



# OHIO BUILDING ENVIRONMENT REPORT

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## Research Highlights

### **AACM demolition in progress NRMRL Research Team Tests Alternative Asbestos Control Method**

*By Patricia Schultz, Public Affairs Office US EPA*

**NRMRL researchers recently collaborated** with community officials in Fort Smith, Arkansas, to test an experimental method for asbestos removal from several abandoned buildings at a nearby U.S. Army base. The research team compared the alternative asbestos control method (AACM) with conventional removal technology during the demolition of two 60-year-old wooden structures that formerly comprised the Fort Chaffee base hospital. The research is significant because the findings have the potential to influence future EPA regulations on how asbestos should be handled and removed from buildings.

For decades, asbestos was widely used in the construction industry for its strength, fire resistance, and excellent insulating properties. But, in the 1970s, when scientists reported the negative health effects of inhaled asbestos fibers, the material was banned as a hazardous air

pollutant. A silicate mineral made up of bundles of microscopic fibers that can become airborne when disturbed, asbestos has left a legacy of contaminated abandoned buildings, especially in older neighborhoods. Undisturbed asbestos poses little immediate health risk, but because demolition or rehabilitation of asbestos-contaminated buildings is likely to release fibers into the air, the process is closely regulated by national emission standards for hazardous air pollutants (NESHAP). Under current NESHAP rules, the costs of removal can be substantial—up to 60 percent of the total demolition costs of a building—and are a deterrent to the remediation or removal of many abandoned structures.

The Fort Chaffee project selected two buildings that were isolated from population centers and similar enough to give comparable data results. The first building was demolished using the existing (NESHAP) method, which requires the removal and disposal of the asbestos before demolition. A trained and certified crew of nine workers first hand-cleaned and sorted the asbestos,



**AACM demolition in progress**

# From the President



Wayne Ingram

Greetings fellow BECO members, I would like you to join me in thanking Past President Jim Prarat for his service as BECO's President these past two years and for his tireless dedication to our organization. His genuine enthusiasm and energy will be difficult to emulate.

I would also like to thank outgoing Board Members Dave Warye, Ken Stark, Kurt Varga for their service to our organization. Other notable changes to our 2007 Board line up were: Jim Prarat (became Past President), Sonya Wilson (re-elected Secretary), Judy Jarrell (re-elected to Trustee), Bob Repas (re-elected to Trustee), Pat Herbert (elected to President-elect), Don Obermeier (newly elected Trustee), Mike Strine (filling a one year trustee position), and Barry Sands (filling a one year trustee position).

This year will be a defining year for our organization. As we struggle to maintain relevance to our membership, several competing national organizations have started to make inroads to our core mission. While these organizations can be a valuable resource nationally for those of you who participate, there really is no other Ohio-based organization that quite fills our niche. We have become a premier networking resource between regulators, owners, contractors, consultants and industry professionals.

It is to that end that I present you with the following goals for 2007:

1. Double our current membership – while this may seem difficult it will simply require that each member recruit just one other member. This can be a client or colleague that could benefit from our organization. This could also be from changing the single membership status to a corporate status. The more the merrier!
2. Double our Fall Conference Attendance – If we double our membership then this should be easily accomplished. Additionally, a great speaker and/or topic selection for the Fall Conference could boost attendance and membership as well. Please feel free to contact me with any and all ideas!
3. Participation in regional lunches – All members should attend at least one regional luncheon and bring a guest. These have been very informative and a wonderful resource to our membership in the past. Additionally increased attendance will help with goals 1 and 2.

I am interested in hearing any and all ideas that can help grow our organization. Please feel free to call.

*Wayne Ingram*

Wayne Ingram, President  
BECO

# Arbitration Clauses May Be a Good Thing

By David G. Cox

**T**he Court of Appeals for Medina County recently issued a decision that upheld an arbitration clause in a mold removal contract. In the case of *Ball v. Ohio State Home Servs, Inc.* (2006), 168 Ohio App.3d 622, the issue was whether the arbitration provision in the contract was unconscionable. Holding that there was no disparity between the parties in terms of age, education, experience or business acumen, the Court upheld the arbitration provision. "The record indicates that [the consumers] intended to eliminate the mold in their basement because their son was using it as a bedroom. There is no evidence in the record to indicate that [the consumers] lacked reasonable alternatives to accomplish this goal short of signing the contract the same day it was presented to them by [the contractor]." *Id.* at 629. Consequently, the arbitration provision was upheld and enforced.

Many abatement contractors include provisions in their contracts that provide for arbitration in the event there is a dispute over the terms of the contract. Arbitration is recognized under Ohio law and is favored by the Courts. See Revised Code Chapter 2711. In fact, public policy favors arbitration as a means of settling disputes between the parties and can be more efficient than traditional litigation. See, e.g., *Schaefer v. Allstate Ins. Co.* (1992), 63 Ohio St.3d 708.

