



# Transite Pipe / AC Pipe Reference Manual

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## **A summary of AC Pipe (Transite Pipe) issues under the applicable federal regulations**

### **Federal EPA NESHAP: 40 CFR 61 subpart M**

AC pipe in normal, non-friable condition is a Category II Non-Friable ACM. As such it is simply not regulated for removal procedures or waste stream management. If the condition changes because of deterioration so that it becomes friable, or mechanical crushing renders it RACM, it is no longer Category II Non-Friable material and it becomes RACM., and is fully regulated above threshold amounts (160 linear feet for friable pipe and 35 cubic feet for friable pipe debris). Normal removal of non-friable pipe lengths or pieces is not regulated.

### **Federal OSHA Construction Standard for Asbestos: 29 CFR 1926.1101**

**Removal** of AC Pipe is Class II Work. This work requires a Competent Person who is trained at the 40-hour level of AHERA Contractor/Supervisor and workers trained at the Class II 4 hour level specific for AC Pipe (Transite). Work requirements include:

Initial exposure assessment, air monitoring data, regulated area, wet methods, prompt containment of the waste in leak-tight containers, labeling on the work site, chop saw prohibited, PPE not required with negative exposure assessment data, recordkeeping.

Relevant work practice requirements are found at: (g)(1); (g)(3); (g)(8)(v).

**Repair** of AC Pipe is Class III Work. Since the 16-hour training prescribed by EPA AHERA (disturbance inside an occupied building) does not ordinarily have application on a construction site, the Competent Person may use the "exclusion" in 1101(k)(9)(v) and specify the training elements at (k)(9)(v)(viii) and his own initial exposure assessment work procedures. Federal OSHA has determined that the training should take 4 hours including hands-on. The Competent Person should have the same Class III training as the workers.

Relevant work practices are found at: (g)(9).

## Comments on AC pipe replacement

Asbestos cement (AC) pipe was used extensively in the mid-1900s in potable water distribution systems, particularly in the western United States. The Chrysotile Institute estimates AC pipe lifespan at 70 years, but actual service life depends largely on pipe condition and working environment. Because thousands of miles of AC pipe installed in distribution systems in the U.S. is nearing the end of its useful service life, AC pipe condition assessment and strategic replacement planning will need to be done in the coming decade.<sup>1</sup>

According to federal EPA (Docket No. EPA-HQ-OAR-2017-0427)

Asbestos Cement pipes are conventionally remediated in one of three ways: cured-in place pipe (CIPP) lining, abandoned in place, and open trenching. The CIPP lining is used only on pipes that are still in good condition, and strong enough to withstand the daily pressures of their intended use. The CIPP lining is sprayed on the interior of unbroken, inline pipes, and is used to extend the useful life of the pipe. More information on various CIPP linings, formulation, and application is available in the docket to this document.

Asbestos cement pipes may also be abandoned in place, with the new pipeline laid in a separate area.

Open trenching is the practice under which the entire A/C pipe is excavated and open to the ambient air. After excavation, the A/C pipe is wet-cut into 6- and 8-foot sections using a snap cutter or similar tool, wrapped for containment, and removed for disposal.

In reference to other AC pipe replacement methods such as pipe bursting and pipe reaming, EPA states:

“No approval is needed for a work practice under the Asbestos NESHAP as long as that work practice comports with the existing requirements of the rule. Where a potential work practice would depart from any part of the existing rule for a regulated activity, 40 CFR 61.12(d) explains how the EPA may approve an alternate work practice (AWP), and such approval would be required in advance of using the potential AWP. The EPA has previously determined that when the work practices for open trenching are adhered to, this practice conforms to the work practice requirements of the rule. We have neither approved pipe bursting nor pipe reaming as AWP's to replace A/C pipe. Any asbestos cement pipe replacement project (ACPRP) such as pipe bursting or pipe reaming that exceeds the threshold amounts of RACM would be required to follow the appropriate NESHAP provisions, including the standards for active waste disposal sites at 40 CFR 61.154 and the inactive waste disposal site standards at 40 CFR 61.151 if any RACM is left in the ground.”

EPA has recently approved an AWP for a process called “Close Tolerance Pipe Slurrification (CTPS)”. The process is basically a procedure for accessing a buried AC pipe by vertical access points, feeding in a “train” that grinds the pipe to a fine powder in place, mixing the powder with liquid chemicals to form a slurry which is pumped out for disposal, while at the same time pulling a new pipe into the cavity.

