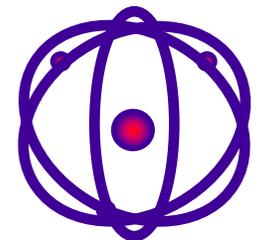
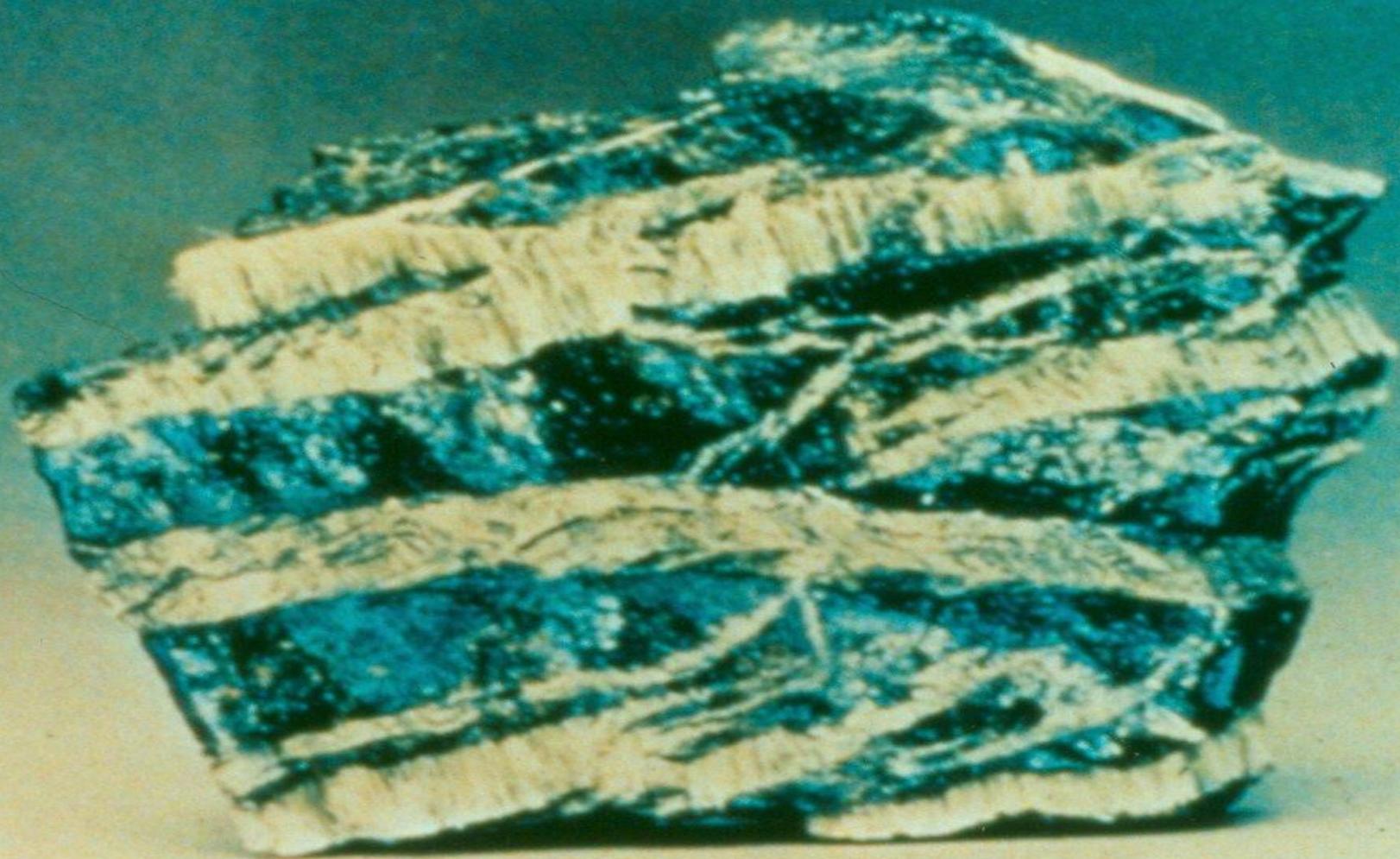


Asbestos - Yes, It's Still Around!