Under Ohio law, arbitration provisions must be procedurally and substantively conscionable. *Collins v. Click Camera & Video, Inc.* (1993), 86 Ohio App.3d 826. What this means is that the arbitration provision in a contract must be negotiated between the parties on equal terms. There can not be any disparity in age, education, intelligence, business acumen or experience between the parties. *Featherstone v. Merrill Lynch, Pierce, Fenner & Smith, Inc.* (2004), 159 Ohio app.3d 27. If an inordinate amount of disparity occurs in one or more of these areas then it becomes questionable whether the arbitration provision was conscionable.

For example, one party to the contract may be an asbestos abatement contractor who has been in the business for decades. The other party may be a college graduate, professionally employed with access to legal counsel, who has had the asbestos in his/her prior home abated and is familiar with the abatement process. In such a situation, a court may find that the arbitration provision is conscionable.

In another example, however, the party may not be a high school graduate, has never lived in a home before, has never worked with a contractor before, and is young and unexperienced in the ways of the world. In this situation, a court may be inclined to find an arbitration provision unconscionable. It all depends on the facts of the case.

A major benefit to an arbitration provision is that if a contractor is sued for breach of contract the contractor may apply to the court for a stay of the case and mandate that the parties enter into arbitration before first going to court. See R.C. 2711.02(B). In such a case, the parties will be required to arbitrate the issue pursuant to and in accordance with the terms of the arbitration provision. There is, however, an exception to this rule. This exception occurs when the party to the contract is a consumer and the consumer wishes to "rescind" the contract in its entirety. In that case, the arbitration provisions do not apply. See *Rolling v. Ohio State Home Servs., Inc.*, 1993 Ohio App. LEXIS 3585 (Ohio Ct. App. 1993).

If you have an arbitration provision in your contract, make sure it is reviewed periodically to ensure that it comports with applicable law, that it refers to the applicable industry rules on arbitration, and that it specifies how the parties are to initiate arbitration proceedings. Ensuring your arbitration clause is satisfactory and enforceable will save you litigation costs in the long run.

David G. Cox is an associate with the Columbus, Ohio law firm of Lane, Alton and Horst LLC and serves as legal counsel to BECO. This article is not intended to be nor should it be construed as legal advice and constitutes the opinion of only the author and not the firm.

## NRMRL Research Team Tests

(continued from page 1)

which was concentrated mostly in wall-joint compound and window glazing. The removal took nine days; following that, the demolition and removal took one day.

In the second building, the experimental (AACM) method treated the interior and exterior of the building with a chemical foaming agent, similar to a compound used by firefighters, to hold the asbestos in place as the building was being demolished. A surrounding earth berm retained the runoff. Demolition debris was loaded into plastic-lined trucks, sealed, and removed to an approved landfill. Two inches of soaked topsoil were also removed for disposal. The process took one day.

In both tests, air sampling stations monitored air quality before, during, and after the demolitions. All workers wore protective clothing and respirators, but NRMRL researchers expect that the alternative method offered the better protection because workers did not have to work in the elevated asbestos conditions encountered using the NESHAP removal process. Exact cost comparisons are not yet complete, but the cost of removing and disposing of the asbestos alone in the conventional method was an estimated \$85,000, not including demolition and disposal costs. The new method, based on findings from a similar experiment in another state, could save as much as 40 to 60 percent of the conventional costs.

EPA Region 6 staff members who cooperated in the project stressed that this study by itself will not be used as a basis for revising the air toxics standard. Rather, the test data will become part of a baseline of information to use, if desired, in considering changes to current demolition standards. Final data analysis is expected to take several months. Because of the large number of asbestos-contaminated buildings on other military bases, the Department of Defense is expected to be particularly interested in the data generated by the test.

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## ADAO Announces Launch of Powerful Video Featuring Capitol Hill Tunnel Supervisor John Thayer

Internet TV Channel Business Editors/Health/Medical Writers/Government Writers WASHINGTON—(BUSINESS WIRE)—April 18, 2007—The Asbestos Disease Awareness Organization (ADAO), an organization dedicated to serving as the voice of asbestos victims, today announced the online launch of a powerful video featuring John Thayer, Supervisor of the Capitol Power Plant Tunnel Crew for the Architect of the Capitol, based on John's presentation at the 2007 Asbestos Awareness Day Conference in Philadelphia on March 31. The video shows detailed and revealing pictures of asbestos dust and environmental hazards within the Capitol Hill tunnels where John and his crew work. John has been a leading advocate for justice and increased safety for tunnel workers and this video is an important educational resource to help in stopping the spread of asbestos related diseases.

The video, which can be viewed on [www.choosinggreen.com](http://www.choosinggreen.com) is the first of the ADAO Asbestos Awareness Day Conference videos to be made available online. More videos will be added to the site, and will serve as the foundation for an up and coming asbestos awareness internet TV channel dedicated to education and awareness about asbestos related diseases.