<sup>1</sup> Exponent article

**FACT SHEET**  
**Alternative Work Practice for the Air Toxics Standards for Asbestos NESHAP**

**ACTION**

- On May 30, 2019, the Environmental Protection Agency (EPA) issued a final notice on an alternative work practice (AWP) request for the Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP).
- The Asbestos NESHAP, an organized collection of work practices, prevents the release of asbestos through prescribed handling and processing of asbestos-containing materials. The Asbestos NESHAP was originally promulgated in 1973 and was last amended in 1990.
- The Asbestos NESHAP allows requests for approval of new technology and work practices to remove and replace asbestos cement (A/C) pipe.
- EPA received a request to approve an alternative work practice called “close tolerance pipe slurrification” (CTPS) to remove A/C pipes.
- In CTPS, wet A/C pipe is ground into a slurry and removed with a vacuum. A new pipe is inserted and a skim coat of nonfriable cementitious asbestos-containing material is left on the outside rim of the new pipeline.
- After evaluating the request and soliciting comments on the proposed notice, EPA determined that CTPS is at least equivalent to the Asbestos NESHAP process for A/C pipe removal.
- This final notice allows CTPS to be used as an AWP to comply with the Asbestos NESHAP.

**BACKGROUND**

- Asbestos is a known human carcinogen and the primary route of exposure is through inhalation of asbestos fibers. More information on the health effects of asbestos may be found at <https://www.epa.gov/asbestos/learn-about-asbestos#effects>.
- As the infrastructure of municipalities age, utilities need to replace deteriorated water pipes made of asbestos cement, which can be problematic and costly because pipes run beneath and beside major roadways, buildings and overlap other utilities (e.g., gas, electricity).
- Conventional work practices to replace A/C pipe include open-cut trench and replace and abandoning A/C pipe in place.

**FOR MORE INFORMATION**

- Interested parties can download the final action from the EPA’s website at: <https://www.epa.gov/stationary-sources-air-pollution/asbestos-national-emission-standards-hazardous-air-pollutants>.
- Today’s notice and other background information are also available either electronically at <http://www.regulations.gov>, the EPA’s electronic public docket and comment system, or in hardcopy at the EPA Docket Center’s Public Reading Room. The Docket ID number for this final action is EPA-HQ-OAR-2017-0427.
  - The Public Reading Room is located in the EPA Headquarters Library, Room Number 3334 in the EPA WJC West Building, located at 1301 Constitution Ave., NW, Washington,

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DC. Hours of operation are 8:30 a.m. to 4:30 p.m. eastern standard time, Monday through Friday, excluding federal holidays. ○ Visitors are required to show photographic identification, pass through a metal detector and sign the EPA visitor log. All visitor materials will be processed through an X-ray machine as well. Visitors will be provided a badge that must be visible at all times.

- For further information about the final action, contact Korbin Smith of EPA's Office of Air Quality Planning and Standards, Sector Policies and Programs Division, Minerals and Manufacturing Group at (919)-541-2416 or by email at [smith.korbin@epa.gov](mailto:smith.korbin@epa.gov).

## Federal OSHA on 4 hour training

**Federal Register / Vol. 60, No. 125 / Thursday, June 29, 1995 / Rules and Regulations 33981**

However, it has been brought to the agency's attention that there are some other types of materials other than those listed ACM building components. These other materials include gaskets, firedoors, laboratory hoods, and other materials (for example, see list in Ex. 1- 183, EPA's "Greenbook" Appendix G, page 40). However, covering all required training for those other materials is generally not assumed to take 8 hours. The training for these materials continues to require covering all topics in (k)(9)(viii) of the Construction and Shipyard Employment Standard, all pertinent work practices and other controls and must have a "hands-on" component. OSHA believes that such training would be likely to require at least 4 hours to adequately cover the topics, methods, and hands-on portion. OSHA also recognizes that many different operations will be covered in this type of training and that the time required for adequate training will vary and thus the period is not specified.

## OSHA

### Standard Interpretations

#### Class III asbestos work: training, medical surveillance, PPE, and surfacing materials

April 21, 1998

Ms. Sally J. Lagomarisino  
Supervisor Environmental Health and Safety  
Clayton Environmental Consultants  
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Pleasanton, CA 94566

Dear Ms. Lagomarisino:

This is in response to your letter of August 29, 1997, to Stephen Mallinger, former Acting Director, Office of Health Compliance Assistance, Occupational Safety and Health Administration (OSHA), requesting clarification of the applicability of the asbestos standard to certain work activities. We apologize for the delay in our response to you.