Presented by: Nate Cox
Lake States Environmental, Ltd.
February 22, 2022



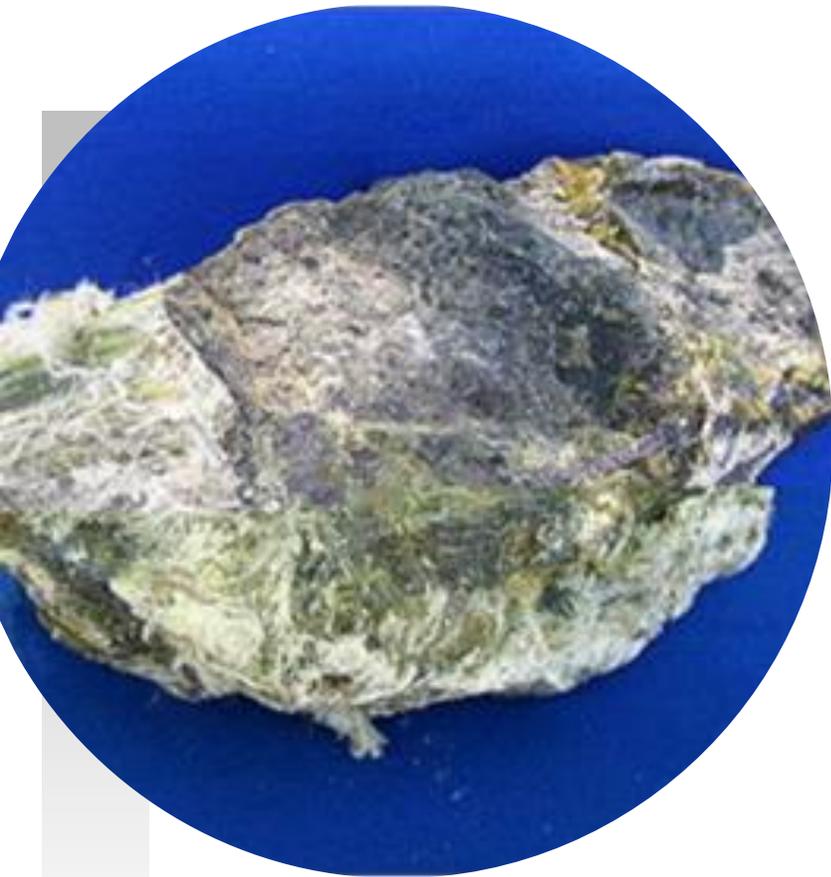


The "Miracle Mineral"





What is Asbestos?



Asbestos refers to a set of six naturally occurring fibrous minerals:

1. Chrysotile
2. Crocidolite
3. Amosite
4. Anthophyllite
5. Tremolite
6. Actinolite



ASBESTOS

- Bundles of fibers which break apart easily
- Fibers are microscopic
- Very aerodynamic - float for days
- Strong as steel
- Resists breakdown from heat
- Resists breakdown from chemicals
- The best insulator
 - Temperature
 - Sound
 - Electricity
- Cheap



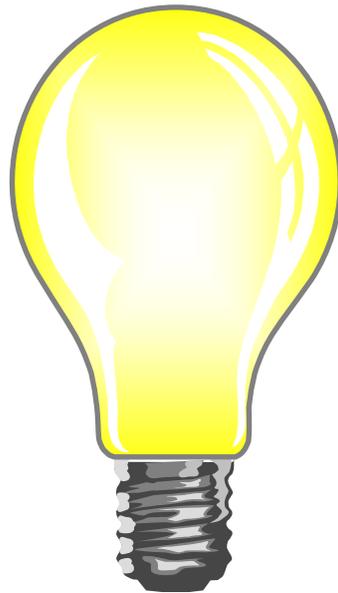
When is Asbestos dangerous?

- Asbestos is dangerous when it gets in the air and you breathe or swallow it



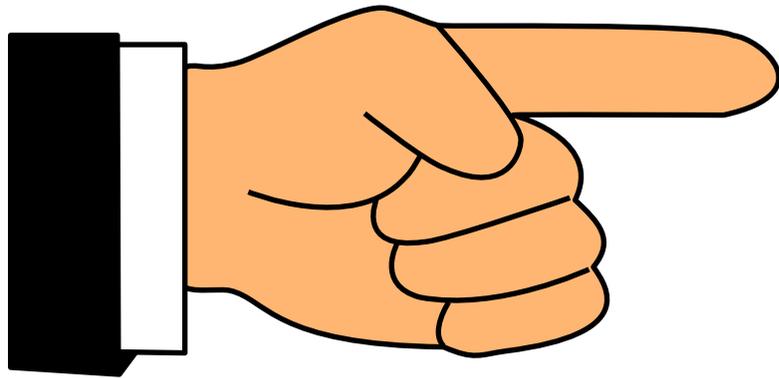
ASBESTOS CONTAINING MATERIAL - ACM

ACM is defined as a material containing greater than 1 % of an asbestos mineral.





DEFINITIONS



- Friable
- Non-friable



FRIABLE ASBESTOS

- Asbestos that can be crumbled or pulverized by hand pressure.
- Friable asbestos is more dangerous because the fibers are more likely to get in the air.





