Asbestos Cement (A/C) Pipe
FACT SHEET FOR NORTH CAROLINA

INTRODUCTION

What is Asbestos Cement (A/C) Pipe

Asbestos cement (A/C) pipe is formed from a mixture of Portland cement, asbestos, and other silica-containing materials under pressure and is heat cured in an autoclave. Due to its lightweight properties and corrosive resistance, A/C pipe became an option for water, wastewater, and storm drainage systems beginning in the 1940's.

A/C pipe production increased steadily until the early 1970's, when production started to decline when health concerns were raised surrounding the manufacturing process. Estimates project over 600,000 miles of A/C pipe has been installed underground throughout the United States and Canada. In North Carolina, an estimated 5,000 miles of A/C pipe has been installed.

A/C pipe is a Category II non-friable asbestos-containing material (ACM). A material is considered non-friable when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. A/C pipe that is in good condition, non-friable and intact due to its solid matrix of cement and asbestos, poses no hazard to the public. However, over the course of time, certain forces (i.e., acidic soils or corrosion) can act upon the A/C pipe and will have a high probability of making the pipe regulated.

In North Carolina, many of the existing A/C pipe in the ground have exceeded the 50- to 70-year design, resulting in the failure of A/C pipes. Consequently, damaged, badly weathered and friable A/C pipe could cause asbestos fibers to be released when disturbed. To avoid exposure, there will be an increased need to maintain non-friable A/C pipe or remove and replace outdated and damaged pipes. To facilitate this, certain activities — including tapping, cutting, removing, and disposal — will be required, and may be subject to regulations. During these activities, A/C pipe must be removed, handled, and disposed of in a manner that keeps the material intact to be considered non-regulated.

REGULATIONS

EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP – 40 CFR Part 61, Subpart M)

The Environmental Protection Agency (EPA) delegates enforcement and administrative duties to many of the individual states. In North Carolina, enforcement of the EPA's NESHAP regulations is managed by the Health Hazards Control Unit (HHCU) within the Department of Health and Human Services. There are also three (3) local programs in the state responsible for enforcing NESHAP regulations in their jurisdiction.

In most states, including North Carolina, public agencies are not required to remove and replace A/C pipe. In North Carolina, if an A/C pipe remains intact and non-friable during removal, a permit is not required. Contractors, however, must comply with the OSHA Asbestos in Construction Standard found in 29 CFR 1926.1101, as it relates to worker protection and work practices.

If it is determined that the underground pipe is A/C pipe, either by assuming or sampling using a North Carolina accredited inspector, then removal and maintenance activities involving A/C pipe in good condition and in whole sections is not subject to regulations under the Federal NESHAP or the NC Asbestos Hazard Management Program (AHMP) rules. Under North Carolina rules, once A/C pipe is no longer in good condition, it becomes a regulated asbestos containing material (RACM) and will be subject to regulations. In the event A/C pipe becomes friable or regulated, applicable asbestos work practices under North Carolina's AHMP-10A NCAC 41C, sections .0605 and .0609 will apply. This type of activity will require the owner or operator to obtain an asbestos removal permit from the HHCU prior to any renovation project that will disturb more than 260 linear feet of regulated A/C pipe. Additionally, the permit notification form must be received with the application fee at least 10 working days from the postmark date before starting work. For emergency

situations, the 10-working day waiting period can be waived, but the HHCU must be notified as soon as possible, and no later than the next working day. A letter from the owner must accompany the emergency permit.

North Carolina OSHA

The Occupational Safety and Health Administration (OSHA) regulation applies to all worker protection and work practices associated with any asbestos activity. Removing or disturbing regulated A/C pipe, which is a Class II material, requires specific controls as outlined below:

The contractor and owner are not released from the requirement to comply with the OSHA Asbestos in Construction Standard found in 29 CFR 1926.1101. OSHA has made the determination that removal of asbestos cement pipe is a "Class II" asbestos work activity and individuals engaged in this activity must meet certain requirements. The person in charge shall be competent, and trained in EPA's Model Accreditation Plan (40 CFR Part 763) or its equivalent. In addition, the work crew shall:

1) Be trained in accordance with the requirements for Class II asbestos work;
2) Use personal protective equipment, including appropriate respiratory protection if a negative exposure assessment has not been obtained;
3) Establish a regulated area;
4) Use wet methods throughout the demolition or renovation activity;
5) Use a HEPA vacuum or dust collector to collect all dust and debris;
6) Promptly clean up and place all waste and debris in leak-tight containers for disposal; and
7) Have personal and area air sampling performed by the competent person, or a third party.

