Asbestos Supervisor

Refresher Course

Wisconsin

Review of the key topics

1. Asbestos Characteristics
2. Health Effects
3. PPE
4. Abatement Project Work Practices
5. Personal Hygiene
6. Other Safety Hazards
7. Medical Monitoring
8. Air Monitoring
9. Asbestos Regulations
10. Insurance and Liability
11. Record Keeping and Project Forms
12. Supervising Asbestos Activities
13. Contract Specifications

IMPORTANT ABBREVIATIONS

ACM	=	Material containing **>1%** asbestos
ACBM	=	Building material containing **>1%** asbestos
PACM	=	Materials Suspected of Containing Asbestos
RACM	=	Regulated Asbestos-Containing Materials
AHERA	=	Asbestos Hazard Emergency Response Act
NESHAP	=	National Emission Standards for Hazardous Air Pollutants
EPA	=	Environmental Protection Agency
OSHA	=	Occupational Safety and Health Administration
DHS	=	Wisconsin Department of Health Services
IDPH	=	Illinois Department of Public Health

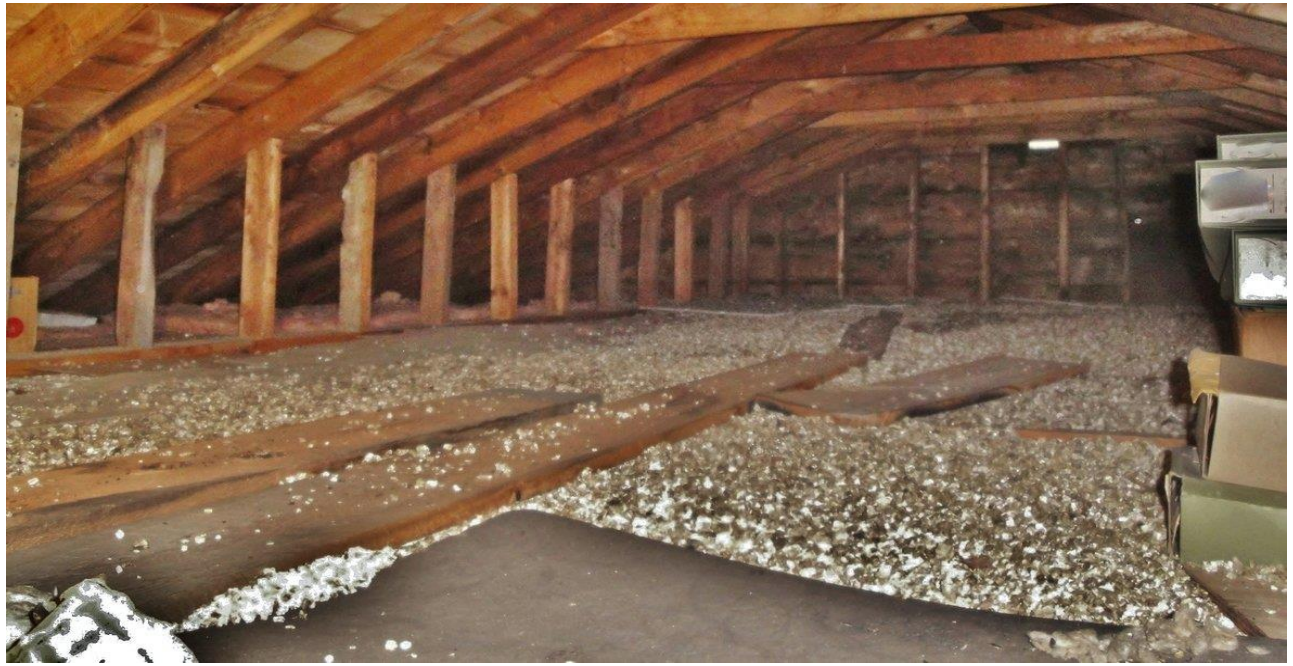
Here are Some Important Wisconsin Definitions

ACM

"a material or product containing **>1% asbestos**, as determined by the Polarized Light Microscopy (PLM) method, described in 40 CFR Part 763, Appendix E to Subpart E, Section I, and a material that meets the definition of material suspected of asbestos content."

Suspected Asbestos-Containing Materials:

vermiculite insulation, and any other untested material used in building components, except (metal, glass, wood, or fiberglass)



Important: All VERMICULITE INSULATION should be treated as an ACM, unless an EPA-designed method for identifying asbestos in vermiculite proves otherwise (A protocol has not yet been established).

Topic 1.

1. Asbestos Characteristics

WHAT IS ASBESTOS?

Asbesto (greek) or Amianto (latin)

- naturally occurring mineral, fibrous silicate,
  - mined for its excellent properties:
    - Thermal insulation,
    - Chemical and physical resistance (acids, stress, etc.)

Commonly used as:

- Sound Insulator,
- Thermal Insulator,
- Fireproof,
- and other building materials.

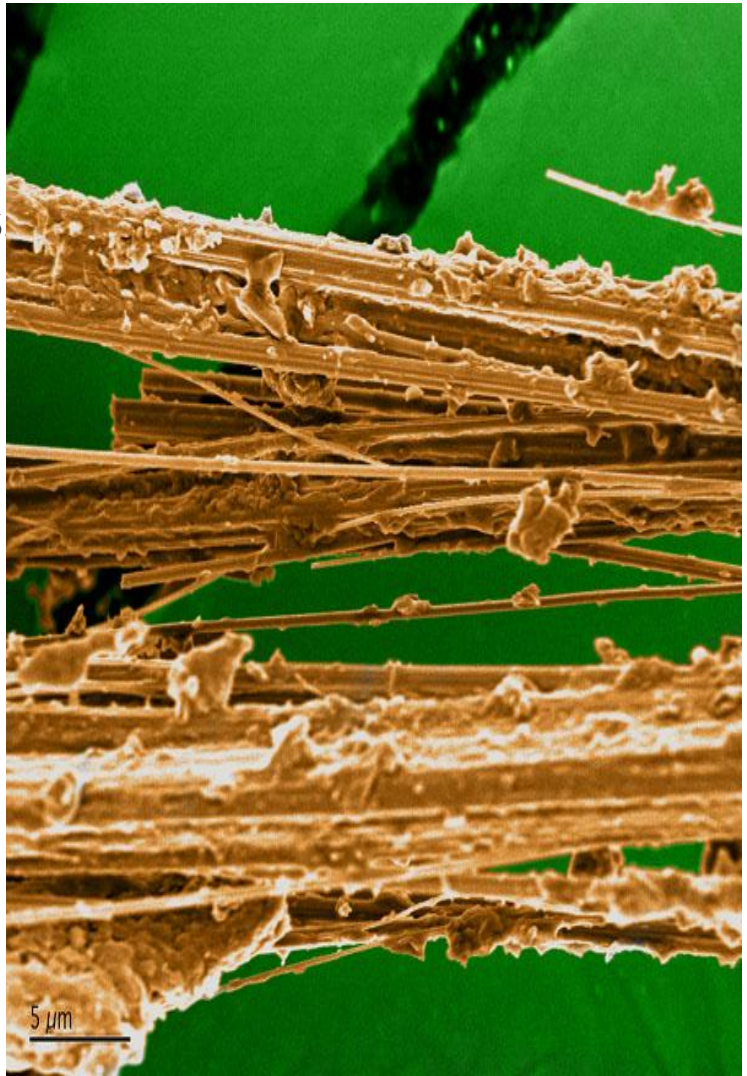
Source: EPA

AERODYNAMIC CHARACTERISTICS

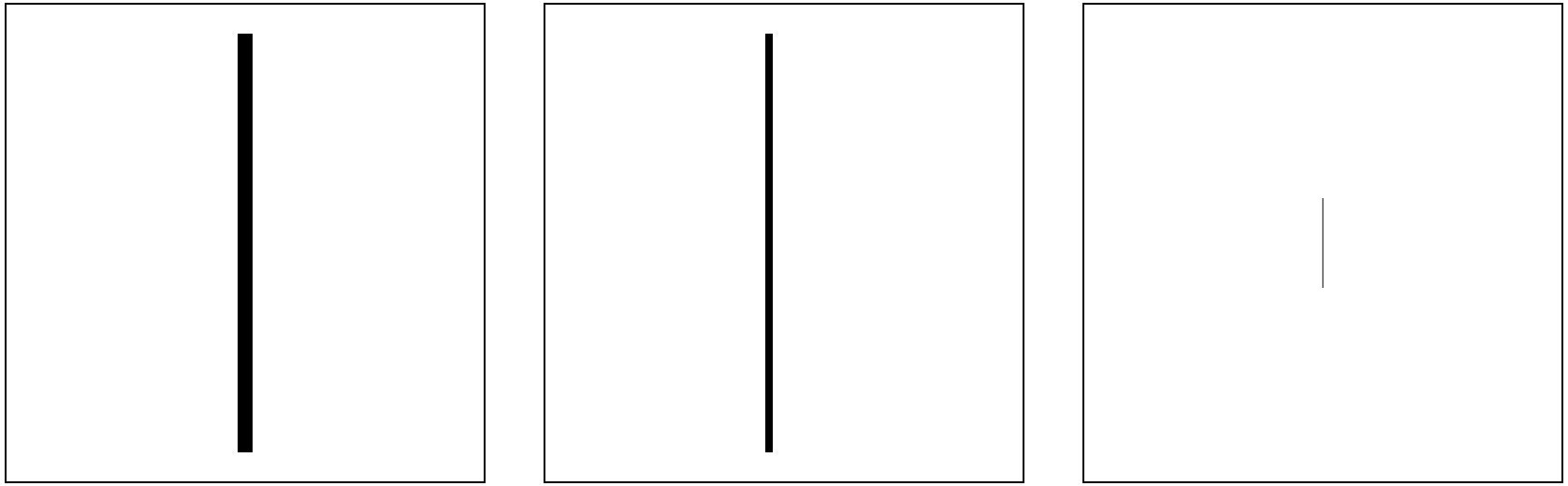
- **Microscopic fibers**
- **Invisible to the naked eye**
- **Asbestos fibers are measured in microns**

- **They are usually 5 μm long or larger.**
- **3/1 Width/Length Aspect**
- **Fibers are suspended in the air for days**

μm = micrometer
(*millionths of a meter*)



VERY SMALL FIBERS



75 µm

Hair

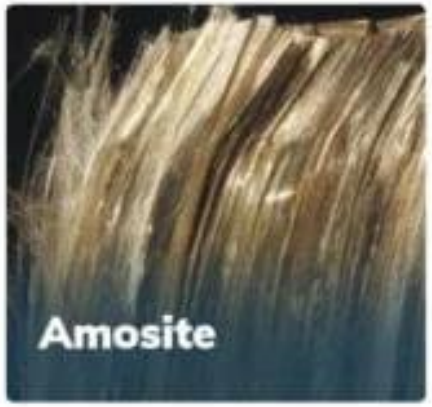
5 µm

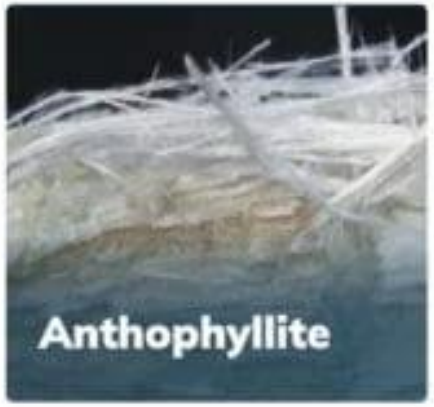
Fiberglass

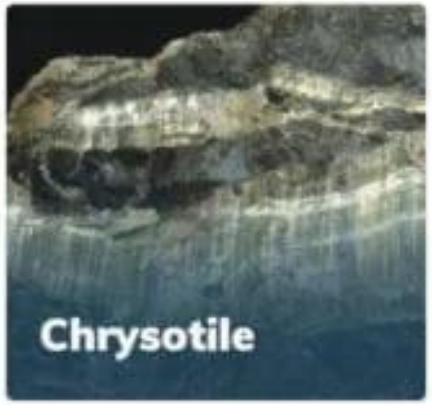
0.5 µm

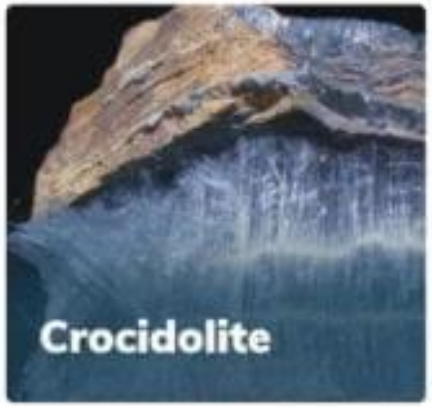
Asbestos

MOST COMMON ASBESTOS TYPES



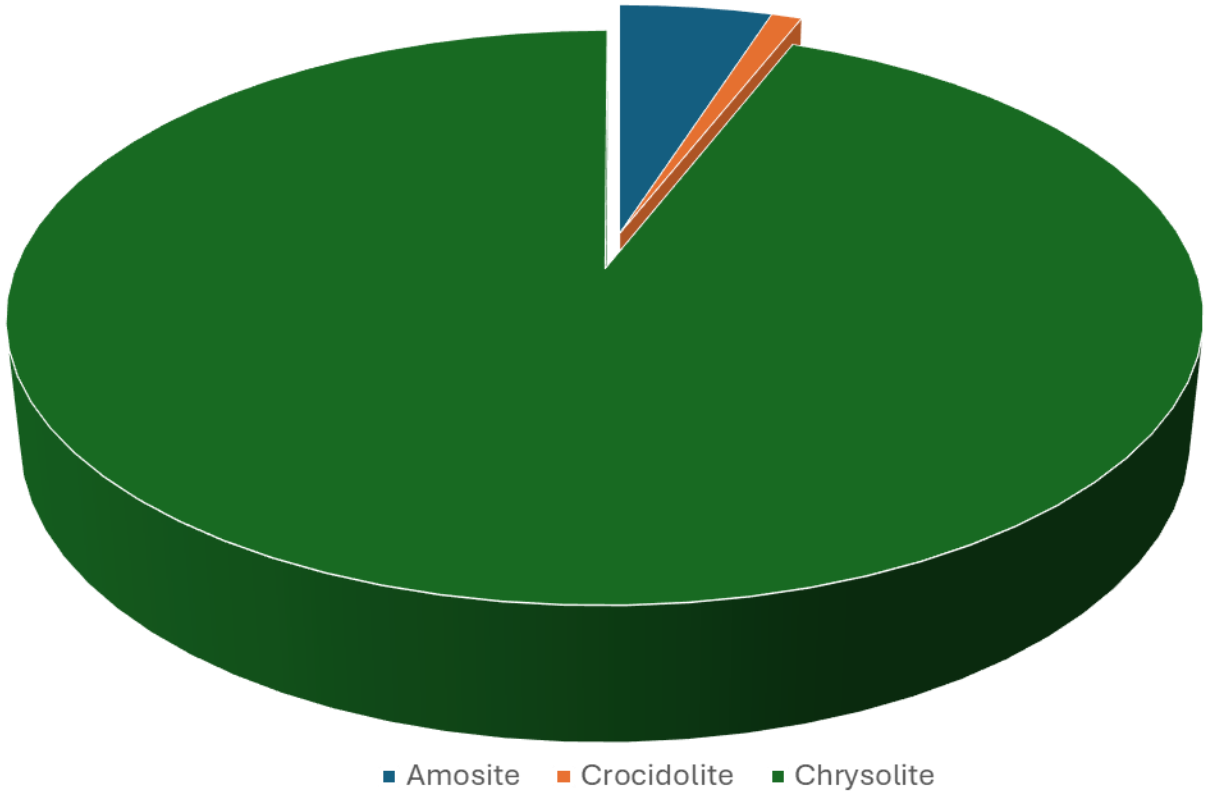






SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

MOST COMMON ASBESTOS TYPES



SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

RARE ASBESTOS TYPES

1. ACTINOLITE

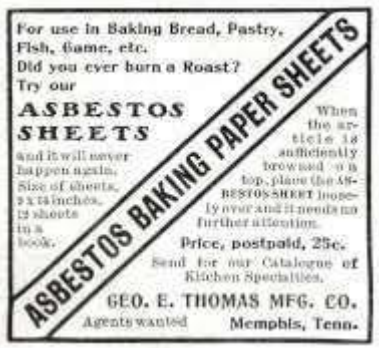
2. TREMOLITE

3.ANTHOPHYLLITE

HISTORY OF ASBESTOS

- Greek Word meaning **inextinguishable**
- Referred to as a "**miracle mineral**"
- **Building material** for Roman Empire
- Spun and **woven into cloth** for clothimg and textiles.
- Egyptians used asbestos to **embalm pharaohs**.
- Scandinavians mixed with **pottery** and sealed cracks in log huts.
- Persians used as **cremation robe** to preserve ashes.
- Insulation for **armor suits** in medieval times.

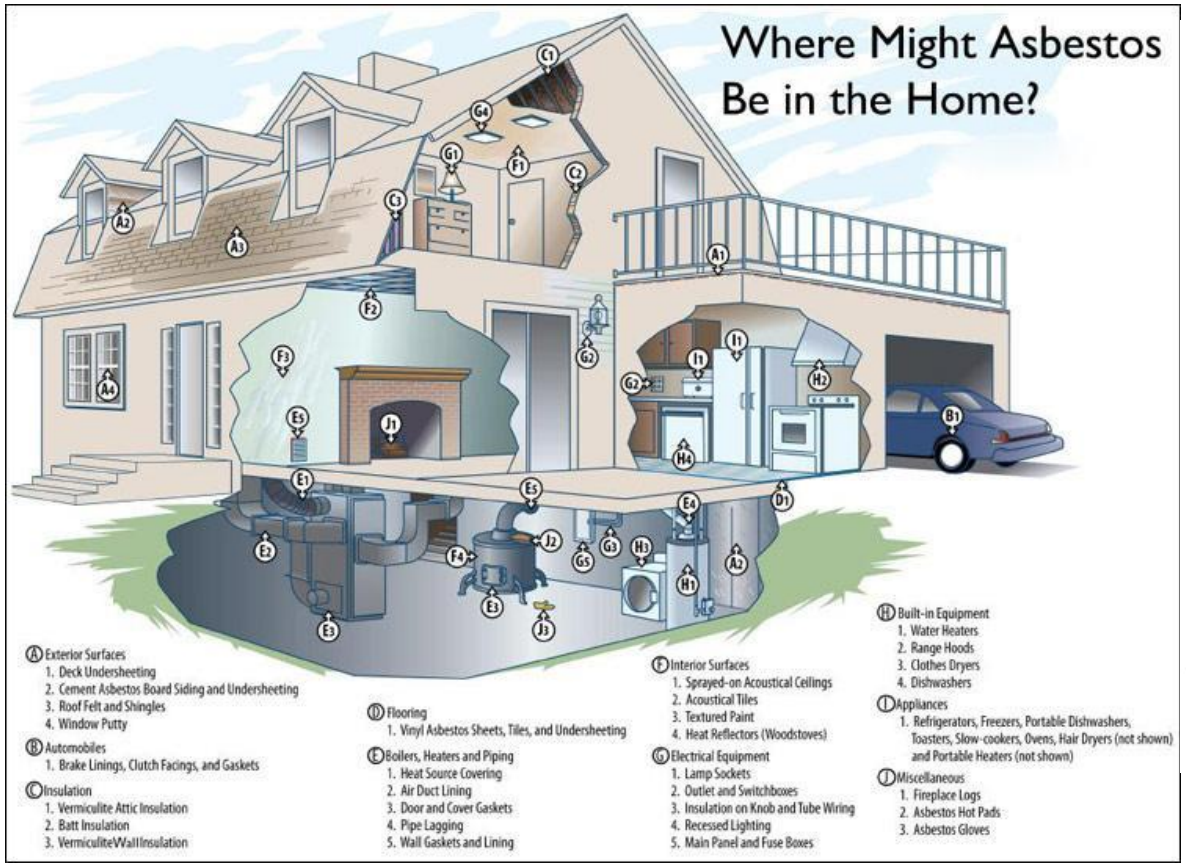
ASBESTOS USES



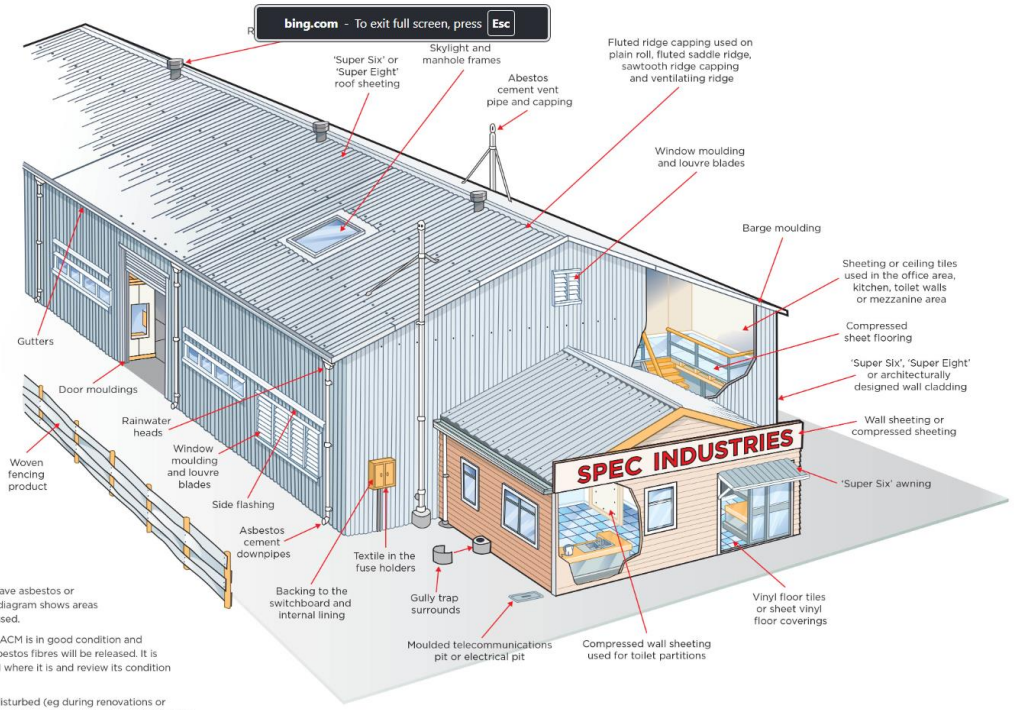
- Mined and used commercially since late 1800's.
- Building & construction.
- Shipbuilding.
- Automotive.
- Ceiling and Floor Tiles.
- Adhesives & Plastics.
- Paint & Coatings.

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

Where is asbestos likely to be found?



worksafe.govt.nz



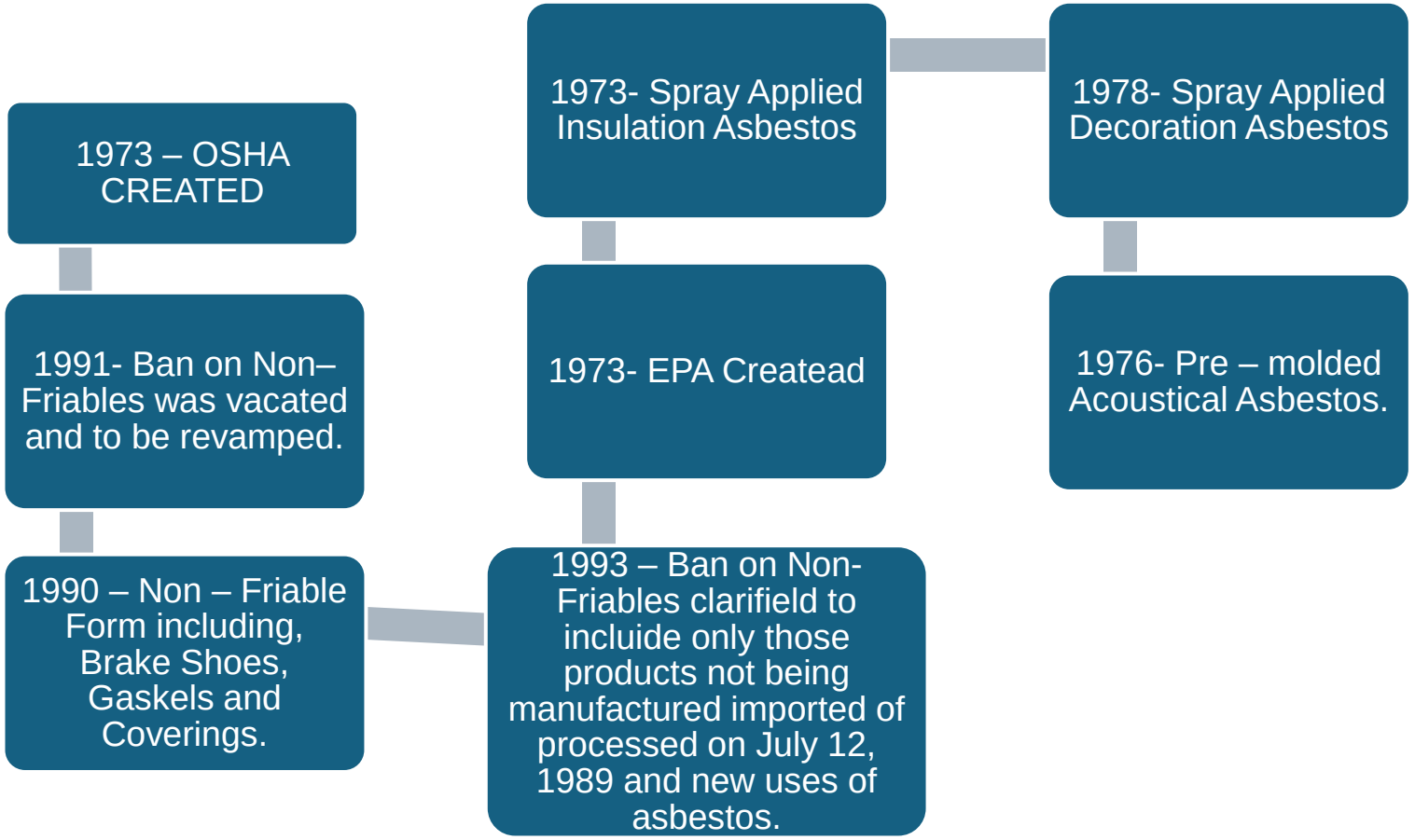
Buildings constructed before 2000 may have asbestos or asbestos-containing material (ACM). The diagram shows areas where asbestos or ACM were commonly used.

The risk to health is low if the asbestos or ACM is in good condition and undisturbed. It is unlikely that airborne asbestos fibres will be released. It is usually safer to leave the asbestos or ACM where it is and review its condition over time.

If the asbestos or ACM deteriorates or is disturbed (eg during renovations or repairs) it is more likely that asbestos fibres will be released. Breathing in airborne asbestos fibres is a serious risk to health.

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

ASBESTOS TIMELINE - BANS



SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

ASBESTOS IDENTIFICATION

- **FRIABLE ASBESTOS**

❑ Can be reduced to powder by hand pressure when dry.

❑ Spray – on asbestos insulation.

- **NON – FRIABLE ASBESTOS**

❑ Found bonded to other materials.

❑ Fibers can be released by cultting, grinding, or sanding.

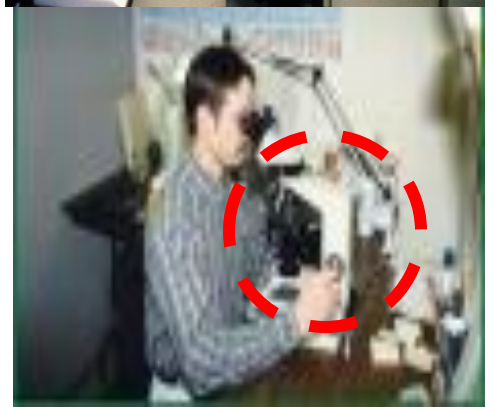
SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

IDENTIFICATION

"Bulk" sample: Take a small piece and send it to an approved lab.

ANALYTICAL METHODS

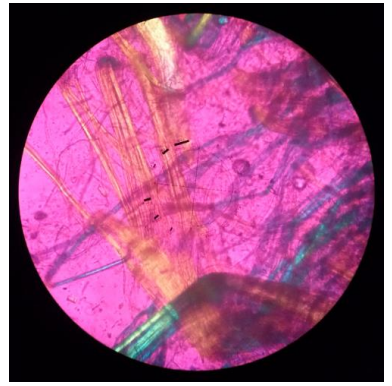
- **PLM (*Polarized Light Microscope*):**
  - **Used to identify asbestiform fibers in a sample**
  - **bulk or air.**
- **PCM (*Light Contrast Microscope*):**
  - **Air Samples**
  - **Concentration of All Fibers in the Air**
- **TEM (*Electron Transmission Microscope*):**
  - **Used to identify fiber structures in samples.**
  - **Samples of materials in schools**
  - **Final Air Quality Sample AHERA = < 70 st/mm2**



MICROSCOPY ANALYSIS

- **PLM:** Polarized Light Microscopy

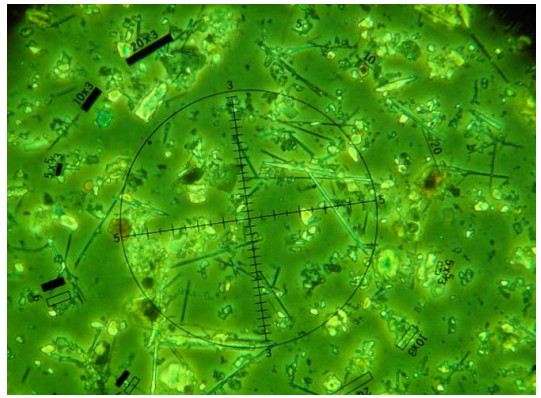
(25x Magnification)



PLM is a preferred method for asbestos analysis because it is relatively quick, cost-effective, and non-destructive.