NON-FRIABLE ASBESTOS

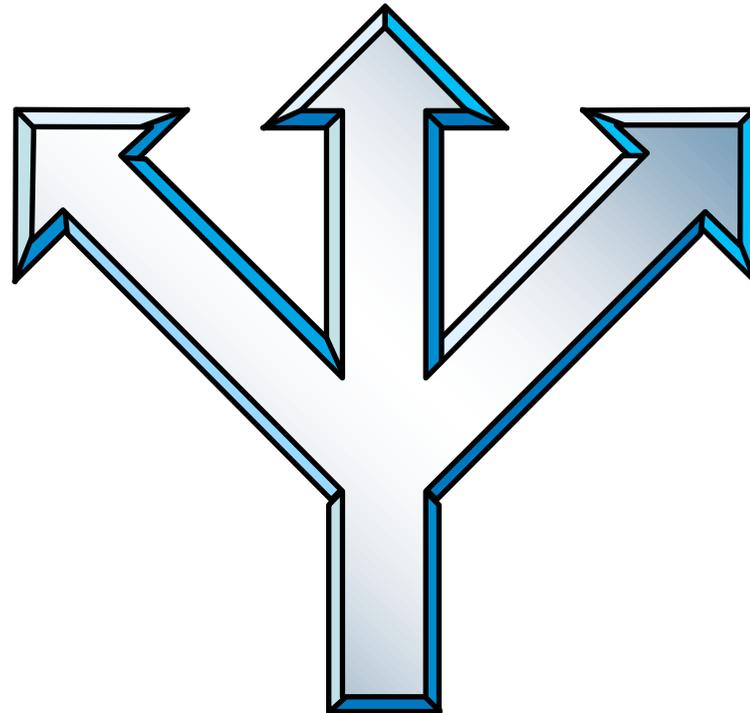
- Asbestos that cannot be crumbled or pulverized by hand pressure.





CATEGORIES OF ACM

- Surfacing material
- Thermal system insulation (TSI)
- Miscellaneous Materials





SURFACING MATERIAL

- An asbestos containing material that is **sprayed, troweled-on** or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).