"My crew maintains the five miles of underground utility tunnels that supply heat and cooling to all of Congress and some 20 other federal office buildings on Capitol Hill," stated John Thayer Supervisor of the Capitol Power Plant Tunnel Crew for the Architect of the Capitol (AOC). "The tunnels are a tough place to work. Temperatures get up to 160 degrees, big slabs of concrete fall from the ceilings, and the cramped passages are thick with welding fumes, pulverized asbestos and concrete dust. We know from personal experience the lethal danger that asbestos presents because we have worked in and breathed asbestos for decades, and are now beginning to suffer the health

consequences. The Architect of the Capitol knew, but didn't tell us, that the concentration of airborne asbestos in the tunnels was extremely toxic — 30 to 40 times the legal limit. We need to make sure that people know the truth."

"ADAO applauds John Thayer for his brave and honest effort to educate the public about the truth regarding asbestos in the Capitol Hill tunnels. It is amazing that any employer tries to get away with an asbestos cover up these days and still more amazing when the employer is Congress," according to Linda Reinstein, Executive Director and Co-founder of the Asbestos Disease Awareness Organization. "We are excited about the opportunity to tell John's story so that others may be able to learn from his unfortunate and preventable experiences. With this video and the coming launch of an online TV channel dedicated to asbestos awareness and education, we hope to be able to utilize the Internet as a powerful resource for spreading the word about the dangers of this deadly fiber, and hopefully prevent future tragedies."

The occurrence of asbestos-related diseases, including mesothelioma, lung cancer and asbestosis, is growing out of control. Studies estimate that during the next decade, 100,000 victims in the United States will die of an asbestos related disease — equaling 30 deaths per day.

### About Asbestos Disease Awareness Organization —

Asbestos Disease Awareness Organization (ADAO) was founded by asbestos victims and their families in 2004. ADAO seeks to give asbestos victims a united voice to help ensure that their rights are fairly represented and protected, and raise public awareness about the dangers of asbestos exposure and the often deadly asbestos related diseases. ADAO is funded through voluntary contributions and staffed by volunteers.

#### For more information visit:

[www.asbestosdiseaseawareness.org](http://www.asbestosdiseaseawareness.org).  
CONTACT: Asbestos Disease Awareness Organization (ADAO)  
Doug Larkin, 703-250-3590, ext. 1245  
Cell: 202-391-1546  
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## Analyzing Vermiculite Issues

Determining the asbestos content in vermiculite has become a source of confusion and uncertainty within the asbestos community. Building owners have questions about testing and handling the material, and asbestos professionals are at a loss for hard, fast answers. Currently, Federal and State government agencies do not have any official response to many of these questions. USEPA has some research methods that they are reviewing, but none of them have been officially approved. Without approved testing protocols, the only safe response is to assume the material is asbestos and treat it accordingly. This response is one building owners do not want to hear. This leaves asbestos professionals with a series of gray responses to evaluate.



*Different Grades of Vermiculite—  
USEPA Photo*

### The Surfacing of Vermiculite

It is difficult to say much about vermiculite without bringing up Libby, Montana. The vermiculite at the Libby mine is reported by USEPA to contain in the range or 3-4% asbestos, comprised of tremolite and actinolite amphiboles. The reported high asbestos disease rates from the Libby area and the widespread use of the product combined to bring asbestos in vermiculite into the spotlight. Vermiculite has been used in a number of products, and the Libby mine produced 80% of the world's supply during the height of its production. There are many places vermiculite was used and most of the places used Libby vermiculite.

*(continued next page)*

### Characteristics of Vermiculite Usage



**Loose-Fill Vermiculite Attic Insulation – USEPA Photo**

Determining testing and analytical approaches for products containing vermiculite depends on how the material is applied. The vermiculite may be bound into the matrix of another material or the material may exist as loose fill. Since standard analytical methods of sampling and analysis (i.e. core sampling and PLM analysis) were developed for asbestos bound in materials, these methods appear to be appropriate for asbestos associated with vermiculite that was bound into another material.

Vermiculite used as loose fill has different characteristics than the traditional asbestos materials. Traditional asbestos materials bind asbestos into their matrix, whereas, the asbestos in loose vermiculite is not bound and rather coexists loosely with the vermiculite. The following table lists some reported uses of vermiculite and the characteristics of its use.

<b>Examples of Vermiculite Uses and Characteristics</b>
<b>Vermiculite bound in matrix of another material:</b>
Lightweight concrete
Gypsum plaster
Fireproofing
Insulation
Acoustic finishes
Paints
Sealants
<b>Vermiculite exists as loose fill:</b>
Attic insulation
Masonry fill
Fertilizer carrier
Potting soil
Soil conditioners
Absorbent packing

### Sampling and Analysis Alternatives

Since regulatory agencies have not released required sampling and analytical protocols, the responsibility to determine various protocols' applicability falls in the laps of the Asbestos Inspector conducting the testing and the building owners who have to rely upon them. It is not prudent to look at sampling methods separately from the analytical choices, because the majority sampling methods were developed to support and provide proper amounts of material to be analyzed. The bound vermiculite applications can be viewed differently than the loose fill vermiculite applications.