You ask if pounding a nail or installing a molly anchor into wall materials, such as, joint compound, finishing/texture material, wall plaster, or paint, that contain more than 1% asbestos, to hang a picture, bulletin board, or clock, etc. is considered to be work that is covered by tile construction asbestos standard (29 CFR 1926.1101). You also ask if installing a molly anchor or other fasteners into wall materials as described above or into floor materials such as asbestos-containing resilient floor tile or sheeting in order to seismically brace a file cabinet, bookcase, etc., is construction work that is covered by the construction asbestos standard. Such work must be evaluated case by case to determine whether it is covered by the construction asbestos standard. If the task is difficult or complex enough to require that construction workers, maintenance persons, or repair persons perform the work, then the work is Class III work covered by the construction asbestos standard. If the task is easy or simple enough to not require that construction workers, maintenance persons, or repair persons perform the work, then the work is covered by the general industry asbestos standard, 29 CFR 1910.1001, instead of the construction asbestos standard.

You seek clarification of what training must be provided employees performing that work described above that is Class III work covered by the construction asbestos standard. If the employees are employed at carrying out an operation and maintenance program for the building or facility, they require training equivalent to the Environmental Protection Agency's (EPA's) Operation and Maintenance (O&M) training as outlined in 40 CFR 763.92. On the other hand, if Class III work described in the preceding paragraph is the only Class III work conducted by the employees, the employer may rely on the competent person it uses for asbestos projects to determine whether the O&M-type course is appropriate for these employees. If the competent person determines that much of the curriculum in the O&M-type course is not relevant, the competent person may certify that the training contained in 29 CFR 1926.1101(k)(9)(viii) is more applicable and may opt to designate this training for the employees provided relevant engineering and work practice controls, other controls, and "hands-on" training will be adequately covered. Both initial training and annual refresher training must be provided. There is no specified minimum time that must be devoted to refresher training. The duration of the initial training will depend on the complexity and hazard of the operation, but it is likely that at least 4 hours will be required to cover the topics, methods, and hands-on portion.

As to your inquiry about medical surveillance for employees performing that work you describe above that is Class III work, an employee must be offered medical surveillance if there are more than 30 days per year the employee spends any amount of time performing the activities. Those days on which an

employee spends less than an hour performing the work are not excluded from the count because the work produces asbestos-containing aerosols or shavings. The days on which an employee spends less than an hour on Class III (or Class II) work are excluded only if the asbestos-containing material stays intact while being disturbed (or removed).

You are correct that regardless of exposure levels, regulated areas must be established wherever Class III asbestos work is conducted. According to 29 CFR 1926.1101(e)(1), all Class III asbestos work must be conducted within a regulated area. Moreover, the regulated area is required even should a negative exposure assessment be produced. The regulated area shall be demarcated in any manner that minimizes the number of persons within the area and protects persons outside the area from exposure to airborne asbestos. Signs shall be provided and displayed pursuant to the requirements of 29 CFR 1926.1101(k)(7).

You are correct that until the employer produces negative exposure assessments for Class III asbestos work, the employees performing the work must be provided and must use respirators and protective clothing. If Class III asbestos work is not performed using wet methods, or if the Class III asbestos work is performed on asbestos-containing surfacing material, then respirators shall be used even after negative exposure assessments have been produced.

The protective clothing required for Class III asbestos work if a negative exposure assessment has not been produced is coveralls or similar whole-body clothing, and head coverings, gloves, and foot coverings. In those instances where negative exposure assessments have been produced for Class III asbestos work, no protective clothing is required.

You end your inquiry into the requirements that pertain when pounding a nail or installing a molly anchor into a wall by asking whether the use of coveralls and a respirator, establishment of a regulated area, and posting of an asbestos warning sign are required just to hang a picture on a plaster wall or on a sheetrock wall coated with finishing material, even after a negative exposure assessment has been produced. As you will note from the answers we provide later in this letter to your questions about surfacing material, the project you ask about may not involve surfacing material. Also, as we stated earlier in this letter, if the task is easy or simple enough to not require that construction workers, maintenance persons, or repair persons perform the work, then the work is covered by the general industry asbestos standard, 29 CFR 1910.1001, instead of the construction asbestos standard.

If the work is covered by the general industry asbestos standard, then if a negative exposure assessment has been produced, no respiratory protection or protective clothing is required, and neither the establishment of a regulated area nor the posting of an asbestos warning sign is required.

You ask for the definition of "routine facility maintenance." OSHA has not defined the term with regard to its relationship to the Asbestos Construction Standard because the term has no special application to the standard.

You ask that OSHA provide examples of materials it considers surfacing materials besides acoustical plaster and fireproofing coatings for structural members. Decorative plaster with a honeycombed structure and loosely bound fibers is an example of another material that OSHA considers surfacing material.

You list a number of materials and ask if they are surfacing materials as defined by OSHA. We repeat each of the materials you list and comment on them.