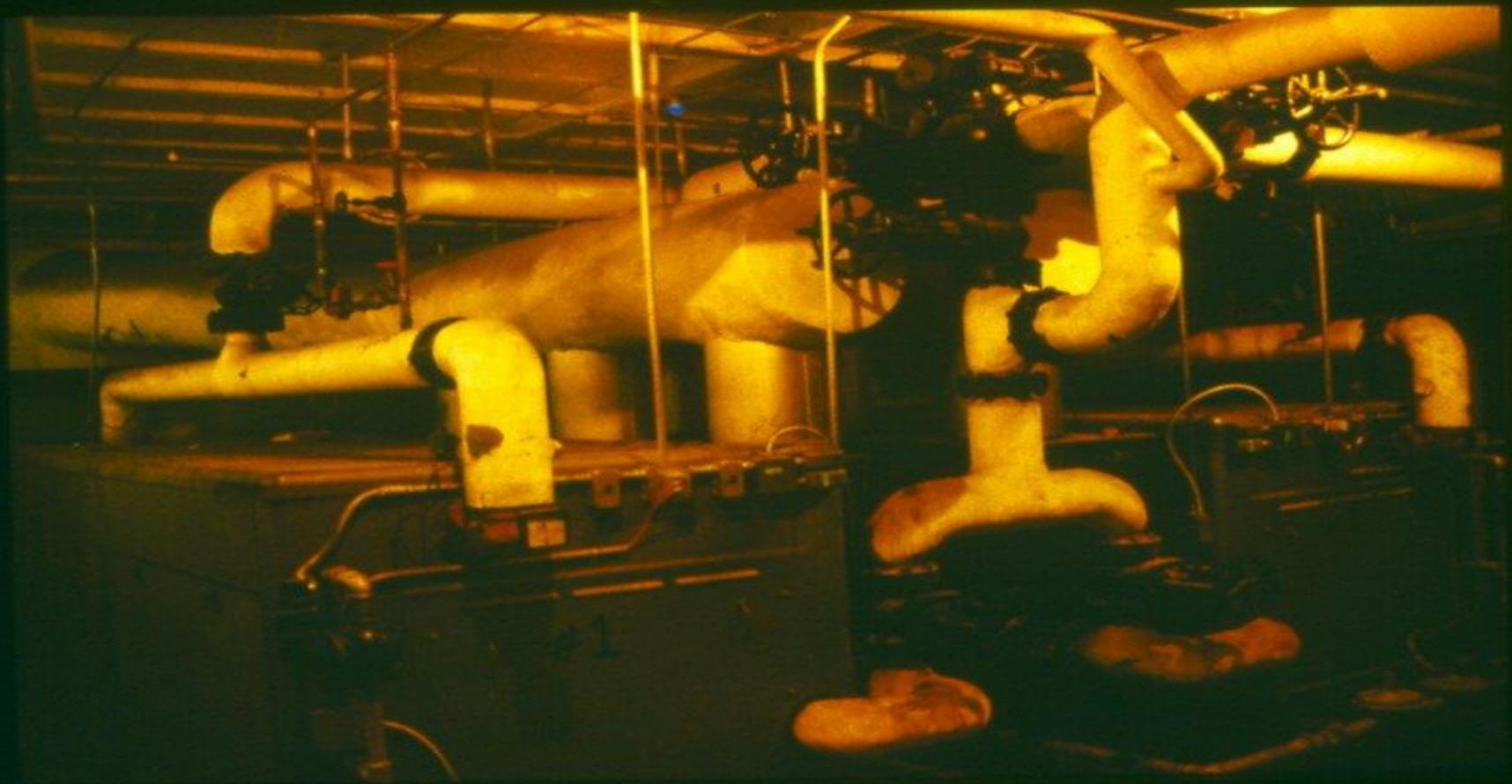


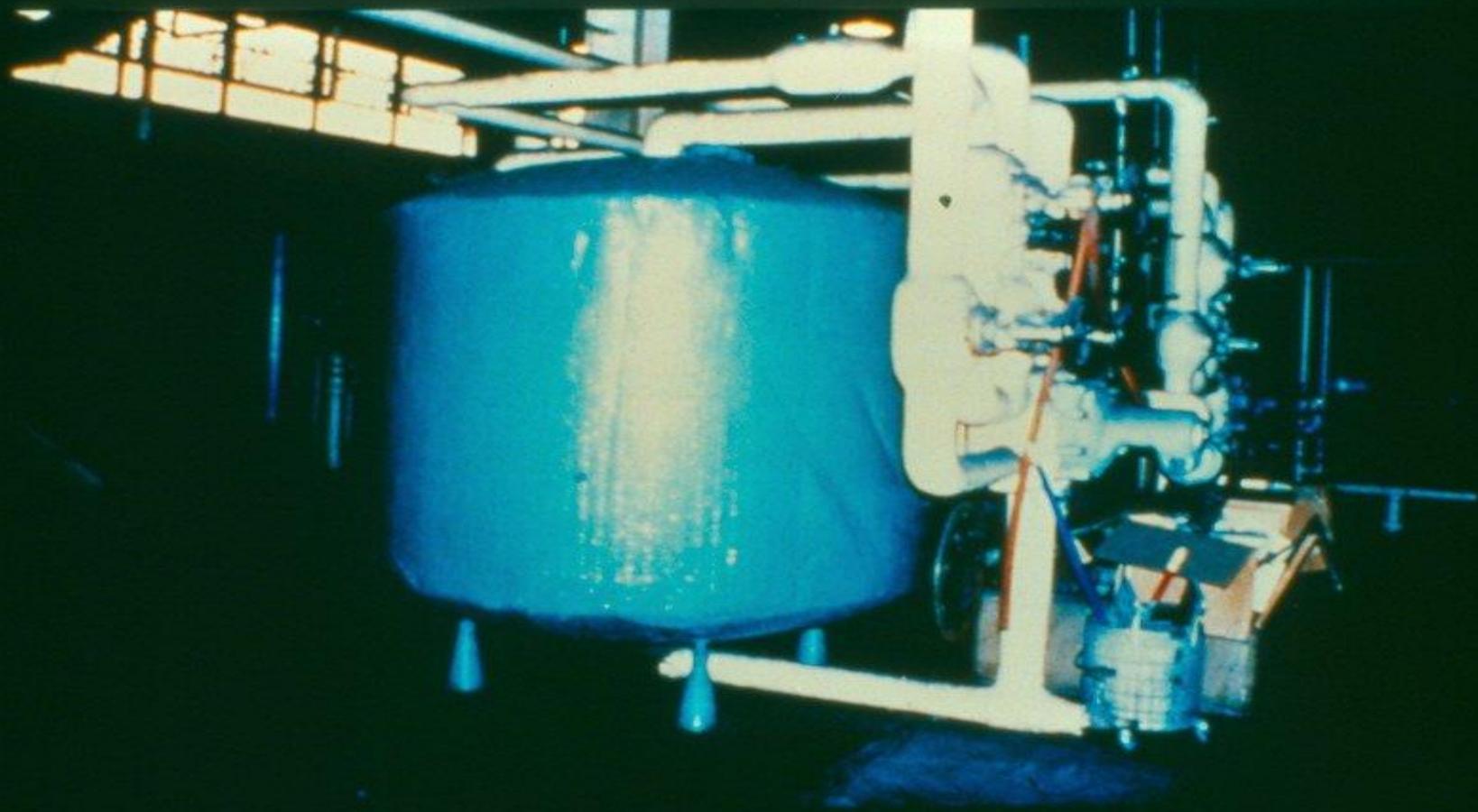


THERMAL SYSTEM INSULATION (TSI)

- Asbestos containing materials applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain.

