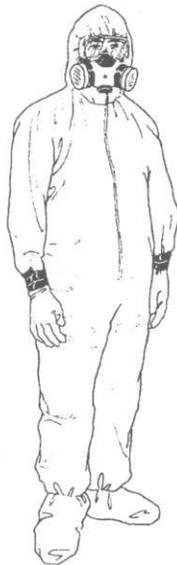
Western Region Medford at (541) 776-6010, ext. 235 or (877) 823-3216

Western Region Coos Bay at (541) 269-2721, ext. 22

When handling this material in schools (K-12), contractors should be aware of U.S. Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) rules. Contact the EPA's regional office for more information at (800) 424-4372.

Oregon Occupational Safety and Health Administration (OR-OSHA) has rules about worker training, building surveys, and the safe handling of nonfriable asbestos. (See OAR 437, Division 3, Construction.) Contact OR-OSHA at (503) 378-3272, for current rule and policy information.

SAFETY EQUIPMENT



Respirator: The DEQ suggests you purchase a dual cartridge respirator equipped with two HEPA (high efficiency particulate air) filters for use on this project. The HEPA cartridges are color-coded purple or magenta. Ask your vendor for a fit test to make sure that your respirator fits properly.

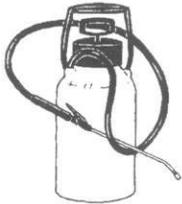
NOTE: Oregon OSHA may require contractors to provide respirators and other safety equipment to their employees during projects where asbestos is being removed.

Eye Protection: Each person removing cement asbestos should wear nonfogging goggles or safety glasses.

Coveralls: You may want to obtain tyvek (paper) coveralls to keep dust off your clothing.

Boots: Laceless, pull-on type rubber boots are advised to protect your feet from sharp edges and nails. Rubber boots can be washed to remove asbestos contamination.

TOOLS



- Φ A garden type water sprayer or a garden hose
- Φ A two inch wide flat "L" shaped pry-bar (Wonder-bar)
- Φ Nail puller, vise grip, pliers, or others means of removing nails
- Φ Heavy-duty wire cutters
- Φ 3 to 6-mil thick plastic sheeting
- Φ Leaktight containers, such as plastic bags, barrels or plastic wrapping

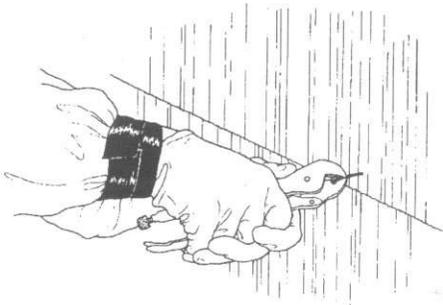
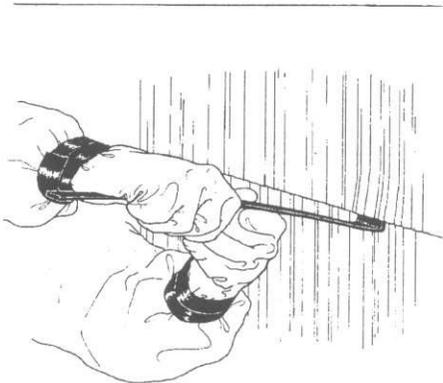
THE WORK WILL BE DIFFICULT

Even under the best conditions these projects are physically demanding and potentially dangerous. The following are some of the problems you will be faced with:

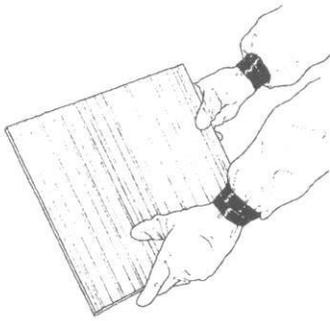
- Φ Breathing through a respirator is difficult and places extra stress on the heart and lungs.
- Φ Coveralls can be hot and hard to move around in.
- Φ Work will involve ladders since some of the materials are located in high areas.
- Φ Goggles and safety glasses reduce visibility and field of vision.
- Φ Care must be taken around electric wires because water is being used to keep the asbestos wet.
- Φ The work area will be slick from wetting and become a slip/trip hazard.