- Wall/ceiling plaster (cementitious-type) that has been troweled onto wire lath, button board, or other substrate -- Unless the plaster is acoustical plaster as indicated by a honeycombed structure, or the plaster is decorative plaster with an appearance similar to acoustical plaster, it is not surfacing material.
- Stucco -- This is not surfacing material.
- Paint that has been sprayed on or otherwise applied to wall/ceiling or other building surfaces -- This is not surfacing material.



- Finishing material that has been troweled onto or spray-applied to wall/ceiling sheetrock, concrete, or other surfaces (e.g., "joint compound" that has been applied to a sheetrock wall/ceiling surface to provide a textured finish and covers the entire surface [not just the joints], or a skimcoat application of a light cement finish coat that has been used to provide a smooth finish on sheetrock or concrete -- "Joint compound" used to provide a textured finish for the entire wall or ceiling is usually not surfacing material since usually any fibers it may contain are firmly bound. However, if the textured finish is not readily distinguishable visually from acoustical plaster, it is surfacing material within the meaning of the use of the term in the standard. Cement skimcoats applied to sheetrock or concrete to provide a smooth finish are not surfacing materials.
- Floor leveling compound -- This is not surfacing material.
- Mastic that has been troweled onto a concrete floor surface to adhere resilient tile -- This is not surfacing material.

We appreciate the opportunity to clarify these matters for you. If you have further questions please contact [the Office of Health Compliance Assistance at (202) 693-2190].

Sincerely,

John B. Miles, Jr  
Director  
Directorate of Compliance Programs

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06/28/2008

### Clarification Regarding Class II Work for Operations Involving AC Pipe

Over the course of the past year or so several staff members within ADOSH have encountered situations where employees were performing work on AC containing pipe which fell within the classification of Class II work. As such there was some discussion on training requirements for those employees as well as the need for a “competent person” as called for in 1926.1101(g)(7)(i). A competent person is defined in 1101.(b) as;

A person meeting the definition of competent person under 1916.32(f) and in addition one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29CFR 1926.32(f). In addition, for Class I and Class II work who is specifically trained in a training course which meets the criteria of EPA’s Model Accreditation Plan (40 CFR part 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education, agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2).

One of the questions that keeps coming up is : **Does 4 hours of training meet the intent of the OSHA regulations found in 1926.1101(k)(9)(iv)(C), with respect to training for other Class II operations under that paragraph, specifically work involving AC pipe?**

**Reply:** These other Class II operations are operations that normally do not require isolation or negative pressure enclosures, such as most operations involving AC pipe. 1926.1101(k)(9)(iv)(A) lists operations involving specific material for which training must be a minimum of 8 hours as stated.

Since AC pipe is not one of the materials listed in 1926.1101.(k)(9)iv)(A) then training for this type of work would have to meet the requirements of 1926.1101(k)(9)(iv)(C). Please note that there is no specification in 1926.1101(k)(9)(iv)(C) as to the duration of the training. The issue of main importance with respect to this standard is the content of the training, which must be sufficient enough to cover the elements in (k)(9)(viii) as well as provide for a “hands on period”. Moreover the Federal Register issued in 1995, 60 FR 33981, does discuss the issue of training designed to meet 1926.1101(k)(9)(iv)(C) and it specifically states that, “OSHA believes that such training would be likely to require at least 4 hours”.

Based on the information provided above, if the employers training program is providing the necessary information as described in 1926.1101(k)(9)(viii) and in addition the specific work practices and engineering controls found in paragraph (g) of the regulation which specifically relate to the category of material being removed, and includes a “hands on” element in the training, ADOSH would concur with Federal OSHA’s opinion that 4 hours would be of sufficient time to accomplish this training.

As for the area of the competent person, OSHA regulations as noted above, call specifically for a competent person and by definition that individual possess a certain ~~level of training as well as authority~~. ADOSH's position is that the competent person would still be required for Class

OSHA

**Standard interpretations on training and work practices for Class II and Class III AC Pipe work.**

May 29, [2007]

Robert J. Prejeant, Esquire  
240 Barrow Street  
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Dear Mr. Prejeant:

Thank you for your letter dated December 19, 2006, to Secretary of Labor Elaine L. Chao. Your letter was forwarded to the Directorate of Enforcement Programs of the Occupational Safety and Health Administration (OSHA) for a response. Your letter asked two questions relating to operations on asbestos cement water pipes and compliance with OSHA's Asbestos Standard for construction, 29 CFR 1926.1101. One of your questions referenced an industry manual for such operations, published by the American Water Works Association (AWWA), which you enclosed.<sup>1</sup> You also enclosed two letters from an engineering consultant providing advice on this matter. We provided an interim reply to you, January 23, 2007. This letter constitutes OSHA's interpretation only of the requirements discussed, and it may not be applicable to any question not detailed in your original correspondence. Your paraphrased questions and our replies are below.