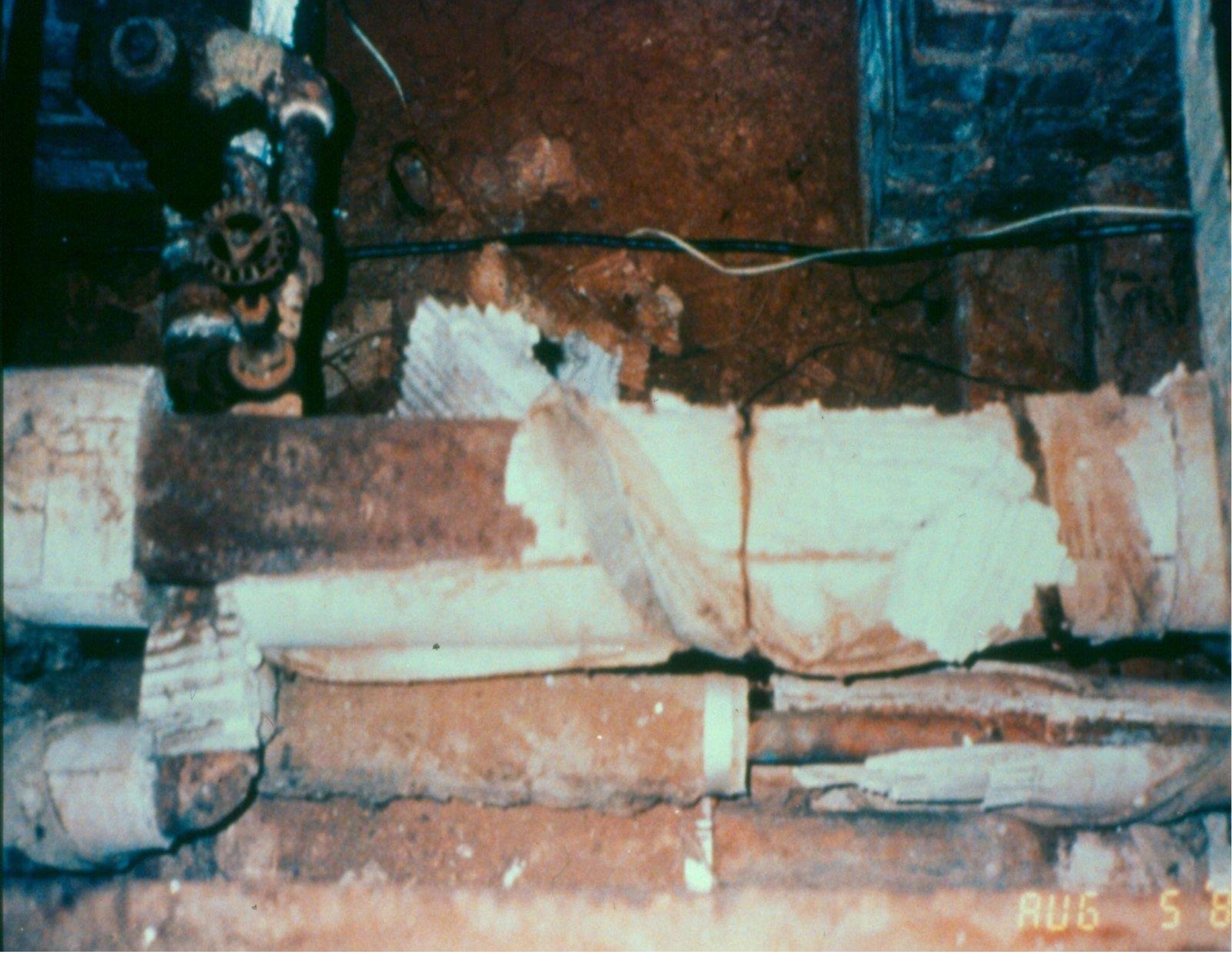
TSI ACM contains more than 1% asbestos.







12 - 27



AUG 5 '8



MISCELLANEOUS

- Any other type of asbestos containing material.





Health Effects of Exposure to Asbestos

Asbestos Diseases





Asbestos can Kill You...

- When you work around asbestos, you must work carefully. Avoiding accidental disturbances is important.
- When asbestos is in the air, it gets into your body when you breathe and when you swallow.



When is Asbestos Dangerous?

- Asbestos is silent and deadly. You cannot see, hear, feel, taste, smell, or touch the small asbestos fibers that enter your body.
- It doesn't make you cough or sneeze, nor make you throat or skin itch.
- But if it is in the air, you can breath it. That's when asbestos is dangerous!



How do we know that asbestos can make you sick?

- We have been accumulating information for decades, tracking life and death histories of workers who's jobs involved exposure to asbestos.
- Over time it has become apparent that workers who were exposed to asbestos developed and died from diseases we now know are caused by asbestos.



Asbestos Diseases

Asbestosis

Lung Cancer

Mesothelioma

Other (GI) Cancers



How much asbestos is dangerous?

- There is no safe level of exposure to asbestos.
- But we do know that most diseases associated with the exposure to asbestos are dose-related.
- Asbestosis, Lung Cancer and Digestive System cancers are all dose-related.
- Mesothelioma is different. It appears to be incidence related, with dose not being much of a factor.



