Exhibit No.:
Issues: Worker Safety Issues

Witness: Greg A. Weeks
Exhibit Type: Surrebuttal
Sponsoring Party: Missouri-American Water Company
Case No.: WR-2007-0216 SR-2007-0217
Date: July 27, 2007

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. WR-2007-0216
SR-2007-0217

SURREBUTTAL TESTIMONY

OF

GREG A. WEEKS

ON BEHALF OF

MISSOURI-AMERICAN WATER COMPANY

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

IN THE MATTER OF MISSOURI-AMERICAN WATER COMPANY FOR AUTHORITY TO FILE TARIFFS REFLECTING INCREASED RATES FOR WATER AND SEWER SERVICE	)))))	**CASE NO. WR-2007-0216 SR-2007-0217**

AFFIDAVIT OF GREG A. WEEKS

Greg A. Weeks, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Surrebuttal Testimony of Greg A. Weeks"; that said testimony and schedules were prepared by him and/or under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge.

Greg A. Weeks

State of Missouri
County of Jasper
SUBSCRIBED and sworn to
Before me this 26 **day of** July **2007.**

Notary Public

DAWNESHA JOHNSON
Notary Public-Notary Seal
STATE OF MISSOURI
Commissioned for St. Louis County
My Commission Expires: Nov. 21, 2008
ID. #04607988

My commission expires: 11/21/2008

Surrebuttal Testimony of Greg A. Weeks

Q: PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A: My name is Greg A. Weeks. My business address is 2650 E. 32nd St. Suite 121, Joplin, Missouri 64804.

Q: WHOM ARE YOU EMPLOYED BY AND IN WHAT CAPACITY?

A: I am the General Manager - Network Operations for Missouri-American Water Company ("MAWC" or "Company").

Q: WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A: The purpose of my testimony is to respond to certain aspects of the rebuttal testimony of Alan Ratermann, witness for the Utility Workers Union of America, Local 335 ("UWUA Local 335"), regarding alleged worker safety issues resulting from asbestos material in pipes and lead material in pipes.

Q: DO YOU HAVE ANY INTRODUCTORY COMMENTS CONCERNING MR. RATERMANN'S TESTIMONY?

A: Yes. After reviewing Mr. Ratermann's testimony, it is clear that Mr. Ratermann is trying to create issues where there are none. Asbestos cement ("AC") pipe is an acceptable material used in public water systems across the country, and MAWC takes appropriate precautions to meet all federal and state standards when handling AC pipe in its system. The same is true for

use of lead pipe in the system. Although Mr. Ratermann makes various claims about the hazards of asbestos or lead exposure and the potential impact on the health and safety of consumers and employees, Mr. Ratermann's allegations are misleading because they are not supported by the facts. As discussed below and in the testimony of Company Witness Cindy Hebenstreit, Mr. Ratermann's testimony should be disregarded because, among other things, he misstates the facts, he does not have firsthand information to support his conclusions, and he relies on outdated reference materials.

Q: ON PAGE 2, LINES 4-6 OF HIS TESTIMONY, MR. RATERMANN ALLEGES THERE IS A SIGNIFICANT AMOUNT OF AC PIPE IN THE SYSTEM. HE FURTHER STATES THAT THIS SIGNIFICANT AMOUNT OF AC PIPE IS IN FREQUENT NEED OF REPAIR. ARE MR. RATERMANN'S STATEMENTS ACCURATE?

A: No. The amount of AC pipe used by MAWC is extremely small For example, in St. Louis County where Mr. Ratermann works, there is less than 2% AC pipe in the entire network. Mr. Ratermann's second statement is similarly misleading. The occurrence of repairs involving AC pipe is extremely low. For example, out of all the main repairs performed in St. Louis County since January 2004, less than one-half of one percent have involved cutting AC pipe. The picture that Mr. Ratermann attempts to paint in his testimony regarding AC pipe simply does not comport with the facts.

Q: MR. RATERMANN CLAIMS THAT WORKERS ARE NOT GIVEN ADEQUATE TRAINING TO WORK WITH AC PIPE. IS THIS TRUE?

A: No. Training comes in various forms and not always in a formal classroom setting. Although Mr. Ratermann claims he has never been "offered a class" on safely cutting AC pipe, this statement is misleading. As recently as May 2, 2007, Mr. Ratermann attended the monthly Labor-Management Safety Committee Meeting where the Company and Union discussed AC pipe and the Company shared information from AWWA on correct procedures for handling AC pipe. (See Schedule GAW 1) This same training brochure also has been distributed by the Company to all lead persons on the construction and maintenance crews. The Company conducts on-the-job training for employees who handle AC pipe as well. As noted above, there is very little occasion to cut AC pipe so employees are instructed by experienced lead persons and supervisors as they encounter it in the system.

Q: GENERALLY, WHAT DO THE INSTRUCTIONS FOR CUTTING AC PIPE ENTAIL?

A: In order to avoid asbestos exposure, employees are advised to follow specific work practices for cutting AC pipe, which primarily include using approved tools to cut pipe and incorporating wet methods to eliminate airborne asbestos dust hazard.

Q: DO YOU KNOW IF THESE PRACTICES ARE EFFECTIVE IN PROTECTING WORKERS FROM AIRBORNE ASBESTOS DUST?

A: Yes. As an example, on July 13, 2007, the Company conducted air monitoring testing during an AC pipe cutting demonstration. The Company hired an independent industrial hygiene consulting firm to perform the testing. The consultant firm found that all samples were below the laboratory limit of detection (0.0138 fibers per cubic centimeter), meaning asbestos fibers were non-detectable. As such, the firm also concluded the samples were below the Occupational Safety and Health Administration ("OSHA") Permissible Exposure Limit for airborne asbestos (0.1 fibers per cubic centimeter).

Q: WHAT PRECAUTIONS DOES THE COMPANY TAKE TO AVOID CONTAMINATION OF THE WATER SUPPLY AFTER AC PIPE IS CUT AND REPAIRED?