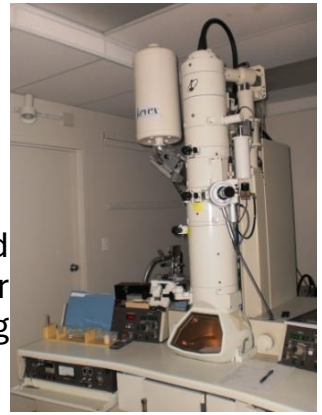
- **PCM:** Phase Contract Microscopy

(400x Magnification)

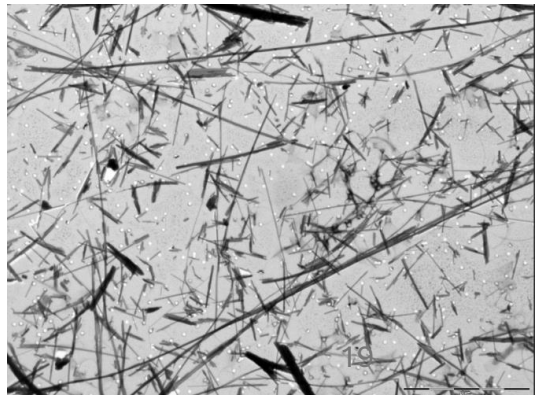


Phase Contrast Microscopy (PCM) is used for analyzing asbestos, primarily for air sampling and fiber counting. Here's how PCM is utilized in asbestos analysis.

- **TEM:** Transmission Electron Microscopy



(+25,000x Magnification)



Transmission Electron Microscopy (TEM) is used for analyzing asbestos because of its superior capabilities in detecting and characterizing asbestos fibers.

PCM vs TEM

PCM

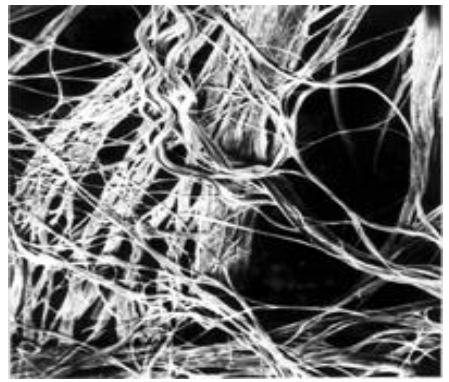
- Only **counts** "fibers." It does not identify.
- **NIOSH 7400** Method
- **25 mm** cassette (**0.8 µm** pore size)
- Least expensive ($ 6 to $ 15 per sample)
- Sensible up to **0.15 µm**. Typically 0.25 µm.

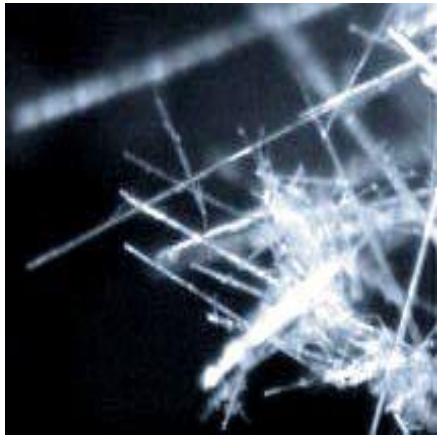
TEM

- **Counts & identifies** fibers.
- **AHERA** Method
- **25 mm** cassette (**0.45** µm pore size)
- Most expensive ($ 50 to $ 200 per sample)
- Sensible up to **0.0002 µm**. Typically 0.0025 µm.

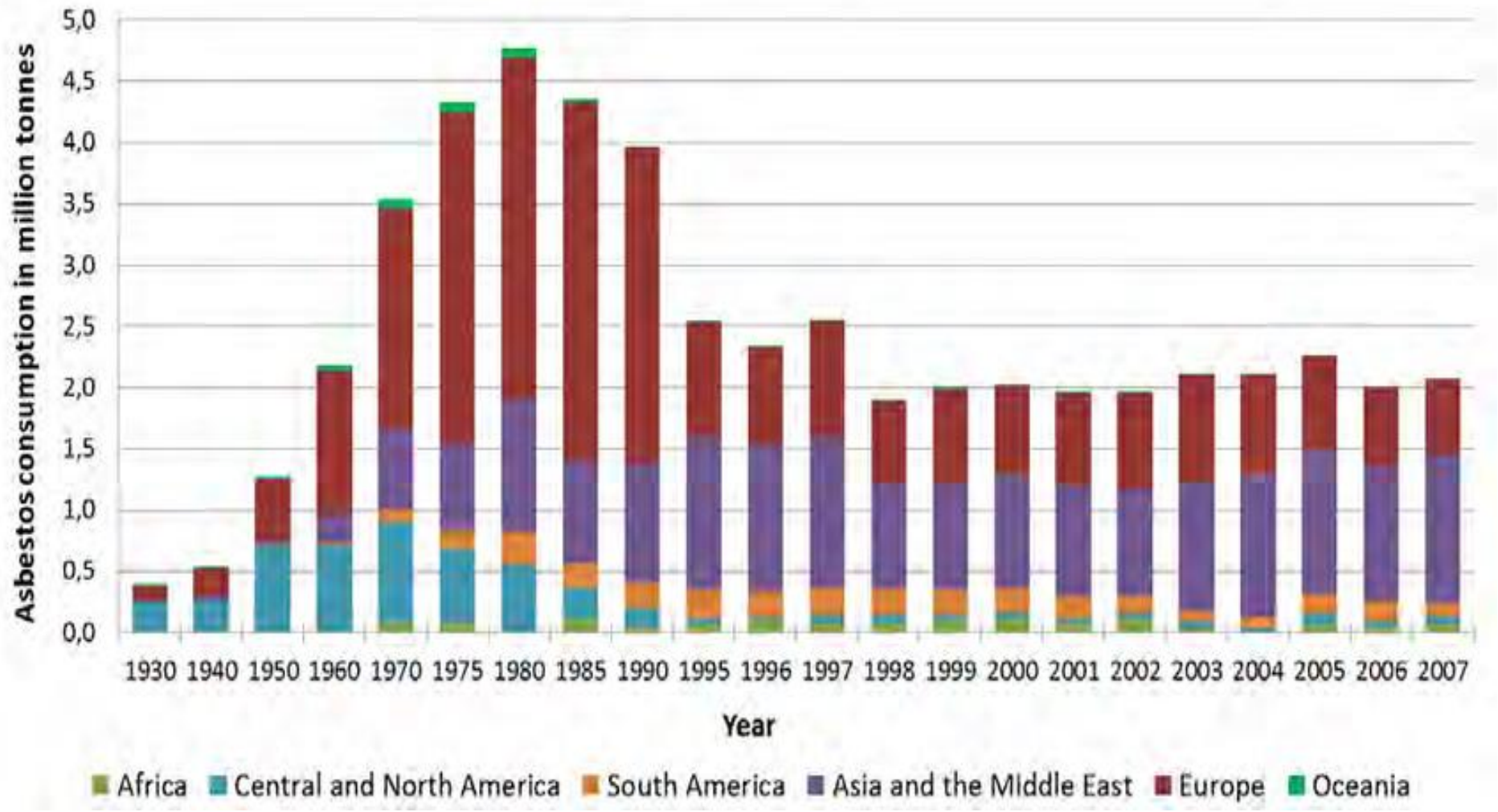
PHYSICAL CHARACTERISTICS

- **SERPENTINE FIBERS**:
- Chrysotile (white) = 95% construction products
- **AMPHIBOLE FIBERS**:
- Crocidolite (blue)= <2% building products
- Amosita (coffee) = <3% construction products





ASBESTOS CONSUMPTION IN THE WORLD



Source: United States Geological Survey (USGS, 2006 and from the values of production, exports and imports of each country.

ACM

Courtesy University of Wisconsin, Milwaukee

- Materials containing >1% asbestos (greater than one percent).

ACM

>1%

“FRIABLE” ASBESTOS

- ACM that can be **CRUMBLED OR REDUCED** to POWDER by hand in DRY.
- Includes damaged non-friable asbestos.

Source: OSHA Informer

CATEGORIES OF ACBM

The US EPA distinguishes 3 categories of asbestos-containing materials:

- ❑ Surfacing Materials
- ❑ Sprayed or troweled on materials Thermal System Insulation.
- ❑ Pipe and bolier insulation Miscellaneous Materials.

NON-FRIABLE ACM

CATEGORY I:

Valve seals, packaging materials, heavy-duty floor coverings, and asphalt roofing products containing >1% asbestos under 40 CFR part 763, section 1, PLM.

▶**Ex:** Vinyl Asbestos Tile (VAT)

CATEGORY II:

Any material, excluded from Category I, that contains >1% asbestos, under 40 CFR part 763, section 1, PLM, which, when dried, cannot crumble or be reduced to dust by hand.

Ex: Transite

Are these materials friable or non-friable?

EXAMPLES OF ITS USE

Surface Materials (SM):

ACM applied by spray or putty knife (walls, ceiling, structural members) for decorative, acoustic or fire insulation purposes. This includes plaster and fire-resistant covers.

Thermal Coating System (TSI):

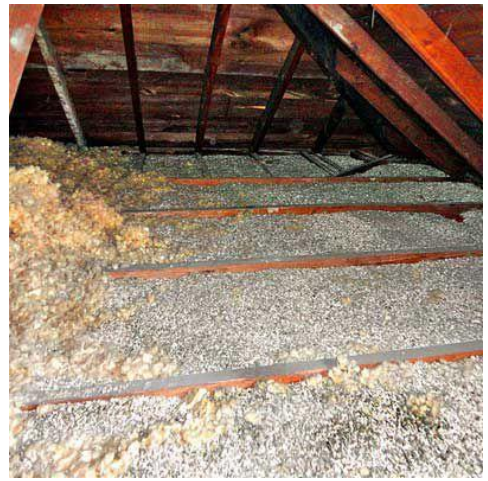
A thermal coating used to inhibit heat transfer or to prevent condensation in pipes, boilers, tanks, and some components of hot and cold water systems, and for ventilation, heating, and air conditioning (HVAC) systems. This includes lagging, pipe lining, blocks, batt, liner covers, cements and slurries, and a variety of products such as gaskets and ropes.

Miscellaneous Materials:

Other products, usually non-friable and materials such as floor tile, ceiling, plush roofing, concrete pipes, siding sheets, and fabrics.

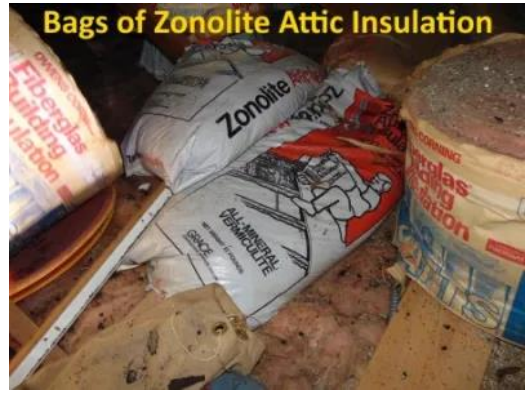
VERMICULITE

- Used in construction, insulation,& gardening.
- Libby, Montana asbestos contamination.
- EPA, estimated that **940,000 U.S**. homes contain Zonolite vermiculite insulation (1985).
- **Must be trained and certified** as Asbestos abatement Contractor to remove or disturb more tan 60'' x 60'' sealed bag (Wisconsin only).



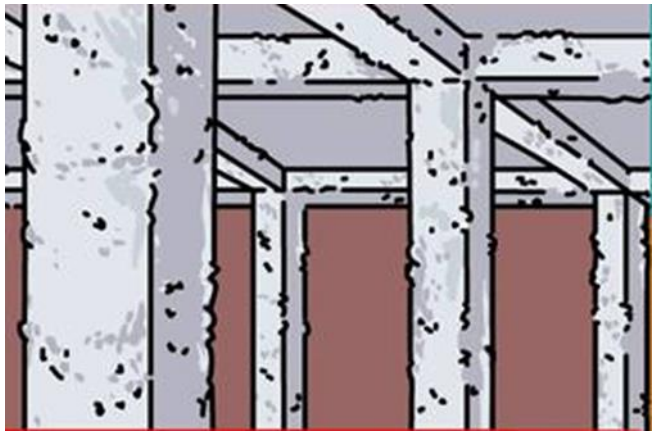
ENCOUNTERS WITH VERMICULITE

- ❑ Minor renovations.
- ❑ Routine Landscaping.
- ❑ Extensive digging.
- ❑ Major Renovations.
- ❑ Fires.
- ❑ You should assume that vermiculite is from Libby and treat as if it contains asbestos.
- ❑ Currently no federal regulation on vermiculite, although some states and local agencies may regulate.



AMOSITE

NOT ASBESTOS



NOT ASBESTOS

CHRYSOLITE

WHEN IS IT DANGEROUS?

When it is in the air and can be breathed.

RISK CONSIDERATIONS

It is NOT ALWAYS harmful, unless it is disturbed or damaged:

¿WHAT IS ASBESTOS? - REVIEW

Naturally Occurring Mineral

CHARACTERISTICS

- Fire Resistant
- Chemical resistant
- Non – conductive
- Acoustical
- Heat and Frost insulator
- Lightweight
- Tensile strength greater than Steel

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

ASBESTOS CONTENT - REVIEW

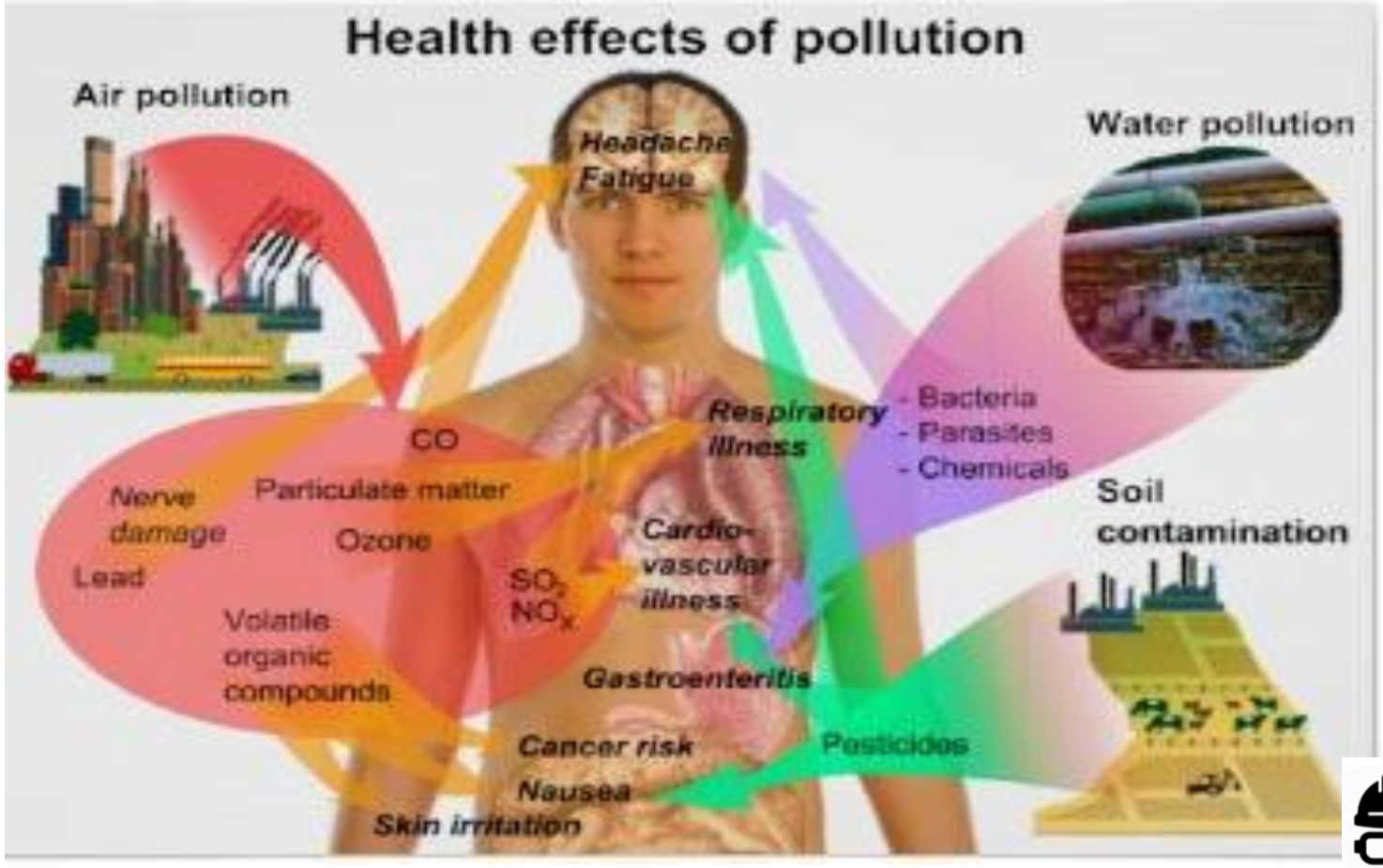
- ❑ Asbestos – containing material (ACM) = >1% asbestos.
- ❑ Presumed Asbestos Containing Material (PACM).
- ❑ Thermal system insulation (TSI) and surfacing ACM.
- ❑ Resilient Flooring (before 1980).
- ❑ Dust or Debris near visibly damaged ACM/PACM.

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

Topic 2.

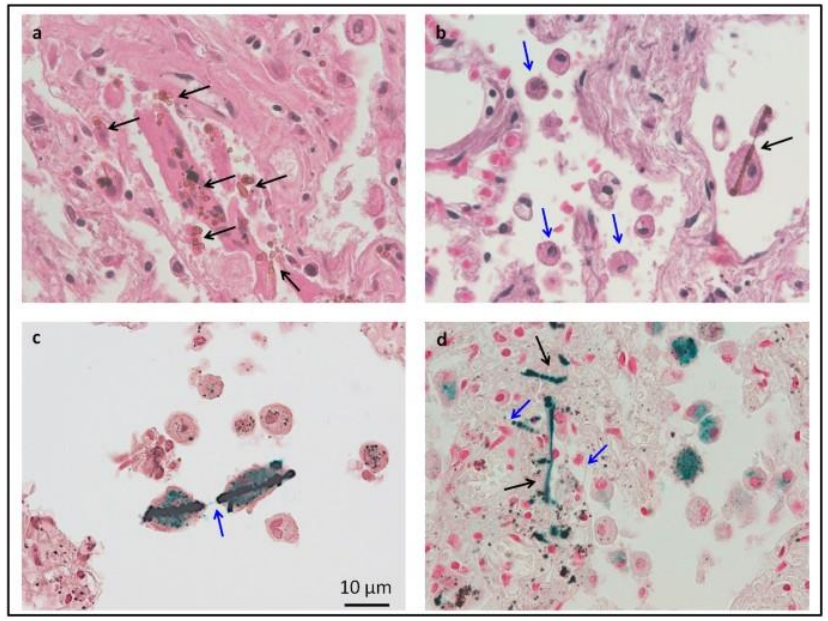
2. Health Effects

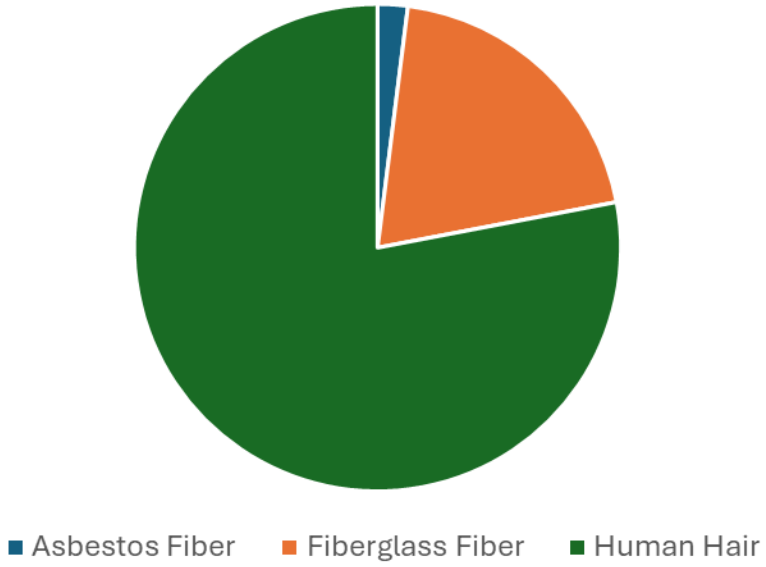
HEALTH EFFECTS



WHY IS ASBESTOS DANGEROUS?

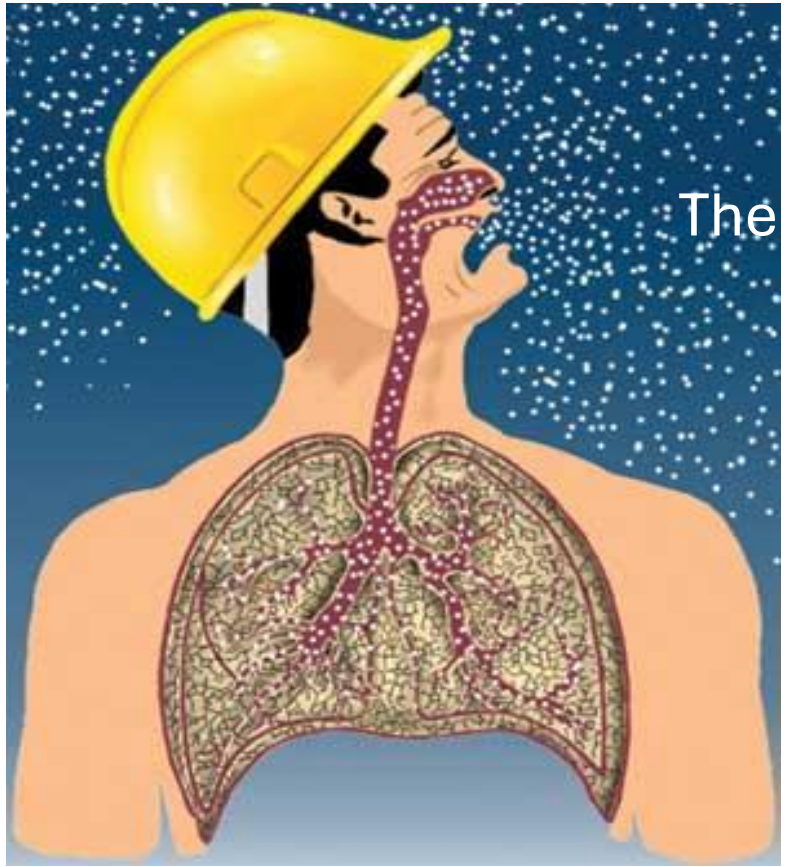
- **When crushed, it breaks into tiny Sharp fibers that you cannot see, feel or taste**





SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

Dose / Response



Asbestos exposure accumulates

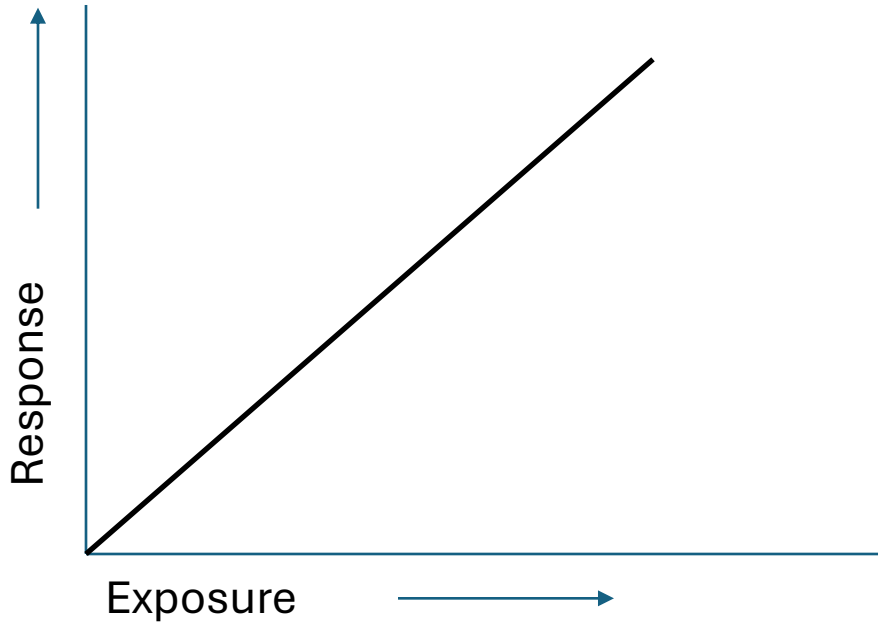
Dose/Response relationship:

The more you are exposed to asbestos, the greater your risk of getting sick.

HOW MUCH ASBESTOS DOES IT TAKE?

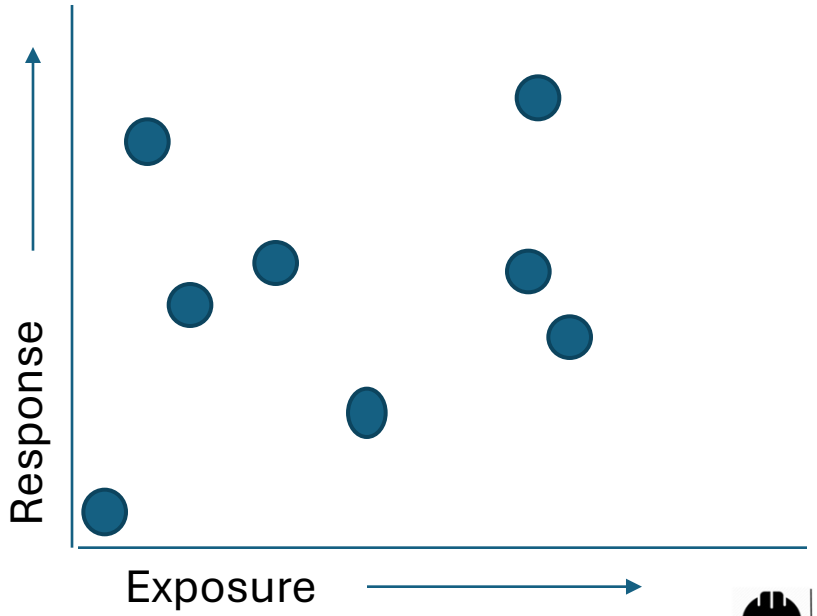
DOSE RESPONSE

- The greater the exposure (concentration /time), the greater the ocurrence or severity of response (reaction / health effect)



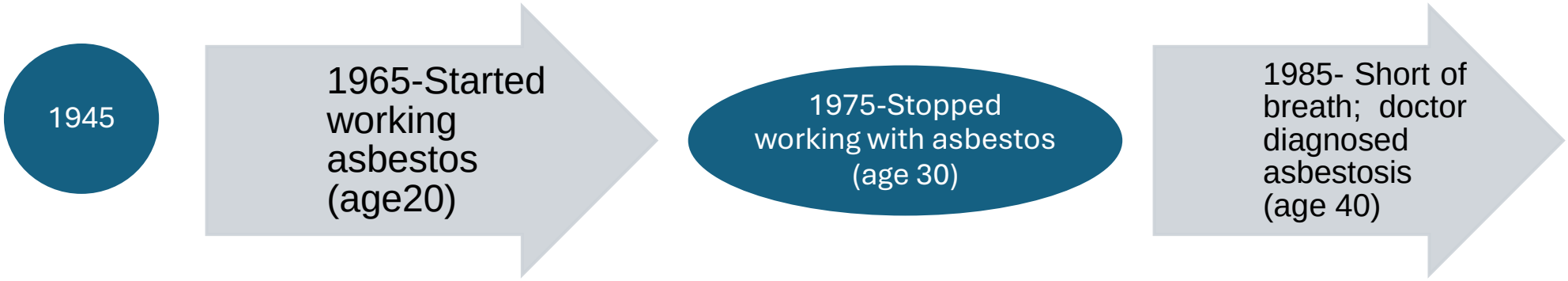
NON- DOSE RELATED

- No pattern between amount of exposure and ocurrence of response.



HOW LONG DOES IT TAKE TO GET SICK?