**Question 1:** Is the work involved in tapping or tying-in to asbestos-containing cement water pipes considered a Class II or Class III asbestos work activity, as defined in 1926.1101(b)?

**Reply 1:** A competent person must evaluate the work and classify the asbestos operation(s) in accordance with 1926.1101. It has been reported<sup>2</sup> that asbestos-containing cement pipes consist of 15-20 percent asbestos, thus meeting the definition of an asbestos-containing material (ACM), which means any material containing more than one percent asbestos (reference 1926.1101(b)). Removal of asbestos cement (AC) pipe is normally Class II asbestos work, as this activity involves the removal of ACM that is not thermal system insulation or surfacing material. If, however, the work to be performed is repair or maintenance and involves removing no more ACM than can be contained in one glove bag or waste bag, this operation could be Class III asbestos work (see 29 CFR 1926.1101(b)). Please keep in mind that, if it is not clear in which class the asbestos work belongs, the employer should assume the higher class applies because employees will be protected better using the more restrictive work practices and controls. For example, in this employer's case, the work practices and controls required for a Class II removal of AC pipe are more protective than those for a Class III repair. OSHA's Asbestos Standard defines several relevant terms applicable to this utility's described work with AC pipe, including, but not limited to, Class II, Class III, Competent Person, Disturbance, Negative Initial Exposure Assessment, Removal, and Repair (see 29 CFR 1926.1101(b)).

**Question 2:** A public water utility requires this tapping and tying-in work on AC pipes in its system to adhere to the following procedures: workers wear personal protective equipment such as Tyvek<sup>®</sup> suits, respirators, and gloves; all workers receive adequate asbestos training; and debris is wrapped in plastic covering, hauled to a dumpster dedicated for AC pipe and later

disposed in a hazardous waste landfill. However, these procedures are being questioned by developers as unreasonable and costly.

In response, the utility drafted a new policy for contractors performing tapping or tying-in to asbestos cement pipe, wherein the contractors are to follow the published AWWA procedures for such work. The utility's policy also proposes to employ a Competent Person to determine the airborne concentration of asbestos during each tapping or tying-in project and if OSHA's permissible exposure limit (PEL) or excursion limit are exceeded, the Competent Person will direct the contractor to cease work, and a specialty contractor shall then be directed to complete the remaining work where exposures are expected to exceed the PEL. This policy is proposed to reduce costs for the public utility and for developers that may need to connect to the utility's water system. Does this new policy for tapping and tying-in to AC pipe comply with the requirements of 1926.1101?

**Reply 2:** Other than the regulatory provisions in its standards, OSHA does not approve, endorse, or provide any specific policies or procedures for employers' operations. However, we can provide general comments on the information you provided. The AWWA's published work practices for AC pipe are generally compliant with OSHA's Asbestos Standard for construction, 1926.1101, and, if followed, AWWA's work practices should reduce employee exposures so that the OSHA PEL and excursion limit for asbestos are not exceeded. However, OSHA's Asbestos Standard includes provisions that must be complied with regardless of whether employee exposures exceed the PEL or excursion limit.

Regarding this utility's draft policy for AC pipe tapping and tying-in, we will comment on four issues that affect the cost of this work: training, exposure assessment, engineering and work practice controls, and personal protective equipment. First, concerning training, OSHA's training requirements in 1926.1101 for the workers and the competent persons are based on the classification of the asbestos work. For Class II and Class III work, training is as follows: **1926.1101(k)(9)(iv)(C)** For Class II operations not involving the categories of material specified in paragraph (k)(9)(iv)(A) of this section, training shall be provided which shall include at a minimum all the elements included in paragraph (k)(9)(viii) of this section and in addition, the specific work practices and engineering controls set forth in paragraph (g) of this section which specifically relate to the category of material being removed, and shall include "hands-on" training in the work practices applicable to each category of material that the employee removes and each removal method that the employee uses.

**1926.1101(k)(9)(v)** Training for Class III employees shall be consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2). Such a course shall also include "hands-on" training and shall take at least 16 hours. Exception: For Class III operations for which the competent person determines that the EPA curriculum does not adequately cover the training needed to perform that activity, training shall include as a minimum all the elements included in paragraph (k)(9)(viii) of this section and in addition, the specific work practices and engineering controls set forth in paragraph (g) of this section which specifically relate to that activity, and shall include "hands-on" training in the work practices applicable to each category of material that the employee disturbs.