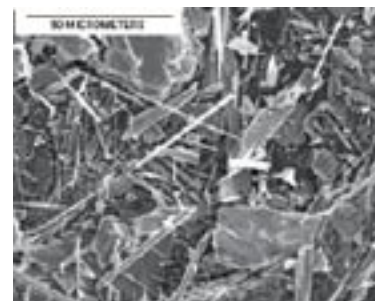
#### **Bound Vermiculite Sampling and Analysis**

As stated previously, vermiculite bound into other materials can generally be viewed in the same way as traditional asbestos materials (fireproofing, TSI, plasters, etc). Sampling to support standard PLM or TEM methods would be all that is needed. Analytical choices include PLM utilizing visual estimation or point counting and TEM. Gravimetric reduction can also be used with either method based on the matrix of the binding material.

#### **Loose Fill Vermiculite Sampling and Analysis**

This is the application of vermiculite where most of the confusion exists. Traditional sampling and analytical methods are available, but additionally other methods have been developed to address the complexities of asbestos in loose fill vermiculite. These newer methods include the Alexandria Method, the Cincinnati Method, and methods developed by independent laboratories when asked to meet the challenges loose fill vermiculite poses. The issues posed by loose fill vermiculite include the disassociation between the vermiculite and the asbestos fibers, and the clustering of asbestos fibers.

Traditional PLM and TEM sampling and analysis seems to be lacking when making a reliable determination of asbestos in loose fill vermiculite. The size of the sample, location of the samples, and the amount of material included in the analysis are reasons



**Asbestos Amphiboles in Vermiculite – USGS Photo**

traditional methods are not reliable enough to make a determination that asbestos is not present in the material. The USEPA released a press release on May 21, 2003 stating, "Due to the scientific uncertainties associated with existing testing techniques, there is no easy way or dependable testing method to differentiate between vermiculite insulation that might have some asbestos fibers and vermiculite insulation that does not." At the time of this statement, the traditional methods were the only methods commonly available and appear to be the target of this statement. Since that time other methods have been developed and are being analyzed by EPA and others in the asbestos industry. These methods include the Alexandria Method, the Cincinnati Method, and other methods developed by private laboratories.

The **Alexandria Method** uses light microscopy to view sampled material and determine if the vermiculite is characteristic of vermiculite found at the Libby mine. The sample size has not been established, but slides from this method appear to indicate a sample of approximately 8-12 ounces would suffice. This analysis is not an asbestos determination, rather a 'Libby vermiculite' determination. A positive determination means the vermiculite has the same characteristics as the vermiculite from the Libby mine and therefore the assumption is it contains asbestos. There is no negative determination with this method, rather a non-positive determination would be considered inconclusive. Additional testing methods would need to be used on the material to obtain a 'negative', no asbestos result. This method is still in the development stage and does not have an estimated approval date from EPA.

The **Cincinnati Method** (EPA/600R-04/004) was specifically developed

for loose fill vermiculite attic insulation and can be used with other loose fill vermiculite applications. The sampling involves the use of a flat edge scoop to thrust and slide along the bottom of the application raising it to place in a 1-gallon zip-lock bag. This procedure is repeated until the bag is full and three separate locations have been sampled. It is critical to get to the bottom of the material, because the finer asbestos fibers can settle and separate from the vermiculite. Unlike traditional asbestos sampling, the inspector taking the vermiculite sample to be analyzed by the Cincinnati Method needs to cautiously use wet methods with this highly friable material. Drying time can be effected by the wetness of the sample; also, the analytical results can be affected if surfactant gets on

the asbestos amphiboles. This comes into play during the analysis when sub samples are introduced into an aqueous solution and finer amphiboles are collected out of the suspended solution. Amphiboles with surfactant will sink, taking them out of the suspension. The samples are analyzed by TEM and PLM. The determination from this method is if asbestos amphiboles exist in the material. A positive determination confirms asbestos; a negative result means no asbestos amphiboles are present. In their Asbestos Project Plan published November, 2005, USEPA stated that they planned to approve this method for vermiculite attic insulation.