A. PROCEDURES FOR THE ABATEMENT OF CEMENT ASBESTOS PRODUCTS

Cement asbestos products must be removed, handled and disposed of in a manner that keeps the material in predominantly whole pieces to be considered nonfriable. The method of removal cannot shatter, crumble, pulverize, or reduce the material to dust. Sanding, sawing, grinding, chipping, or the use of power tools is not allowed. If the removal is done in accordance with this guide, licensing as a DEQ asbestos contractor and DEQ worker certification are generally not needed.



1. File a DEQ notification and pay the nonfriable fee as outlined in OAR 340-248-0260. The notification must be received by the DEQ Business Office at least 5 days prior to starting the nonfriable removal. *If you are the owner occupant of a single-family dwelling doing asbestos removal on the home you live in, you do not need to file a notification.*
2. Keep the material wet while you remove it. This can be done by using a water hose, garden sprayer, spray bottles, or any other method that keeps the material wet. **Wetting prevents asbestos fiber migration during removal.**
3. Put plastic sheeting on the ground under the work area to contain pieces that may fall. Use a razor knife and cut the paint seal around siding tiles that were previously painted, then either remove retainer screws or gently pry up material using a flat bar or similar tool so that the nail heads are exposed and can be pulled out, or clipped off with heavy-duty wire cutters. Lift off tiles without breaking them. Place the tiles on the ground in a nonwork area or in separate containers to prevent breakage. After the material is removed from the structure it may not be broken.



4. Take cement materials off in *whole pieces*, **do not** break material on purpose, **do not** step on material, **do not** drop material, and **do not** throw material from ladders. When removing nonfriable siding you should end up with only whole tiles or individual tiles broken into no more than 4 pieces (no shattering). In many cases, breakage can be entirely eliminated if you follow the procedures in this guide. **If** you cannot remove the siding without shattering it, you must change your method of removal. **If** there is no method that allows proper removal, **then** you must follow the procedures outlined in section “**B**” below.
5. DEQ suggests that you put the cement asbestos in leaktight containers, such as plastic bags, barrels, or leaktight wrapping and mark them with the warning statement “DANGER ASBESTOS-CONTAINING MATERIAL”. Make sure the material remains wet until disposal. It is also a good idea to fill out a DEQ ASN-4 waste shipment report for transport and give it to the landfill upon arrival. Take the nonfriable asbestos waste to a landfill authorized to handle asbestos waste. The DEQ advises you to contact the landfill before you remove asbestos, so you can find out what that landfill’s disposal needs are. Many landfills require special packaging for cement asbestos products. **DEQ rules do not allow on-site burial of asbestos materials and nonfriable asbestos waste may not be used as clean fill!**

NOTE: *The DEQ knows that some breakage and damage will occur during this process. However, this breakage will be minimal if you follow this guide.*

B. USE THE FOLLOWING PROCEDURES WHEN THE REMOVAL MAKES THE CEMENT ASBESTOS FRIABLE.

If the cement asbestos is shattered, damaged, or is badly weathered, it either is or will become friable and release dust and asbestos fibers. Friable asbestos materials must be removed by a **DEQ licensed asbestos contractor using DEQ certified workers.**

All asbestos abatement rules under OAR 340-248-0005 through -0280 must be followed. A friable asbestos notification and fee must be filed with the DEQ as outlined in OAR 340-248-0260, for more information contact DEQ.

C. BUILDING DEMOLITION WHERE CEMENT ASBESTOS PRODUCTS ARE PRESENT.

All ACMs must be removed from buildings before they are demolished. DEQ requires a survey to be performed to determine if asbestos materials are in or on a structure before demolition can occur.

1. If cement asbestos material can to be removed as nonfriable asbestos, the work practices in section “**A**” above apply.
2. If cement asbestos is removed as friable, the work practices in section “**B**” above apply.