A: The Company takes precautions every time it installs new pipe, regardless of the type of pipe, by flushing the system prior to placing it back into service. Complete flushing avoids contamination of the water supply, including any minimal amount of asbestos slurry from cutting an AC pipe during a repair.

Q: MR. RATERMANN EXPRESSES CONCERN ABOUT LEAD MATERIALS USED IN THE WATER DISTRIBUTION SYSTEMS. DO YOU AGREE WITH HIS POSITION THAT THESE PIPES SHOULD BE REPLACED?

A: Absolutely not. As discussed by Company witness Cindy M. Hebenstreit, the United States EPA and the Missouri DNR recognized that lead material was a common pipe joining material for pipes prior to 1989. The Missouri "lead free" statute specifically exempts lead used to repair lead joints from the lead pipe ban. See Section 640.120 RSMo. Further, instances in which the company would use lead material for the repair of a lead joint are extremely rare.

Q: DOES THIS CONCLUDE YOUR TESTIMONY?

A: Yes, it does.

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Work Practices for Asbestos–Cement Pipe

Project Manager: Bill Cuthbertson
Art: Keith Dana and Sherry Tongue

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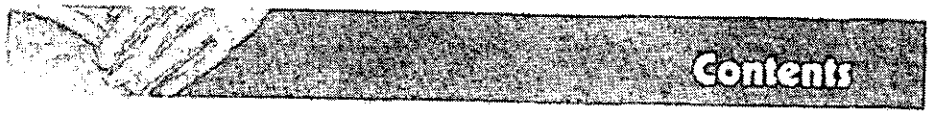

Foreword

The Occupational Safety and Health Act in the United States and similar laws in Canada and other countries were enacted to ensure to the extent possible a safe and healthful workplace for every worker. This legislation covers millions of employees and nearly every employer including those involved in utility duct and pipeline construction.

This handbook was developed to assist in the compliance with US federal asbestos workplace standards when shipping, receiving, handling, and assembling asbestos-cement pipe. Following the recommended work practices is recognized as a principal means of reducing the health hazards associated with prolonged exposure to high levels of airborne asbestos fibers.

In 1977, the Association of Asbestos-Cement Pipe Producers (AACPP) commissioned Equitable Environmental Health Inc. (EEH) to study and collect information, including quantitative information, on potential airborne asbestos exposures to asbestos-cement pipe workers. EEH simulated field operations for (1) unloading pressure pipe at the work site, (2) laying pressure pipe in a trench, (3) cutting pressure pipe with saw-cutting equipment, and (4) machining pressure and sewer pipe with manual and power lathes. When the work practices outlined herein were followed, these operations caused airborne asbestos exposures that fell below the current US Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL).

OSHA referred to the EEH studies in the preamble to its 1986 asbestos construction standard,* noting that asbestos-cement pipe exposures can be checked at airborne levels under 0.1 asbestos fibers/cm³.

The recommended work practices appearing on the following pages have been developed through experience, study, and field testing. They are designed to achieve safe jobsite conditions when working with asbestos-cement pipe.

This handbook will be helpful to engineers, utility managers, superintendents, contractors, foremen, and pipe-laying crews in understanding and explaining to others the appropriate work practices for asbestos-cement pipe products.

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* OSHA. 1986. *Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite*. Final rule. 51 FR 22612.

Acknowledgments

The Association of Asbestos–Cement Pipe Producers* (AACPP) proposed, published, and copyrighted a pamphlet in 1977 titled *Recommended Work Practices for A/C Pipe*. The pamphlet was revised in 1988. AWWA received AACPP permission to reproduce the pamphlet as part of this handbook.

The AWWA Standards Committee on Asbestos–Cement Pressure Pipe reviewed and approved this publication. AWWA thanks the following committee members for their time and expertise:

Roger C. Graft, *Chair*

Consumer Members

R.C. Graft, City of San Diego, San Diego, Calif.

R.D. Kennedy, Twentynine Palms Water District, Twentynine Palms, Calif.

D.H. Nelson, City of Thousand Oaks, Thousand Oaks, Calif.

General Interest Members

T.E. Arizumi,† Hawaii State Health Department, Honolulu, Hawaii

K.M. Bell, Underwriters Laboratories Inc., Northbrook, Ill.

T.L. Brown Jr., Factory Mutual Research Corporation, Norwood, Mass.

B.R. Elms,† Standards Engineer Liaison, AWWA, Denver, Colo.

L.A. Kinney Jr., Bureau of Reclamation, Denver, Colo.

E.W. Misichko,‡ Underwriters Laboratories Inc., Northbrook, Ill.

J.S. Rego Jr., Fall River Water Department, Fall River, Mass.

L.F. Straw, ISO Commercial Risk Services Inc., Duluth, Ga.

Producer Members

Marcel Cossette, Ceram-CNA Inc., Sherbrook, Qc.

S.G. Leyshock, CAPCO Pipe Company Inc., Lithonia, Ill.

R.H. Novick, Certainteed Corporation, Englewood, Colo.

W.R. Perrell,‡ CAPCO Pipe Company Inc., Birmingham, Ala.

B.J. Pigg, Association of Asbestos–Cement Pipe Producers, Arlington, Va.§

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* AACPP, 1745 Jefferson Davis Hwy, No. 406, Arlington, VA 22202.

† Liaison, nonvoting.

‡ Alternate.

§ Note: Asbestos-cement pipe is no longer produced in the United States or Canada.

Chapter 1

Introduction

Asbestos is the name of a class of naturally occurring mineral fibers that occur in fibrous form. Commercial minerals that are classified as asbestos include chrysotile, crocidolite and amosite.

Asbestos can cause a disabling respiratory disease, asbestosis, and various types of cancer, such as lung cancer and mesothelioma, if the fibers are inhaled in large quantities over long periods of time. The symptoms of these diseases generally do not appear for 20 or more years after initial exposure.