WORK PRACTICE REQUIREMENTS FOR REMEDIATION OF A/C PIPE

Setting up a Regulated Area

Before work begins, a regulated area must be established by the competent person performing A/C pipe abatement. It includes the work area and any adjoining areas where asbestos-containing waste material generated from the abatement is secured, packaged, and stored. These areas should be demarcated using stakes or safety cones for holding barrier tape and signage in place to restrict access from unauthorized personnel. Prominently displayed warning signs along the demarcated perimeter should have the following language using bold, capital letters, and separated as illustrated below:

DANGER

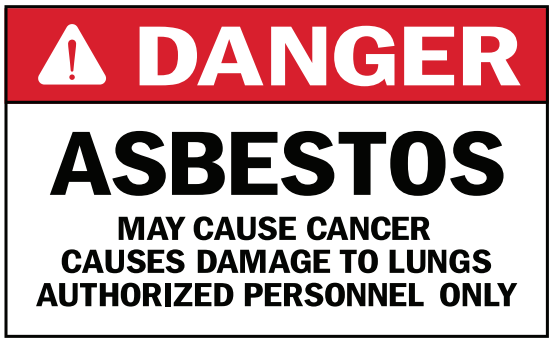
ASBESTOS

MAY CAUSE CANCER

CAUSES DAMAGE TO LUNGS

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA



Personal Protective Equipment (PPE)

Personal protective equipment (PPE) such as half-face HEPA respirators, disposable coveralls, gloves, goggles, steel-toed rubber boots should be worn to prevent personal exposure to asbestos generated from A/C pipe remediation. Be careful not to contaminate areas outside your work area. **(Note: Prior to wearing a half-face respirator, contact your personal physician to determine if you are medically fit to safely wear a respirator. See mandatory Appendix D "Initial Medical Questionnaire")**

Non-Regulated A/C Pipe Removal Activities

Once the regulated area has been established and the worker(s) have donned the necessary PPE to begin work, the OSHA trained worker(s) should operate any equipment used for disturbing A/C pipes in accordance with the manufacturer's instructions. The area of the A/C pipe affected by disturbance must be

sufficiently wetted prior to the disturbance. All work being performed by non-accredited personnel shall stop immediately if the A/C pipe becomes friable or regulated. Any removal of regulated asbestos-containing material in North Carolina must be completed by North Carolina accredited professionals.

Prohibited activities that could render A/C pipe friable or regulated includes sanding, sawing, grinding, or chipping with hand methods. Using power tools with these activities will generate large amounts of dust and debris and must be prevented. Acceptable work practices for managing, maintaining, and removing non-friable A/C pipe include keeping it wet during removal, using amended water (water + surfactant), setting-up work area using 6-mil poly sheeting under pipes to collect fallen debris, and to wrap the intact A/C pipe in sections, with proper labeling.

Open Trenching

Open trenching occurs when the entire A/C pipe is excavated and open to the ambient air. After excavation, several remediation methods (Regulated and Non-Regulated) can be used to facilitate the handling, removal, and disposal of A/C pipe, as shown below

Non-Regulated (Manual) Remediation Methods:

Snap Cutters – Snap cutters, also called "squeeze-and-pop" equipment, use cutting wheels mounted in a chain wrapper around the pipe barrel. Hydraulic pressure, applied by means of a remote, pneumatically or manually operated pump, squeeze the cutting wheels into the pipe wall until the cut is made.

Carbide-Tipped Blade Cutters – Blade cutters are frame adjustable to the circumference of the pipe and have a number of self-tracking rollers that align one or more carbine-tipped cutting blades. Because of the relatively low mechanical input and clean cutting action, hand operated blade cutters produce lessor amounts of airborne asbestos dust.