HOW TO REMOVE NONFRIABLE ASBESTOS (AC) WATER PIPE

A Guide for Meeting DEQ Rules

Exposure to asbestos can result in severe health impacts and the Department of Environmental Quality (DEQ regulates the removal, handling and disposal of asbestos-containing materials (ACM) during construction, remodeling, and demolition. This document outlines handling procedures for working with water pipe that contains asbestos.

The safest way to handle AC Pipe is to make sure the material stays in a nonfriable condition. Friable asbestos material will easily release fibers when crushed. Nonfriable asbestos material has a solid matrix that holds the asbestos fibers in check and will not allow asbestos fibers to release easily, unless mishandled, damaged, or in badly weathered condition. In most cases, AC Pipe is considered nonfriable.

Nonfriable asbestos materials in good condition are exempt from some DEQ rules. You **do not** need to be a DEQ licensed asbestos contractor or DEQ certified asbestos worker to do nonfriable removal. If you follow the procedures in this guide, the AC pipe should remain in nonfriable condition.

Nonfriable material must be handled, transported, and disposed of in a way that prevents it from becoming friable and releasing asbestos fibers. For more information about the asbestos rules or if you have questions contact one of the DEQ regional offices:

Eastern Region Bend at (541) 388-6146, ext. 226

Eastern Region Pendleton at (541) 278-4626

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Northwest Region in Gresham at (503) 667-8414 x 55022, x 55018, or (800) 452-4011

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Region Salem at (503) 378-5086, or (800) 349-7677

Western Region Medford at (541) 776-6010, ext. 235 or (877) 823-3216

Western Region Coos Bay at (541) 269-2721, ext. 22

The Oregon Occupational Safety and Health Division (OR-OSHA) has rules about worker training, building surveys, and the safe handling of nonfriable asbestos. (See OAR 437, Division 3, Construction.) Contact OR-OSHA at (503) 378-3272, for current rule and policy information.

A. FOR AC WATER PIPE TO BE CONSIDERED NONFRIABLE IT MUST BE REMOVED IN WHOLE SECTIONS.

You cannot cause the AC pipe to shatter, crumble, be pulverized, or release asbestos fibers. You cannot sand, saw, grind, chip, or use power tools on AC pipe. If you use this guide, licensing as a DEQ asbestos abatement contractor and DEQ worker certification are not needed.

1. File a DEQ nonfriable notification and pay the nonfriable fee as outlined in OAR 340-248-0260.
2. Keep the material wet while you remove it. You can use a water hose, garden sprayer, spray bottles, or any method that keeps the material wet. **Wetting prevents fiber migration during removal.**
3. Pull the pipe up out of the ground in easy to handle lengths (3 feet to 5 feet), using DEQ approved cutting procedures.
4. DEQ suggests you place the pipe in leaktight containers with a warning statement "DANGER ASBESTOS-CONTAINING MATERIAL". The asbestos-containing waste material (ACWM) must remain wet until disposed of at a landfill authorized to handle asbestos waste. It is also suggested that you fill out a DEQ ASN-4 waste shipment report for transport and give it to the landfill upon arrival. DEQ advises you to contact the landfill before you start your project so you can find out what that landfill's disposal needs are. Many landfills require asbestos to be specially packaged and labeled. **Nonfriable asbestos waste may not be used as clean fill and DEQ rules do not allow on-site burial of AC pipe, unless the reason for this burial meets specific exception conditions!**

NOTE: *DEQ knows that some breakage and damage will occur during this process. However, that breakage will be minimized if you follow this guide.*

DEQ CAN ALLOW ALTERNATE REMOVAL AND DISPOSAL PROCEDURES:

The DEQ can consider unusual conditions and allow the use of a different removal and disposal procedure on a case by case basis. Some of these exceptions may include removal procedures not listed in this guide. Options for leaving AC pipe in place instead of removal and disposal may be available through this exception. AC pipe buried under a roadway, or AC pipe that goes under a structure normally is considered an acceptable reason for on site burial.

DEQ staff is willing to discuss any situation where the removal and disposal of AC pipe, instead of on site burial, may cause an extreme financial hardship. For more information about these exceptions or to see if your project qualifies for an exception, please contact the DEQ.