It is uncertain how many **other loose fill vermiculite sampling and analysis protocols** have been

developed. When evaluating these methods, sample requirements, sample preparation steps and the analytical procedures will need to be assessed. It is important that the laboratory understands the various dynamics of asbestos in loose vermiculite and has developed their protocols to accommodate them. Some of these protocols look for all types of asbestos, not just the amphiboles characteristic of the Libby mine. At this stage in the game there may be a number of valid analytical approaches that have not been approved by a government agency or nationally recognized organization. The asbestos inspector needs to be confident in the laboratory and their approach to this material. It's the laboratory's role to conduct

*(continued next page)*

### **Unofficial Guide to Sampling and Analyzing Asbestos in Vermiculite**

<b>Methods</b>	<b>Sampling Considerations</b>	<b>Analytical Considerations</b>
<b>Traditional PLM &amp; TEM Bulk Sampling &amp; Analysis</b>	Obtain all layers of material Best suited for vermiculite bound into a material  Not designed for applications where asbestos coexists and is not bound to other material	Bound vermiculite materials have same considerations as traditional asbestos materials including fiber size and binder type when considering PLM vs. TEM, gravimetric, and point counting.  Amount of material may not be sufficient for reliable negative determination with loose fill vermiculite  Ranges of fiber size in loose fill vermiculite makes it difficult to choose only PLM or TEM
<b>Alexandria Method</b>	Much more material required than traditional asbestos material sampling	Not an asbestos determination, if vermiculite is characteristic of Libby mine.  Results are positive or inconclusive, not negative.
<b>Cincinnati Method</b>	Good portion of sampled material should be taken from bottom of application 1-gallon size samples 3 samples recommended Too much water effects sample drying during analysis Use of surfactant effects analysis of smaller amphiboles	Analysis involves both PLM and TEM analysis Reliability of results may be limited to asbestos presence, not % in sample Reliable negative determination for amphibole asbestos, not chrysotile
<b>Other Loose-Fill Methods</b>	Size and number of samples required Make sure areas of material most likely to contain asbestos are included in sample What sampling techniques interfere with analytical methods	Is PLM or TEM involved or both? Is sample prepared with loose fill characteristics considered? Is a reliable negative determination possible? Which type of asbestos is analyzed (amphiboles and/ or chrysotile)?

# Removing ACM/What Does OSHA Mean?

Kurt Varga

The InService Training Network, Inc.

— April 2007

**W**hen is the act of taking asbestos-containing material out of a facility considered removal by OSHA and regulated by OSHA's asbestos construction industry standard? Many consultants and contractors in the asbestos industry are uncertain about what is meant by *removal* in the OSHA standard. It may be useful to explore the meaning of the word *removal* as used in the OSHA standard. This article explores that meaning.

The removal of ACM is regulated by OSHA Section 1926.1101. Removal of ACM is either a Class I or Class II work operation. Class I is removing surfacing material or thermal system insulation that is ACM. Class II is removing anything else that is ACM. Class III work is "repair and maintenance operations where ACM . . . is likely to be disturbed." Even though Class III may involve removal of ACM, the term *removal* is not used in the definition of Class III work. Class IV work involves maintenance and custodial work where employees contact but do not disturb ACM.

Two definitions are significant to this discussion. Part of OSHA's definition of *disturbance* is, "activities that disrupt the matrix of ACM or PACM, or generate visible debris from ACM or PACM." OSHA defines *removal* as "all operations where ACM and/or PACM is taken out or stripped from structures or substrates, and includes demolition operations."

Removal activities common to construction that are regulated by the OSHA asbestos standard include stripping pipe insulation from pipes, removing suspended acoustical plaster ceiling systems, stripping fireproofing from beams and decks, removing resilient floor covering and associated mastic, removing acoustical ceiling panels, and removing asbestos-cement siding from houses. Some of these activities will likely disrupt the matrix of the ACM, for example stripping fireproofing from structural steel.

Some of these activities, if performed following established procedures, are not likely to disrupt the matrix of the ACM, for example removing floor tile following the work practices recommended by the Resilient Floor Covering Institute. Removal may or may not mean "activities that disrupt the matrix of ACM" or activities that "generate visible debris from ACM." In any case all of these activities are regulated by OSHA as either Class I or Class II work operations.

Some activities involving the removal of ACM are not clearly defined by OSHA's asbestos construction standard, and the lack of clarity causes confusion in our industry. One example may serve to explore the problem. A worker is removing a window from a building. The window is a steel casement window that has asbestos-containing window glazing compound sealing the glazing to the steel casing frame. The worker detaches the window casing from the window frame without disrupting the compound. Some people treat this as a Class II work operation, and others treat it as not a Class II operation. What is it, if it is not one of the four classes of work operations?

The argument could be made that workers can remove window casings without disturbing the asbestos-containing glazing compound. Since the ACM is not disturbed it is not an instance of removal. The trouble with this argument is that the definition of *removal* does include *disturbance*. In fact OSHA's agreement with the Resilient Floor Covering Institute is all about removing asbestos-containing floor tile without disturbing the tile.