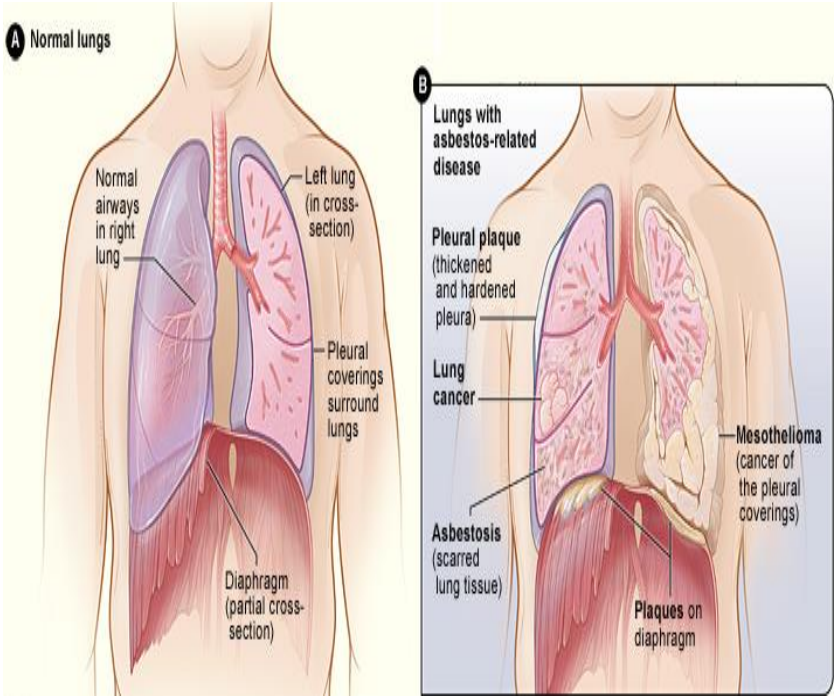
- ❑ You cannot tell when you are breathing asbestos.
- ❑ No amount of asbestos is safe.
- ❑ You can get 10-40 years after exposure (Latency Period)



SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

ASBESTOS – RELATED DISEASES

- ❑ Lung Cancer
- ❑ Abnomial cell growth
- ❑ Biggest Killer
- ❑ Dose Related
- ❑ Almost Always fatal



- ❑ **Mesothelioma**
  - Cancer on protective lining (lung/abdomen)
  - Non-doce related
  - Always Fatal
- ❑ **Asbestosis**
  - Scarring of lung tissue
  - “White lung”
  - Dose – related
  - Not always fatal
- ❑ **Digestive System Cancer**
  - From ingestión
  - Dose – related
  - Not always fatal

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

OTHER TYPES OF CANCER

Laryngeal Cancer

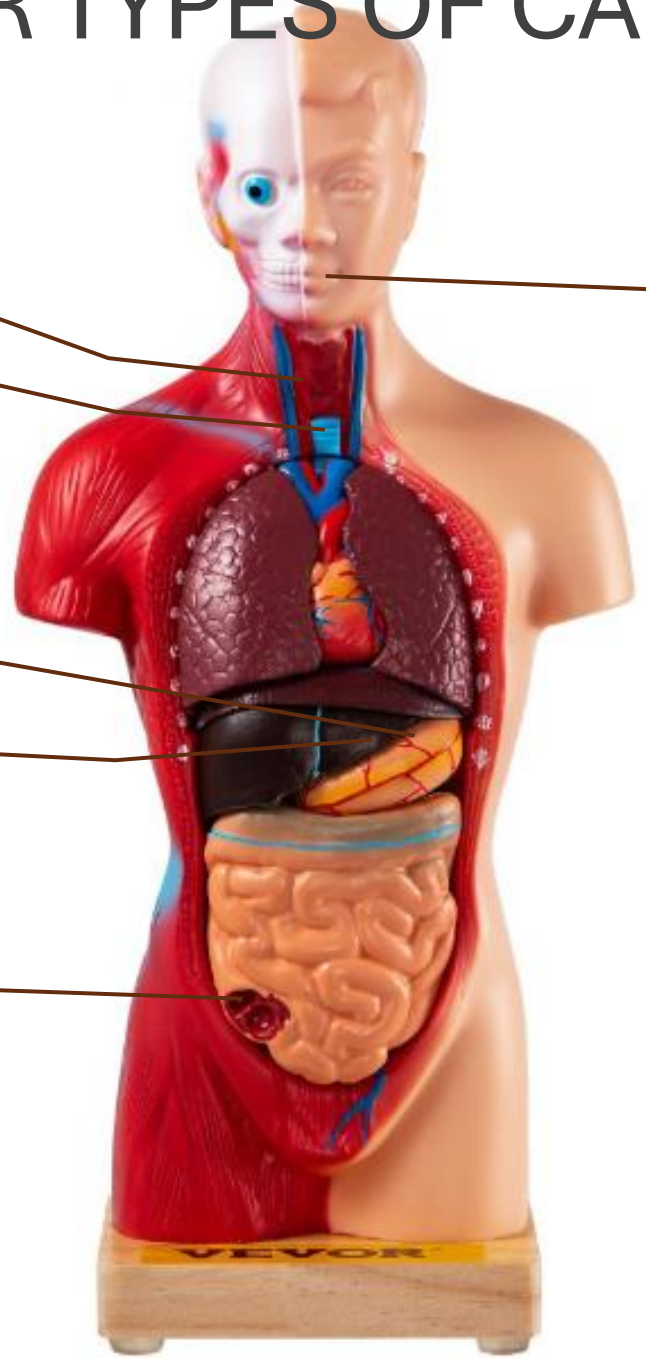
Esophagus Cancer

Stomach Cancer

Pancreatic Cancer

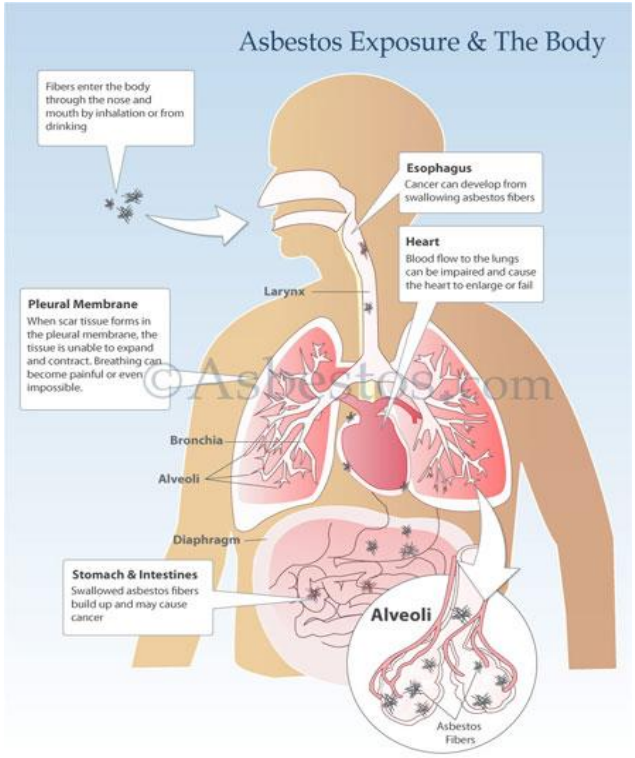
Colon Cancer

Mouth Cancer

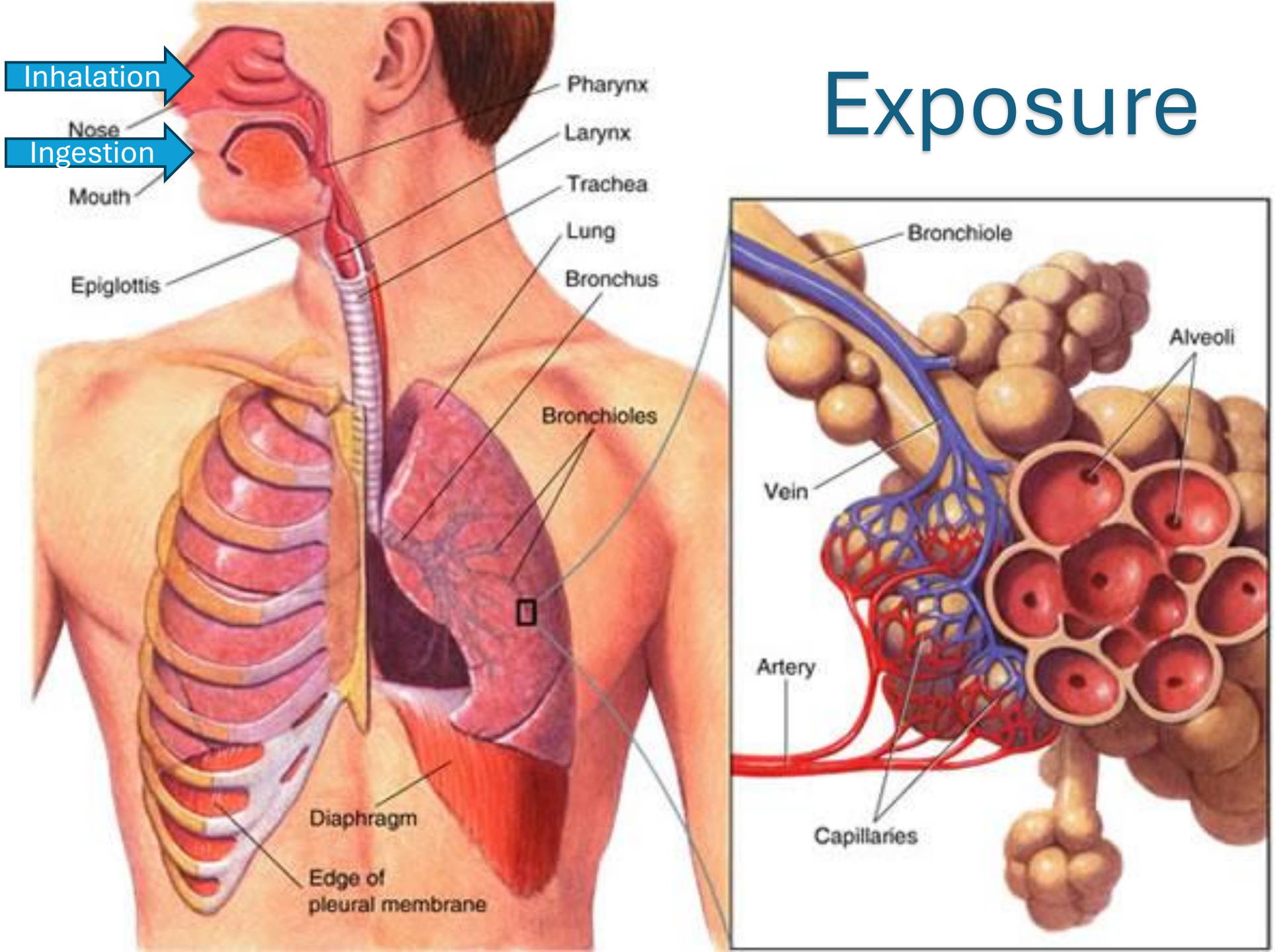


ROUTES OF ENTRY

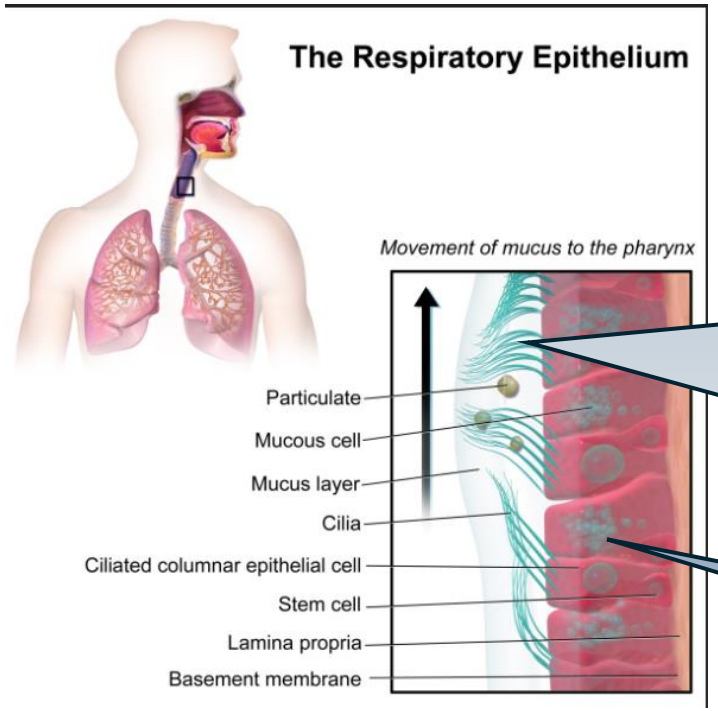
- ❑ Inhalation
- ❑ Nasal Hair
- ❑ Traces and Bronchial Tubes
- ❑ Alveoli



Exposure


Inhalation
Ingestion
Nose
Mouth
Epiglottis
Pharynx
Larynx
Trachea
Lung
Bronchus
Bronchioles
Diaphragm
Edge of pleural membrane
Bronchiole
Alveoli
Vein
Artery
Capillaries

BODY DEFENSES

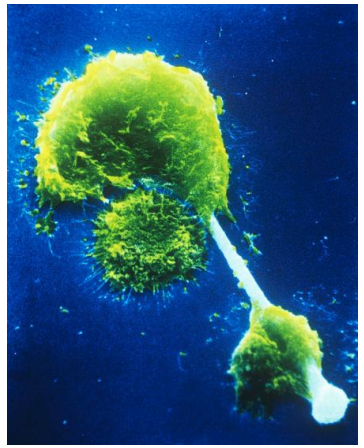


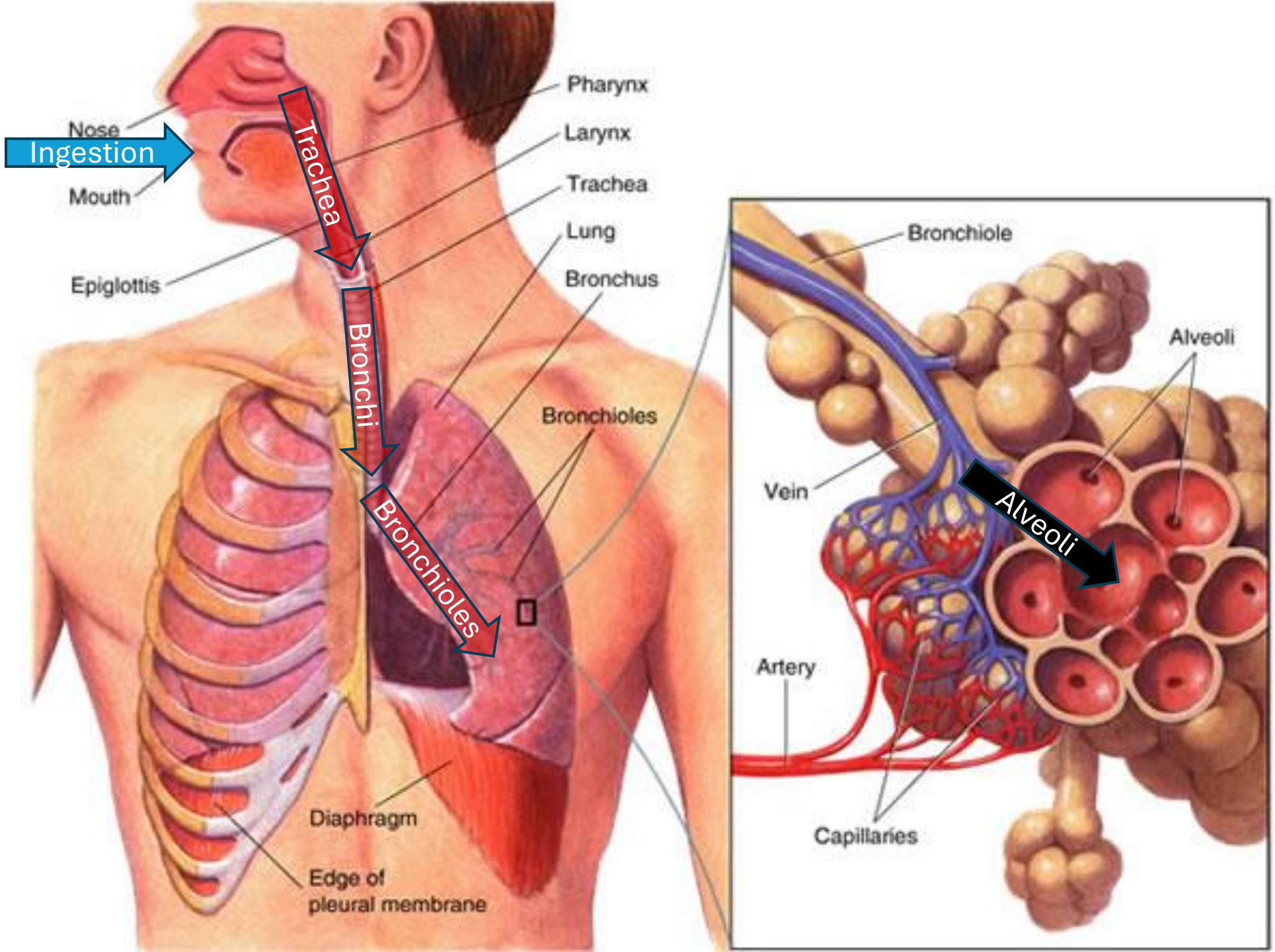
CILIA
Thin hairs found in the trachea.
They help expel contamination through sneezing.
Smoking numbs the cilia, which affects the process of clearing the airways.

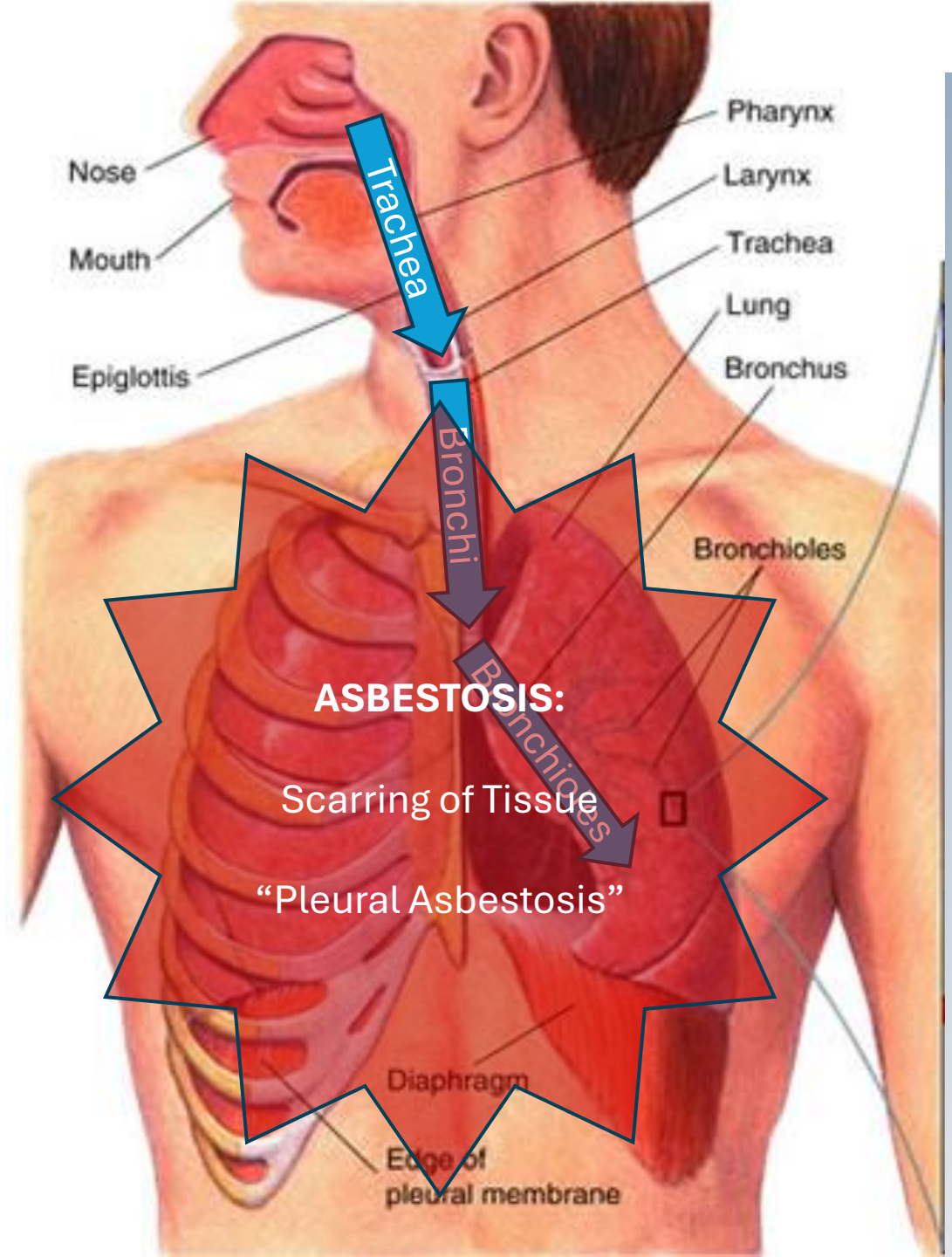
Mucosa
It helps stick particles to the trachea and then expel them.
One swallows 2/3 of the mucus daily.

White Blood Cells

They help cleanse the blood.




Nose
Ingestion
Mouth
Epiglottis
Pharynx
Larynx
Trachea
Lung
Bronchus
Bronchioles
Trachea
Bronchi
Bronchioles
Diaphragm
Edge of
pleural membrane
Bronchiole
Alveoli
Vein
Alveoli
Artery
Capillaries



ASBESTOSIS

Symptoms: Common symptoms include shortness of breath, persistent cough, chest tightness, and finger clubbing. Severe cases can lead to respiratory failure.

Diagnosis: Diagnosis involves a medical history review, physical examination, imaging tests (X-rays, CT scans), and pulmonary function tests.

Treatment: There is no cure for asbestosis. Treatment focuses on symptom management and preventing complications. Quitting smoking is crucial for those with asbestosis.

Prevention: Proper workplace safety measures, including asbestos awareness training, personal protective equipment (PPE), and regular monitoring, can help prevent exposure.

Finger Clubbing!

Asbestos-related finger clubbing, also known as digital clubbing, is a physical condition where the ends of the fingers and toes become enlarged and the nails curve around the fingertips. This condition is often associated with long-term exposure to asbestos.

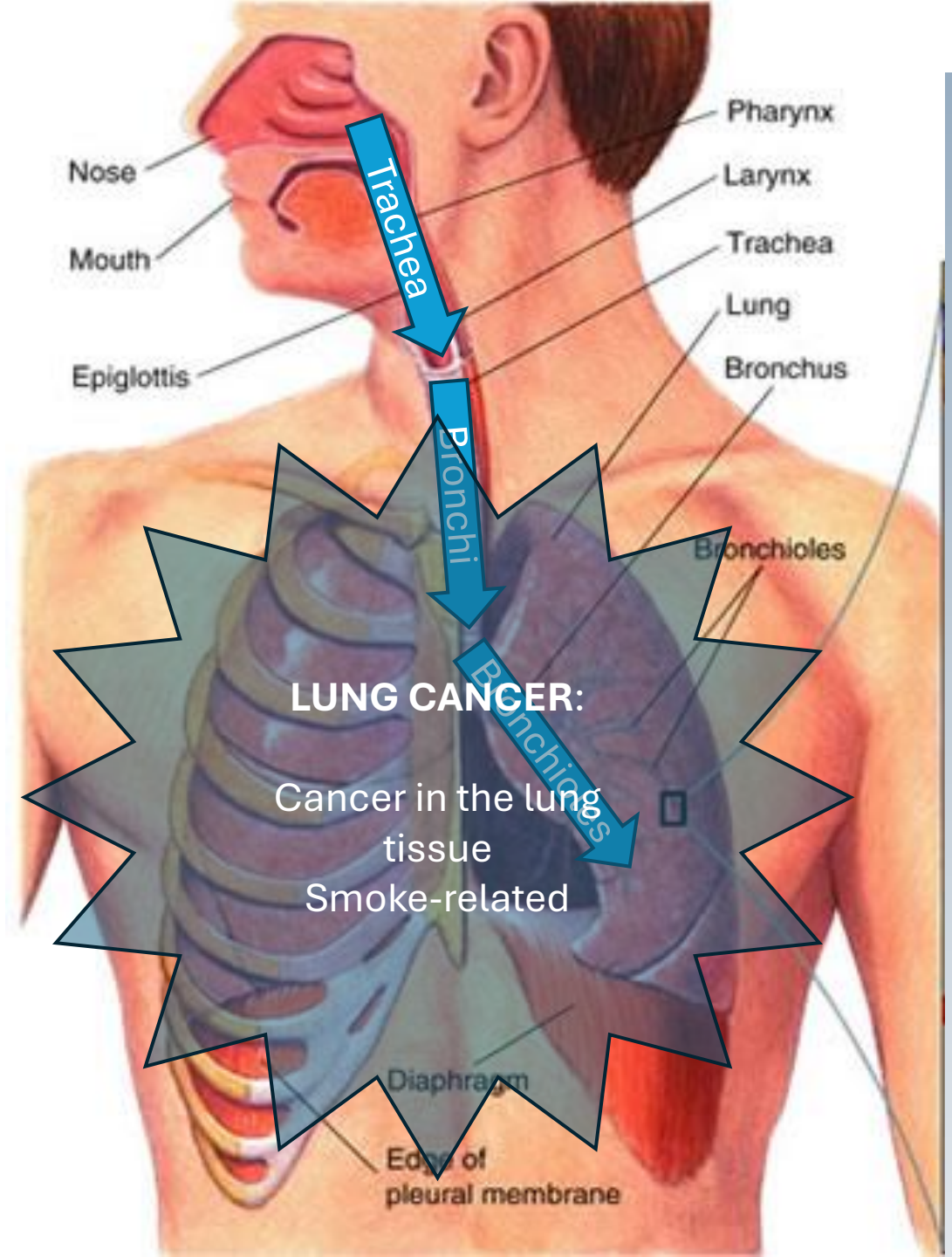
Here's how asbestos exposure can lead to finger clubbing:

1.Asbestosis: This is a chronic lung condition caused by inhaling asbestos fibers, leading to scarring (fibrosis) of the lung tissue. The reduced lung function and oxygenation can contribute to finger clubbing.

2.Lung Cancer: Asbestos exposure is a known risk factor for lung cancer, which can also cause finger clubbing as a secondary condition.

3.Mesothelioma: This is a rare but aggressive cancer of the lining of the lungs (pleura) or abdomen (peritoneum) directly linked to asbestos exposure. Mesothelioma can lead to clubbing due to the impact on lung function and overall oxygen levels in the blood.

The exact mechanism behind finger clubbing is not fully understood, but it is believed to involve increased blood flow to the fingertips and changes in the connective tissue. The condition is a sign of underlying health issues and requires medical evaluation to determine the cause and appropriate treatment.



LUNG CANCER

Symptoms: Common symptoms of lung cancer include persistent cough, chest pain, shortness of breath, wheezing, hoarseness, weight loss, and coughing up blood.

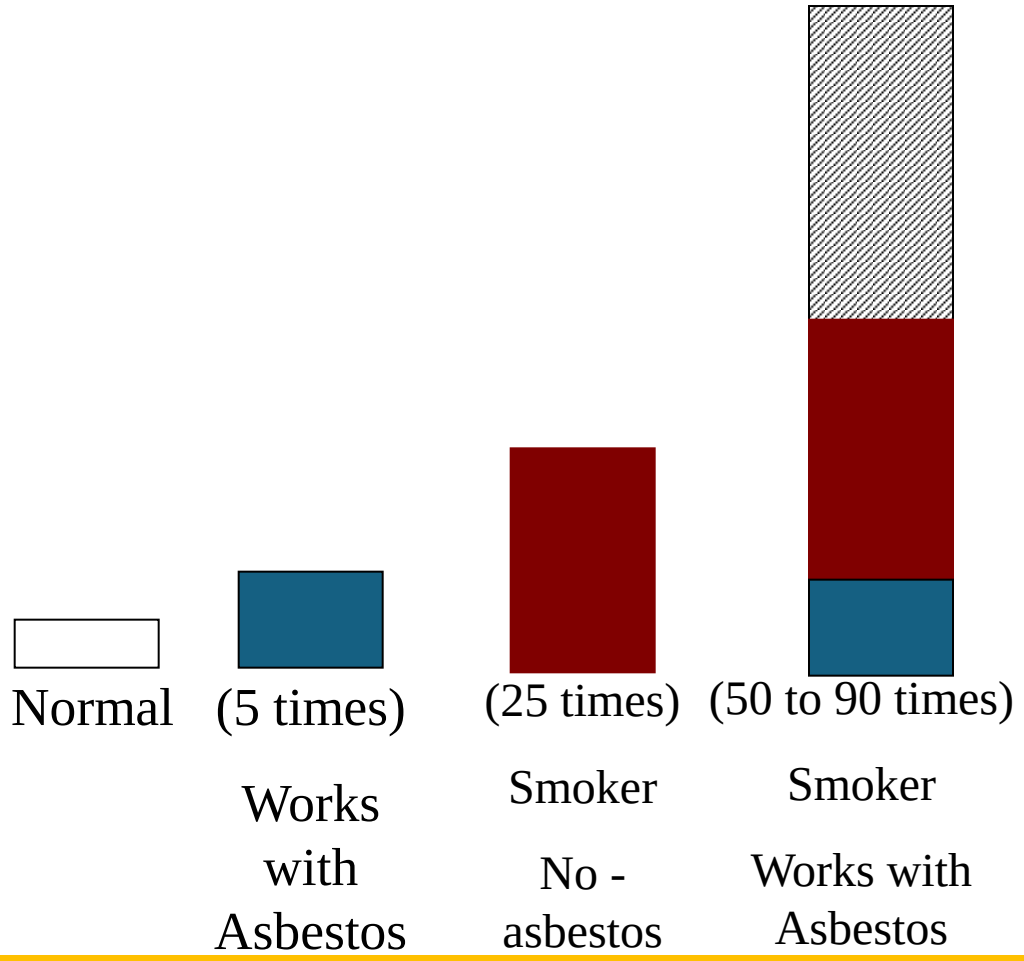
Diagnosis: Diagnosis typically involves imaging tests such as chest X-rays or CT scans, as well as biopsy for confirmation. Early detection through screening can improve treatment outcomes.