Manual Field Lathes – Manual field lathes are designed to trim ends of pipe and re-machine rough pipe barrels to factory-machine end profiles. The lathe consists of an adjustable, self-aligning arbor inserted into the pipe bore, a screw-fed turning frame, carbide machining blades, and manual (hand or ratchet) turning handles.

Wet Tapping A/C Pressure Pipe – Pressure or "wet" tapping for service connections is performed in the trench while the pipe is under pressure. The equipment (manually driven) is affixed to the pipe by means of a chain yoke. A combination boring-and-inserting bar drills and taps the pipe walls and inserts a corporation stop or pipe plug. The pressure chamber, which protects against water leakage, also catches the asbestos-cement chips, creating a dust-free operation.

Dry Tapping A/C Pressure Pipe – 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. Corporation stops or other connections may then be affixed to the pipe.

Chisel and Rasp – Holes may be cut into the A/C pipe with a hammer and a chisel. The edge of a plumber's wood chisel is used to completely cut around the hole outline, about ¼ in. (7mm) from the prescribed line. The operation is repeated, and the cut is deepened until through the pipe wall. The edges of the hole are then dressed with a coarse wood rasp.

Hammer and Chisel – Replacement of damaged pipe may necessitate excavation, exposure, and removal. A/C 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.

Regulated Remediation Methods:

Certain methods (i.e., power tools or heavy equipment) used to remediate exposed A/C pipe could render the pipe friable, and therefore regulated. Exposed A/C pipe that has already been crushed would be considered regulated. Regulated A/C pipe will likely become crumbled, pulverized, or reduced to dust and would be subject to the applicable work practices, accreditation, permits and fees under the North Carolina's AHMP rules.

Other Remediation Methods of A/C Pipe:

ABANDONED-IN-PLACE

Abandoning A/C pipe in good condition in place or the recommended pumping of grout into buried lines will not cause A/C pipe to become RACM. However, EPA states, "pipe bursting of A/C pipe with mechanical equipment would cause the material to become regulated and threshold amounts would be subject to the NESHAP regulations."

CLOSE TOLERANCE PIPE SLURRIFICATION (CTPS)

Recently, the EPA approved an alternative work practice known as "Trenchless Technology." This method removes and replaces an existing pipe by pulling a rotating reamer and simultaneously injecting a bentonite-based lubricating fluid through the pipe. The reamer rotates at sufficient speed to grind the existing pipe, surrounding soil, and bentonite-based lubricating fluid into a slurry. The slurry is squeezed out of the ground into a receiving pit by the new pipe that is pulled in behind the reamer. More information on CTPS can be found on the EPA website at www.epa.gov/stationary-sources-air-pollution/notice-final-approval-alternative-work-practice-standard-asbestos.

DISPOSAL REQUIREMENTS

There should be no visible air emissions created from asbestos waste during loading, transporting, and unloading operations. Prior to transporting A/C pipe waste to the landfill, abatement contractors should contact their local landfill to understand the requirements for accepting asbestos waste. **[Note: A/C pipe waste must be disposed of in a landfill approved to receive asbestos.]**

Contact the North Carolina Department of Environmental Quality — Solid Waste Section for a list of approved landfills. **The main telephone number is (877) 623-6748.**

FOR MORE INFORMATION

To find North Carolina accredited asbestos inspectors and supervisors, or for more information, visit our website at: https://epi.dph.ncdhhs.gov/asbestos/healthaz.html

Or contact us directly:
Health Hazards Control Unit
1912 Mail Service Center
Raleigh, NC 27699-1912
(919) 707-5950

THE FOLLOWING LOCAL PROGRAMS HAVE NESHAP AUTHORITY AND MUST ALSO BE NOTIFIED:

Buncombe County: Asheville-Buncombe Air Quality Agency (AB Air Quality) — (828) 250-6777

Forsyth County: Office of Environmental Assistance and Protection — (336) 703-2440

Mecklenburg County: Mecklenburg County Air Quality — (704) 336-5430

For additional information on asbestos:
U.S. Environmental Protection Agency at www.epa.gov/asbestos

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES
Division of Public Health

Environmental Health Section • Health Hazards Control Unit (HHCU)
https://epi.dph.ncdhhs.gov/asbestos/healthaz.html
NCDHHS is an equal opportunity employer and provider. 12/22