Another argument is that removing the casing with the glazing compound in place does not involve stripping the compound from the glazing or the steel frame. This argument seems to fail because *removal* includes "operations where ACM is taken out or stripped from structures or substrates." The glazing compound is being "taken out" as the window casing is "taken out." Perhaps there is a different way to read OSHA's definition of *removal*.

## Analyzing Vermiculite Issues

(continued from page 7)

the analysis properly, but it is the inspector's responsibility to determine if the material contains asbestos or not. The asbestos inspector's role includes choosing a valid analytical method and properly interpreting the results.

Finally, after all the previously mentioned issues have been considered, there is another question to throw into the discussion. Is the Libby mine the only location for asbestos containing vermiculite and has chrysotile been found in vermiculite? The USGS report, *Reconnaissance Study of the Geology of U.S. Vermiculite Deposits—Are Asbestos Minerals Common Constituents?*, approved for publication May 7, 2002, provided preliminary reports that other vermiculite deposits contained amphibole asbestos. There are other reports from various organizations that have conflicting information regarding this issue. If only amphibole asbestos can be found in vermiculite, then the amphibole-specific methods can be used for a non-asbestos determination. However, if evidence exists that chrysotile can be found in any known deposits of vermiculite, then sampling and analytical methods focusing on only amphibole asbestos would not be extensive enough for an asbestos inspector to consider the vermiculite non-asbestos.

There is a lot for an asbestos inspector to analyze when developing a plan to conclusively test vermiculite, especially loose fill vermiculite. Once the asbestos inspector selects the sampling and analytical methods he or she has decided to use, the fun continues when trying to explain these issues to the building owner. Cost factors, which have not been discussed, will also play a role in these discussions.

With the risk of sounding like a former president, the reading may depend on what OSHA means by the word *or*. The word *or* has several possible meanings. One meaning is in the sense of one or the other but not both. Do you want that hamburger plain or with cheese? You cannot have both. (This is sometimes called the exclusive sense of *or*.) Another meaning is one or the other or both. Do you want mustard or ketchup on that hamburger? You can have both. (This is sometimes called the inclusive sense of *or*.) Sometimes, when the author wants to make it clear that he or she<sup>1</sup> is using *or* in this sense, he or she writes *and/or*, as in “ACM and/or PACM.”

A third use of the word *or* is to further define or explain something. For example we may say that our job in the asbestos industry is to abate or lessen the hazards associated with asbestos. In other words, we can use the words *abate* or *lessen* interchangeably. To say “we lessen the hazard,” is the same as saying, “we abate the hazard.”

To revisit OSHA definition of *removal*, it includes “operations where ACM is taken out or stripped from structures or substrates.” Applying either of the first two uses of *or*, “to take out ACM” is one type of activity, and “to strip ACM from structures” is another type of activity. Either or both are covered by the definition. Applying the third use of *or*, “to take out ACM” is the same as saying “to strip ACM from structures or substrates.”

Applying either of the first two uses of *or*, the workers removing window casings are engaged in Class II work operations and all of the OSHA requirements for Class II work would apply. Applying the third use of *or*, makes the status of the operation less clear. The workers are taking out the window glazing compound in the sense that they are removing it from the building since it is applied to the steel and glazing of the casing they are removing. They are not taking out the glazing if that means stripping it from its substrates or structures. Perhaps taking the casing out along

with the ACM glazing compound is “unclassified,” and is not a Class I or II work operation.

The job of removing window casings compares to a number of other “unclassified” jobs where ACM is present: removing a fire door off its hinges; wrapping a hot water tank and lifting it from its resting points; cutting and removing pipe after glove bagging sections and wrapping the insulation (so called wrap and cut). If these jobs are not instances of removal and are not classified, then what provisions of the OSHA asbestos construction standard apply?

There are several provisions of the standard that do not refer to any of the four work operation classes. Exposure assessments are required for “each employer who has a work operation covered by this standard,” (1926.1101(f)(2)). Engineering controls are required “in all operations covered by this section,” (1926.1101(g)). Engineering controls includes using HEPA vacuum cleaners, wet methods, and prompt clean up and disposal of waste. Label waste containers per 1926.1101(k)(8). Use HEPA vacuums and waste containers per 1926.1101(l). Keep records of air monitoring data per 1926.1101(n). Additional requirements apply depending upon the results of exposure assessments.

Some of the requirements of the OSHA standard seem inappropriate for some of the “unclassified” work operations. For example, it would seem odd to use wet methods to remove an intact fire door from its hinges. Some unclassified work operations may need training when OSHA does not require it. For example, if the window casing is not removed using proper procedures, the glazing compound may become dislodged from its substrate, in which case it is a Class II operation.