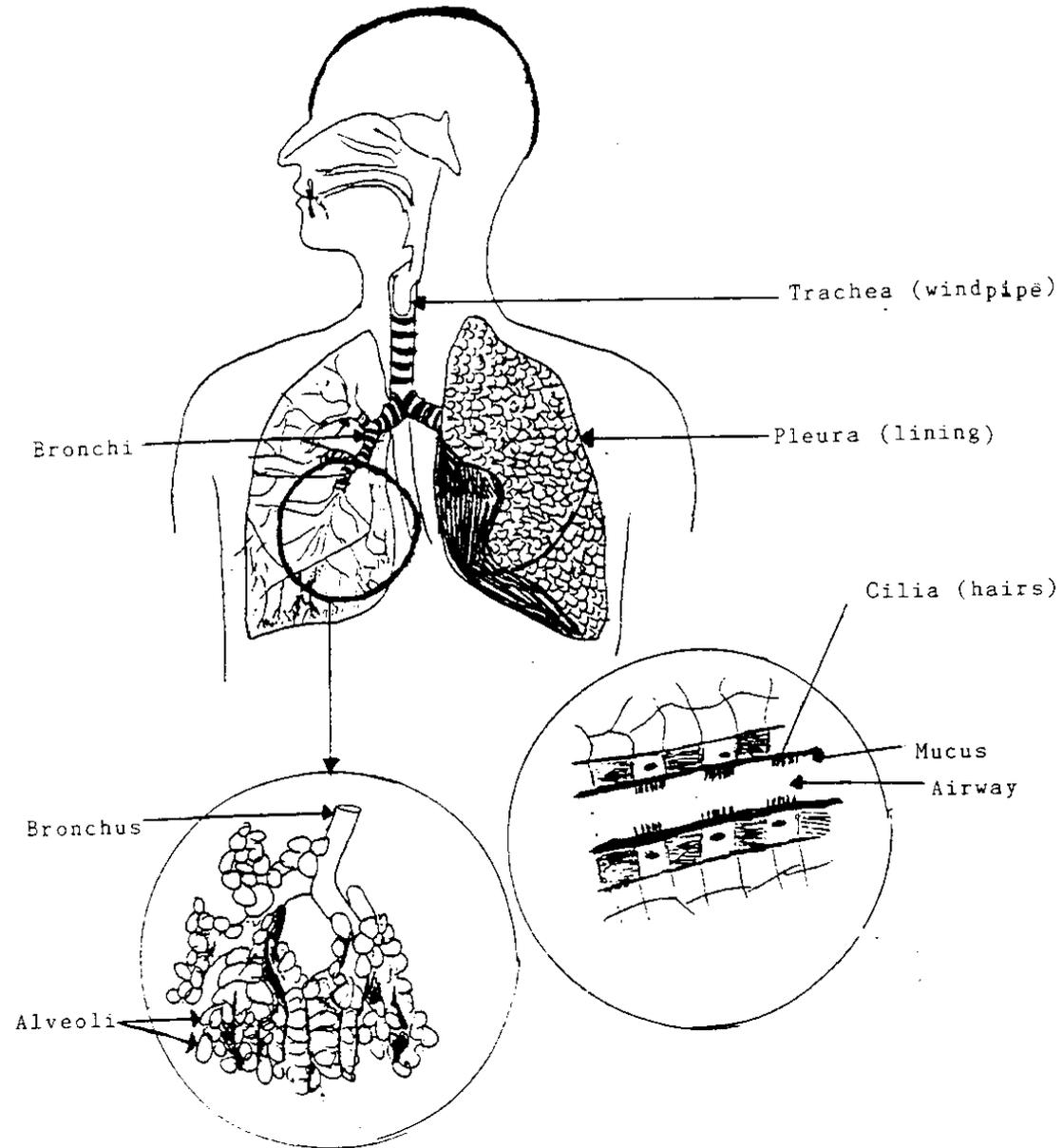
Latency Period

- The time between when a person is exposed to a hazard and when the symptoms develop from the exposure.
- The latency period is between 10 to 40 years

Your body has its own natural defense to help eliminate asbestos

But some of the tiny fiber can still
pass through these defenses







Asbestosis

Scarring of the Lung Tissue

Specifically the Alveoli membranes



Lung Cancer

Cancer in the Lung

Usually in the pipes at a turn or junction.



Mesothelioma

Cancer of the Plural Lining(s)

Pleural mesothelioma

Chest cavity

Peritoneal mesothelioma

Abdomen (belly)



Mesothelioma

- This is also the one disease that is only caused by exposure to asbestos.
- It is often referred to as the "Marker Disease" for exposure to asbestos sometime in a worker's past.