**1926.1101(o)(4)(i)** For Class I and II asbestos work the competent person shall be trained in all aspects of asbestos removal and handling, including: abatement, installation, removal and handling; the contents of this standard; the identification of asbestos; removal procedures, where appropriate; and other practices for reducing the hazard. Such training shall be obtained in a comprehensive course for supervisors that meets the criteria of EPA's Model Accredited

Plan (40 CFR part 763, subpart E, Appendix C), such as a course conducted by an EPA-approved or state-approved training provider, certified by EPA or a state, or a course equivalent in stringency, content, and length.

**1926.1101(o)(4)(ii)** For Class III and IV asbestos work, the competent person shall be trained in aspects of asbestos handling appropriate for the nature of the work, to include procedures for setting up glove bags and mini-enclosures, practices for reducing asbestos exposures, use of wet methods, the contents of this standard, and the identification of asbestos. Such training shall include successful completion of a course that is consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2), or its equivalent in stringency, content, and length. Competent persons for Class III and IV work, may also be trained pursuant to the requirements of paragraph (o)(4)(i) of this section.

Although employers may be concerned about the costs of this training for workers and competent persons, OSHA doesn't require employers to purchase training materials or use on-site or off-site training vendors; employers may instead perform training using in-house resources as long as the training is equivalent in curriculum, training method, and length to that of the EPA plan (see the [Federal Register, 59 FR 41020, August 10, 1994](#)). Be advised, however, that some states require state licensing of any type of asbestos workers and supervisors, not just those performing AHERA work in schools.

Additionally, this utility may want to consider whether the exception provided in 1926.1101(k)(9)(v), above, is applicable for its training of Class III workers. A previous OSHA interpretation has stated that employers applying this exception must still provide initial and annual refresher training, but the standard does not specify the duration of this training; though the initial training covering the elements in 1926.1101(k)(9)(viii) is likely to require at least 4 hours. See [OSHA Letter of Interpretation, April 21, 1998](#) (attached). Again, however, state regulations may be more restrictive.

Concerning exposure assessment, we direct you to paragraph (f) of the standard, *Exposure Assessments and Monitoring*. The provisions in this paragraph and its subparagraphs contain important requirements for air monitoring of employee exposures, initial exposure assessment, negative exposure assessment, objective data, periodic monitoring, termination of monitoring, and employee notification and observation of monitoring, which are applicable to your work on AC pipe.

Concerning the construction Asbestos Standard's provisions for engineering and work practice controls, we direct you to paragraph (g) of the standard. The utility's draft policy you enclosed seemed to indicate that the utility would use a "specialty contractor" whenever the Competent Person determines that the PEL is reached or exceeded by a utility contractor performing the tapping or tying-in operation on AC pipe. This also seems to imply that there may be a different level of training and/or performance capability between the "specialty contractor" and the utility contractor. If these are the intended implications, then we would remind all employers involved of how the exposure assessment and monitoring provisions of the Asbestos Standard are related to employee training and the required methods of engineering and work practice control.

First, employers must understand that employees performing asbestos work, whether their exposures are above or below the PEL, will still require the appropriate level of training described above, as per 1926.1101(k)(9). Additionally, for this utility's work on AC pipe, the standard specifies required engineering and work practice controls in the applicable

subparagraphs in paragraph 1926.1101(g), some of which apply even when exposures do not exceed the PEL. These controls include wet methods; HEPA vacuums; prompt clean-up and disposal; and prohibitions against use of high-speed abrasive disc saws or compressed air without HEPA-filtered exhaust, dry clean-up of dust and debris, and employee rotation. In addition to these controls, whenever employee exposures exceed the PEL or excursion limit in Class III work, for example, the following controls are specified (we've underlined the parts that may apply to the utility's operations with AC pipe where a competent person determines that it is Class III work):

**1926.1101(g)(9)(iv) Where the employer does not produce a "negative exposure assessment" for a job, or where monitoring results show the PEL has been exceeded, the employer shall contain the area using impermeable drop cloths and plastic barriers or their equivalent, or shall isolate the operation using a control system listed in and in compliance with paragraph (g)(5) of this section.**

**1926.1101(g)(9)(v) Employees performing Class III jobs, which involve the disturbance of thermal system insulation or surfacing material, or where the employer does not produce a "negative exposure assessment" or where monitoring results show a PEL has been exceeded, shall wear respirators which are selected, used and fitted pursuant to provisions of paragraph (h) of this section.**

Regarding the work practice controls for utility operations on AC pipe, one of the two letters you enclosed from the utility's engineering consultant contained a statement that was inaccurate. The work practices described in the AWWA manual are based on data for "peak dust concentrations" representing short time periods of maximum exposure and will limit exposure level to airborne asbestos during a typical work day. Using these [AWWA] work practices, the exposure time is well below the PEL and the [tapping and tying-in] activity [on AC pipe] is exempt from the [OSHA] regulations.