Epidemiological studies indicate that the risk of lung cancer among exposed workers who smoke cigarettes is greatly increased over the risk of lung cancer among exposed nonsmokers. These studies also suggest that cessation of smoking will reduce the risk of lung cancer for a person exposed to asbestos.

The potential for a product containing asbestos to release respirable fibers depends on its degree of friability. Friable means that the material can be crumbled using hand pressure and is therefore likely to emit fibers. Asbestos-cement pipe, generally considered a nonfriable product, can emit airborne fibers if the material is cut or sawed.

However, following the work practices demonstrated in this handbook when installing or maintaining asbestos-cement pipe can help limit the release of airborne asbestos fibers to levels well below 0.1 fibers/cm³, the US Occupational Safety and Health Administration (OSHA) asbestos construction standard's permissible exposure limit (PEL).

Summary of the OSHA Asbestos Construction Standard

The US Occupational Safety and Health Act was signed into law on Dec. 29, 1970. Under the act, OSHA was created within the US Department of Labor. The law includes, among OSHA's duties, to reduce workplace hazards and to develop and effectively enforce occupational job safety and health standards.

On Dec. 7, 1971, the secretary of labor issued a temporary standard for workplace exposures to asbestos fibers. Six months later, a permanent standard for asbestos exposures was promulgated. The OSHA asbestos standard has undergone several revisions, especially with regard to the PEL.

Under the OSHA construction standard,* effective at the time this publication was produced, it is the employer's responsibility to ensure that

* OSHA. Code of Federal Regulations. Title 29, Labor, Part 1926, Safety and Health Regulations for Construction. Washington, DC: US Government Printing Office, 1988 (July).

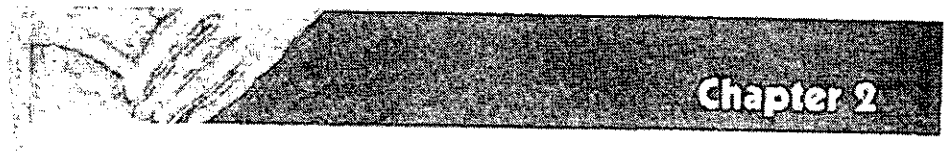
employee exposures to airborne asbestos do not exceed the following (PELs): (1) an 8-hour, time-weighted average (TWA) of 0.1 fibers (≥5 μm in length) /cm³ of air and (2) the "excursion limit" of 1.0 fibers/cm³ of air as averaged over a 30-min sampling period.

Additionally, the current standard prescribes initial air monitoring and other stringent compliance measures. Employers shall achieve compliance with the PELs by using control techniques, such as wet methods, during the cutting and application of asbestos products. High-speed abrasive disk saws are prohibited unless equipped with local exhaust ventilation and a high-efficiency particulate air (HEPA) filter dust collection system.

Employees exposed to airborne asbestos fibers must be specially trained and allowed to observe all air monitoring. If employees are exposed for a combined total of 30 or more days per year at or above the PEL or excursion limit or are engaged in asbestos removal or maintenance work, they must be provided with medical surveillance. Smoking is prohibited in all work areas where there is any exposure to asbestos.

Employers handling asbestos-cement pipe may avoid the initial air-monitoring requirements called for at the beginning of each asbestos job. OSHA provides that objective data may be used to demonstrate that employee exposures will fall below the PELs under those work conditions that have the greatest potential for fiber release.

The work practices described in this handbook are based on data for "peak dust concentrations" representing short time periods of maximum exposure. Snap cutting and machining operations involving asbestos-cement pipe are infrequent and of short duration. The work practices for asbestos-cement pipe described in this handbook will assist in limiting exposure to levels of airborne asbestos that would exceed the OSHA PEL or excursion limit in the typical working day.



Chapter 2

Work Practices for Asbestos-Cement Pipe

Shipping, Receiving, Handling, Storage, and Assembly

Asbestos-cement pipe is shipped clean from the factory and is carefully loaded using methods that will not damage the pipe and are acceptable to the carrier (Figure 2-1). Loading, unloading, stringing out, and assembling asbestos-cement pipe are virtually dust-free operations. Asbestos-cement pipe storage is also a dust-free activity.

All hand and mechanical unloading operations should be carried out in accordance with the manufacturer's instructions.

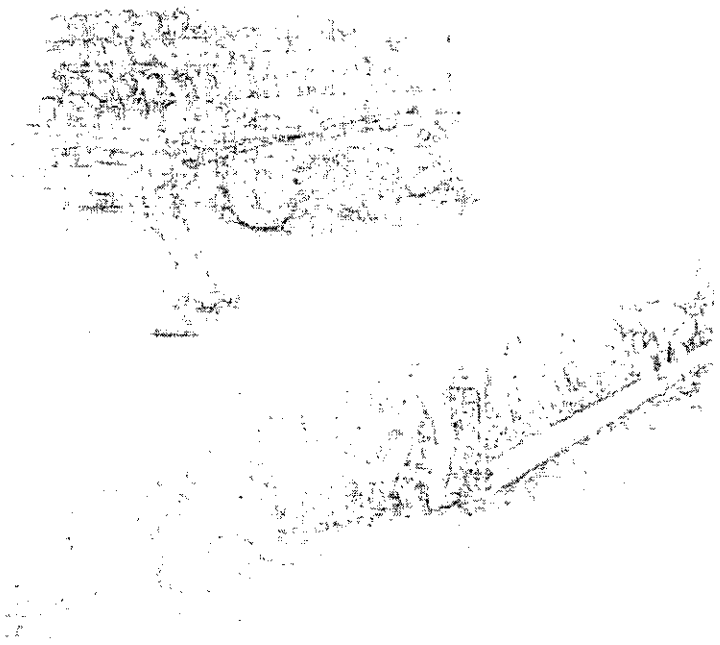


Figure 2-1 Unloading asbestos-cement pipe

NOTE Protective clothing and equipment may be required when handling asbestos-cement pipe. Consult your local regulation agency for details and requirements.