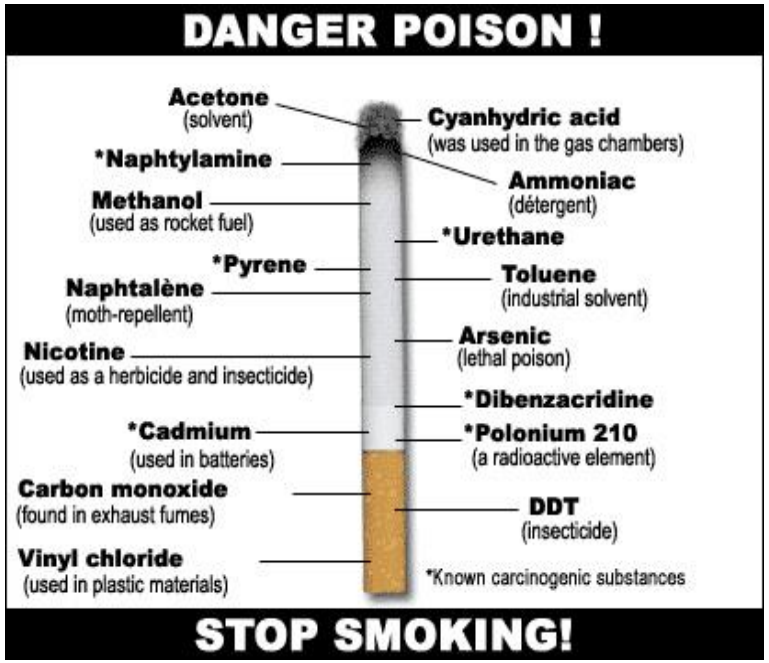
Treatment: Treatment options for lung cancer include surgery, chemotherapy, radiation therapy, targeted therapy, and immunotherapy. The choice of treatment depends on the type and stage of cancer.

Prevention: Quitting smoking and avoiding exposure to tobacco smoke and other carcinogens can significantly reduce the risk of developing lung cancer. Radon testing and mitigation are also important preventive measures.

SMOKING AND WORKING WITH ASBESTOS

Smoking increases the risk of lung cancer by 50 to 90 times.



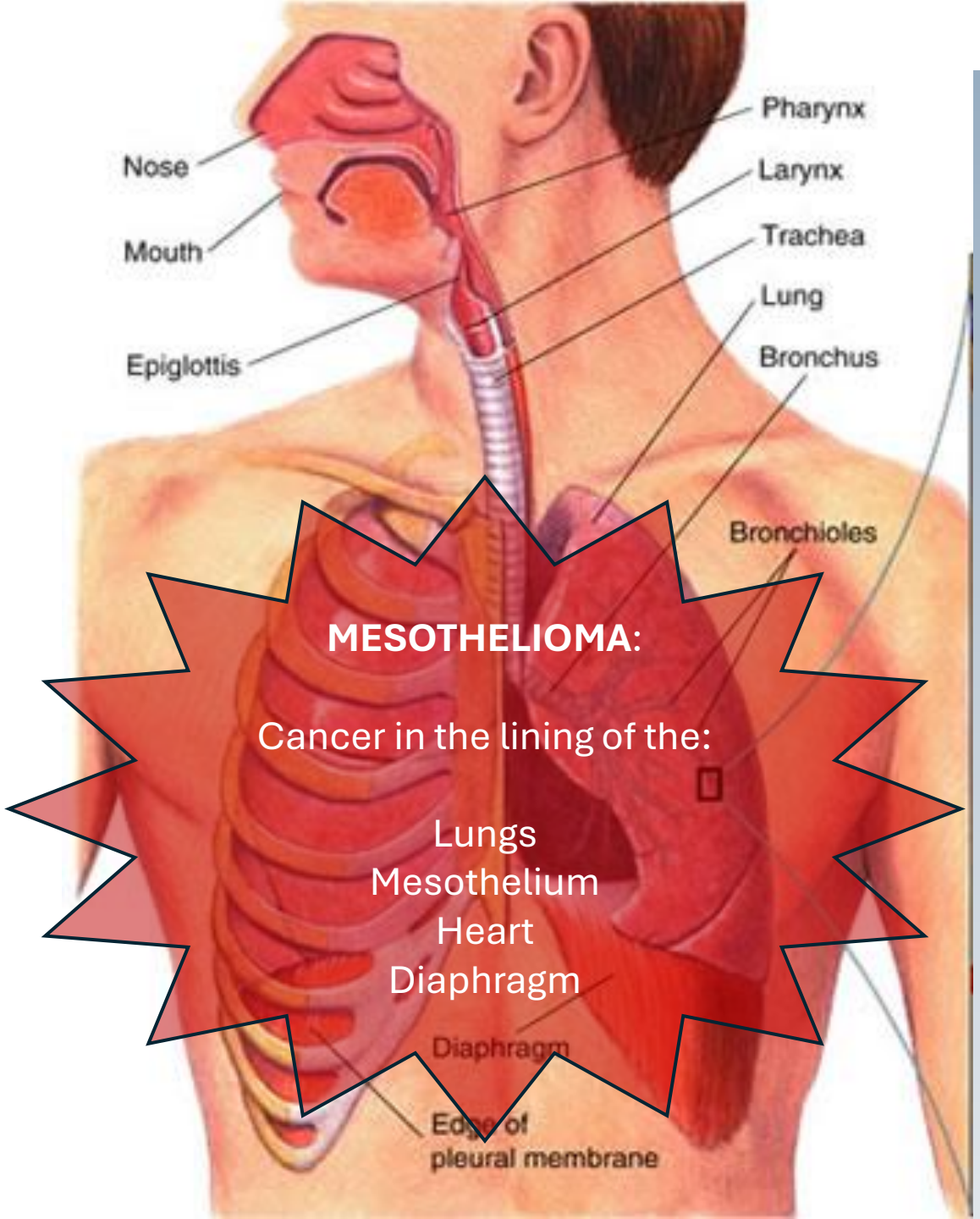


Cigarettes contain more than 4000 chemicals; 69 of them carcinogenic.

VAPING IS ALSO DANGEROUS

Here are the dangers associated with vaping:

- No matter the delivery method, nicotine is addictive. Studies have shown that it may be harder to quit a nicotine addiction than a heroin addiction.
- The flavors and stabilizers in e-cigarettes can cause unknown inflammation to delicate lung tissue.
- The length of time spent vaping can be much longer than smoking a standard cigarette.



MESOTHELIOMA

Symptoms: Common symptoms of mesothelioma include chest pain, shortness of breath, persistent cough, abdominal swelling or pain, weight loss, and fatigue.

Diagnosis: Diagnosis involves a thorough medical history review, physical examination, imaging tests (CT scans, MRIs), and biopsy for confirmation. Early detection is crucial for treatment success.

Prognosis: Mesothelioma prognosis varies depending on factors such as the stage at diagnosis, tumor location, and overall health. Treatment options may include surgery, chemotherapy, radiation therapy, and immunotherapy.

PERSONS WHO DIED FROM ASBESTOS-RELATED DISEASES

Steve McQueen

- **He died of m**esothelioma
- **McQueen recalled stripping asbestos off pipes in a ship's engine room** during his stint as a U.S. Marine.
- The actor also worked around sound stage insulation and wore fireproof racing suits that likely contained asbestos.

Priest Richard Pankowsky

- He died at the age of 35
- His father brought asbestos home and later died of asbestosis
- His mother died of mesothelioma

LATENCY PERIOD

- The length of time it takes from exposure to asbestos to the onset of a disease (10 – 40 years).
- It is estimated that from 1940 to 1980, 27 million Americans had significant exposure to asbestos at work.
- **THERE IS “NO SAFE LEVEL OF EXPOSURE” - EPA 1989**

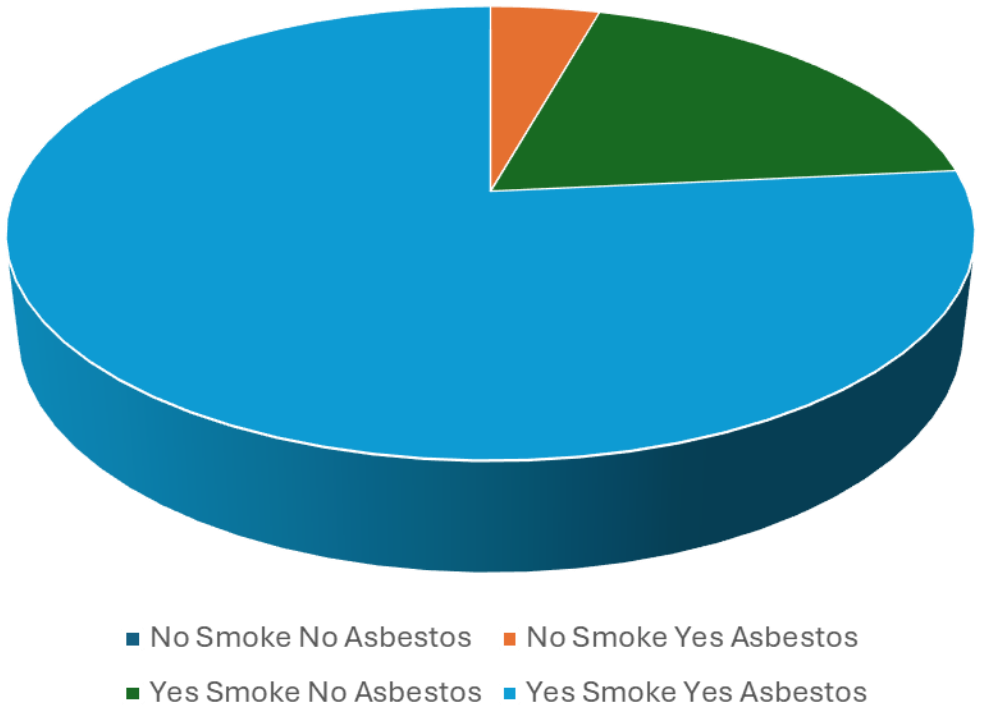
SYMPTOMS & TREATMENTS

	SYMPTOMS	TREATMENT
ASBESTOSIS	Shortness of breath, shortness of breath	There is no cure Antibiotics for colds
LUNG CANCER	Pain under the ribs Strong cough	Transplant Chemotherapy
MESOTHELIOMA	Many times there are no symptoms	There is no cure. Chemotherapy
PLEURAL PLAQUES	Shortness of breath	There is no cure Antibiotics for colds
OTHER TYPES OF CANCER	Abdominal, stomach, bowel, or rectal pain	90% chance of cure if there is early detection

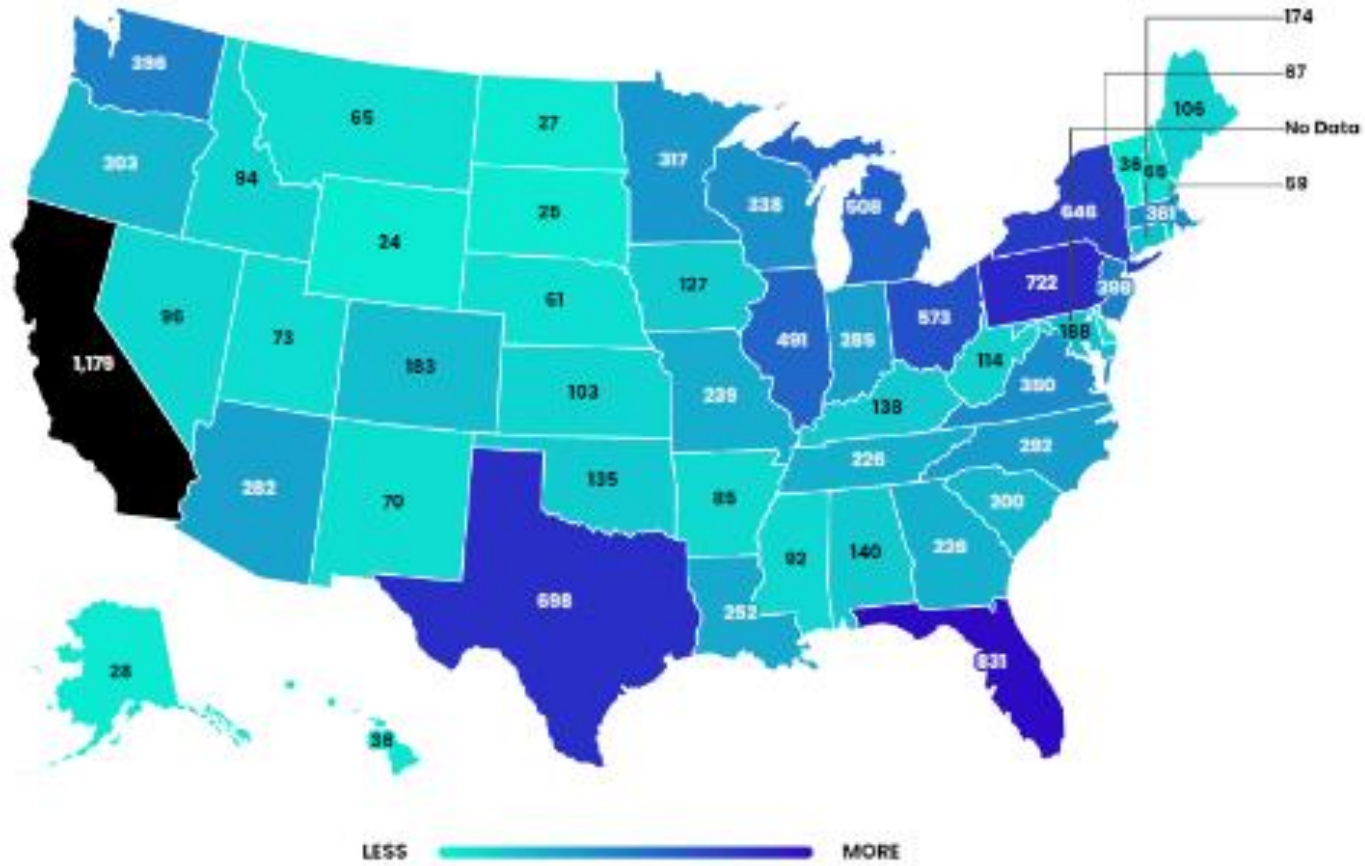
SMOKING AND ASBESTOS SYNERGISTIC EFFECT

- The Combined Effect is greater than the sum of each individual factor.

Example: Risk of lung cancer from occupational asbestos exposure and smoking



Number of Mesothelioma Deaths (2015-2019)

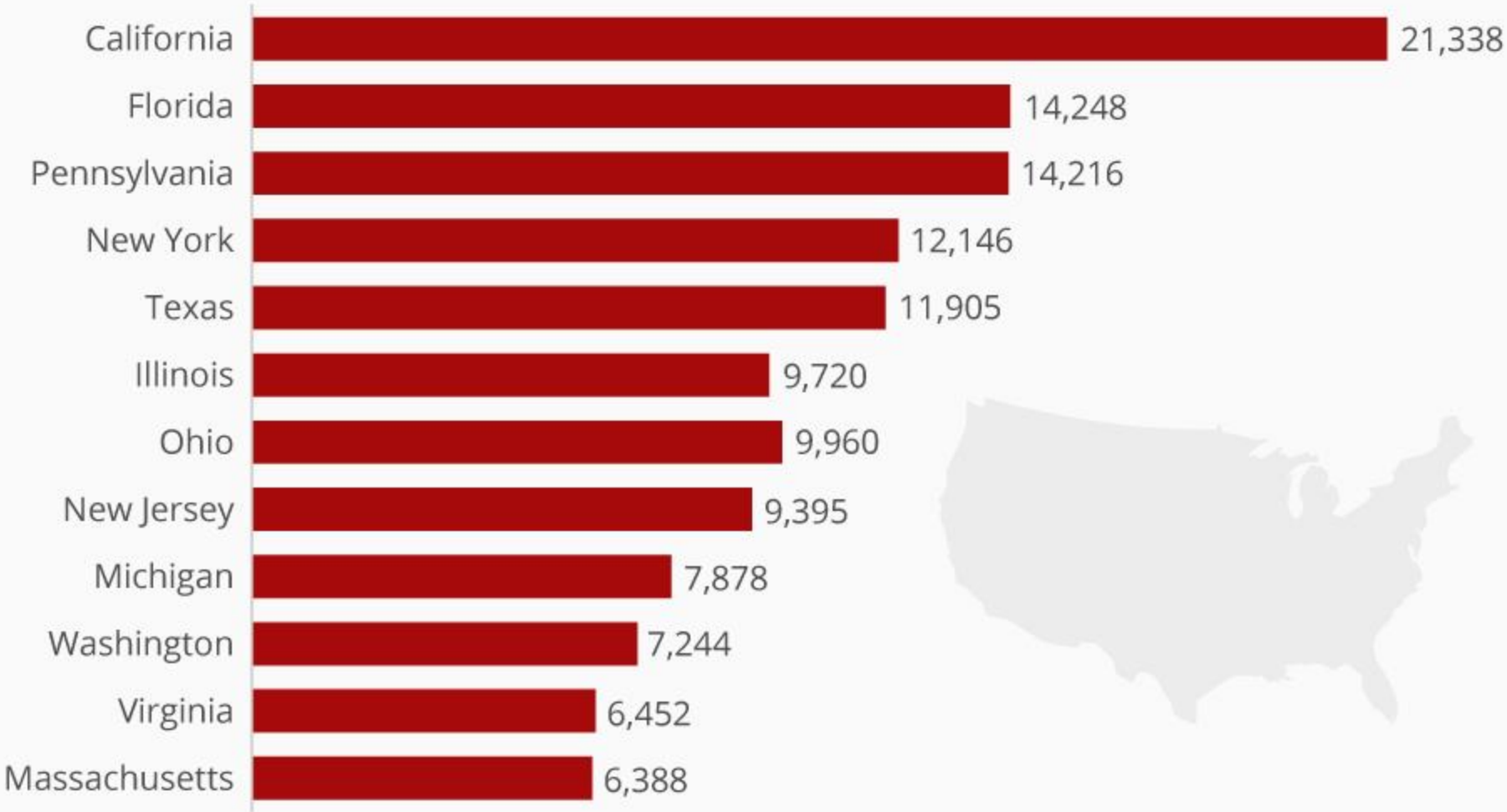


1POINT21

Source: CDC

Where Asbestos Has Inflicted The Deadliest Toll

States with the most asbestos-related deaths from 1999 to 2013

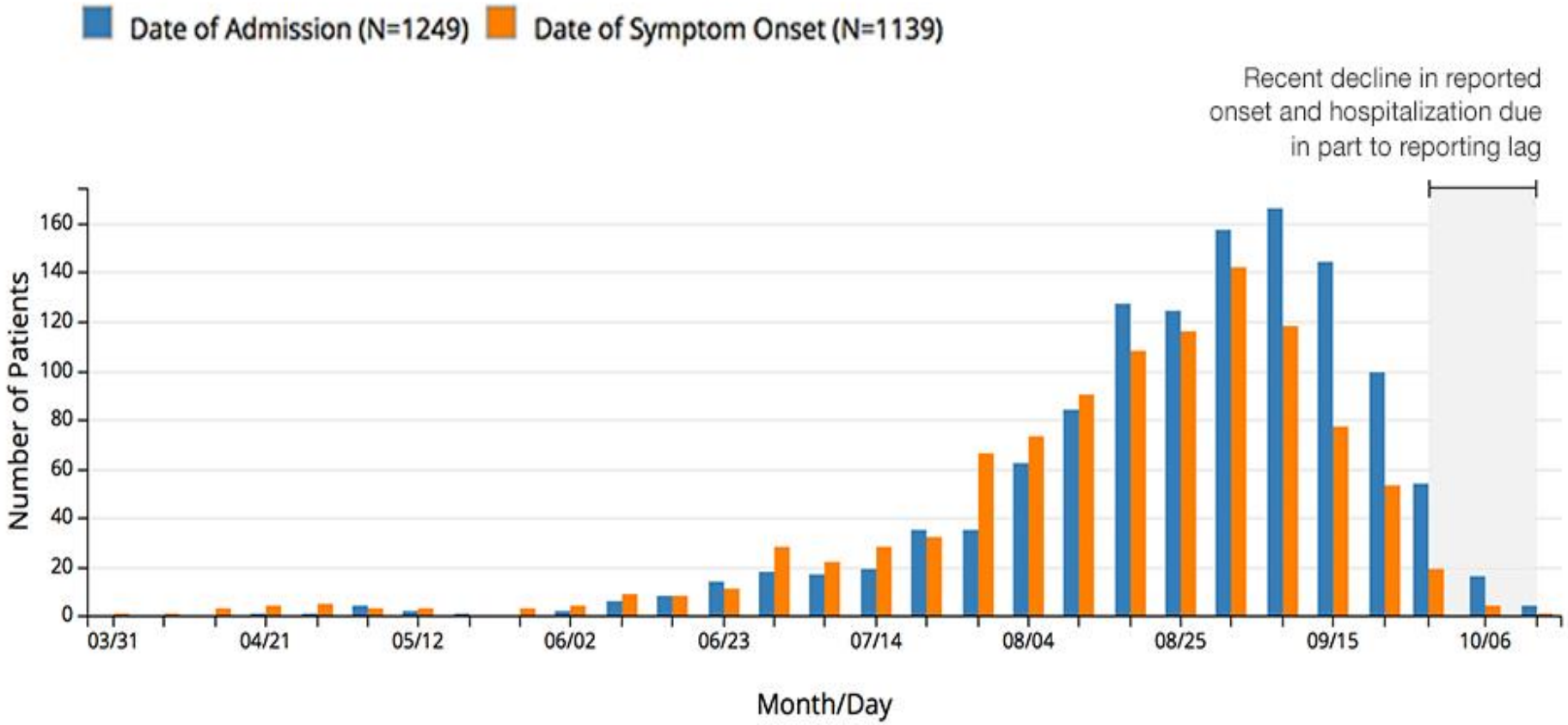


 Source: EWG Action Fund via Asbestos Nation

statista

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Dates of symptom onset and hospital admission for patients with lung injury associated with e-cigarette use, or vaping — United States, March 31–October 19, 2019



Topic 3.

3. PPE

PROTECTION PROGRAM

OSHA requires:

Subject employees to this program when:

Work >PEL (0.1 f/cc) for more than 30 days out of a year,

Negative pressure masks will be used.

Personal Protective Equipment

- **Respirators**: >0.1 f/cc
- **Hard Hats**: use when entering construction sites
- **Googles**: use to prevent eye injuries
- **Body Suits**: use when working with asbestos
- **Reflective vests**: use over coveralls
- **Gloves**: use when handling objects
- **Boots**: use when entering construction sites
- **Fall Protection**: use when working >6 feet height

ASBESTOS PERMISSIBLE EXPOSURE LIMITS

- Airborne Asbestos is measured in fibers per cubic centimeter (f/cc)

Time- Weighted Average (TWA) = 0,1 f/cc (8hours)

Excursion Limit (EL) = 1,0 f/cc (30 minutes)

Clearance Level (CL) =[,01 f/cc via PCM And { 70 ststructures /mm2 (structures per square milimeter).

VIA TEM

Air level required to pass job after abatement

CLOTHING

- ❑ Employers are required to provide proper PPE.
- ❑ Protective clothing must be worn where PEL is excceded.
  - Coveralls, hoods, booties/shoe coverings.
- ❑ Rips or tears in suits must be covered immediately.
- ❑ Put on s clean suit each time you enter the work área.
  - Used disposable suits are asbestos waste.
- ❑ Leave work clothes at work, do not take home.

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

OTHER SAFETY EQUIPMENT

- Use proper gloves for best protection
- Hard hats protect you from falling objects.
- Goggles or safety glasses should always be worn.
- Ear protection for noisy equipment or work áreas.
- Clean non-disposable clothing or equipment after use.
- Learn how to use and maintain equipment.

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

WHEN TO WEAR RESPIRATOR

CLASS I	CLASS II	CLASS III	CLASS IV
Always	❑ Exposure above PEL/EL	❑ Exposure above PEL/EL	❑ Exposure above PEL/EL
	❑ Wet methods not used	❑ Wet methods not used	❑ Working where other employees are required to wear respirators.
	❑ No neg exposure assessment	❑ No neg exposure assessment	
	❑ ACM not removed intact	❑ TSI or surfacing materials are disturbed	

Must have medical exam before you wear a tight-fitting respirator

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

RESPIRATORY HAZARDS

Dusts and vapors:

- Asbestos
- Lead dust

Vapors and Odors:

- Rubber Removers
- Rubber Spray

Oxygen Deficiency:

- Enclosed Places

What are the Exposure Limits?

- PEL = 0.1 f/cc in 8 hours TWA
- STEL = 1 f/cc in 30 minutes
- How many fibers is 0.1 f/cc at the end of the day?
- What happens if I work more than 8 hours?

PEL

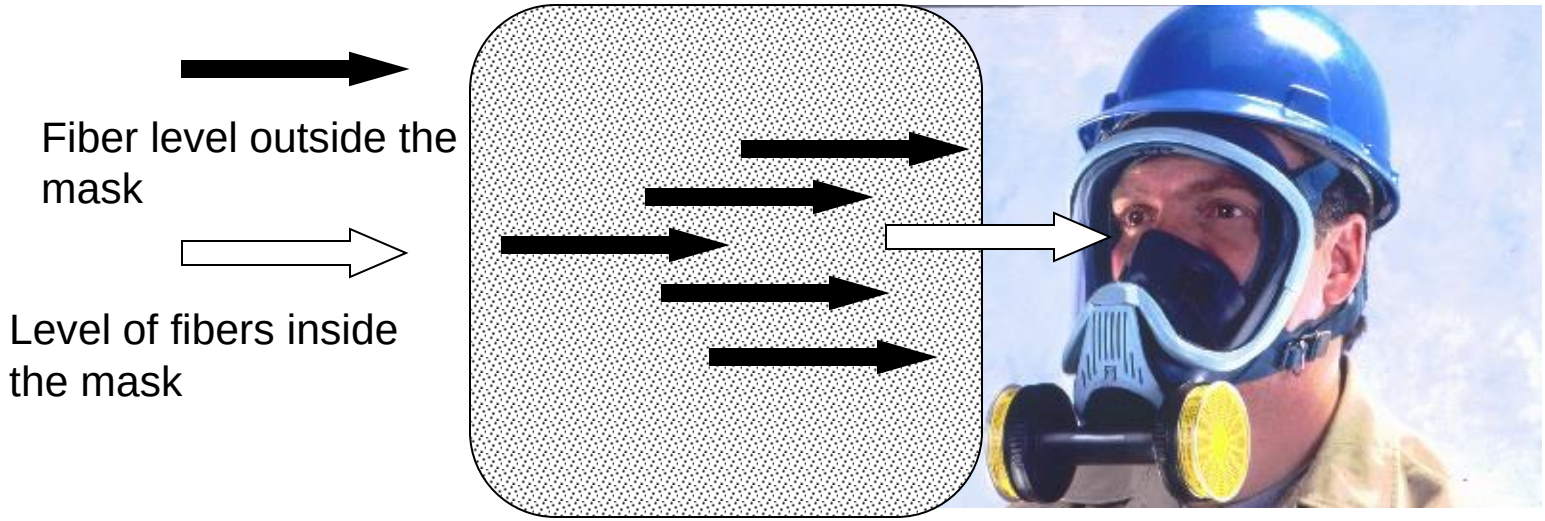
Allowed to breathe this level in an 8-hour period.

A worker breathes 1 cubic meter of air per hour

at the level of 0.1 f/cc

The worker will breathe approximately 800,000 fibers.

PROTECTIVE FACTOR



Comparison of the number of fibers outside the mask in relation to the fibers inside the mask. Ex:

Half Face = 10 outside/1 inside.

So, the PF is = 10

MUL
MAXIMUM USE LIMIT

Maximum number of fibers that a respirator can protect me.