This consultant was in error when he stated that when an activity is below the PEL it is exempt from OSHA's Asbestos Standard. As we explained in the preceding paragraphs, besides the training requirements and exposure determination requirements, the standard also specifies several engineering and work practice controls for all asbestos work, regardless of whether the exposures exceed the PEL or excursion limit, per paragraphs 1926.1101(g)(1)-(3) for all asbestos work, and additionally for Class III work specifically, per paragraphs (g)(9)(i)-(ii).

Finally, we will comment on the provisions of the construction Asbestos Standard for personal protective equipment, with respect to the utility's operations on AC pipe. We mentioned above the standard's provision at paragraph 1926.1101(g)(9)(v) for the use of respirators when the employer does not have a negative exposure assessment or when monitoring results show the PEL has been exceeded. In addition, paragraphs (h)(3)(iii) and (h)(3)(iii)(A) require employers to provide employees working in these conditions with half-mask air purifying respirators equipped with HEPA filters. Similarly, the standard's provision for protective clothing at (i)(1) requires employers to provide or require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for any employee exposed in excess of the PEL or excursion limit, or where a negative exposure assessment has not been made.

In conclusion, the utility's policy for asbestos operations involved in tapping and tying-in to AC pipe should not be based on the assumption that as long as the AWWA procedures are followed, then there will be assured compliance with OSHA's construction Asbestos Standard,

29 CFR 1926.1101. What is correctly represented in the AWWA handbook is that by adhering to its work practices employers will limit asbestos exposures so that the OSHA PEL or excursion limit are not likely to be exceeded.

Thank you for your interest in occupational safety and health. We hope you find this information helpful. OSHA requirements are set by statute, standards, and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>. If you have any further questions, please feel free to contact the OSHA Office of Health Enforcement at (202) 693-2190.

Sincerely,

Richard E. Fairfax, Director  
Directorate of Enforcement Programs

UNITED STATES ENVIRONMENTAL PROTECTIVE AGENCY  
Region IX  
75 Hawthorne Street  
San Francisco, CA 94105

October 9, 1991

Michael Lessler  
Deputy Pima County Attorney  
Pima County Attorney  
1400 Great American Tower  
32 N. Stone Avenue  
Tucson, AZ 85701-1412

**AC pipe is regulated as a “facility component”  
under the Asbestos NESHAP. Crushing causes  
it to become RACM.**

Dear Mr. Lessler:

Thank you for your letter requesting a determination on whether asbestos containing cement pipe is regulated under the Asbestos NESHAP.

Your first question is whether cement asbestos pipe which is part of a public water system is part of a facility as defined under the Asbestos NESHAP. The Environmental Protection Agency (EPA) has determined that the asbestos cement pipe is a “facility component” of the facility which owns or utilizes the pipe as defined under 40 CFR 61.141. This determination was formalized by EPA in the attached letter of John B. Rasnic dated July 17, 1991.

A demolition is defined under the NESHAP as “the wrecking or taking out of any load supporting structural member of a facility...”. Since the pipeline is being removed, and the pipeline is a facility, the removal of the pipeline would be considered a demolition.

Asbestos containing pipe is considered to be “Category II” material as regulated by the NESHAP. Category II material is defined as “any material, excluding Category I nonfriable ACM, containing more than 1% asbestos...”. EPA, in the July 17, 1991 determination, stated “The crushing of asbestos cement pipe with mechanical equipment would cause this material to become RACM” (Regulated Asbestos Containing Material). The demolition and renovation provisions in 40 CFR 61.145 and the waste disposal provisions in 40 CFR 61.150 would apply to asbestos cement pipe where the pipe is considered RACM...”.

Therefore, under the circumstances you described the work practices used removing the asbestos cement pipeline would be regulated under the Asbestos NESHAP and the methods used would indicate a violation of the rule.

If you would like EPA assistance in developing or prosecuting the case, please feel free to call me at (415) 744-1135.



Sincerely, Robert Trotter, Asbestos NESHAP Coordinator

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

July 17, 1991

Mr. Joseph L. Perez  
Utilities Engineer  
Utilities Services Department  
Board of County Commissioners  
901 S.E. Prineville Street  
Port St. Lucie, Florida 34983

**Crushing and backfilling of AC pipe**

Dear Mr. Perez:

This is in response to your May 15, 1991 letter to Mr. Jim Kwiat of EPA's Office of Toxic Substances. Your letter was forwarded to the Stationary Source Compliance Division since it is our office that provides clarifications on the Asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP).