B. USE THE FOLLOWING PROCEDURES WHEN THE REMOVAL RESULTS IN THE AC PIPE BECOMING FRIABLE.

If AC PIPE is shattered, damaged, or badly weathered, it is considered to be friable and will likely release asbestos fibers. ***A DEQ licensed asbestos abatement contractor using DEQ certified workers must remove all friable asbestos materials.***

All asbestos abatement rules under OAR 340-248-0005 through -0280 must be followed, including the following:

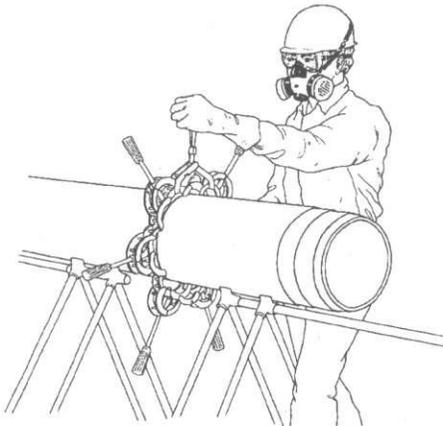
1. File a friable asbestos abatement notification and fee as outlined in OAR 340-248-0260.

2. Hire a DEQ licensed asbestos abatement contractor to remove the asbestos for you.

The following information was excerpted from the American Water Works Association guideline for handling AC pipe. This information is modified to make it compatible with the DEQ asbestos removal regulations. There may be other removal and handling procedures employing non-power options that are equally effective and also meet DEQ asbestos requirements.

AMERICAN WATER WORKS ASSOCIATION RECOMMENDED WORK PRACTICES FOR CUTTING AND SPLICING CEMENT WATER PIPE

1. USING CARBIDE TIPPED BLADES TO CUT AC PIPE, IN SIZES FROM 3 INCH THROUGH 24 INCH.

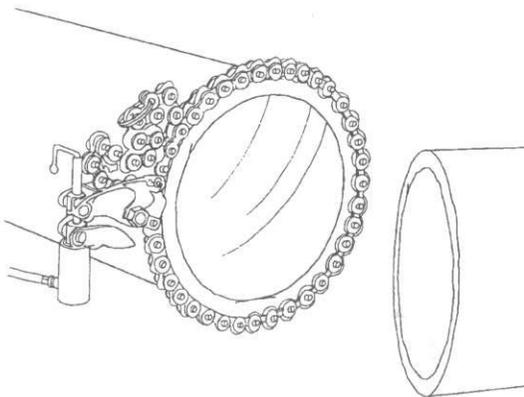


Blade cutters are frame adjustable to the circumference of the pipe and have a number of self-tracking rollers that align one or more carbide-tipped cutting blades. Because of the relatively low mechanical input and clean cutting action, hand operated blade cutters do not produce significant amounts of airborne asbestos dust.

KEEP MATERIAL WET AT ALL TIMES.

DO NOT blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!

2. USING SNAP CUTTERS TO CUT AC PIPE IN SIZE RANGES 3 INCH THROUGH 24 INCH.

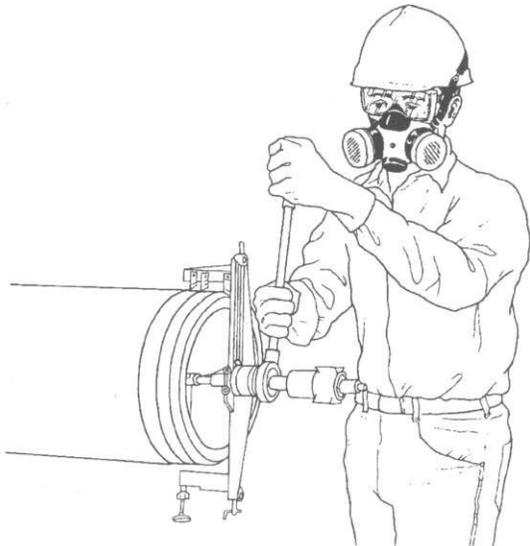


Snap cutters ("squeeze-and-pop" equipment) operate by means of cutting wheels mounted in a chain wrapper around the pipe barrel. Hydraulic pressure, applied by means of a remote, pneumatically, or manually operated pump, squeezes the cutting wheels into the pipe wall until the cut is made. This type of cutting minimizes the release of asbestos fibers.