Other Cancers

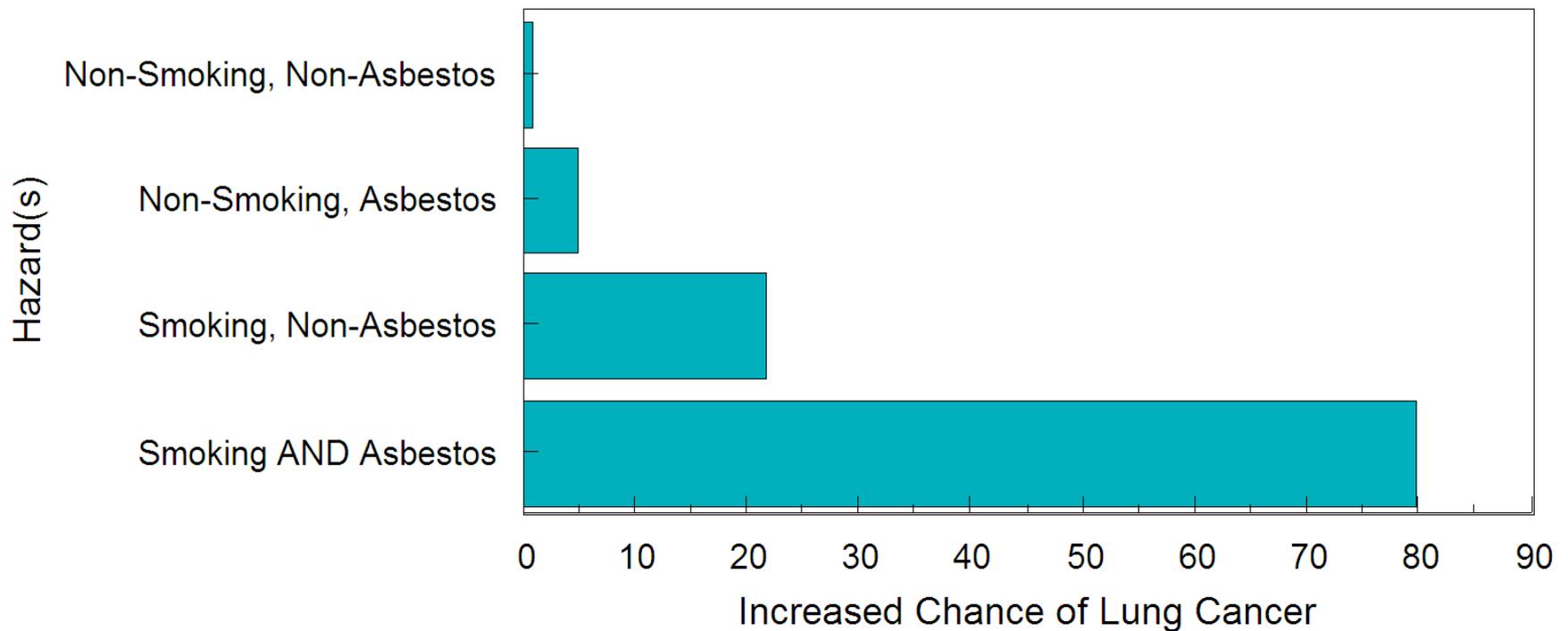
Other Cancers can include:

Mouth, tongue, throat, voicebox, esophagus, stomach, intestinal, colon, rectal, and liver cancer.

Smoking and Asbestos Exposure

- The Synergistic Effect - Multiplying Effect

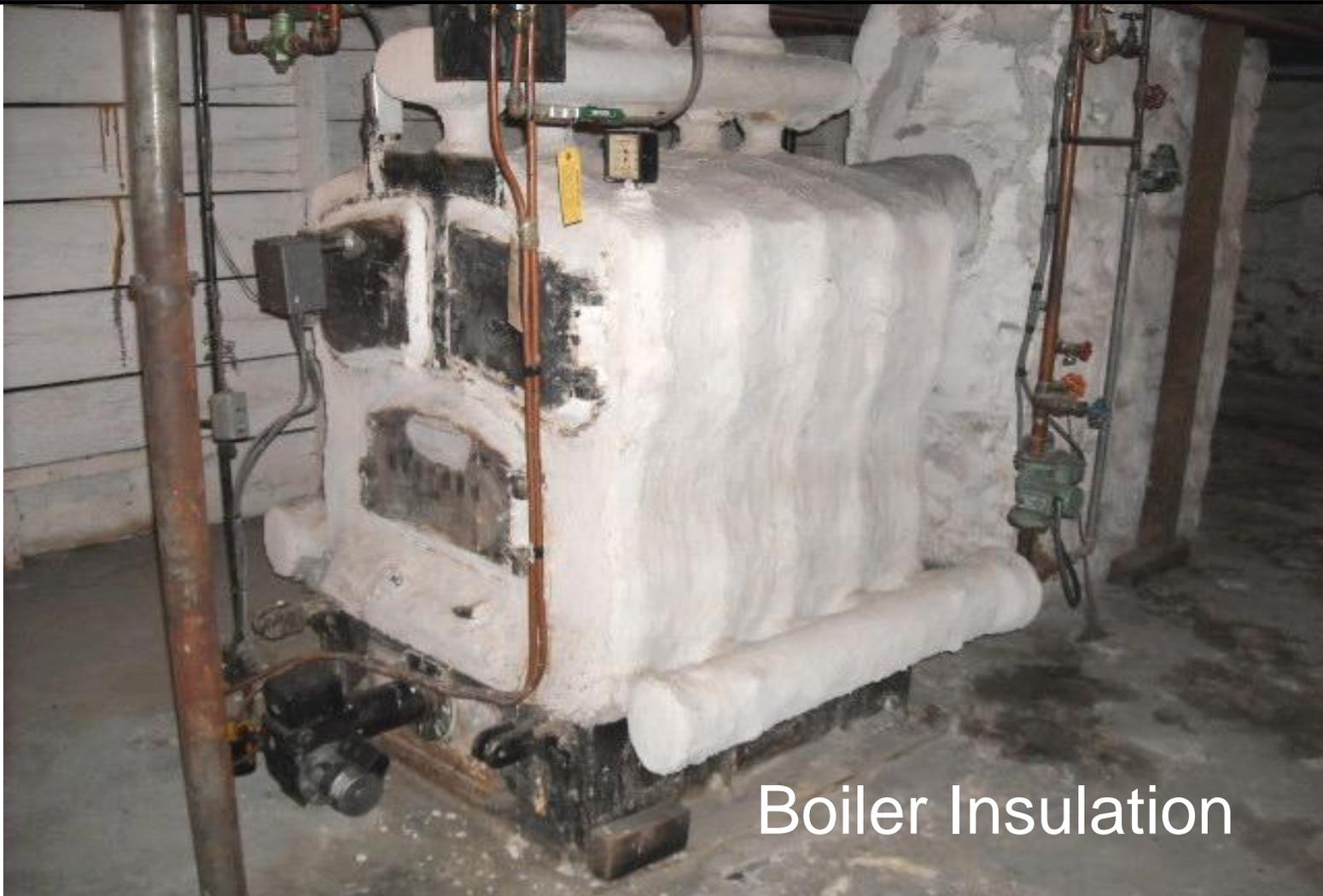
Synergistic Effect of Combining Smoking and Asbestos Hazards