RESPIRATOR	PF	MUL
Half Face	10	1 f/cc
Full Face	50	5 f/cc
PAPR	1000	100 f/cc
Type "C" Continuous Mode	100	10 f/cc
Type "C" Demand Mode	1000	100 f/cc
SCBA	10000	1000 f/cc

MUC
Maximum Use Concentration

MUC = 0.01 f/cc X FP

Example: For a Half Face Mask, the MUL is:

0.1 f/cc X 10 = 1 f/cc

RESPIRATOR	FACTOR	x	PEL	CUM
Half Face	10	x	0.01 f/cc	0.1 f/cc
Full Face	50	x	0.01 f/cc	0.5 f/cc
PAPR	100	x	0.01 f/cc	1 f/cc
Type “C” Continuous	100	x	0.01 f/cc	1 f/cc
Type “C” Demand	1000	x	0.01 f/cc	10 f/cc
SCBA	10000	x	0.01 f/cc	100 f/cc

EXPOSURE LIMITS

PEL **(permissible Exposure Limit) =**

0.1 f/cc (in 8 hours TWA)

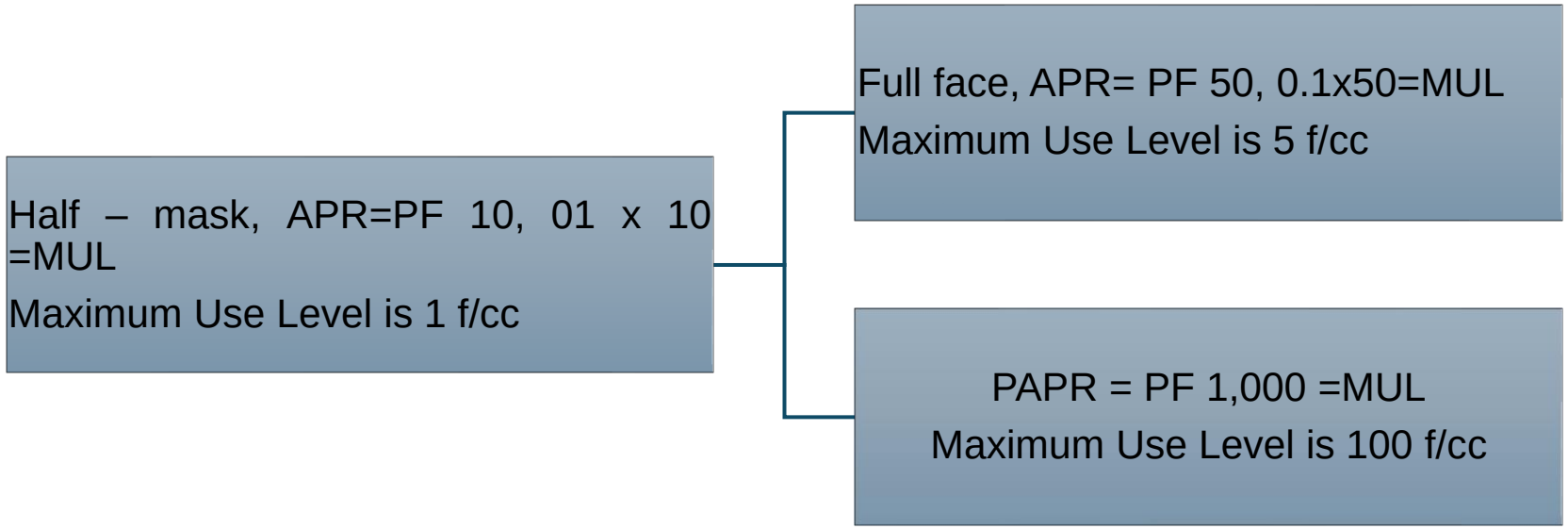
STEL **(Short-Term Exposure Limit)**

1 f/cc (in 30 min.)

Note: TWA is an Average Time Measurement in an average of 8 hours.

MAXIMUM USE LIMIT

- PEL (0.1 f/cc) x Protection Factor (PF) = Maximum Use Limit (MUL)



ASSIGNED PROTECTION FACTORS & MULS

Osha Respiratory Protection Standard 29 CFR 1910,13 (2006) – Table 1	+/- Pressure	PF	MUL
APR Half Mask	Always – neg	10	1 f/cc
APR Full-Face	Always – neg	50	5 f/cc
PAPR Full- Face	Usually+pos (except if overbreathed)	1,000	100 f/cc
Supplied Air, Full-Face • Continuous flow	Usually+pos (except if overbreathed)	1,000	100 f/cc
Pressure Demand	Always+pos	1,000	100 f/cc

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA





FIT CHECKS

- **Positive Check**

- **Negative Check**

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

SEAL CHECK PROCEDURES

THE NEGATIVE PRESSURE USER SEAL CHECK.

Cover the place where the hose connects to the facepiece with your hand and suck in gently. Hold for a count of ten seconds. You will feel the respirator pull against your face. You can feel the area of the seal tightening to your face. If there is a leak, air will rush in through the leak instead of pulling the facepiece against your face. You will feel air move against your cheeks. It mayfeel like a feather brushing across your face. The air will move toward your mouth. You mayhear the airflow.

If someone is watching you, theyshould see the respirator suck in a little at your nose if you have a good fit.

POSITIVE PRESSURE SEAL CHECKS

Take the cover off the exhalation valve(s) on your chin or on the sides of the face piece. Cover the rubber flap(s) with your hand(s) and blow out gently. You should feel the force of your breath puff the respirator out a little bit. This is like the feeling when you first blow up a balloon. If there is a leak in the facepiece, air will rush out of the leak instead of making the mask puff out. If there is a leak, you will feel air rush out against your cheeks. You will not feel the seal tightening to your face. Don' t blow too hard or you can blow out your inhalation valves and break a good seal.

TYPES OF RESPIRATORS

- APRs = Air Purifying Respirators *(Air Purifiers)*
  - Positive Pressure(+)
  - Negative Pressure(-)

- SARs = Supplied Air Respirators *(Air Suppliers)*
  - Positive Pressure(+)

TYPES OF RESPIRATORS

Air – Purifying Respirators

HALF - MASK

FULL-FACE

Powered Air- Purifying Respirator (PAPR)

Supplied Air Respirators

Air-Line Respirator (Type C)

- ❑ Continuous Flow
- ❑ Pressure Demand

Self- Contained Breathing Apparatus (SCBA)

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

HALF FACE

Used in low-dust work

Doesn't cover the eyes

Legal up to **1 f/cc**

FULL FACE

Used in medium-dust work

They fog up

Legal up to **5 f/cc**

PAPR

- Used in high-dust jobs
- Required when removing friable ACM
- Legal up to **100 f/cc**

DO NOT USE

in spaces where there is

Oxygen Deficiency

<19.5% O_2

TYPE “C”

- Use a separate air source from the work air
- Requires specialized installation
- Maximum line length = 300 feet
- Maximum Air Pressure = 125 psi
- Legal up to 100 f/cc

SCBA

- Used in rescue and emergency work
- Requires specialized training
- Legal up to 1000 f/cc

These respirators

CAN BE USED

in places where there is

Oxygen Deficiency.

FIT TESTING

❑ **QUALITATIVE**

- Detection of taste or odor (bitrix, irritant, smoke, saccharin, or banana oil).
- Only used for ne pressure respirators with PF – 10 or positive type C respirators

❑ **QUANTITATIVE**

- Uses machine to detect fit.
- May be used for any tight-fitting respirator

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

RESPIRATOR KEY FACTS

- ❑ All respirators must be approved by NIOSH.
- ❑ No respirator is perfect.
- ❑ Must be fit tested before use and every 12 months.
- ❑ Must have medical exam annually.
- ❑ Must be trained on respirator use and care.

RESPIRATOR CARE

❑Your Responsibilities

- Choose right respirator
- Know how to use it
- Inspect before use
- Fit checks
- Keep Clean
- Store in safe place
- Repair when needed

RESPIRATORY PROTECTION

29 CFR 1910.134

Respiratory Protection Regulations

REQUIREMENTS

MEDICAL APPROVAL

Questionnaire

Routine Physical Exam

PFT (Pulmonary Function Test)

Optional: EKG, X-ray chest

TRAINING IN THE USE OF RESPIRATORS

Use, Maintenance, and Limitations

RESPIRATORY ADJUSTMENT TESTS

Annually

Any time you lose or gain 20 lbs or more

Each time they are going to use other respirators

LIMITATIONS

1. Mask size
2. Filters
3. Changes in the user's face
4. Cleaning and disinfection
5. Protection Limits
6. Use according to the type of work

HOW TO MANAGE RESPIRATORY RISKS

ADMINISTRATIVE:

- Training, Written Programs, SOP

ENGINEERING & CONTROL & SAFE WORK PRACTICES:

- Put plans into action, Use good work practices, physical systems (NAM, wet asbestos, barriers)

PPE:

- Proper Use of Respirators

REMEMBER

DO NOT USE Air Purifying Respirators

in places

Less than 19.5% O_2

Do not use APRs in IDLH

(*immediately dangerous to your life and health*) environments

Oxygen Deficiency

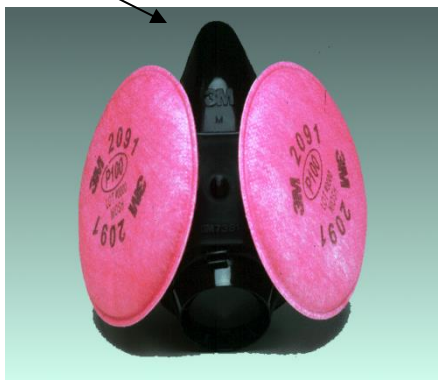
<19.5% de O_2

FILTER TYPES

- N-95 (grey) - The Dust Mask.

- P-100 (Magenta, pink).

HEPA filters filter 99.97% ~~of~~ particles from the air down to fibers as small as 0.3 microns in diameter.



- Combo Filters.

Comfo Respirator Cartridges

The Comfo line of particulate, chemical and combination cartridges is NIOSH-certified (to 42 CFR, Part 84). Cartridges fit Comfo Classic, Ultra-Twin, Ultra Elite Twin-Cartridge and Duo-Twin Respirators, and certain half-mask and full-face Advantage Respirators with Adapter (P/N 809999).

			Acid Gases												Filter Type & Efficiency See **Definitions** on previous page			
MSA Cartridge Description	**Re-Order Part Number**	**Color Coding**	Organic Vapor	Chlorine	Sulfur Dioxide	Chlorine Dioxide	Hydrogen Chloride	Hydrogen Sulfide	Ammonia	Methylamine	Formaldehyde	Hydrogen Fluoride	Mercury Vapor				See **Notes** on p. 12
			OV	CL	SD	CD	HC	HS	AM	MA	FM	HF	MV	P100	R95	N95	
Organic Vapor (GMA)	464031 (10 in pkg.)		●												●	●	2,3
Organic Vapor/P100 (GMA)	815178 (6 in pkg.)		●											●			2,3,4
Organic Vapor/P100 Short Stack (GMA)	815186 (6 in box)		●											●			2,3,4
Acid Gas (GMB)	464032 (10 in box)			●	●	●	●	●							●	●	2
Acid Gas/P100 (GMB)	815179 (6 in box)			●	●	●	●	●						●			2,4
Organic Vapor/Acid Gas (GMC)	464046 (10 in pkg.)		●	●	●	●	●	●							●	●	2,3
Organic Vapor/Acid Gas/P100 (GMC)	815180 (6 in box)		●	●	●	●	●	●						●			2,3,4
Organic Vapor/Acid Gas/P100 Short Stack (GMC)	815188 (6 in box)		●	●	●	●	●	●						●			2,3,4
Ammonia/Methylamine (GMD)	464033 (10 in box)								●	●					●	●	2,3
Ammonia/Methylamine/P100 (GMD)	815181 (6 in box)								●	●				●			2,3,4
Multigas (GME)	492790 (10 in box)		●	●	●	●	●	●	●	●	●	●			●	●	2,3
Multigas/P100 (GME)	815182 (6 in box)		●	●	●	●	●	●	●	●	●	●		●			2,3,4
Iodine Vapor/P100 (GMI)*	815184 (6 in box)		●											●			2,4
Chlorine/Mecury Vapor (Mersorb)	466204 (10 in box)			●									●		●	●	2
Chlorine/Mercury Vapor/P100 (Mersorb)	815185 (6 in box)			●									●	●			2,4
P100	815175 (10 in box)													●			1,4
Sparkfoe® P100	815176 (10 in box)													●			1,4
Low-Profile P100	815177 (10 in box)													●			1,4
Stand-alone and cover *N95 and covers required for Comfo Respirators*	816662 N95 (10 in pkg.) 816661 N95 (50 in box) 489353 Reusable snap-on cover (1 in pkg.; 2 req.)															●	1
Prefilter and Cover N95	816662 N95 (10 in pkg.) 816661 N95 (50 in pkg.) 489353 Reusable snap-on cover (1 in pkg.; 2 req.)															●	1
Prefilter and Cover R95	816287 R95 (20 in box) 489219 R95 Reusable snap-on cover (1 in pkg.; 2 req.)														●		1

EMPLOYERS RESPONSIBILITIES

Respiratory Protection Program

Respirator Fit Testing and Training

- ❑Assign a person in charge of program
- ❑Write procedures for choosing and using
- ❑Check program regularly
- ❑Ofter medical exams (negative pressure respirators)
- ❑Give employee training on respirators
- ❑Use approved respirators
- ❑Chosse respirator fits employee
- ❑Inspect and fix respirators
- ❑Have safe storage place

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

FILTER SELECTION

Color	**Pollutant**
Pink	Particles, vapors, mists
Yellow	Organic, chemical vapors.
Black	Organic vapors.
Combined	Particles, vapors, mists / organic, chemical vapors.

NIOSH CODINGS

NIOSH It classifies filters according to their filtering capacity, as follows:

CODE	Oils/ Solvent Resistance
N	Not resistant
R	Resists up to 1 working day
P	Oil-proof, durable for more than 1 working day

CODE	EFFICIENCY
N95	Filters 95% oil-free particles and aerosols.
R95	It filters 95% of oily particles and aerosols for up to 8 hours.
P100	Filters 99.97% of oily particles and aerosols.

IMPORTANT FACTS

- Remember that the filter must be wet before throwing it away.
- The filter should not be cleaned with the VACUUM.
- The filter is disposable and should be replaced when you have difficulty inhaling.
- Respirators should be removed in the bathroom of the decontamination area.

RESPIRATOR SELECTION REVIEW

- **FIT TESTS:**
- Qualitative
- Quantitative

- **SEAL CHECKS:**
- Negative Pressure
- Positive Pressure

Question to Verify Knowledge

Select the appropriate respirator for a job where the following contaminants are present:

- **Asbestos = 0. 7 f/cc (fibers per cubic centimeter)**
- **Construction Dust = Low Dust**
- **O2 = 17%**
- **Mold = 10 spores per cubic meter**
- **Lead Dust = 30 mcg/M3 (micrograms per cubic meter)**

4. Abatement Project Work Practices

Topic 4.

Proper Training: Ensure that all personnel involved in the abatement project receive appropriate training in asbestos handling, removal, and disposal procedures.

Use of Personal Protective Equipment (PPE): Provide and enforce the use of PPE, including disposable coveralls, respirators (fit-tested N95 or higher), gloves, and protective eyewear, to minimize exposure to asbestos fibers.

Containment and Isolation: Establish containment barriers using polyethylene sheeting to isolate the work area from the rest of the building, preventing the spread of asbestos fibers.

Wet Methods: Use wet methods, such as misting with water, to suppress dust and minimize the release of asbestos fibers during removal or disturbance.

HEPA Vacuuming: Use HEPA (High-Efficiency Particulate Air) vacuum cleaners to carefully clean up debris and dust, ensuring thorough removal of asbestos fibers.

Minimize Airflow: Seal off HVAC vents, windows, and other openings in the work area to minimize airflow, reducing the potential for asbestos fiber dispersion.

Negative Air Pressure: Utilize negative air pressure systems equipped with HEPA filtration to create a controlled airflow direction that draws air into the containment area, capturing and filtering asbestos fibers.

Regular Monitoring: Conduct air monitoring before, during, and after abatement activities to assess airborne asbestos fiber levels and ensure compliance with regulatory standards.

Proper Waste Disposal: Dispose of asbestos-containing materials in accordance with local, state, and federal regulations. Double-bag asbestos waste in labeled, leak-proof containers and transport it to approved disposal sites.

Decontamination Procedures: Implement decontamination procedures for personnel and equipment exiting the work area, including designated clean-off areas, showers, and removal of contaminated clothing before leaving the site.

Site Cleanup: Thoroughly clean and decontaminate the work area after completion of abatement activities, including HEPA vacuuming, wet wiping, and visual inspection to ensure no asbestos residue remains.

Documentation and Reporting: Maintain detailed records of all abatement activities, including work plans, air monitoring results, waste disposal manifests, and worker training certifications. Report any incidents or deviations from established procedures promptly.

RESPONSE ACTIONS IN ACTION

Spayed-on asbestos removal.

Exterior siding removal

RESPONSE ACTIONS - CONTROL METHODS AHERA

- **Removal =**
  - Getting rid of asbestos.
- **Encapsulation =**
  - Sealing asbestos in place.
- **Enclosure =**
  - Enclosing Asbestos in Place.
- **Repair =**
  - Fixing Damaged Asbestos.
- **O and M** (Operation & Maintenance) =
  - Regular monitoring and cleaning.

REMOVAL

Removal is the method used most to control fiber release from asbestos materials in buildings. Removal means taking the asbestos off of whatever it is on. Except in rare circumstances, asbestos is always wetted before it is removed. It is then bagged and sealed and taken to landfill that accepts asbestos and is licensed to do so. A removal job must not only remove the material that can be easily seen but also that which is not easily visible to the naked eye. Workers will also be doing lots of cleaning. This is because when asbestos is scraped, pulled, or ripped off surfaces or mechanical systems, many fibers are released. These must be cleaned up as part of the removal job.

On a removal job you can be exposed to a lot of asbestos dust. This is why strong rules have been made for these jobs. If removal jobs are not done right, workers can be exposed to asbestos. In addition, a poor removal job can leave more asbestos fibers in the building air tan there were before.

REMOVAL

- Wetting the asbestos
- Never Dry Sweep
- Don't let it build up
- You can't use water <32 degrees F (permit required)
- If there is a break in the barriers, tape them immediately

Containment: Cut down the risk of contamination by carefully preparing a containment area. Search in products for the containment supplies you will need to complete your job.

Poly sheeting- 4mil/6mil Widths available 8', 10',12' and 20'

Containment poles, available in 10', 12' and 20' lengths

Containment Tape, vinyl Tape and Spray Adhesive

Poly Hangers

Negative Air Machine

Stage I, Stage II and HEPA Filters

Flex Duct and Lay Flat Tubing

Signage and Barrier Guards

FILTER THE AIR

HEPA = 99.97% fibers >0.3 microns in diameter

NAM = 4 air/hour changes

KEEP NAM's working passing clearance

- **<0.01 f/cc**
- **<70 st/mm2**

How to Calculate Number of NAMs Needed

- **Step 1**. Find air volume (Length x Height x Width)
- **Step 2**. Find Air Load (Air Volume / 15 minutes)
- **Step 3**. Divide Air Load by NAM Capacity (Air Load / 2000 cfm or 600 cfm)
- **Step 4**. Round up result and Add a back up NAM

NAM Filter Capacity and Change Schedule

Pre-filter:

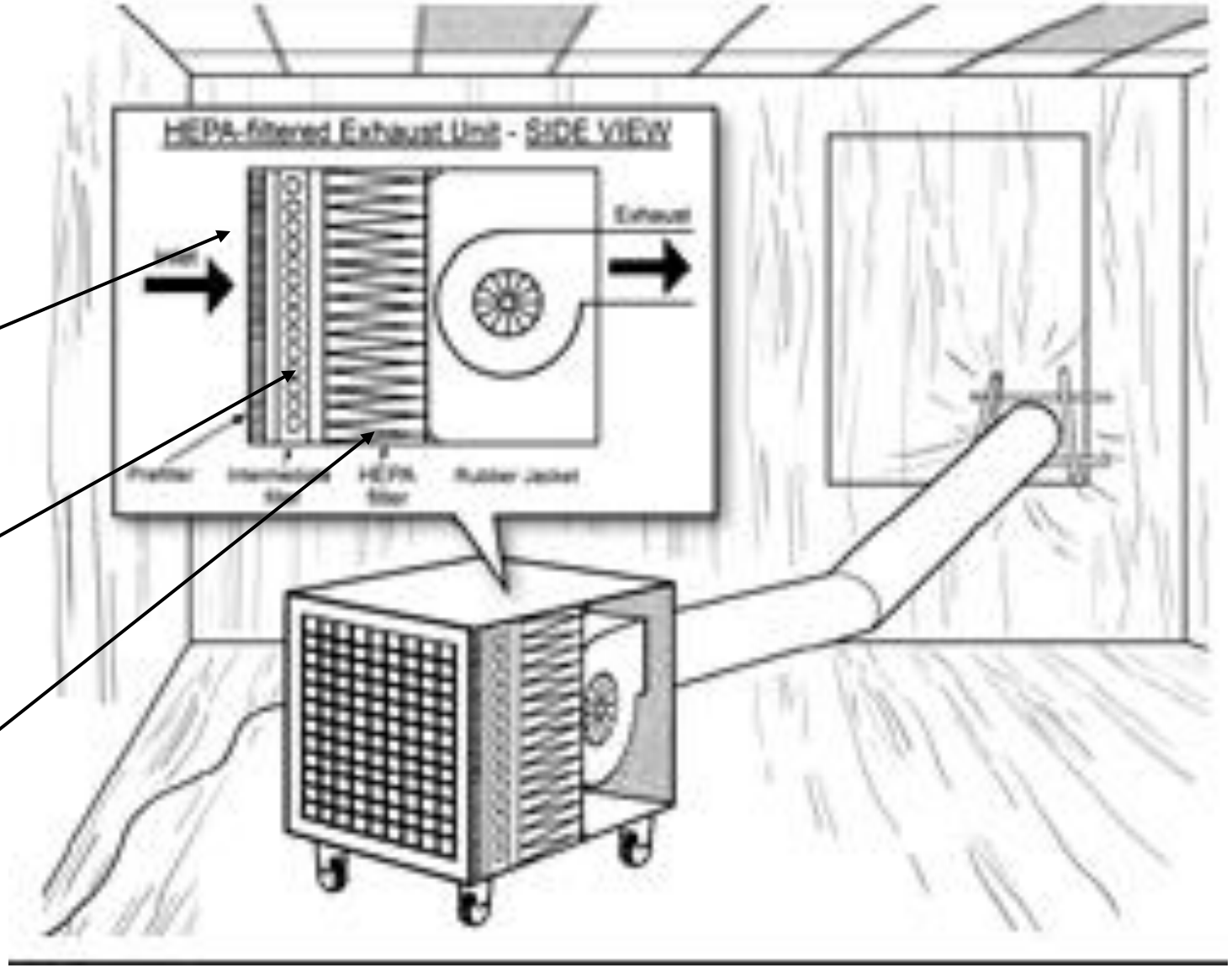
- **Capacity:** >25 microns
- **Change:** every 2 hours

Secondary Filter:

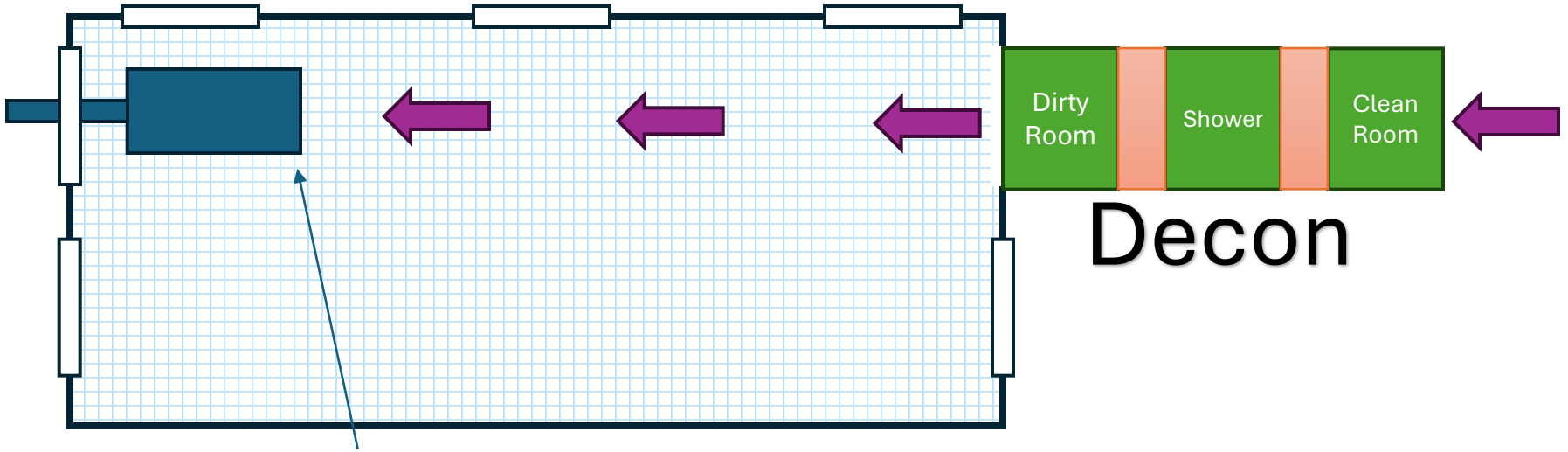
- **Capacity:** >5 microns
- **Change:** end of every shift

HEPA Filter:

- **Capacity:** >0.3 microns
- **Change:** every 500 hours



Containment System “Containment”



Remember:
OSHA requires a 3-stage DECON with showers when handling:

>10 square feet of ACM
> 25 linear feet of ACM removal

NAM Configuration

- Place at furthest point from air intake
- Exhaust duct to outside air

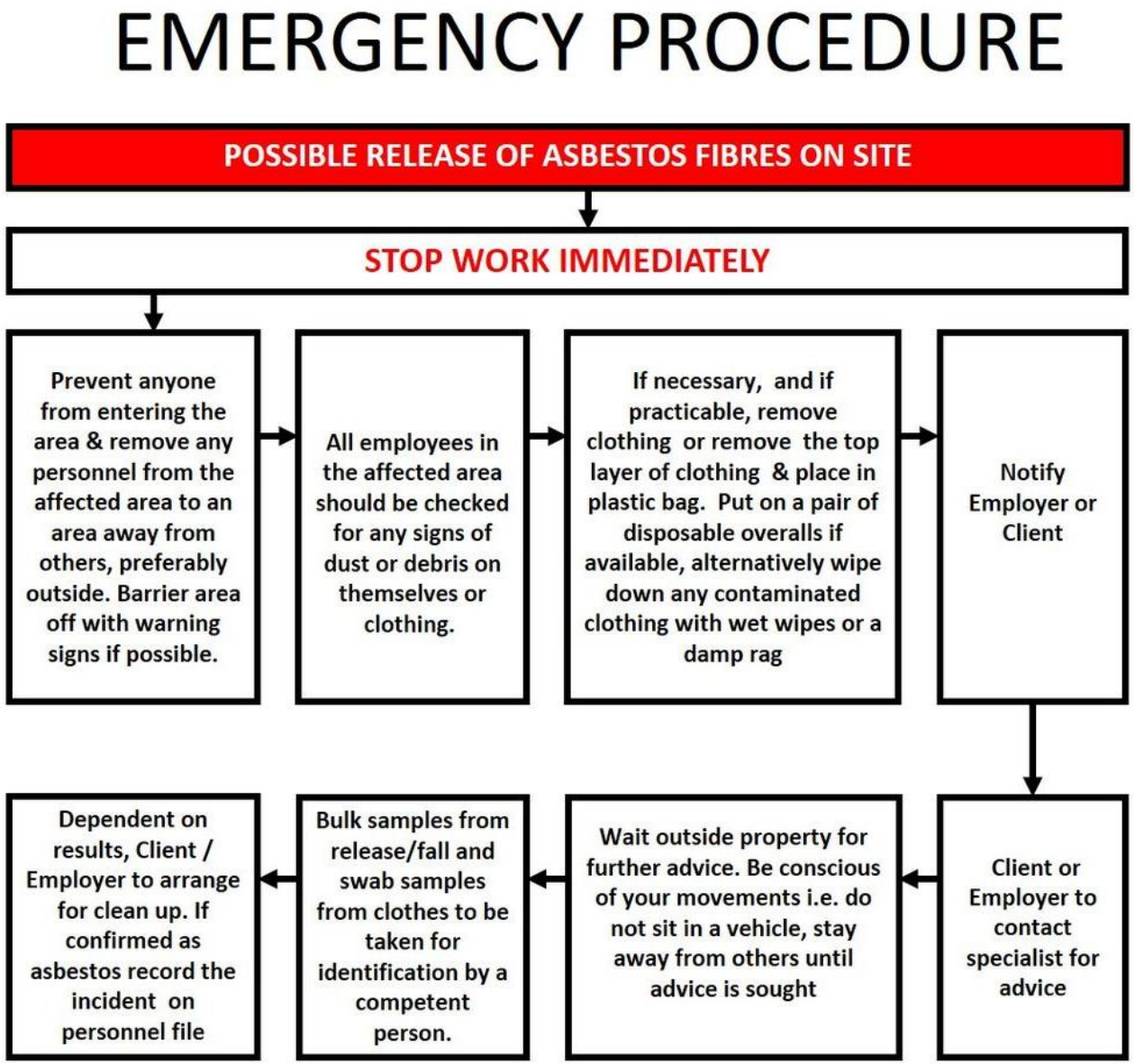
Exercise

- Find the number of 600 cfm NAMs needed in a containment with the following dimensions:

  - Length = 32 feet
  - Height = 18 feet
  - Width = 22 feet

EMERGENCY PROCEDURES

- Safety Review – Instructors please take a momento to go over emergency evacuation procedures and building layout.