Figure 2-2 Low closure lengths and couplings to avoid field cutting and possible exposure to asbestos

Closure System

Through the use of closure lengths and closure couplings (Figure 2-2), closure distances up to 13 ft 4 in can be spanned without any field cutting of asbestos-cement pipe. The practice of exclusively using these closure lengths and couplings eliminates possible airborne asbestos exposures resulting from the field cutting of asbestos-cement pipe. These assemblies are available from asbestos-cement pipe manufacturers.

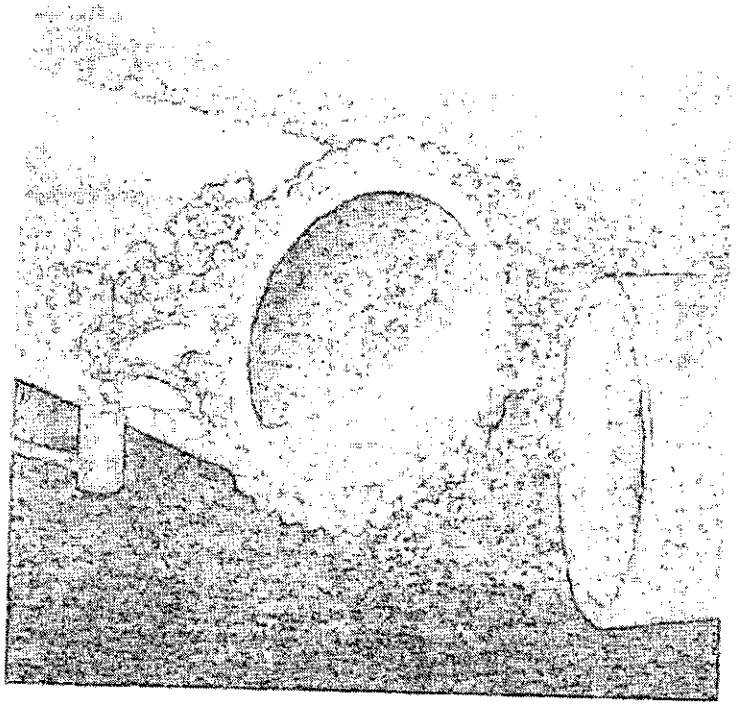


Figure 2-3 Snap cutter

Pipe Cutting

If field cutting of pipe is required, a device such as a snap cutter (Figure 2-3) should be used to produce a smooth square cut end. Such devices avoid damaging the pipe and limit the release of airborne asbestos.

A snap cutter or "squeeze-and-pop" device is a set of cutting wheels evenly mounted on a chain that can be wrapped around a pipe barrel. Hydraulic pressure, applied by an electric or manually operated pump, tightly draws the cutting wheels, squeezing them into the pipe wall until it is cut through. Carbide-tipped cutting blades should not be used to cut asbestos-cement pipe.

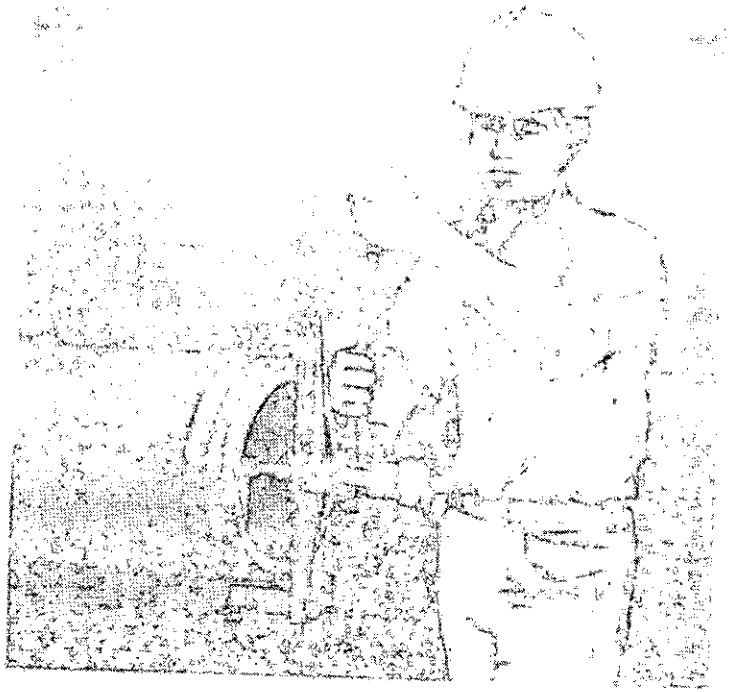


Figure 2-4 End-turning asbestos-cement pipe using a manual field lathe

NOTE: Protective clothing and equipment may be required when handling asbestos-cement pipe. Contact your local regulatory agency for specific requirements.

Machining—Manual Field Lathe

Manual field lathes (figure 2-4) are designed to end-trim and remachine rough pipe barrels into end profiles equivalent to factory-machined. The lathe consists of an adjustable, self-aligning arbor inserted into the asbestos-cement pipe bore (which acts as a mandrel on which the turning handle operates), a screw-feed turning frame, carbide machining blades, and manual chain or ratchet turning handles.

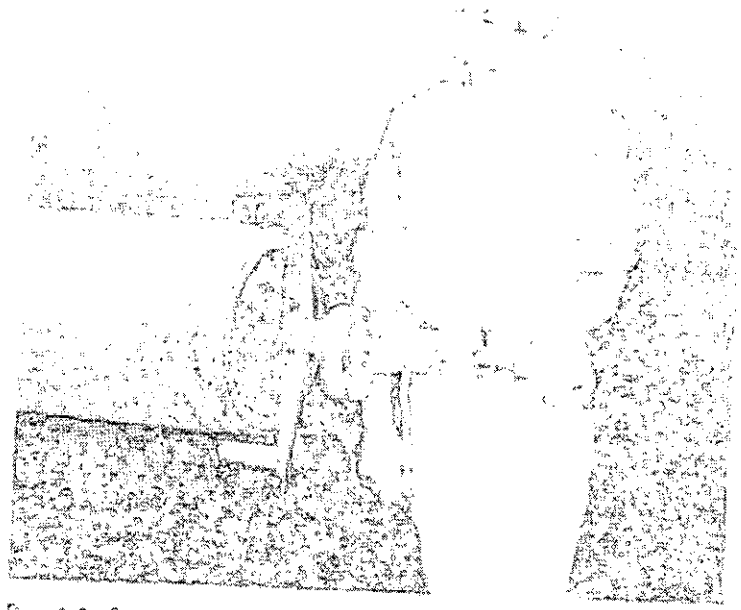


Figure 2-5 End-turning asbestos-cement pipe using a power field lathe (typ.)