KEEP MATERIAL WET AT ALL TIMES.

DO NOT blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!

3. USING MANUAL FIELD LATHES TO MACHINE AC PIPE IN ALL SIZES.

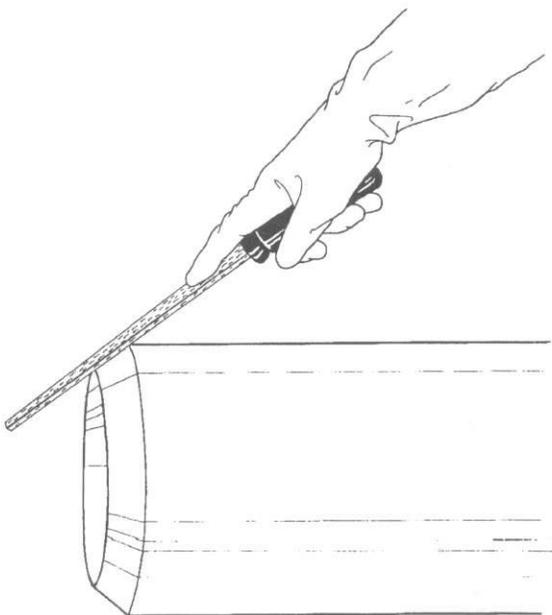


Manual field lathes are designed to end-trim and re-machine rough pipe barrels to factory-machined end profiles. The lathe consists of an adjustable, self-aligning arbor inserted into the pipe bore (which acts as a mandrel upon which the turning handle operates), a screw-fed turning frame, carbide machining blades, and manual (hand or ratchet) turning handles.

KEEP MATERIAL WET AT ALL TIMES.

***DO NOT** blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!*

4. USING A MANUAL RASP TO MACHINE AC PIPE IN ALL SIZES.



Short lengths of AC pipe, machined-end exclusively (MEE) and machined overall (MOA), can be cut to make closures and repairs and to locate fittings exactly. Field-cut ends may be re-beveled with a coarse wood rasp to form a taper approximating the profile of the factor-beveled end.

KEEP MATERIAL WET AT ALL TIMES.

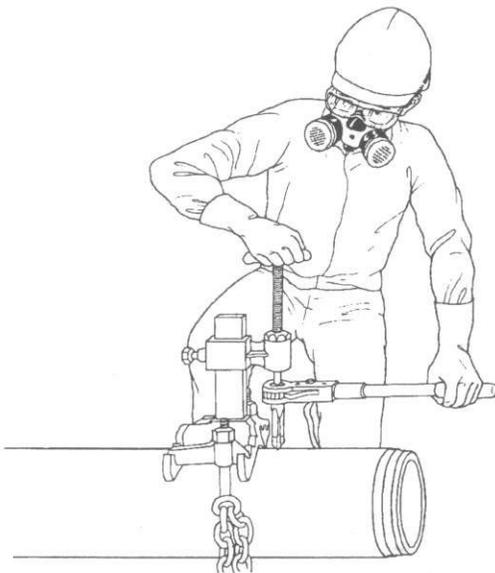
***DO NOT** blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!*

5. WET TAPPING AC PRESSURE PIPE IN ALL SIZES.



Pressure or “wet” tapping for service connections is performed in the trench while the pipe is under pressure. The equipment (manual driven) is affixed to the pipe by means of a chain yoke. A combination boring-and-inserting bar drills and taps the pipe wall and inserts a corporation stop or pipe plug. The pressure chamber, which protects against water leakage, also catches the asbestos-cement chips, so this is essentially a dust-free operation. To minimize (1) the fouling of valves, regulators, meters, and other equipment with chips and (2) unnecessary addition of asbestos to drinking water, provisions should be made for downstream flushing or use of tapping equipment with positive purge or “blow-off” features. **KEEP MATERIAL WET AT ALL TIMES. DO NOT blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!**