In your letter you inquired whether the crushing of excavated asbestos cement pipe in place with mechanical equipment and backfilling and burying of the crushed pipe would be acceptable by EPA.

In the revised Asbestos NESHAP, promulgated on November 20, 1990, EPA defined two categories of nonfriable asbestos containing material (ACM): Category I nonfriable ACM and Category II nonfriable ACM. As defined in 40 CFR 61.141, "Category I nonfriable ACM means asbestos containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than 1% asbestos determined using the methods specified in Appendix A, Subpart F, 40 CFR part 763, Section 1, Polarized Light Microscopy. Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than 1% asbestos as determined using the methods [cited above] that when dry cannot be crumbled, pulverized or reduced to powder by hand pressure."

EPA considers asbestos cement pipe to be a "facility component" (as determined in 40 CFR 61.141) of the facility which owns or utilizes the pipe. In addition, EPA considers asbestos cement pipe to be a Category II nonfriable asbestos containing material. This material will become "regulated asbestos containing material" (RACM), as defined in 40 CFR 61.141, when it becomes "friable asbestos material" or when it "has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material during the course of demolition or renovation operations regulated by (40 CFR 61 Subpart M)." Consequently, the crushing of asbestos cement pipe with mechanical equipment would cause this material to become RACM. The demolition and renovation provisions in 40 CFR 61.145 and the waste disposal provisions in 40 CFR 61.150 would apply to asbestos cement pipe where the pipe is considered RACM, and the amount of pipe being removed and crushed is at least 260 linear feet for a single renovation project or during a calendar year for individual non-scheduled operations.

The backfilling and burial of the crushed asbestos cement pipe in place would cause these locations to be considered active waste disposal sites and therefore, subject to the requirements in 61.154. Furthermore, if no additional asbestos containing waste material is buried at that location for a year, the site would become an inactive waste disposal site subject to the requirements 61.151(e) and 61.154(h). Consequently, the owner of the land would be required to comply with the requirements for active and inactive waste disposal sites discussed above.

In order to avoid the creation of a waste disposal site which is subject to the Asbestos NESHAP, the owner or operator of the pipe may want to consider other options for dealing with the abandoned pipe. If the pipe is left in place or removed in such a way that it is not crumbled, pulverized or reduced to powder, it would not be subject to the NESHAP. If the pipe must be crushed, the owner or operator of the pipe can avoid creating an active waste disposal site by removing the pipe from the site and transporting it as asbestos waste material, in accordance with 61.150, to a landfill which accepts asbestos waste material.

You also described an alternative method involving the pumping of grout into the buried lines which are no longer in service. The pumping of grout into buried lines is not a process which, in and of itself, would cause asbestos cement pipe to become RACM, as discussed above. However, both the present condition of the pipe and the method used to take the pipe out of service should also be considered to determine the applicability of the Asbestos NESHAP.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

October 16, 2003

**AC pipe debris left in trench**

Bill Cavness  
Director  
The Asbestos Institute  
8102 N. 23<sup>rd</sup> Avenue, Suite A  
Phoenix, AZ 85021

Dear Mr. Cavness:

Thank you for your question regarding the Asbestos NESHAP requirements for asbestos cement pipe that has been damaged and mixed with soil. EPA has consistently determined that asbestos cement pipe that has been extensively damaged or crushed by mechanical means becomes Regulated Asbestos Containing Material (RACM). In addition, EPA has determined that when RACM is mixed with other waste or soil the contaminated area must be treated as RACM and asbestos containing waste and must be cleaned to background levels. I have enclosed agency determinations on these issues.

EPA and Arizona agencies have concluded enforcement actions where asbestos cement pipe has been improperly removed and the material has become RACM. In these instances, contaminated soil has been disposed of as regulated waste.

I would caution any public or municipal agency working with asbestos cement pipe that repetitive disturbance, such as a bypass or tie in, could trigger the planned non-scheduled provision of the Asbestos NESHAP and would make all operations subject to the Asbestos NESHAP. Failure to conduct proper notification, work practices, and disposal of contaminated material may result in Asbestos NESHAP enforcement action. Proper work practices and housekeeping, such as wetting, dropcloths and regulated areas, have been in practice with municipalities to meet NESHAP requirements.

If you have any further questions on the Asbestos NESHAP, please feel free to call me at (415) 972-3989.

Sincerely,  
Robert S. Trotter  
Asbestos NESHAP Coordinator