NOTE: Protective clothing and equipment may be required when handling asbestos-cement pipe. Contact your local regulatory agency for specific requirements.

Machining—Power Field Lathe

Power field lathes (figure 2-5), like manual lathes, are designed to end-trim and remachine rough asbestos-cement pipe barrels into end profiles equivalent to factory-machined. The lathe consists of an adjustable, self-aligning arbor inserted into the asbestos-cement pipe bore (which acts as a mandrel on which the turning handle operates), a screw-feed turning frame, carbide machining blades, and an electric or pneumatic power drive.

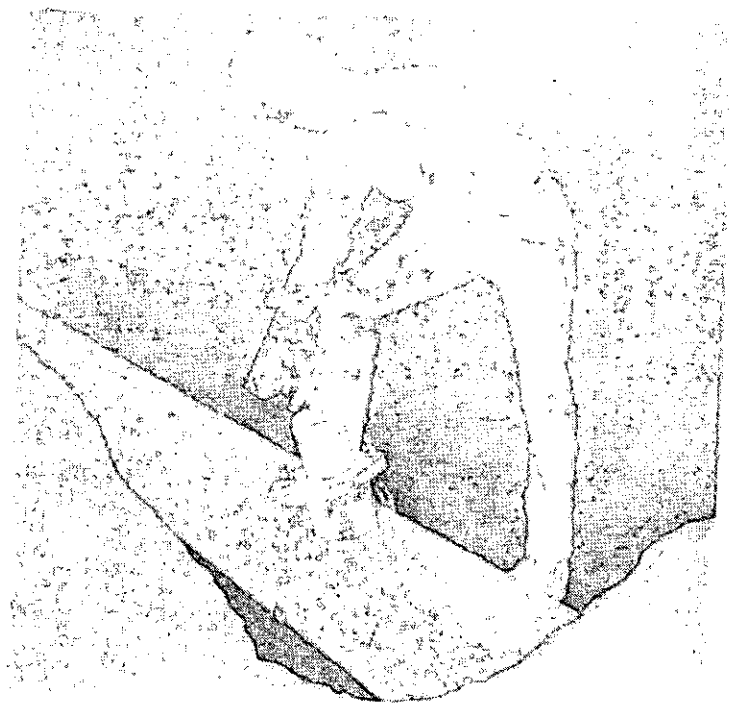


Figure 2-6 Pressure tapping asbestos-cement pipe

NOTE: Protective clothing and equipment may be required when handling asbestos-cement pipe. Contact your local regulatory agency for specific requirements.

Pressure Tapping

Pressure tapping, or "wet" tapping, is used for service connections in the trench while the pipe is under pressure. The manual or power-driven equipment is attached to the pipe with a chain yoke (figure 2-6). A combination boring-and-insert bar drills and taps the pipe wall and inserts a corporation stop or pipe plug. The tool's pressure chamber protects against water leakage and catches asbestos-cement debris, making this a virtually dust-free operation.

To remove asbestos-cement debris that entered the pipeline, provisions should be made for flushing or use of tapping equipment with positive purge or "blow-off" features.

Figure 2-7 Nonpressure tapping asbestos-cement pipe

NOTE: Protective clothing and equipment may be required when handling asbestos-cement pipe. Contact your local regulatory agency for specific requirements.

Nonpressure Tapping

Nonpressure tapping, or "dry" tapping, for service connections in asbestos-cement pipe may be performed in or out of the trench. The tapping equipment is attached to the pipe or coupling with a chain yoke (figure 2-7). 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.

Asbestos-cement pipe debris must be removed from the pipe's interior. Flush with water, wet mop, or vacuum with HEPA-filtered equipment. *Do not dry sweep or blow out with compressed air.*

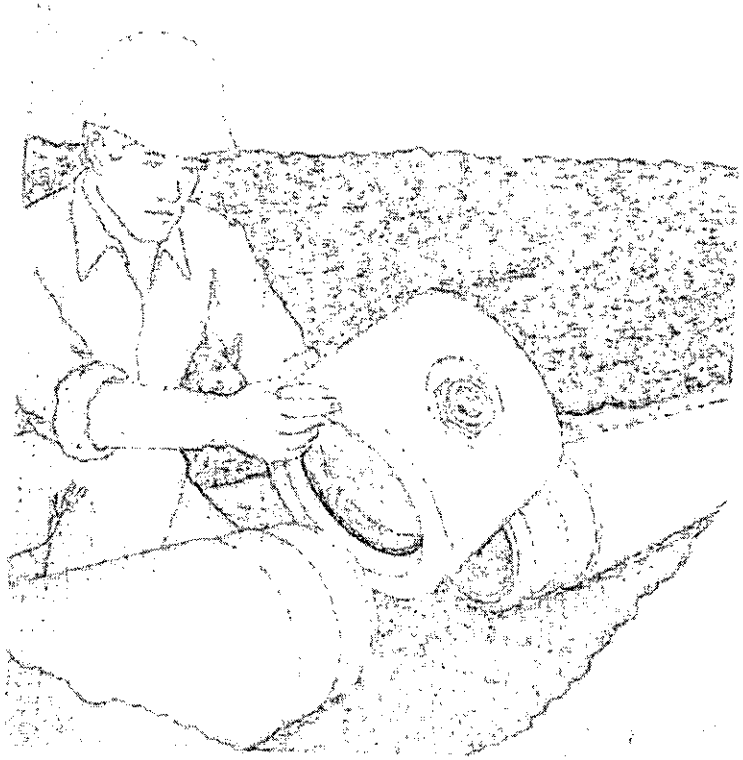


Figure 2-8 A factory-installed, threaded brass insert coupling

NOTE: Protective clothing and equipment may be required when handling asbestos-cement pipe. Contact your local regulatory agency for specific requirements.