These puzzles arise once OSHA’s definition of removal is interpreted always to mean stripping of asbestos from a substrate. In the case of the “wrap and cut” method to remove pipe insulation, workers could use glove bags to remove pipe insulation to reveal pipe, which is a Class I work operation. Provided that the workers wrap the insulation that remains, untrained workers could cut the pipe and handle the pipe insulation. OSHA addresses this practice in the November 3, 1995, CPL 2-2.63 as follows:

**Q. Are “wrap and cut” operations included in the definition of “removal”?**

**A. Yes,** a wrap and cut operation is a type of asbestos removal. It consists of two distinct operations. The wrap portion requires the removal of small amounts of asbestos from either side of the pipe to be cut. This will be a Class I or III operation depending on the amount of asbestos removed. Once the asbestos is removed and wrapped, the pipe is then cut. The cutting portion of the job is unclassified, as it does not involve asbestos removal.

Although in this job scenario the cut operation is unclassified, it seems that some provisions of the rule, for example the need for personal monitoring, would still apply. The problem is determining which if any of the provisions of OSHA’s standard apply to unclassified work operations.

Many jobs removing building components that contain ACM are performed without disturbing ACM. Sometimes during this work ACM is unnecessarily disturbed. Some amount of awareness and training is appropriate to ensure good work practices. Examples of good work practices are provided by the National Institute of Building Sciences in Guidance Manual: Asbestos Operations & Maintenance Work Practices. Workers need to be made aware of the problems that can arise when ACM is present.

<sup>1</sup> Test yourself. Is this the exclusive or inclusive sense of *or*?

# LEAD EXPERTS

## Lead Hazard Abatement Training Schedule

### 2007

Type, Length and Pricing	Location	Course Month / Dates					
<b>Worker Initial - 32 Hour</b> \$595 Per Trainee	Toledo	Jan 22 – 25	Aug 6 – 9				
	Cleveland	Mar 26 – 29	Sept 17 – 20				
<b>Worker Refresher - 8 Hour</b> \$195 Per Trainee	Toledo	Jan 18	May 17	Sep 13			
	Cleveland	Feb 22	Apr 19	Jun 14	Aug 16	Oct 11	Dec 13
	Columbus	Mar 22	Jul 26	Nov 20			
<b>Contractor Initial - 40 Hour</b> \$795 Per Trainee	Toledo	May 7 – 11	Nov 5 – 9				
	Cleveland	Feb 12 – 16	Apr 23 – 27	Jun 18 – 22	Aug 27 – 31	Oct 22 – 26	Dec 3 – 7
	Columbus	Mar 12 – 16					
<b>Contractor Refresher - 8 Hour</b> \$195 Per Trainee	Toledo	Jan 18	May 17	Sep 13			
	Cleveland	Feb 22	Apr 19	Jun 14	Aug 16	Oct 11	Dec 13
	Columbus	Mar 22	Jul 26	Nov 20			
<b>Inspector Initial - 24 Hour</b> \$475 Per Trainee	Toledo	Mar 5 – 7	Aug 20 – 22				
	Cleveland	Feb 5 – 7	Apr 2 – 4	Jul 30 – Aug 1	Sept 24 – 26	Dec 17 – 19	
	Columbus	Jan 8 – 10	Jun 4 – 6				
<b>Inspector Refresher - 8 Hour</b> \$195 Per Trainee	Toledo	Jan 17	May 16	Sep 12			
	Cleveland	Feb 21	Apr 18	Jun 13	Aug 15	Oct 10	Dec 12
	Columbus	Mar 21	Jul 25	Nov 19			
<b>Risk Assessor Initial - 16 Hour</b> \$320 Per Trainee	Toledo	Mar 8 – 9	Aug 23 – 24				
	Cleveland	Feb 8 – 9	Apr 5 – 6	Aug 2 – 3	Sept 27 – 28		
	Columbus	Jan 11 – 12	Jun 7 – 8				
<b>Risk Assessor Refresher - 8 Hr</b> \$195 Per Trainee	Toledo	Jan 17	May 16	Sep 12			
	Cleveland	Feb 21	Apr 18	Jun 13	Aug 15	Oct 10	Dec 12
	Columbus	Mar 21	Jul 25	Nov 19			
<b>Lead Renovator - 8 Hour</b> \$195 Per Trainee	Toledo	Feb 27	May 15	Oct 4	Nov 15		
	Cleveland	Jan 30	Apr 12	Aug 14			
	Columbus	Mar 20	Jul 24	Dec 11			

**Lead Experts P.O. Box 1390, Mentor, OH 44061-1390**  
**Phone: 440-266-0403 / 800-259-8930 Fax: 440-266-0413**

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**\*\* If You Have Any Special Needs Or Need Reasonable Accommodations, Please Contact Us Immediately \*\***

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1/1/07

# EPA Agrees to Cut Lead in Kids' Products

By JOHN HEILPRIN, Associated Press Writer

April 16, 2007 16:55 PDT WASHINGTON, (AP) —

Companies that make or distribute toys, zippers and other children's products will face tougher government scrutiny to keep out any lead that could poison and kill children or harm their brain development.