ENCAPSULATION

- Apply lockdown encapsulant upon removal
- Types of Encapsulants:
  - Sealing
  - Penetrating
  - Bridging

ENCAPSULATION

Encapsulation is the spraying or brushing on of a paint-like coating over the material. The coating is put on with either a **low-pressure sprayer** or a brush. When material is encapsulated, the coating prevents release of fibers into the air. The coating can also prevent some damage to the material from contact.

When you work on an encapsulation job, you can still be exposed to asbestos fibers. In fact, when the encapsulant hits the material a small amount of dust is sometimes blown into the air. The material cannot be wetted first, because the encapsulant will not stick. Because of this, an encapsulation job is set up just like a removal job. Workers will also wear respirators and protective clothing while doing encapsulation.

Two kinds of encapsulants are used. One kind is called a **bridging encapsulant** This kind covers the material with a "tough skin" on the outside. The other kind is called a **penetrating encapsulant**. This kind soaks into the material and binds the material together. The material then becomes hard like a plaster cast.

When doing encapsulation, workers usually apply two coats over the material depending on the manufacturer' s instructions. This is done to make sure that the asbestos is completely covered. The encapsulant takes some time to dry. Materials contaminated with dust during the job are disposed of as asbestos waste. This includes plastic barriers, suits, and other items.

ENCLOSURE

- Enclosing Asbestos
- Must be airtight

Enclosure means building an airtight barrier around asbestos containing materials. The enclosure is built with non-asbestos building materials. Examples are sheet rock, wood, and spline joints, caulked sheet metal and other materials. If the barrier is not airtight, it is not considered an enclosure. For example, putting in a drop ceiling to control asbestos fireproofing material is not an enclosure.

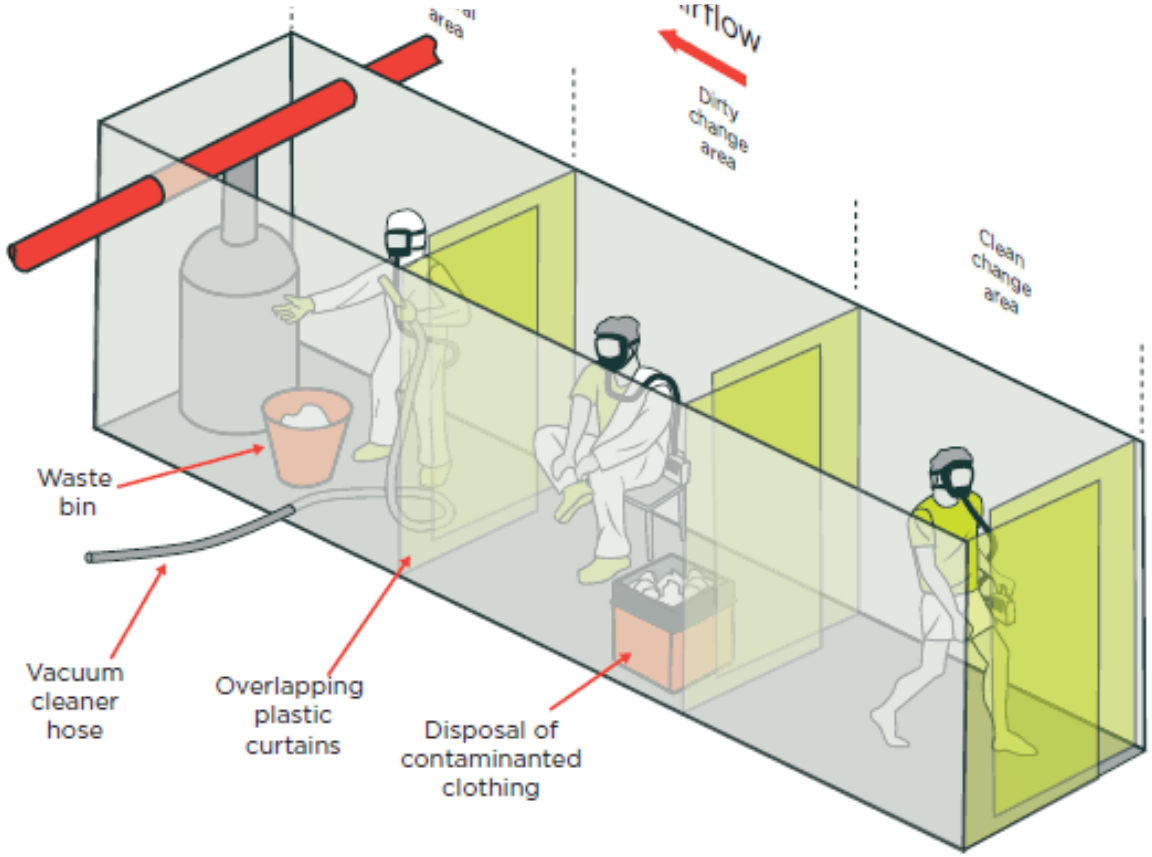
An enclosure job also requires that a containment be built. Building the enclosure often requires disturbing the material. Workers will also have to wear respirators and protective clothing. If drills or nail guns are used to attach the enclosure, asbestos dust can be released.

Another type of enclosure is sometimes referred to as **encasement**. Encasement means spraying a closed cell foam directly on an asbestos material or onto a lattice hung below the material. Another example would be to pour concrete onto a dirt floor in a crawl space.

During an enclosure job, disturb the material as little as possible. It is best to use power tolos such as drills only if they are attached to a HEPA vacuum.

REPAIR

- Apply bridging encapsulation
- Ensure no leaks remain



OPERATION AND MAINTENANCE

- This method is used by maintenance personnel
- workers need to be trained

Glovebagging Procedure Review

Equipment and Supplies Checklist:

1. Avail EXT glovebags
2. Grayling D-Con shower system
3. Disposable coveralls
4. Boot covers
5. Work gloves
6. Hard hat
7. Eye protection
8. HEPA filtered respirator
9. Barricade tape and warning signs
10. Duct tape
11. Smoke test kit
12. Surfactant / wetting agent
13. Encapsulant
14. Pump-up garden type of sprayer
15. HEPA filtered vacuum cleaner
16. 6mil polyethylene drop cloth
17. Asbestos disposal bags

Preparation:

1. Shut off the HVAC system, or ventilation fans in the work area and tag and lockout access to control panels.
2. Mark off the regulated area with barricade tape, leaving a wide margin around the abatement area.
3. Post asbestos-warning signs prominently.
4. Erect the D-Con facility adjacent to the regulated area.
5. If there are doors or windows accessing the regulated area, set up critical barriers.
6. Don your personal protective gear, beginning with the coveralls.
7. Roll out the polyethylene sheeting and position an adequate length under the pipe as a drop cloth.

State of the Art Technologies, Procedures and Products

Review of Asbestos Project Procedures

Asbestos removal in a school in the USA involves a series of well-defined steps to ensure safety and compliance with regulations. Here is a general outline of the process:

1. **Initial Assessment and Planning**
    1. Conduct a **thorough inspection** by a licensed asbestos inspector to identify asbestos-containing materials (ACMs).
    2. Develop an asbestos management plan detailing the location, condition, and amount of asbestos, and outline the procedures for its removal.
2. **Notification and Permits**
    1. **Notify** the appropriate regulatory agencies (e.g., EPA, state and local health departments) about the planned asbestos removal project.
    2. Obtain all necessary **permits** and **approvals** for the removal project.
3. **Pre-Removal Preparations**
    1. Develop a site-specific **work plan** outlining the **procedures**, **safety measures**, and **waste disposal** methods.
    2. **Set up a containment** area around the work site to prevent the spread of asbestos fibers.
    3. **Turn off HVAC systems** to prevent asbestos fibers from spreading through the ventilation system.
    4. **Post warning signs** to inform and restrict access to the asbestos removal area.

4. Personal Protective Equipment (PPE) and Safety Measures

1. Ensure all workers **wear appropriate PPE**, including respirators, disposable coveralls, gloves, and eye protection.
2. Provide decontamination facilities for workers to use before leaving the containment area.

5. Asbestos Removal Procedures

1. **Wet the asbestos-containing materials** to minimize dust and fiber release.
2. **Carefully remove ACMs** using hand tools, avoiding breaking or disturbing the materials more than necessary.
3. Place removed asbestos materials in sealed, labeled, leak-tight containers or double-bagged in heavy-duty plastic bags.

6. Air Monitoring and Clearance Testing

1. Conduct **continuous air monitoring** around the work area to ensure asbestos fiber levels remain below permissible limits.
2. After removal, conduct clearance air testing to confirm that the area is free of asbestos contamination.

7. Waste Handling and Disposal

1. Transport asbestos waste in sealed, labeled containers to an EPA-approved disposal site.
2. Ensure the waste is properly disposed of according to federal, state, and local regulations.

8. Final Cleanup and Decontamination

1. Thoroughly clean the work area using HEPA vacuums and wet wiping methods.
2. Remove containment barriers and dispose of them as asbestos waste if contaminated.
3. Ensure all tools and equipment are decontaminated before removal from the site.

9. Post-Removal Inspection and Reporting

1. Conduct a final inspection to verify that all ACMs have been removed and the area is safe for re-occupancy.
2. Document the entire removal process, including air monitoring results, waste disposal records, and clearance certifications.
3. Provide a final report to school officials and regulatory agencies, as required.

RE-OCCUPANCY

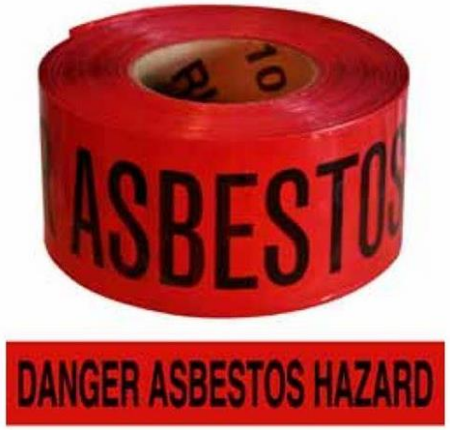
Re-Occupancy

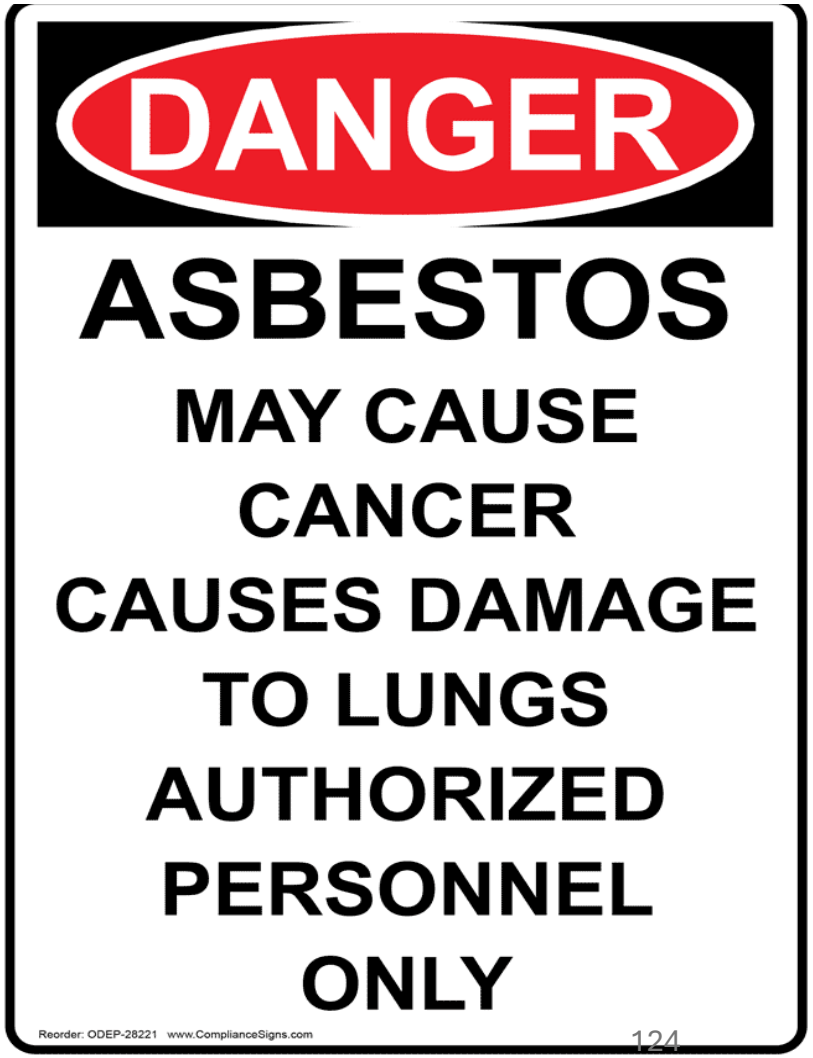
- Obtain clearance from regulatory agencies, if required.
- Inform school staff and parents that the area is safe for re-occupancy and provide them with any necessary information regarding the removal process.
- Following these steps ensures that asbestos removal in a school is conducted safely, effectively, and in compliance with all relevant regulations.

Review of Work Area Setup

1. PUT UP WARNING SIGNS

Notify building occupants and employees of intentions involving asbestos. Put up a barrier outside the work area. This will keep non-workers out. Hang asbestos warning signs on the barrier. The signs must look exactly like this one. The signs should be at eye level. They should be in a language that building users can read.





2. SHUT OFF THE VENTILATION SYSTEM

The ventilation system carries air through the building. It can carry asbestos through the building. Asbestos fibers go where the air goes. The ventilation system for the work area must be shut off. Shut off the system at the electrical box. Lock the box and label it with a tag. Cover and seal the vent openings with 2 layers of 6-mil thick plastic. The ventilation system is often called the HVAC system. HVAC stands for Heating, Ventilation, and Air Conditioning.

3. SHUT OFF THE ELECTRICAL SYSTEM

Asbestos jobs are wet. Electrical shocks are one of the worst dangers on an asbestos job. Water can leak into an electrical outlet and kill you. The electrical system must be shut off. Shut off the system at the electrical box. Lock the box and label it with a tag. Turning off wall switches is not enough. Someone who doesn' t know about asbestos work could electrocute you by mistake by throwing a switch that is not locked and tagged out.

Machines and other mechanical systems also have to be shut off. A machine with moving parts could hurt someone. It has to be turned off and locked out so that people can work safely around it.

Steam pipes have to be shut off too. Let the pipes cool for at least 12 hours before working on them.

4. BRING IN EXTENSION CORDS

Negative air machines, safety lights, HEPA vacuums, and tools all need power. Bring in extension cords for all the equipment. Extension cords are sometimes called temporary wiring. Tape the cords onto the walls so that workers won' t trip on them. Do not hang cords with metal wire. This could cause a shock. Cords must be hooked up to sensitive circuit breakers. These are called Ground Fault Circuit Interrupters (GFCI' s).

5. BRING SCAFFOLDS, LADDERS, AND TOOLS INTO THE WORK AREA

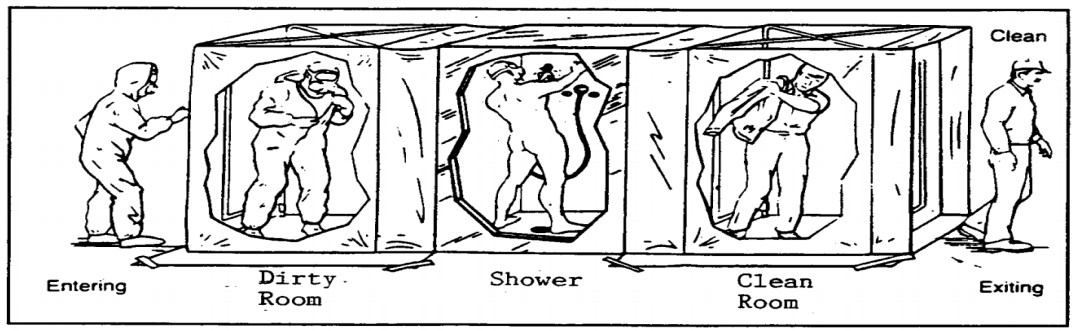
Scaffolds may be too big to bring through the decontamination unit (decon). Bring the scaffolds in before the decon is hooked up. Put tape over any open the ends of the scaffolds so that asbestos won' t falln i. Bring in any large equipment. Be sure that all the tools you need are in the work area before removal begins.

6. BUILD THE DECONTAMINATION UNIT (DECON)

You go into and leave the work area through a special series of rooms. This is called the decontamination unit (decon). The decon has a shower. Every time you leave the work area, you must take a shower or wash off. Don' t take asbestos out of the work area on your body with you.

The decon has three rooms. They have to be in this order (starting from the work area):

- Work area
- Dirty room
- Shower
- Clean room



The decon is lined with two layers of 6 mil thick poly and duct tape. The rooms have plastic flaps between them. The flaps keep air from moving out, but let air come in. Seal the decon air- tight to the work area. Make sure the base plastic (poly) extends one foot up the side framing. This ensures that any asbestos laden water will not leak out.

7. HOOK UP AND START THE NEGATIVE AIR MACHINE

The clean air from the negative air machine goes out a window to the outside. The seal at the window has to be airtight. Cut holes in a piece of plywood and tape the hose in. If you are working in a large room, there will be more than one machine.

Put the negative air machine as far away as possible from the decon. Air should be pulled away from workers across the longest possible distance from the decon. You may have to use hoses if the only window in the room is right next to the decon. If there is more than one machine, they should all be on the side of the room farthest from the decon.

When the negative air machine is on, air comes into the room through the decon. The negative air machine should be on 24 hours a day until the project passes final clearance air monitoring. Air should only leak in, not out. Sometimes extra holes are cut in the poly so that enough air will come in. This is called makeup air. These holes must be covered on the inside with plastic flaps or HEPA filters in case the negative air machine shuts down.

8. CLEAN EVERYTHING IN THE ROOM

You might do a great job of scraping the asbestos off a ceiling. But what about the asbestos fibers that were on the furnishings and surfaces before you started the job? Asbestos fibers must be cleaned up. If you don' t clean before you take the asbestos off, the room will still be dirty at the end of the job. Clean everything in the room before you put up the poly (plastic). In this situation be sure to wear a respirator and disposable protective clothing.

Use damp rags and HEPA vacuums. When you clean, you may get asbestos in the air. Even if you can' t see it, the asbe stos may be there. As soon as you start to disturb asbestos, put on a respirator and disposable suit. Your employer should test the air. You must have permission from a doctor before you may wear a respirator. You must pass a fit test before you may wear a respirator.

Clean everything in the room:

walls
paintings
furniture
office equipment
circuit breakers
lights
electrical outlets
window sills
books
office supplies
fuse boxes
non-moveable objects
floors
posters
air vents
machines

Clean the surface of air vents with damp rags and HEPA vacuums. Wet the filters and dispose of them with the asbestos. After deactivating the power, clean electrical outlets with HEPA vacuums. If needed, clean de-energized circuit breakers and fuse boxes with HEPA Vacuums. Clean the lights inside and out with HEPA vacuums.

Clean carefully, starting at the top of the walls and working down. Fold the rags periodically to expose a new clean portion of the rag. Otherwise you will spread asbestos onto places you' ve already cleaned.The rags have to be thrown out with the asbestos.

Pre-Abatement Cleaning

- Clean all items within regulated aeras
- HEPA Vac + Wet Wipe + HEPA Vac
- Clean from Top to Bottom
- Clean towards NAM
- Always wear PPE while cleaning
- Use HEPA-equipped vacuums
- Do not use Dry HEPA vacuums in wet areas
- Always attach electrical equipment to GFCI interrupters
- Keep all extension cords elevated
- Clean with a rag and dispose properly

9. DISPOSE OF WHAT YOU CAN' T CLEAN

Contaminated rugs and fabric on furniture must be disposed of. Wrap the rug in two layers of poly (plastic). Seal it up with duct tape and put a label on it. The label must look like the OSHA label. Send the rug to an asbestos landfill.

10. TAKE OUT ANYTHING YOU CAN MOVE

Move anything you can out of the room:

Chairs	Desks
Computers	Cabinets
Office supplies	Machines
Paintings - posters	Books
Lights	Air grates

There is no excuse for piling furniture in a corner of the room. Even if you cover it with poly, it will get asbestos or water on it. Lights should always be taken out unless they can' t be moved.

11. WRAP ANYTHING IN POLY YOU CAN' T MOVE

Those objects that you can' t movemust be sealed. Wrap them in two layers of 6-mil thick poly and duct tape. Put tape on all of the seams. Tape the poly to the floor. The poly has to be totally sealed so that it is air tight, not just draped over the machine.

Sinks and water fountains also have to be sealed in two layers of poly. Shut them off at the valve. Label them with DO NOT DRINK signs. You may not use the sinks or electrical boxes in the room during the job.

Seal up electrical boxes, blackboards, thermostats, alarms, and anything else that must stay in the room. In places like boiler rooms you may have to seal off a working machine. This is hard, since poly will melt and can burn at 150 degrees. Machines give off heat and may also need air to work. You may have to build an enclosure around the machine. You have to keep asbestos out of the machine without staring a fire. If machines cannot be shut off or safely enclosed, State employee cannot do that asbestos job. It must be contracted out.

12. COVER ALL WINDOWS AND OPENINGS TO THE ROOM

In the work area, air should only come through the decontamination unit (decon) Air should only go out through the negative air machine. Seal up any other places where air can go into or out of the room. Cover Windows and doors with two layers of 6-mil thick poly and duct tape. Leave part of one window uncovered for the negative air machine.

Cover all these places:

- ☐ Windows
- ☐ Air vents
- ☐ Electrical outlets, boxes, & conduit openings
- ☐ Doors
- ☐ Light wells (where lights were taken out)
- ☐ Pipe chases (where pipes go through a wall)
- ☐ Holes in surfaces

Critical Barriers and Splashguards

Cover air vents with two layers of 6 mil poly. Seal them with duct tape. Seal the poly so that no water and no air can get in or out. Cover light wells with two layer of 6 mil poly and duct tape. If you can' t take the lights out, seal them up with poly and tape.

The poly over windowsotras aberturas se llama “barrera critica”, o también se conoce como “barrera primaria”.

13. PUT POLY ON THE FLOOR

The first layer of poly goes on the floor or other surface not being abated. Cut the poly big enough so that it goes up the walls or other areas not being abated at least one foot. Tape all the way around the edges of the poly.

The idea is to build a watertight plastic basin inside the room. The poly on the floor should catch all of the asbestos and water. Air and water should not leak out of the basin.
Try to cover the whole surface with one piece of poly. If there are seams in the poly, they have to be sealed. Overlap the seams of plastic 12 inches. Use duct tape. It is a good idea to put a line of blue carpenter' s chalk under the seams. If water and asbestos leak through, they will make the chalk dark. Then you can clean them up before they damage the floor.

There may be seams in both layers of poly. Put the seams from each layer at least 6 feet apart. Then a leak in the top layer won' t leak through the bottom layer.

The poly should overlap other surfaces not being abated by at least 12 inches.

14. PUT POLY ON THE WALLS

Cut the poly big enough so that it comes down at least one foot onto the floor. There should be at least a one-foot overlap between the poly on the floor and on the walls (or other surfaces not being abated). Tape the poly on the top of the walls.

Put tape to isolate the poly on the top of the wall about 5 or 7 inches from the ceiling so you can clean the corner of it. Do not put it 50 or 60 centimeters from the ceiling. Remember that the poly has to make an airtight and watertight bubble inside the room. It protects the walls from asbestos and water. If the top of the wall is not covered, it may get asbestos on it. It will probably be damaged. Tape all the way around the edges of the poly at the bottom.

Poly is heavy, and duct tape can come loose when it' s wet. Duct tape may not be strong enough to hold the poly on the walls. You may have to nail furring strips (small pieces of wood) to the walls. Staple the poly to the furring strips.

Install 2 layers of poly on the floor.

Put duct tape over all the staples and the edge of the poly.

When you have finished putting the first layer of poly on the floor and walls, or other surfaces not being abated, repeat steps 13 and 14 with a second layer. There must be two layers of poly on all surfaces not being abated. Otherwise, if there is a leak, the asbestos will get on the surfaces of the room.

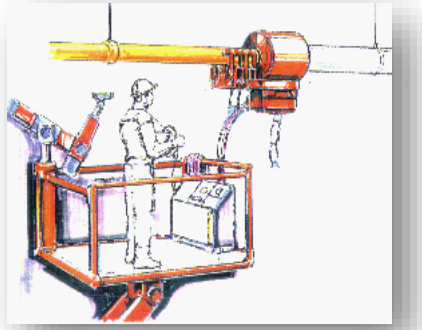
Work areas can be poorly illuminated and confusing, especially in an emergency or in the dark. It is a good idea to make some arrows out of bright luminescent tape on the walls that point the way to the decon. In an emergency, the arrows will show you how to get out of the work area.

15. TESTING THE NEGATIVE AIR MACHINE

The negative air machine should pull the plastic doors in the decon toward the machine. Youcan test the negative air pressure in the room. Puff ventilation smoke from outside the clean room. The air and smoke should be pulled in through the decon. The smoke should be sucked in, not drift out through cracks. Test the seals on primary barriers to make sure they are really airtight. (If you cut a hole to do the smoke test, seal it up).

You have now built an airtight and watertight containment, which is under negative air pressure. You are ready to begin removing the asbestos.

NEW WORK TECHNOLOGIES & PRODUCTS



ASBESTOS ROBOT (BOA System)

GLOVE BAG
"Quick Twist"

"Sticky Poly

INJECTION
"Asbestrip"

FOAM
"Experimental Method EPA

Topic 5.

5. Personal Hygiene

- Vacuum coveralls
- Shower (use warm water, soap, shampoo and paper towels)
- Washing face and hands

Attach the DECON unit

Filter water through 25 micron and 5 micron filters

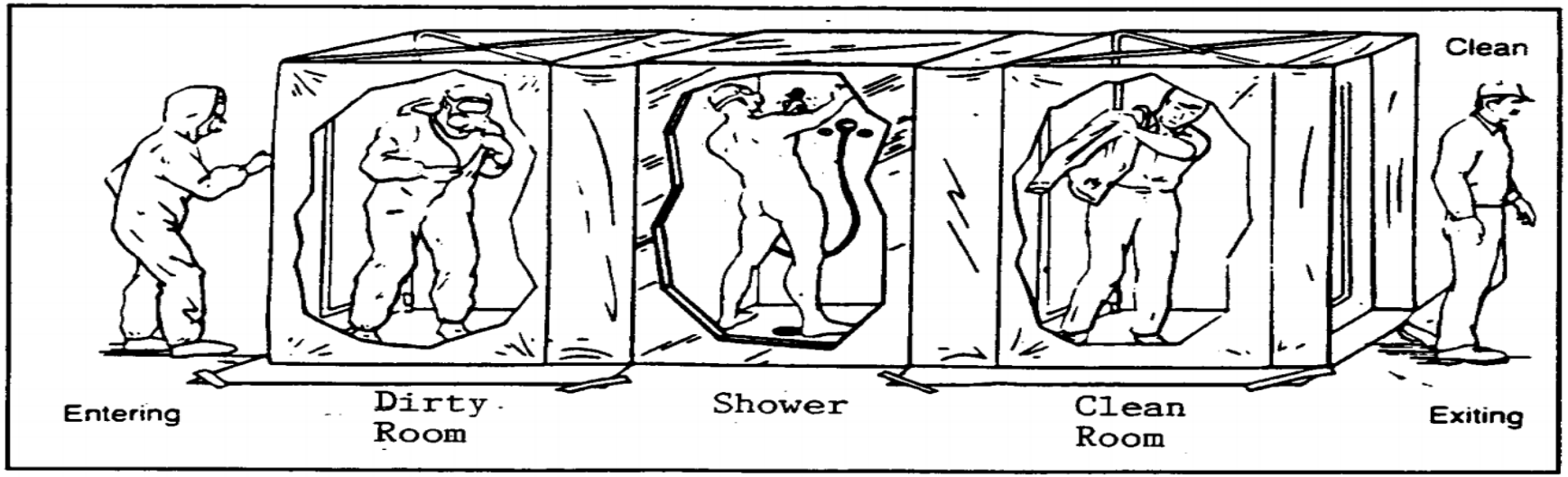
Do not dispose of the water without first filtering it

Place caution signs at the entrance

OSHA requires DECON >25 lf or 10 sf

Hot and cold water

Clean DECON at the end of each use.