Tapped Coupling

Field tapping of asbestos-cement pipe can be eliminated altogether through the use of a factory-installed threaded brass insert coupling (Figure 2-8). Besides having the advantage of factory precision, this "tapped coupling" eliminates the possibility that asbestos-cement debris may enter the pipeline.

In place of a regular coupling, simply install a tapped coupling, insert a corporation stop, and continue laying asbestos-cement pipe.

Chapter 3

Unacceptable Work Practices for Asbestos-Cement Pipe

Dry-Abrasive Disk Tools

The OSHA asbestos standard for construction prohibits the use of high-speed abrasive disk saws (Figure 3-1) not equipped with appropriate engineering dust controls for cutting asbestos-cement pipe. Unventilated saws are known to produce airborne asbestos concentrations in excess of the OSHA permissible exposure and short-term exposure limits. Using such equipment on asbestos-cement pipe must be avoided.

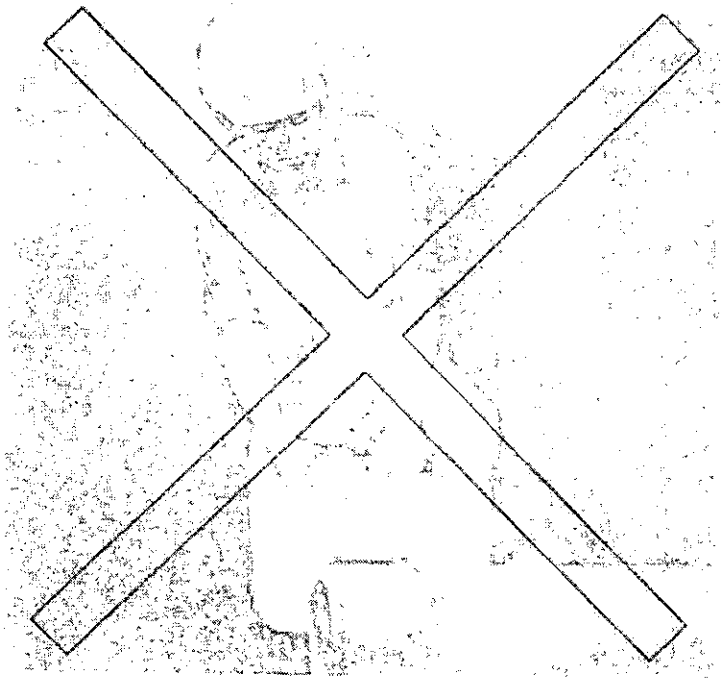


Figure 3-1 Do not use high-speed, abrasive disk saws on asbestos-cement pipe.

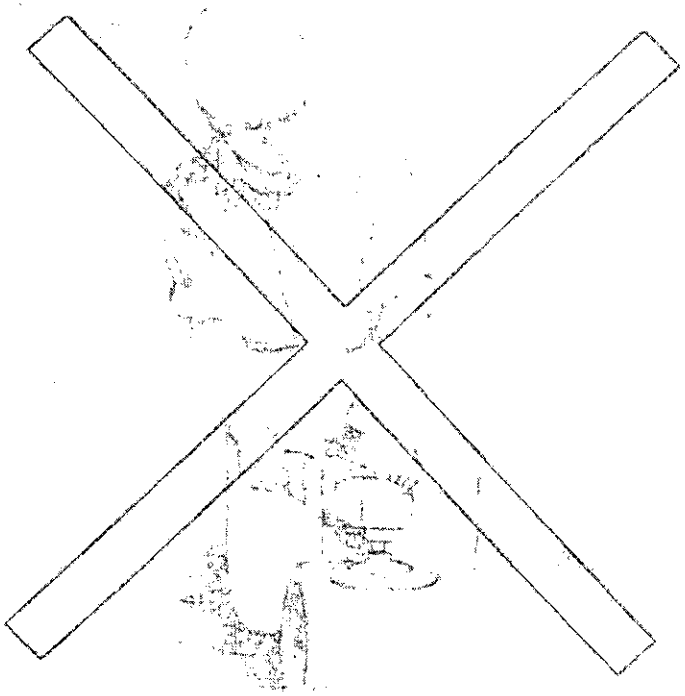


Figure 3-2 Do not use high-speed, abrasive disk sanders on asbestos-cement pipe.

Right-Angle Sanders and Other Dry High-Speed Abrasive Tools

High-speed, abrasive disk sanders (Figure 3-2) should not be used for shaping or beveling asbestos-cement pipe. These abrasive disk tools are likely to produce airborne asbestos concentrations in excess of the OSHA permissible and short-term exposure limits. Using such equipment on asbestos-cement pipe must be avoided.