How is it determined if a material contains Asbestos?

- First off, most materials are “guilty” until proven otherwise by sampling.
- Samples are sent to a lab for testing.
- These samples must be collected by an MDH (or DHS in WI) certified Asbestos Inspector.
- The samples are analyzed under a Polarized Light Microscope (PLM) to determine content.
- The lab sends out a report indicating if the sample contains Asbestos and at what %.



Boiler Insulation



Duct Insulation



Floor Tile⁷



Other Examples of Asbestos



Textured "Popcorn" Ceiling¹



Acoustic Ceiling Tile w/"Puck" Mastic²



Lath & Plaster³



Floor Mastic Adhesive⁸



Gaskets¹²



Joint Compound



Cement "Transite" Pipe¹⁴

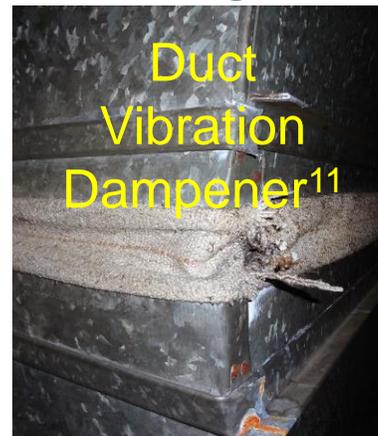
Asbestos Containing Materials



Electrical Wiring



Air Cell



Duct Vibration Dampener¹¹



Cement Roofing



Zonolite Ad
Courtesy of Mesothelioma Resource Center



Plan now to insulate your home for year-round comfort with safe, fireproof Zonolite. Be as much as 15 degrees cooler indoors in summer. Save up to 40% on fuel in winter. You can do the job yourself with Zonolite. Simply pours into place between joists in attic and studs in sidewalls.



Potentially
Contaminated with
Asbestos⁹







Prior to July 1, 2021, activities that disturb or remove flooring, ceiling material, siding or roofing materials, in single family homes or multi-family structures of 4 or fewer units were exempt from the Minnesota Department of Health regulations regardless of the presence of asbestos (or not).



That changed on July 1, 2021.

On July 1st the exemption that previously applied to ceiling materials, flooring materials, siding materials and roofing materials **WAS REMOVED!**



Since July 1st the MDH regulates and requires the use of certified individuals to remove any asbestos containing material or product that is friable in the first place or will become friable during the process of removing it.



This **now includes** ceiling texturing, spray-on and other ceiling materials, flooring materials, siding and roofing materials.

Since a material or product is ‘guilty until proven innocent’, even homes now require an evaluation (inspection) by a certified inspector prior to work being done to determine what is not ACM.



Whenever 6 ft² or 10 linear ft or more of ACM is being removed or disturbed, a licensed asbestos contractor with certified asbestos workers must be used to perform any of the work involving friable material **or material that becomes friable during the removal process.**



Questions?





Thank You for joining us!

Our Contact info:

Lake States Environmental, Ltd.

www.lakestates.com

Bob Rogalla bob@lakestates.com

715-434-4467 or 800-254-9811