6. DRY TAPPING AC PRESSURE PIPE IN ALL SIZES.

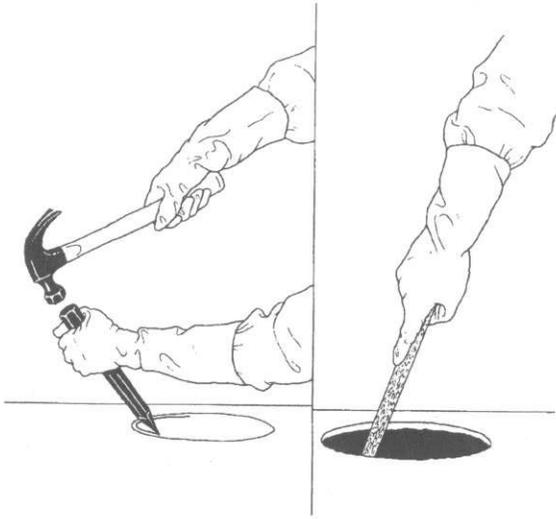


Non-pressure or “dry” tapping for service connections may be performed in or out of the trench. The equipment is affixed to the pipe by means of a chain yoke. Separate drills and taps or a combination tool is used to drill and tap the pipe wall. Remember; always keep the pipe wet during these processes. Corporation stops or other connections may then be affixed to the pipe. To minimize (1) the fouling of valves, regulators, meters, and other equipment with chips and (2) the unnecessary addition of asbestos to drinking water, all dust and cuttings should be removed from the pipe’s interior by flushing with water, wet mopping, or vacuuming with a HEPA rated vacuum cleaner.

KEEP MATERIAL WET AT ALL TIMES.

DO NOT blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!

7. USING CHISEL AND RASP TO HOLE CUT AC PIPE IN ALL SIZES.

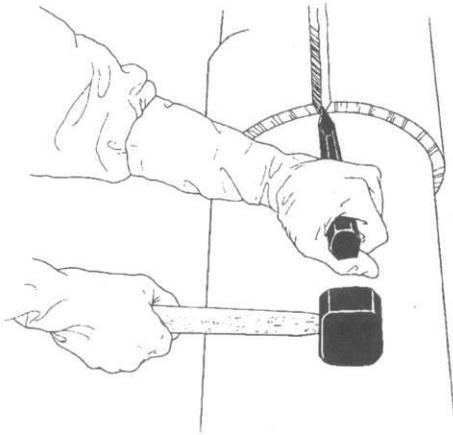


Holes may be cut into AC pipe with a hammer and chisel. The edge of a plumber's wood chisel is used to cut completely around the hole outline, about $\frac{1}{4}$ in. (7 mm) from the prescribed line. The operation is repeated and the cut deepened until through. The edges of the hole are then dressed with a coarse wood rasp. When cutting holes in AC pipe products, all dust and cuttings should be removed from the pipe or duct interior after the cutting operation. Removal may be accomplished by flushing with water, wet mopping or vacuuming with a HEPA rated vacuum cleaner.

KEEP MATERIAL WET AT ALL TIMES.

DO NOT blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!

8. USING HAMMER AND CHISEL TO REMOVE COUPLING FROM AC PIPE IN ALL SIZES.



Replacement of damaged pipe necessitates excavation, exposure and removal. AC coupling removal may be accomplished by gradually splitting the coupling lengthwise using a chisel and hammer. After the top of the coupling has been split, a crowbar or similar tool is used as a lever to split the bottom of the coupling.

KEEP MATERIAL WET AT ALL TIMES.

DO NOT blow out with compressed air, dry sweep, or vacuum with a non-HEPA rated vacuum cleaner!

DEQ and Oregon OSHA have carefully evaluated the above procedures and determined that they can be used safely when handling and repairing AC pipe.

REMEMBER, DEQ regulations require that all asbestos-containing materials be kept wet during removal and disposal in accordance with the asbestos disposal regulations. Exceptions to these requirements must be approved prior to starting an asbestos removal project.