Other Equipment and Methods to Avoid

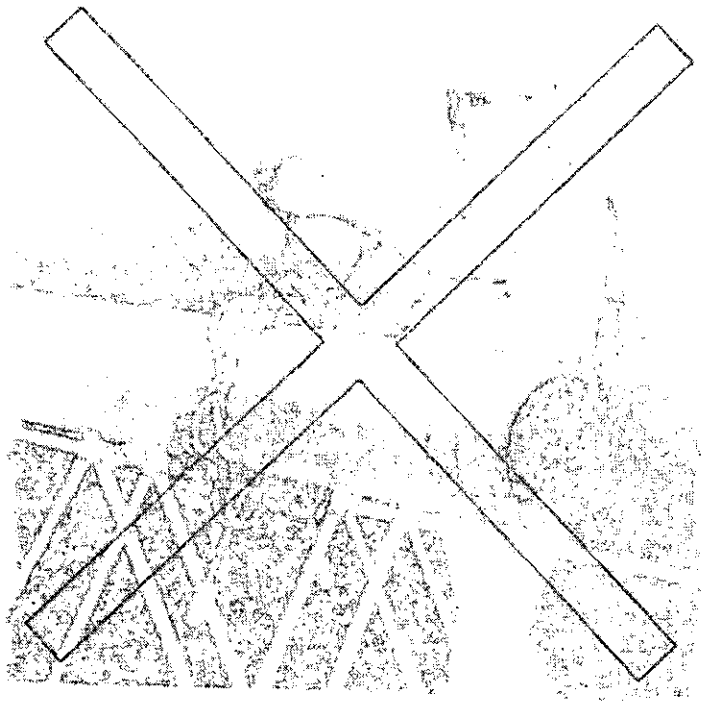


Figure 3-3 Carbide-tipped cutting blades should not be used on asbestos-cement pipe.

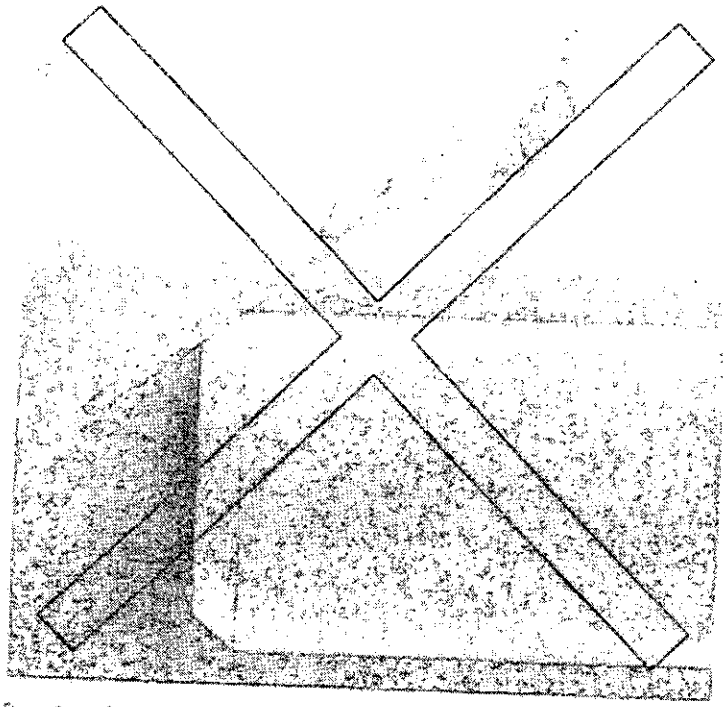


Figure 3-4 Rasps should not be used on asbestos-cement pipe

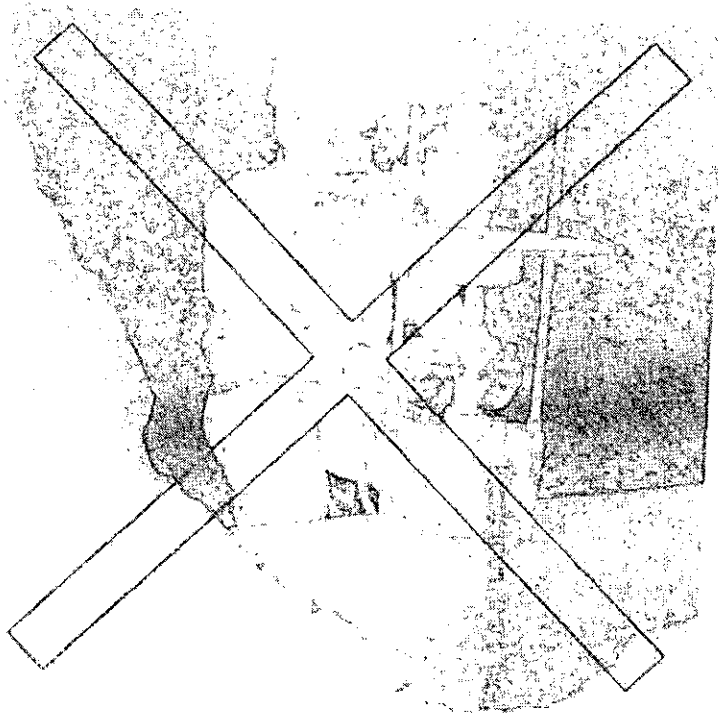


Figure 3-5 Shell cutters should not be used to cut entry holes in asbestos-cement pipe

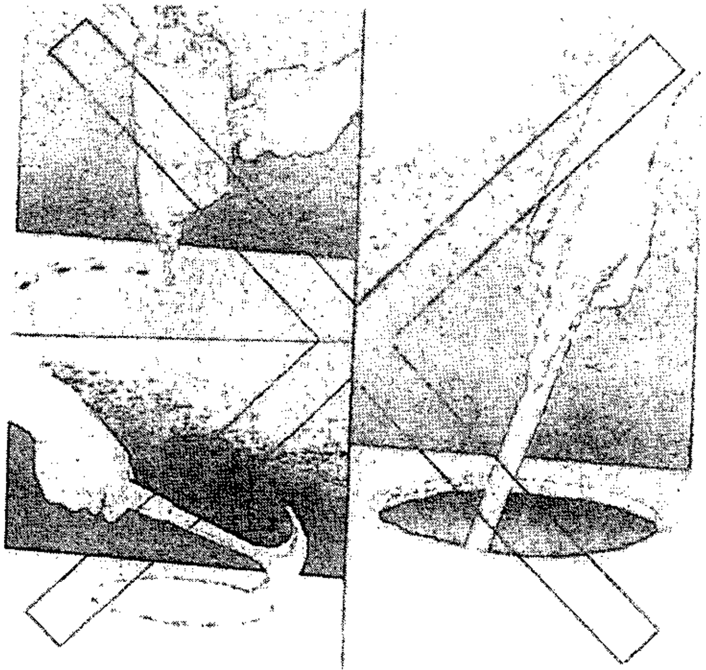


Figure 3-6 A Electrical drills, chisels, and saws should not be used to make [illegible] connections in asbestos-cement pipe