Review of Steps for Effective Decontamination:

Step 1. Vacuum your overall before entering the dirty room

Step 2. Enter the dirty room and remove all PPE (not including respirator)

Step 3. Get in the shower and shower

Step 4. Shower thoroughly using shampoo or soap (with warm water)

Step 5. Remove your respirator and dispose of filters

Step 6. Rinse your respirator

Step 7. Enter the cleanroom and dry your body

Step 8. Dress in clean clothes and go outside

Topic 6.

6. Other Safety Hazards

Exposure to other air contaminants such as:

- Lead dust
- Mercury vapors
- Polychloride biphenyl
- Crystalline Silica dust

- Slips
- Falls
- Electricity
- Insects
- Punctures
- Impacts
- Chemicals

7. Medical Monitoring

Topic 7.

Medical Surveillance

Must have exam before start of work and then once a year

❑Required

- Medical Questionnaire (Work and Medical History)
- General Physical Exam
- Pulmonary Function Test
- Chext X-ray

❑May be recommended by the physician

- EKG

In addition to exams,

- Must be at no cost must be at a reasonable time/place.
- Must be prior to an employee wearing respirator.
- May be more oftem if determined by the physician.

❑ Employers must give copy of physicians opinión to employee within 30 days.

MEDICAL EXAM RECORDKEEPING REQUIREMENTS

Records: The employer must keep medical examination records during the workers' employment and for an additional 30 years.

When you stop working: it is recommended to continue an annual medical follow-up.

Medical Surveillance

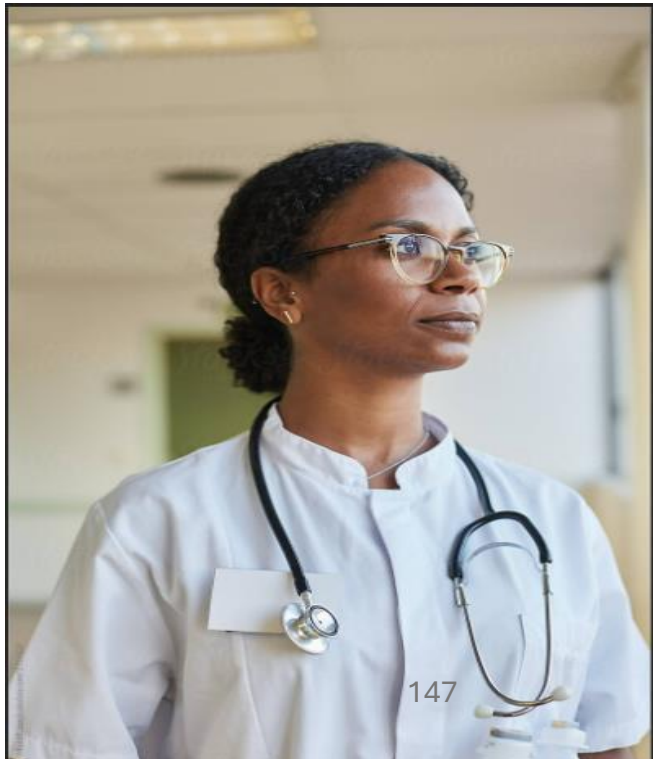
OSHA 29 CFR 1926.1101 (M)

OSHA says:

The employer must perform medical monitoring when its employees go to work at levels >0.1 f/cc 8 hours on average, for more than 30 days per year.

You will be wearing negative pressure respirators.

- **REQUIRED ANNUALLY**
- Medical Questionnaire
- Work history
- Smoking history
- General Physical Exam
- Pulmonary function (spirometry)



CHEST X-RAY

OSHA recommended frequency.

YEARS OF WORK ON ASBESTOS	CURRENT AGE 18 TO 35 YEARS OLD	CURRENT AGE 36 TO 45 YEARS	CURRENT AGE OVER 45 YEARS
From 0 to 10	Every 5 Years	Every 5 Years	Every 5 Years
More than 10	Every 5 Years	Every 2 Years	**Annual**

TEXAS Health and Human Services | Texas Department of State Health Services

Physician's Written Statement - Medical Surveillance for Asbestos Exposure

Environmental & Sanitation Unit • 800-572-5548 or 512-834-6600 • Asbestos.reg@dshs.texas.gov

Applicant Name (First, M.I., Last) | Date of Birth | Social Security Number

Street Address | City | State | Telephone Number

I saw the above-named individual on _____and I completed the following.
(Must be filled-in by Physician or clinic.)

- Completed and reviewed the standardized medical questionnaire. Reviewed work history. I put special emphasis on the pulmonary, cardiovascular, and gastrointestinal systems. Followed guidelines in part 1 and 2 of Appendix D in 29 CFR 1926.1101.
- If employed, I reviewed the employer provided description of this employee's duties as they relate to the employee's exposure. I reviewed employee's job duties for:
    - anticipated exposure level
    - personal protective equipment the employee must use, and
    - employee's previous medical information
- A physical examination with emphasis upon the pulmonary and gastrointestinal systems.
- The pulmonary function tests of forced vital capacity (FVC) and forced expiratory volume at one second (FEV 1) in accordance with NIOSH and ATS standards.
- A chest x-ray: 14- by 17–inch, other reasonably-sized standard film, or digital posterior-anterior chest X–ray classified in accordance with 29 CFR 1926.1101, Appendix E was required and performed. **YES_____**or **NO_____**.

  ***NOTE: According to 29 CFR 1926.1101(m)(2)(ii)(C), the requirement for a chest x-ray is at the physician's discretion.**
- Informed the employee of the results of the exam. Educated the employee about medical conditions that may result from asbestos exposure including the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

Unless otherwise noted below, this evaluation indicates I determined no medical conditions were detected that would place the employee at an increased risk of material health impairment from exposure to asbestos. I recommended to the employee there are no limitations concerning the use of personal protective equipment or respirators. By signing this form, I acknowledge I performed the examination in accordance with either 29 CFR 1926.1101 or 40 CFR 763.122(a), as required.

Comments or limitations, if any

Physician's Signature | Physician's Printed Name | Date

Street Address | City | State | Telephone Number

PRIVACY NOTIFICATION / NOTIFICACIÓN SOBRE PRIVACIDAD

With few exceptions, you have the right to request and be informed about information that the State of Texas collects about you. You are entitled to receive and review the information upon request. You also have the right to ask the state agency to correct any information that is determined to be incorrect. See http://www.dshs.texas.gov/ for more information on Privacy Notification. (Reference: Government Code, Section §52.021, §52.023, §59.003 and §59.004)

Tan solo por unas cuantas excepciones, usted tiene el derecho de solicitor y de ser informado sobre la información que el Estado de Texas reúne sobre usted. A usted se le debe conceder el derecho de recibir y revisar la información al requerirla. Usted también tiene el derecho de pedir que la agencia estatal corrija cualquier informació que se ha determinado sea incorrecta. Diríjase a http://www.dshs.texas.gov/ para más información sobre la Notificación sobre privacidad. (Referencia: *Government Code*, sección §52.021, §52.023, §59.003 y §59.004.)

Revised July 2020 | Publication # 18-11669

Topic 8.

8. Air Monitoring

Asbestos Area (High Volume) Air Sampling

AHERA Compliance

Area air samples are collected in pre-selected locations using either low volume battery operated or high volume electric sampling pumps:

- Background
- Pre-Abatement
- Daily (work-in-progress)
- Final Clearance (aggressive)

Types of Air Samples

Type and Requirements	Description	Analytical Methodology	Responsibility	Threshold
BACKGROUND No federal requirements. Possible state or local.	Used to determine levels prior to starting an abatement project. Establishes baselines often compared to perimeter samples	PCM, possibly TEM	Building owner	Perimeter air sample results
PERSONAL OSHA-required 29 CFR 1926.1101	Determine employee exposure. Perform daily for most OSHA class I and II activities.	PCM	Employer's competent person, meaning "you"	PEL = 0.1 f/cc *TWA STEL = 1 f/cc in 30 min.
ENVIRONMENTAL Perimeter & inside work Area samples Only required by OSHA for class I and II with or without criticals. Possible state or local requirements	Used to use to determine air levels outside on each side work area. Run daily during the abatement process.	PCM, TEM	Building owner	0.01 f/cc or preexisting levels
FINAL CLEARANCE Required by AHERA and some state regulations.	Use used to determine their levels after final cleaning and visual inspection.	PCM or TEM	Building owner	<0.01 f/cc < 70 st/mm^2

* 8 hour Time Weighted Average is calculated by:

$$\textbf{8 Hr TWA} = \frac{C_1T_1 + C_2T_2 + C_3T_3 + \ldots}{T_1 + T_2 + T_3 \ldots}$$

Where C= fiber concentration represented as f/cc, and T = sample duration

AIR MONITORING

- Daily
- 25% Workforce
- Work Area Air Samples
- Outside the area
- Outside DECON
- Outside the NAM machine

Pump Positioning

Filter MUST be placed in "Breathing Zone"

Pump can be placed on belt or harness
Pump MUST be pre-calibrated.
Sampling Rate typically 2 lpm.

Daily Air Samples

This type of air monitoring is performed **every day** while abatement activities occur. When required, Asbestos air samples are collected outside the work area only, including the clean room of the decontamination facility and at each negative air exhaust or 1 sample collected at the terminating point of a bank of up to a max of five negative air exhausts. The purpose of this air monitoring is to document the integrity of the containment barriers and the proper functioning of the negative air machines.

Should the barriers become damaged, or the pressure differential between the work area and adjacent areas disappear, a possibility is created for the airborne fibers within the containment to escape and contaminate the surroundings. A comparison is made between these daily samples and samples taken outside the work area prior to the start of abatement (backgrounds).

If an elevated fiber concentration is detected, one of the possible conclusions is that the contamination of the outside area is due to *faulty abatement practices*. When elevated airborne fiber levels are detected, **the work must stop** and the reasons for the elevated fiber levels shall be determined. The **area outside the work area must be cleaned** prior to the restart of abatement practices.

It should be noted that many activities could result in elevated fiber levels including vacuuming of carpets, cutting wood, re-insulation work involving fiberglass and other similar activities. These possibilities must also be investigated. If it is believed that the source of the elevated fiber levels is not associated with the abatement project, transmission electron microscopy (TEM) analysis may be performed to verify that the fibers are non-asbestos.

CLEARANCE AIR SAMPLING

- Clearance samples must be collected using **aggressive air sampling** techniques. This means that the air is agitated prior to and during the air sampling process with air moving devices such as a leaf blower and fans.
- Aggressive sampling shall be performed in the following manner:
- Before starting the sampling pumps, direct the exhaust of forced air equipment against all walls, ceilings, floors, ledges and other surfaces. Continue for at least five minutes per 1000 square feet of floor space within the enclosure.

WHAT IS “NEA”

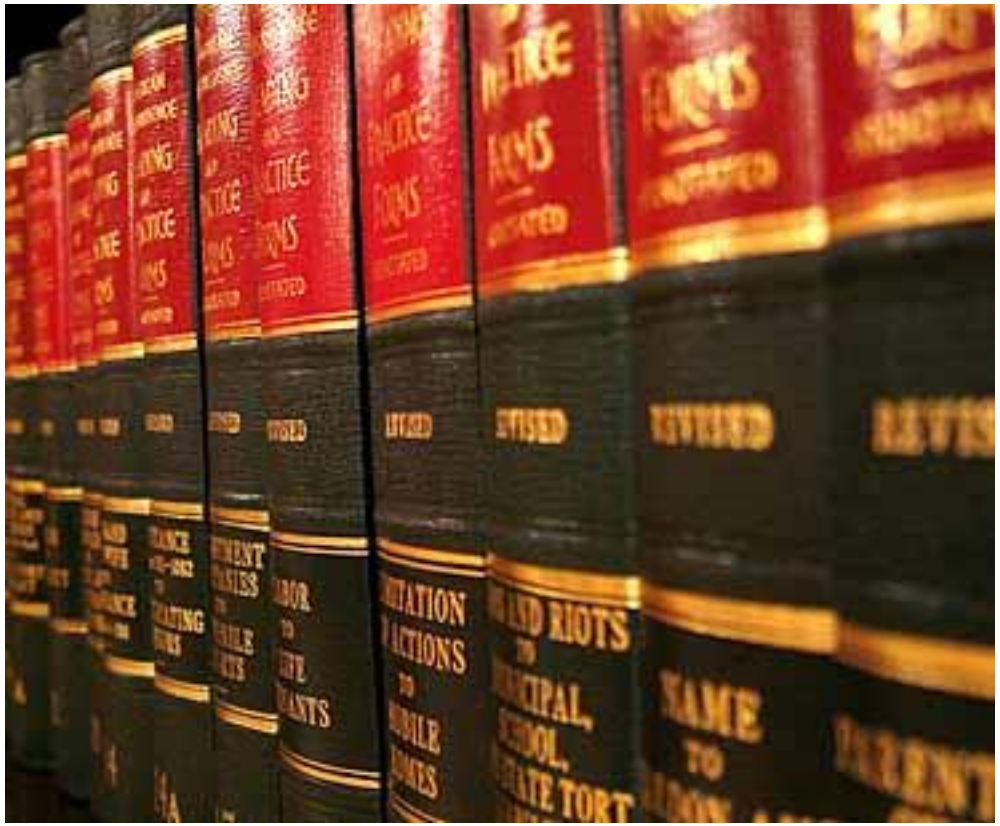
An Asbestos **Negative Exposure Assessment** (NEA) is a determination made to demonstrate that workers will not be exposed to asbestos fibers above the permissible exposure limits (PELs) during specific work activities. Conducting an NEA involves:

1. **Historical Data Review:** Analyzing past air monitoring data from similar jobs WITHIN THE PREVIOUS 12 MONTHS, materials, and conditions.
2. **Initial Exposure Monitoring:** Conducting air sampling during the initial stages of work to establish baseline exposure levels.
3. **Work Practices and Controls:** Evaluating the effectiveness of work practices, engineering controls, and personal protective equipment in keeping asbestos exposure below regulatory limits.
4. **Ongoing Verification:** Periodically reassessing conditions to ensure that the NEA remains valid, especially if work practices or conditions change.

The goal of an NEA *is to ensure that the implemented safety measures are sufficient to protect workers from asbestos exposure, thereby potentially reducing the frequency of air monitoring requirements.*

Topic 9.

9. Asbestos Regulations



FEDERAL RULES

Federal	**Meaning**	**COVERS**
EPA	*Environmental Protection Agency*	Environment NESHAP AHERA
OSHA	*Occupational Health and Safety Administration*	Occupational safety and health (enforces)
NIOSH	*Institute of Occupational Health and Safety*	Occupational safety and health (researches)
DOT	*Department of Transportation*	ACM transportation
DNR	*Department of Resources Naturales*	Demolition and renovation asbestos works (160 sf, 260 lf, 35 cf ACM)

EPA

Standard	Code	Regulates	Coverage
AHERA	40 CFR 763 Subpart E	Asbestos in schools	From kindergarten to grado12
NESHAP	40 CFR 61 subpart M	Demolition Remodeling	Public, private buildings (>260 lf, 160 sf, 35 cf)
ASHARA	Asbestos School Hazard Reauthorization Act	Training	All staff who work with asbestos in a school
Ley de Protección al Trabajador	40 CFR 763 (G) Worker Protection	Protect the worker where OSHA does not	All work where asbestos is handled
Ley de Desaparición del Asbesto	Phase out rule	Manufacture of asbestos products	94% of asbestos products

For more information at: www.usepa.gov

AHERA

Kindergarten to 12th grade

Requires:

Inspection

Report ACM quantity and condition

Implement control methods

Operation and Maintenance

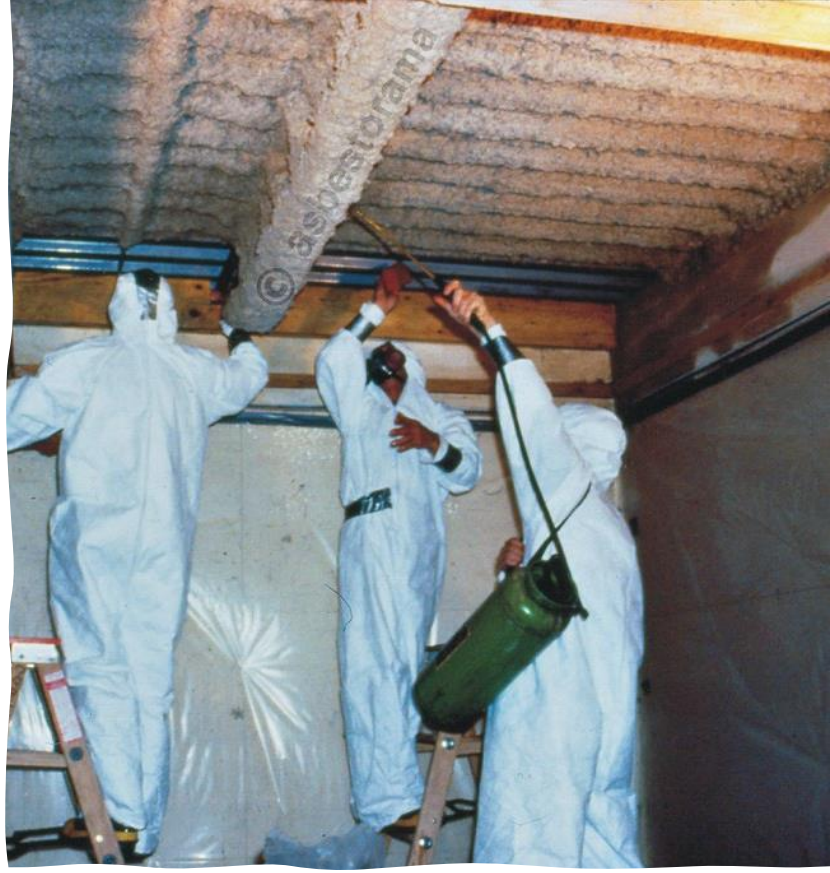
Note: All staff must have training based on MAP protocol (Model Accreditation Program)

NESHAP

- Public, Private and commercial buildings with more than 4 units or apartments.
- Demolition
- Renovation
- Law applies to jobs of:
- > 260 lf, 160 sf, 35 cf

NESHAP

- **Keep the asbestos:**
- "Adequately wet."
- **Do not allow:**
- "Visible Emissions."
- NESHAP requires notification of projects 10 business days before starting them. All demolition projects.



ASHARA

- **Law created in 1990**
- Extends the regulations for training and certification of personnel under the MAP model to commercial and public buildings.

NIOSH

- National Institute of Occupational Health and Safety.
- Research and maintain statistics about occupational health and safety
- Recommends regulation to OSHA
- Approves respiratory masks.

DOT

Department of Transportation

The U.S. Department of Transportation regulates the transportation of hazardous materials. Among them is asbestos.

Here are some rules:

Asbestos must be transported in serrated and sealed packaging and in dumpsters or sawn trucks

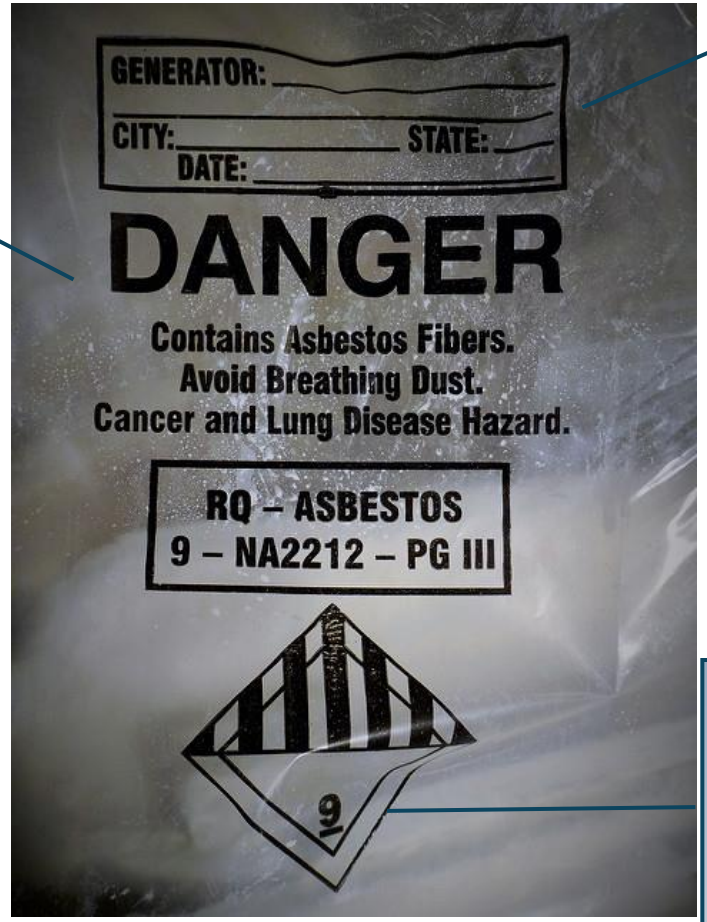
The person driving the truck must have a license and permission to transport the material

The truck must be directed directly to the disposal site

Dumpsters and trucks must have the warning symbol or warning label that idetifies the asbestos: **9**

WASTE LABELS

OSHA Hazard Label



Asbestos Generator Label: You must have the address of the place where the asbestos was removed.

"**Reportable Quantity**" (RQ) for asbestos as defined by environmental regulations in the United States, particularly those outlined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right-to-Know Act (EPCRA).

DOT label Department of Transportation

OSHA

NORM	CODE	REGULATES
Construction Industry	29 CFR 1926.1101	Worker Protection
General Industry	29 CFR 1910.1001	Worker Protection
Maritime Industry	29 CFR	Worker Protection
Respiratory Protection	29 CFR 1910.134	Protection Respiratory
Discrimination	Ley Sección 11-C	Employment Discrimination for Filing Complaints

For more information, please visit: www.osha.gov

OSHA® Occupational Safety and Health Administration

WORKER RIGHTS

NORM	CODE	REGULATES
HazCom (Right to Know)	29 CFR 1910.1200	Chemical Hazards in Your Job
Right to File a Complaint	Sección 11-C	Right to Go to OSHA
Right to a Hazard-Free Workplace	29 CFR 1910.1001 29 CFR 1926.1101	Right to a Hazard-Free Workplace
Right to Refuse to Work Unsafely	La Section 13(a)	Refusing to work unsafely

For more information, please visit: www.OSHA.gov

OSHA® Occupational Safety and Health Administration

OSHA SAFETY REGULATIONS

NORM	CODE	REGULATES
Fall Protection	29 CFR 1926.501-503 29 CFR 1910.1053 (LADDERS)	Working at heights >6 feet
Ruido	29 CFR 1910.95	95 db
Electrical Safety	29 CFR 1926 - Subpart K	Electricity Usage Using GFCI
Head Protection	29 CFR 1926.100	

For more information, please visit: www.OSHA.gov

OSHA® Occupational Safety and Health Administration

OSHA – ASBESTOS IN CONSTRUCTION

ACTIVITY	COVERS
Regulated Areas: (1926.1101)(e)	Put up caution signs
Competent Person: (1926.1101)(e)(6)	Present in the workspace Inspect during each day Must attend supervisory training
Air Monitoring: (1926.1101)(f) Exposure Limits: (1926.1101)(c)	PEL = 0.1 f/cc 8 h STEL or EL = 1 f/cc – 30 min. Daily Air Samples 25% Workers
Medical Surveillance: (1926.1101)(e)	Requires initial and annual examination if working with negative pressure respirators or > 30 days/year
Respirators: (1926.1101)(h)	Mandatory on all work >0.1 f/cc
PPE: (1926.1101)(i)	Required on jobs >25 lf or 10 sf TSI or SM removal or when there is no NEA or >PEL

For more information, please visit: www.osha.gov

OSHA® Occupational Safety and Health Administration

OSHA – ASBESTOS IN CONSTRUCTION

ACTIVITY	COVERS
Training: (1926.1101)(e)	Initial and annual update equivalent to the MAP
Classification of Activities: (1926.1101)(g)(5)	Class I – Class II – Class III Class IV
Decontamination: (1926.1101)(g)	Required if working >25 lf or 10 sf TSI or SM Full DECON, Rest Areas
Engineering and Control Methods: (1926.1101)(g)	Wet Methods NAM, Continuous Cleaning
Work Practices: (1926.1101)(g)(5)(i)(B)	Wet Methods HEPA vacs – continuous and prompt cleaning
Prohibited Practices: (1926.1101)(g)(3)	High-revolution abrasive discs Sweeping Up Asbestos

For more information, please visit: www.osha.gov

OSHA® Occupational Safety and Health Administration

OSHA – ASBESTOS IN CONSTRUCTION

ACTIVITY	COVERS
Controls and Work Practices: (1926.1101)(e)	Comprehensive HEPA Local Ventilation Envelopment and isolation of areas Direct ventilation Other Areas of Work Respirators
Prohibited Work Practices: (1926.1101)(e)	Abrasive polishing discs or saws without HEPA connection Compressed air without collection device Dry Sweeping/Shoveling
Controls and Work Practices: (1926.1101)(e)	Critical barriers/isolation of the required area if: >25 lf or 10 sf TSI or SM <25 lf or 10 sf of TSI or SM if there is no NEA (pre-exposure test) or other workers are nearby HVAC insulation Waterproof plastic on floors

For more information, please visit: www.osha.gov

OSHA – ASBESTOS IN CONSTRUCTION

ACTIVITY	COVERS
Controls and Work Practices: (1926.1101)(e)	Direct ventilation if there is no NEA or >PEL Objects must be covered and one or more of the following methods must be used: Area Under Negative Pressure Glove Bag Negative Pressure Glove Bag Negative Pressure Glove Box Spray Water Process Mini-enclosure

For more information, please visit: www.osha.gov

OSHA® Occupational Safety and Health Administration

SECTION 11-C

You have the right to file a complaint in case you are expelled from your job for fighting for your health and safety.

Although these cases are complicated, if you win the case:

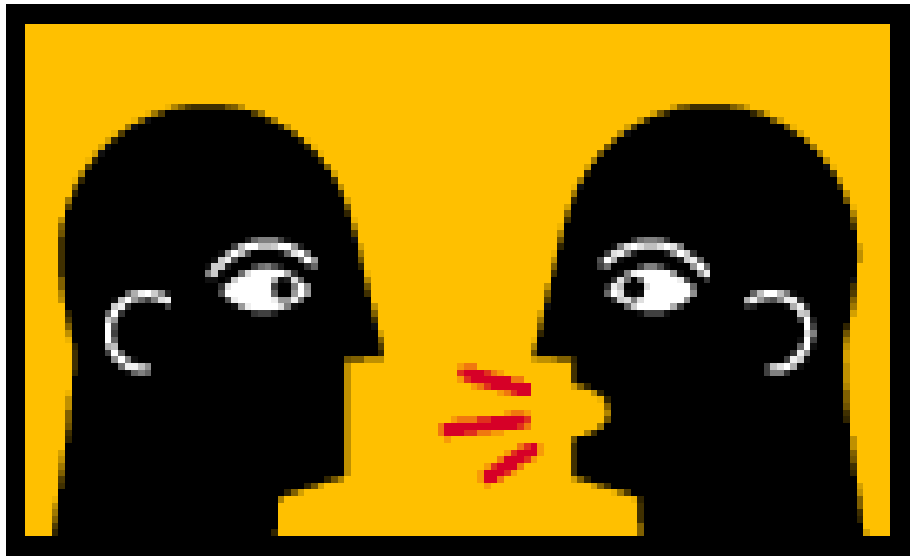
- You will get your job back.
- You will keep your salary.
- You will keep your seniority.

RIGHT TO KNOW

You have the right to know the hazards in your job.

HAZCOM

29 CFR 1910.1200



STATE RULES

STATE	MEANING	COVERS
IDPH ▪ **Illinois**	*Illinois Department of Public Health* **Titulo 77 – Código 855**	Licensing Training Project Notification
DHS ▪ **Wisconsin**	*Department of Health Services* **DHS 159**	Certification Training Project Notification

Obtaining your license in Illinois
IDPH – Code 855

- **Training**: initially and annually
- **Reciprocity**: (if you honor training from other states – upgrade required at approved provider)
- **Training Expiration**: Annually.
- **License expiration**: May 15 of each year.
- **Year of grace**: (1 year after training expiration)
- **Requirement to work**: license and certificate in force and at hand.

Asbestos Supervisor Application Instructions

- Supervisors are the Contractor's designees on asbestos abatement projects and are responsible for ensuring that work is conducted in accordance with state and federal regulations.
- In accordance with the Asbestos Abatement Act and Code, the Illinois Department of Public Health (IDPH) shall license persons desiring to serve as supervisors in public and nonpublic school facilities.

- In accordance with the Commercial and Public Building Asbestos Abatement Act and Code supervisors are required to be licensed by the IDPH to perform project activities in commercial and public buildings. Licensure is required for persons performing project activities in excess of 3 square feet or 3 linear feet.