The Environmental Protection Agency agreed in response to legal pressure to write up to 120 importing and manufacturing companies by the end of the month, instructing them to provide health and safety studies if any lead might be found in the products they make for children.

"Parents still need to be vigilant about the recalls on products marketed to children that might contain lead, and take those products away from children as soon as they are recalled," Jessica Frohman, co-chair of the Sierra Club's national toxics committee, said Sunday.

The EPA letters are part of a settlement it signed Friday with the Sierra Club and another advocacy group, Improving Kids' Environment. The agency also must tell the Consumer Product Safety Commission "that information EPA has reviewed raises questions about the adequacy of quality control measures by companies importing and/or distributing children's jewelry."

Lead, a highly toxic element, can cause severe nerve damage, especially in children. The EPA says lead emissions have dropped more than 90 percent since it was first listed as an air pollutant in 1976, mainly by removing lead from gasoline. Other sources of exposure to it include food and soil, solid waste, coal, oil, iron and steel production, lead smelters and tobacco smoke.

While the EPA can ban a substance such as lead, only the commission has the authority to ban a product. The Sierra Club last year petitioned EPA and the commission to monitor and ban the making of any children's necklaces, bracelets, rings and other jewelry that contains lead.

After the EPA rejected the petition, the two groups sued the EPA last year in the U.S. District Court for the

Northern District of California, where the Sierra Club is headquartered.

The lawsuit also followed the death of 4-year-old Jarnell Brown of Minneapolis, who died last year from acute lead poisoning by swallowing part of a heart-shaped charm bracelet distributed by Reebok International Ltd. The child's death was ruled accidental, but Reebok recalled 300,000 of the silver-colored, Chinese-made bracelets found to be 90 percent lead that the company had given away with its shoes.

The attorneys general in California and Illinois sent letters to EPA supporting the groups' legal challenge.

In December, the commission began taking steps to ban, rather than recall as it has been doing, children's jewelry containing more than 0.06 percent lead by weight; about one ounce for every 100 pounds. California and Chicago have adopted the same standard.

The commission's decision came after it had recalled more than a dozen products in the past two years out of concern about lead. Nationally, inexpensive toy jewelry made with lead or painted with lead paint is sold in vending machines and stores that sell mainly to immigrant communities.

More than 70 major U.S. retailers agreed last year to stop selling children's jewelry containing lead in California after another advocacy group, the Center for Environmental Health, and the state's attorney general sued in 2004.

The commission's biggest-ever recall was in 2004 and involved 150 million pieces of children's jewelry with unsafe lead levels.



# ARI Technologies, Inc. Signs Deal With Japanese Consortium to Conduct Asbestos Destruction Demonstration

KENT, Wash., April 24 /PRNewswire

**ARI Technologies, Inc. (ARI) of Kent, Washington, a waste management technology developer,** signed an agreement

with a Japanese Consortium comprised of a major steel manufacturer, a leading general contractor and other prominent Japanese companies that are engaged in industrial waste processing to conduct an asbestos destruction and recycling demonstration consistent with guidelines established by the Japanese Ministry of Environment (MOE).

The demonstration is scheduled to take place this summer using ARI's Thermochemical Conversion Technology (TCCT) processing facility in Tacoma, Washington, USA.

ARI Japan Corporation, a joint venture between ARI and another Japanese party, has taken the role in promoting the TCCT asbestos recycling business in Japan. The Washington Department of Trade and Economic Development (CTED) and the Japan External Trade Organization (JETRO) have been instrumental in helping facilitate the success of the joint venture.

Conducting the asbestos treatment demonstration is a major step toward establishing commercial asbestos processing facilities in Japan. The Japanese Consortium intends to begin operating its first commercial asbestos processing facility in Japan by September 2008 with

(continued on last page)

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**ARI Technologies, Inc. Signs Deal With Japanese Consortium to Conduct Asbestos Destruction Demonstration**

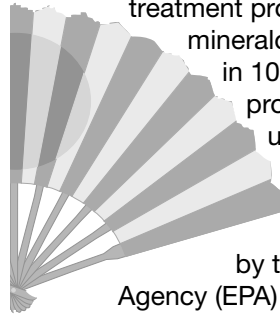
*(continued from page 11)*

additional plants to follow soon thereafter.

ARI owns the patented, EPA-permitted, asbestos treatment process that destroys asbestos through mineralogical conversion. The process results in 100% destruction of asbestos fibers and produces a product that is inert, non-toxic, unregulated, and suitable as a recycled construction aggregate. The technology has also been applied to other hazardous wastes and is permitted by the US Environmental Protection Agency (EPA) to treat PCBs as well as asbestos. The technology is also effective for immobilization of metals and radionuclides in certain wastes.

ARI is a privately owned company that builds waste treatment systems and licenses the technology to users globally. Please visit <http://www.aritechnologies.com/>

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