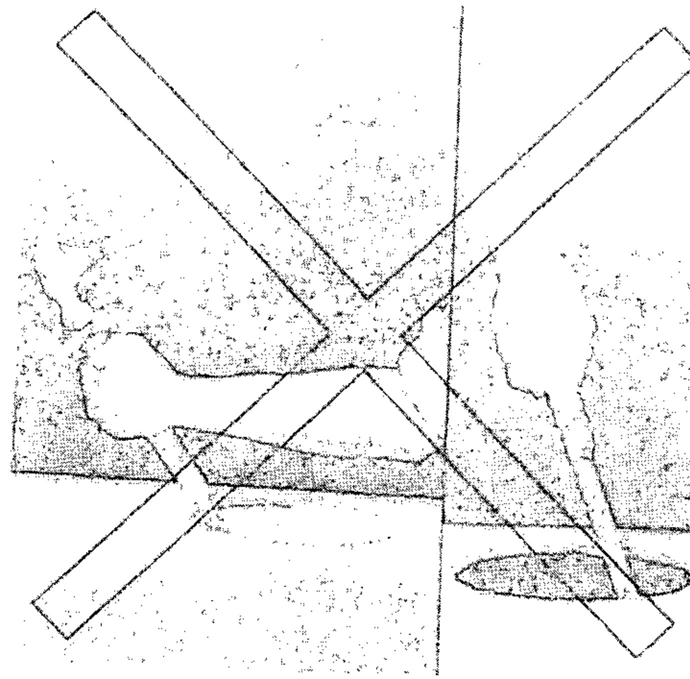


Figure 3-6 B Electrical drills, chisels, and saws should not be used to make [illegible] connections in asbestos-cement pipe

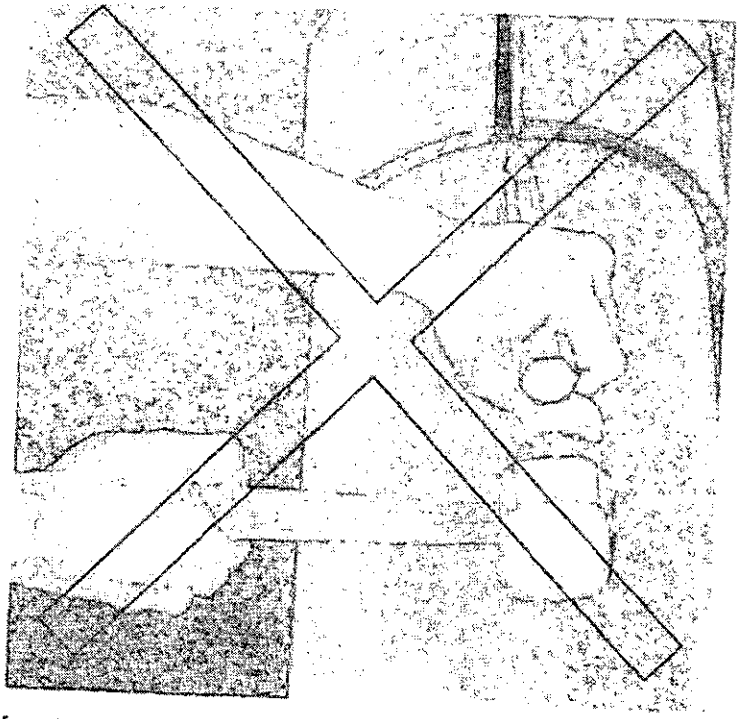


Figure 3-7 A hammer and chisel should not be used to remove couplings on asbestos-cement pipe.

Chapter 4

Housekeeping and Waste Disposal

General

Housekeeping is an important part of a safe construction project. Improper installation and handling of asbestos-cement pipe can release airborne asbestos fibers from asbestos-cement dust, cuttings, and debris. The practices presented in this handbook will help meet the requirements of OSHA concerning the installation and handling of asbestos-cement pipe; however, state, federal, provincial, or local agencies having jurisdiction in your area may have more stringent regulations. Contact your local regulatory agency for specific requirements on the use of respirators, protective clothing, and any additional safeguards.

Care of Equipment

Equipment should be promptly rinsed clean with water after work on asbestos-cement pipe.

Waste Disposal

Asbestos-cement pipe debris from construction sites and from central yards where asbestos-cement pipe is regularly fabricated should be promptly disposed of using appropriate techniques in accordance with local, state, federal, or provincial laws and regulations. *Do not dry sweep.*

The collected asbestos-cement pipe debris consigned for disposal should be transported in accordance with local, state, and federal or provincial laws and regulations and taken to an approved site.

To determine the appropriate collection and disposal requirements that apply to you, contact the regulatory manager of the hazardous waste management agency having jurisdiction in your area.

5 YEAR AVERAGE LOSS FACTOR

District No	District Name	Total System Delivery	Total Sales	Losses	Loss Factor	
1702	St. Louis County	305,539,527	247,203,173	58,336,355	19.1%	
1703	St. Joseph	28,040,566	23,607,567	4,432,999	15.8%	
1704	Parkville Water	4,207,725	4,001,645	206,080	4.9%	
1706	Warrensburg	4,494,173	4,055,595	438,578	9.8%	
1708	Brunswick	240,581	186,867	53,714	22.3%	
1709	St. Charles	16,743,474	16,113,331	630,143	3.8%	
1710	Mexico	3,906,517	3,461,171	445,346	11.4%	
1711	Joplin	22,095,868	20,021,661	2,074,207	9.4%	
1712	Jefferson City	7,144,088	6,032,757	1,111,331	15.6%	
1714	Warren Cty - Water	37,513	31,783	5,730	15.3%	Data for 1 year only
	2006 Total	392,450,033	324,715,550	67,734,483	17.3%	