General Information (IDPH)

- All licenses shall **expire on May 15 of each year**. Licenses **issued after January 15** shall **expire on May 15 of the following year**.
- Duplicate licenses are obtained by submitting a written request to the Department for a duplicate license with a photograph of the licensee and a **$15.00 fee**. A duplicate license will not be issued if the IDPH accredited training course certificate has expired.
- **Any changes in the licensee's name**, address, place of employment, etc., must be submitted in writing to the Department.
- An applicant shall submit an IDPH accredited initial training course certificate. If the initial training course certificate has expired the applicant shall also include copies of all IDPH accredited refresher course certificates. An Illinois Department of Public Health accredited refresher training course shall be completed annually to maintain accreditation and licensure.
- All training courses completed March 12, 1999 or after shall be accredited by the Department.

Child Support Compliance (IDPH)

State of Illinois
Illinois Department of Public Health

FOR DEPARTMENT USE ONLY
ID#: _____

Application for Asbestos Professional License

Please check the type of License(s) applied for:

❑ Project Supervisor $75.00 ❑ Air Sampling Professional $50.00 ❑ Inspector $50.00
❑ Management Planner $50.00 ❑ Project Designer $50.00 ❑ Project Manager $50.00

MAKE CHECK OR MONEY ORDER PAYABLE TO THE ILLINOIS DEPARTMENT OF PUBLIC HEALTH

Please Type or Print

Applicant Name _____
(First) (MI) (Last)

Home Address _____

City _____ State _____ County _____ ZIP code _____

Home Telephone _____ Date of Birth _____ SSN (#) _____

Education of Applicant
(Enter Highest Grade Completed)
High School ❑ (1-4)
College ❑ (1-4)

In accordance with the requirements of the Illinois Administrative Procedure Act, 5 ILCS 100 the Illinois Department of Public Health requires the disclosure of your Social Security number as part of the license application. Failure to provide your Social Security number shall result in the denial of your license application.

Employer Name _____

Business Address _____

City _____ State _____ County _____ ZIP code _____

Telephone _____ Fax _____ Major Business Activity _____

It is required by law (5 ILCS/100/10-65) that applicants complete and sign the following statement. Failure to complete and sign this statement will result in an incomplete application and delay in issuing your license. Making a false statement may place you in contempt of court.

Check only one box

❑ I am not more than 30 days delinquent in complying with a child support order; or
❑ I am more than 30 days delinquent in complying with a child support order; or
❑ This statement does not apply.

I hereby certify that the information submitted is true and valid and I understand that the Illinois Department of Public Health may deny, revoke or suspend my application for a professional license for knowingly making false or fraudulent claims.

ASBESTOS COURSES COMPLETED

COURSE TITLE	IDPH TC PROVIDER NAME	DATES COMPLETED

SUBMIT TWO 1" X 1" PHOTOGRAPHS OF THE APPLICANT (head and shoulders only).

The license will not be issued without the photograph.

_____ _____
Signature of Owner/Officer Date

IMPORTANT NOTICE: The Illinois Department of Public Health is requesting disclosure of information necessary to accomplish the statutory purpose as outlined under Public Act 85-1083. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center.

The **Public Information Disclosure** below must be completed to allow the Department to release your personal contact information. **ONLY** those asbestos licensees who complete this information will be included in Department lists. By checking a box below, you authorize this Department to publish your business or personal information on all Department listings. Your signature further confirms your agreement to hold harmless and release this Department from any liability arising from release of the information authorized below.

I authorize the Illinois Department of Public Health to include my:
(Check only ONE box)
❑ Personal Information ❑ I do not wish to be listed

IL 482-0882 Revised 4/14 Printed by Authority of the State of Illinois CCI 14-700

- It is required by law (5 IlCS/100/10-65 (c) of the Illinois Administrative Procedure Act, amended by P.A. 87-823 that individual licensees certify whether they are **more than 30 days delinquent** in payment of child support.
- All applicants shall comply with this Act.
- Applicants shall complete and sign the child support statement.
- Failure to complete this statement will result in an incomplete application, and a delay in issuing the license. Making a false statement may place you in contempt of court.

Reciprocity

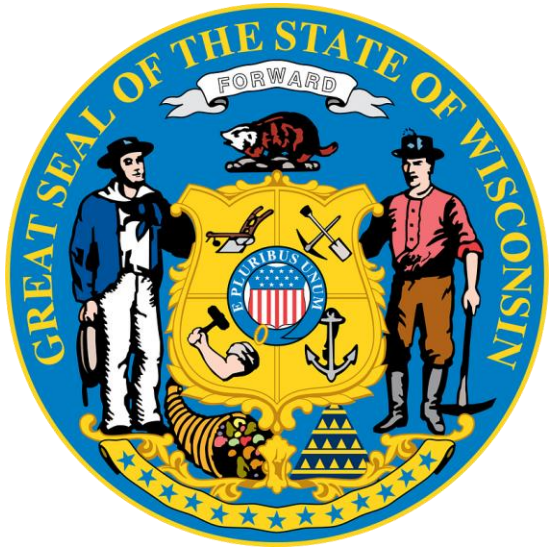
Out of State Residents:

- Out of state residents applying for initial licensure in Illinois may receive reciprocity by submitting U.S. EPA or another state accredited training course certificates and meeting the license requirements for what licenses they are applying for. If the initial training course certificates are expired, the applicant shall also submit refresher training course certificates for all preceding years. Reciprocity of Architectural and Engineering licenses are under the jurisdiction of the Illinois Department of Professional Regulation.

Grace Period:

If a training course certificate has been expired for more than one year from the expiration date, the applicant shall retake an IDPH accredited initial training course. It is the applicant's responsibility to keep their training course certificates current and maintain copies of all certificates for their use. The Department will verify all training course certificates submitted for licensure with the training course provider before a license is issued.

Regulations
DHS 159



Training and Certification Provisions

- This regulation covers companies, supervisors, and workers.
- Here are some aspects that affect you as a **SUPERVISOR**.
- Ask your instructor for a copy of the DHS 159.
- We have some printed versions available for review.

DHS 159

(Department of Health Services)

Certification Requirements:

- Fill out application
- Check or Money Order **$ 125.00** (can pay online too)

Requirements for Out-of-State Individuals

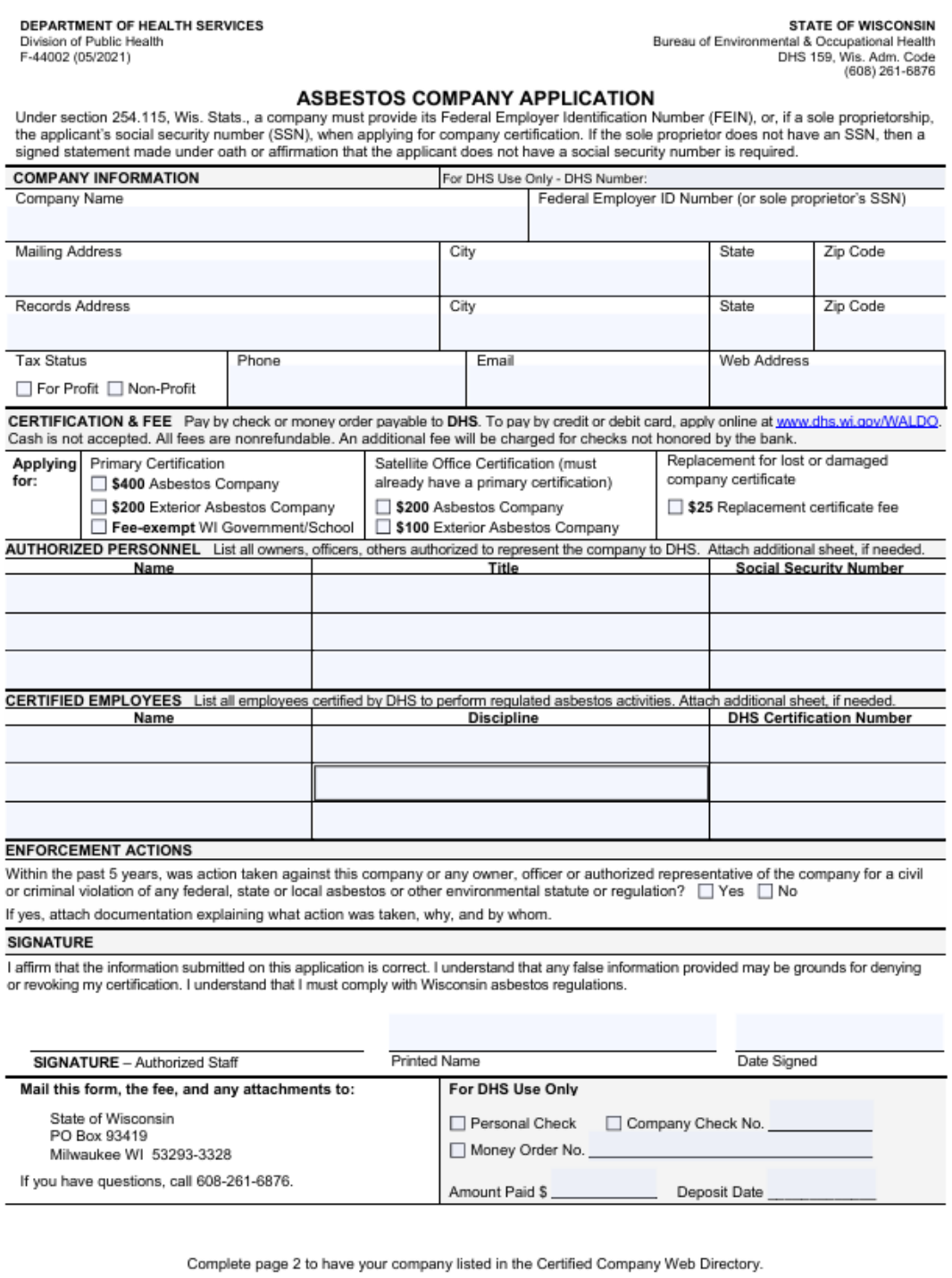
- Full Application
- Check or Money Order for $ 125.00 + $ 25 (out of state fee)
- Initial Course Copy and all re-certifications

Provisional Certification

- You can use your training certificate to work while your license is being processed parentheses (*as long as you have submitted your complete application and fee to DHS*).

- You must keep a copy of your training certificate with you until you have your card.

- The DHS will issue a paper card. When you get it, you must keep a copy of it with you during the work period. A photo on your phone is OK.



DEPARTMENT OF HEALTH SERVICES
Division of Public Health
F-44002 (05/2021)

STATE OF WISCONSIN
Bureau of Environmental & Occupational Health
DHS 159, Wis. Adm. Code
(608) 261-6876

ASBESTOS COMPANY APPLICATION

Under section 254.115, Wis. Stats., a company must provide its Federal Employer Identification Number (FEIN), or, if a sole proprietorship, the applicant's social security number (SSN), when applying for company certification. If the sole proprietor does not have an SSN, then a signed statement made under oath or affirmation that the applicant does not have a social security number is required.

COMPANY INFORMATION | For DHS Use Only - DHS Number:

Company Name	Federal Employer ID Number (or sole proprietor's SSN)		
Mailing Address	City	State	Zip Code
Records Address	City	State	Zip Code
Tax Status ☐ For Profit ☐ Non-Profit	Phone	Email	Web Address

CERTIFICATION & FEE Pay by check or money order payable to **DHS**. To pay by credit or debit card, apply online at www.dhs.wi.gov/WALDO. Cash is not accepted. All fees are nonrefundable. An additional fee will be charged for checks not honored by the bank.

Applying for:	Primary Certification	Satellite Office Certification (must already have a primary certification)	Replacement for lost or damaged company certificate
	☐ **$400** Asbestos Company ☐ **$200** Exterior Asbestos Company ☐ **Fee-exempt** WI Government/School	☐ **$200** Asbestos Company ☐ **$100** Exterior Asbestos Company	☐ **$25** Replacement certificate fee

AUTHORIZED PERSONNEL List all owners, officers, others authorized to represent the company to DHS. Attach additional sheet, if needed.

Name	Title	Social Security Number

CERTIFIED EMPLOYEES List all employees certified by DHS to perform regulated asbestos activities. Attach additional sheet, if needed.

Name	Discipline	DHS Certification Number

ENFORCEMENT ACTIONS

Within the past 5 years, was action taken against this company or any owner, officer or authorized representative of the company for a civil or criminal violation of any federal, state or local asbestos or other environmental statute or regulation? ☐ Yes ☐ No

If yes, attach documentation explaining what action was taken, why, and by whom.

SIGNATURE

I affirm that the information submitted on this application is correct. I understand that any false information provided may be grounds for denying or revoking my certification. I understand that I must comply with Wisconsin asbestos regulations.

SIGNATURE – Authorized Staff | Printed Name | Date Signed

Mail this form, the fee, and any attachments to:

State of Wisconsin
PO Box 93419
Milwaukee WI 53293-3328

If you have questions, call 608-261-6876.

For DHS Use Only

☐ Personal Check ☐ Company Check No. _____
☐ Money Order No. _____
Amount Paid $ _____ Deposit Date _____

Complete page 2 to have your company listed in the Certified Company Web Directory.

Company Certification

Company Certification is required.
Every supervisor and worker must work for a certified company.

(including one-person operations)

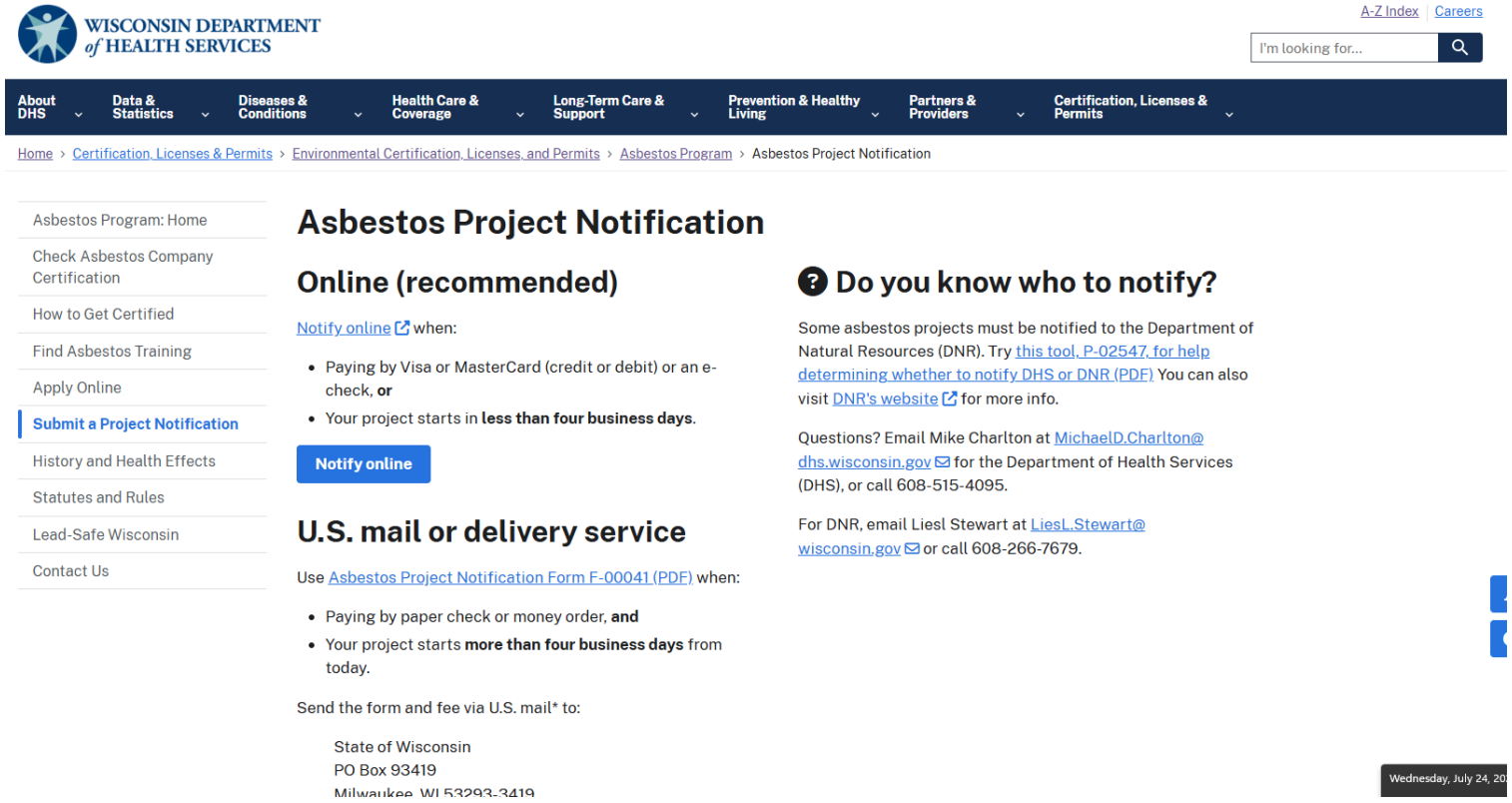
License Fee

$ 200 1 year or **$ 400** 2 years.

Note: Replacement Fee = **$ 25.**

Job Notification

- Asbestos projects generally need to be notified to either DHS or DNR
- Asbestos notice includes information about: the amounts of asbestos that will be removed, from where and when, and if those pieces of info change, the notice needs to be updated.
- DHS and DNR generally inspect projects to assure safe asbestos work is being done by certified workers who are directly supervised.



DEPARTMENT OF HEALTH SERVICES
Division of Public Health
F-00041 (05/2024)

STATE OF WISCONSIN
Bureau of Environmental & Occupational Health
Wis. Admin. Code ch. DHS 159

ASBESTOS PROJECT NOTIFICATION

Use this form to notify the Department of Health Services (DHS) of asbestos abatement activities as required under Wis. Admin. Code ch. DHS 159. Do not use this form to notify the Department of Natural Resources (DNR). See page 2 for instructions. Notify online at https://health.wisconsin.gov/Waldo/Notify.

Company Project Number: _____

PROPERTY INFORMATION

Property type (check most accurate response) ☐ Commercial/Industrial/Business ☐ Public (church, library, etc.) ☐ K-12 School
☐ Government ☐ University ☐ Residential/No. Units (☐ Owner-occupied ☐ Rental) ☐ Other:

Facility/building name, if applicable

Property contact person	Phone number
Name of owner	Phone number

Street or fire code address	City	ZIP code

Location of project on premises

ASBESTOS PROJECT TYPE Check all that apply

☐ Removal ☐ Enclosure ☐ Encapsulation ☐ Repair ☐ Other (describe):
Structure will be: ☐ Occupied ☐ Vacant (If occupied, complete and post Form F-44016, Asbestos Occupant Protection Plan)

NOTICE TYPE

☐ Original ☐ Cancellation ☐ Revision, No. Revising: ☐ Schedule ☐ Type/amount of ACM ☐ Other:
☐ Planned renovation project Start date(mm/dd/yy): End date: ☐ Sub-project No:

PROJECT SCHEDULE Start date includes project set-up

Abatement dates (mm/dd/yy) Start date: End date:
Work days (Check all that apply)
☐ Mon. ☐ Tues. ☐ Wed. ☐ Thurs. ☐ Fri. ☐ Sat. ☐ Sun.

Work hrs: ☐ a.m. ☐ p.m.
to ☐ a.m. ☐ p.m.

PRE-PROJECT ASBESTOS INSPECTION

Inspection date(s) (mm/dd/yy) to	Inspector name	Inspector DHS certification number

ABATEMENT CONTRACTOR INFORMATION

Company name		DHS certification number & expiration date
Address	Contact person name	Office phone number

City	State	ZIP Code	Cell phone number

TYPE AND AMOUNT OF ASBESTOS (See page 2 for guidance) Location: ☐ Interior ☐ Exterior

Total Amount of Asbestos

☐ **Friable** - Submit notification for: ☐ < 260 linear feet ☐ < 160 square feet ☐ < 35 cubic feet
☐ Any amount of asbestos in residential buildings with fewer than 5 units
Type: ☐ Pipes/ducts ☐ Surfacing ☐ Other friable ACM: _____
☐ **Non-Friable** - Submit notification for asbestos projects involving:
☐ Flooring: ☐ Any amount, intact manual methods, or, ☐ <160 square feet, mechanical chipping
☐ Roofing: ☐ Any amount, intact manual methods, or, ☐ <5,580 square feet, power-sawing
☐ Siding: Any amount, intact methods only
☐ Other non-friable ACM:

Linear feet
Square feet
Cubic feet

FEES See Page 5 for acceptable payment methods and Page 4 for information on determining the fee ☐ No fee		**Fee Enclosed**
☐ Original notice, 2 or more working days	☐ Sub-project ☐ Revision, less than 2 working days	☐ $50
☐ Original notice, less than 2 working days	☐ Planned renovation project notice	☐ $100

Project Notification Affidavit -- I am an authorized representative of the abatement company named above. I certify that the information provided on this form is correct to the best of my knowledge and that this project complies with Wis. Admin. Code ch. DHS 159.

SIGNATURE – Authorized Representative	DHS Certification Number	Date Signed

NOTIFICATION GUIDANCE – Follow these instructions to determine if asbestos project notification to DHS is required:

1. Choose the table below that matches the property type.
2. In that table, choose the row that describes the type of activity and amount of ACM involved in the activity.
3. In that row, choose the column that describes the type of material (friable or non-friable).
4. The cell at the intersection of the chosen row and column indicates whether notice to DHS is required.

Table 1: Residential buildings with 1 to 4 dwelling units

Abatement Activity	Friable Asbestos	Non-friable Asbestos
Removal of *more than* 1 bag* of ACM and up to any amount of removal	Notify DHS	Notify DHS
Enclosure, encapsulation or repair of *more than* 3 square ft. or *more than* 3 linear ft. of ACM	Notify DHS	No DHS notice required

Table 2: All other structures, including residential with 5 or more dwelling units**

Abatement Activity	Friable Asbestos	Non-friable Asbestos
Removal of *more than* 1 bag* of ACM but *less than* 160 square ft., *less than* 260 linear ft., or *less than* 35 cubic ft.	Notify DHS	Notify DHS
Removal of 160 square ft. *or more*, 260 linear ft. *or more*, or 35 cubic ft. *or more of ACM*	No DHS notice required**	Notify DHS
Enclosure, encapsulation or repair of *more than* 3 square ft. or *more than* 3 linear ft. of ACM	Notify DHS	No DHS notice required

* "Bag" means a disposal bag or glove bag *no larger than* 60" x 60", properly filled and sealed.

**** Notice to DNR may be required. Notice is required to DNR for removal of any amount of friable or non-friable ACM on DNR-regulated demolition projects and for friable asbestos or RACM in amounts more than 160 square feet, 260 linear feet, or 35 cubic feet in residential buildings with 5 or more dwelling units and in all other facilities. Contact DNR at 608-266-3658 for more assistance.**

SUBMITTING NOTIFICATION

Notification delivery methods allowed based on timing of submittal and type of notice

Original - 2 or more working days*	**Original** - less than 2 working days*	**Revision**	**Planned Renovation Project**	**Sub-project** - 2 or more working days*	**Sub-project** - less than 2 working days*
- Online notice - Postal service** - Delivery service	- Online notice - Delivery service	- Online notice - Email - Fax	- Postal service** - Delivery service	- Fax - Email - Postal service **	- Delivery service

* "Working day" means any day except Saturday or Sunday. For notification purposes a working day ends at 4 p.m.
** Must be postmarked 4 working days or more before project start date.

Project Log

DHS requires a Project Log

Log must be kept at jobsite and must be filled out daily.

DEPARTMENT OF HEALTH SERVICES
Division of Public Health
F-02052 (03/2017)

STATE OF WISCONSIN
Bureau of Environmental and Occupational Health
Wis. Admin. Code ch. DHS 159

ASBESTOS ABATEMENT PROJECT LOG

Wis. Admin. Code § DHS 159.21 (2) Project Log. The company shall maintain a project log onsite for each workday of an asbestos abatement activity. The daily project log shall include the date, project number as identified on the notification form required under Wis. Admin. Code § DHS 159.20, project address, printed name and certification number of the site supervisor, and the printed name, signature, reason for entry, department certification number, if appropriate, and the in and out times for each person who enters the regulated area. **Note**: asbestos abatement activities include both setup and teardown.

Date of Log	Project Number	Name – Project Supervisor (Printed)	Supervisor DHS Certification No.

Project Address

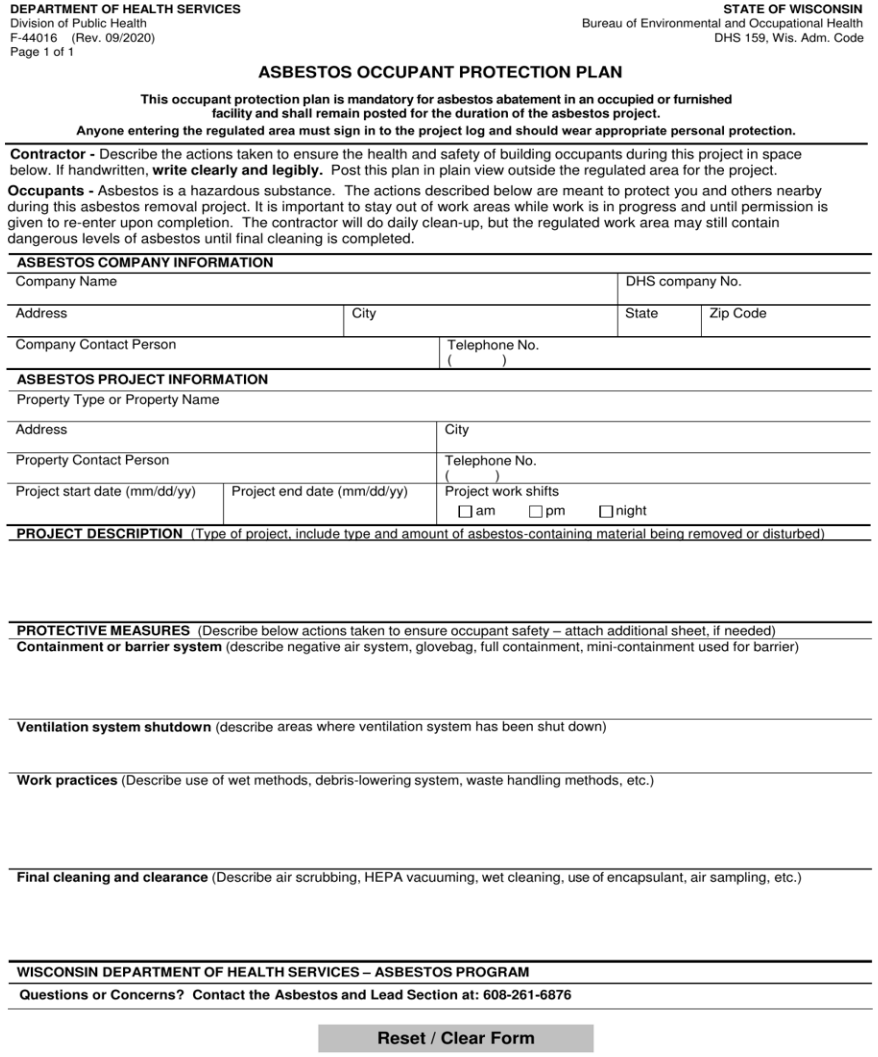
NAME (printed)	SIGNATURE	DHS CERT. NO.	REASON ENTERING REGULATED AREA	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT

- *Date*
- *Project Number*
- *Project Management*
- *Project supervisor's name and certification number*
- *Name of each person, signature, reason for entry, certification number, entry and exit times of each person entering the regulated area.*

Occupant Protection Plan

*DHS requires a **Occupant Protection Plan**, which informs tenants of a building that asbestos work is going to be carried out. This form should include:*

- *Name, address, and phone number of the asbestos company.*
- *Project address, name and telephone number of the contact person*
- *Start and end dates of the project including working days*
- *A paragraph stating that only authorized and PPE personnel may enter the regulated area*
- *Description of the control methods to be used*
- *Description of any activities to be performed*



DEPARTMENT OF HEALTH SERVICES
Division of Public Health
F-44016 (Rev. 09/2020)
Page 1 of 1

STATE OF WISCONSIN
Bureau of Environmental and Occupational Health
DHS 159, Wis. Adm. Code

ASBESTOS OCCUPANT PROTECTION PLAN

This occupant protection plan is mandatory for asbestos abatement in an occupied or furnished facility and shall remain posted for the duration of the asbestos project.
Anyone entering the regulated area must sign in to the project log and should wear appropriate personal protection.

Contractor - Describe the actions taken to ensure the health and safety of building occupants during this project in space below. If handwritten, **write clearly and legibly.** Post this plan in plain view outside the regulated area for the project.

Occupants - Asbestos is a hazardous substance. The actions described below are meant to protect you and others nearby during this asbestos removal project. It is important to stay out of work areas while work is in progress and until permission is given to re-enter upon completion. The contractor will do daily clean-up, but the regulated work area may still contain dangerous levels of asbestos until final cleaning is completed.

ASBESTOS COMPANY INFORMATION

Company Name		DHS company No.	
Address	City	State	Zip Code
Company Contact Person	Telephone No. ( )		

ASBESTOS PROJECT INFORMATION

Property Type or Property Name		
Address	City	
Property Contact Person	Telephone No. ( )	
Project start date (mm/dd/yy) / Project end date (mm/dd/yy)	Project work shifts ☐ am ☐ pm ☐ night	

PROJECT DESCRIPTION (Type of project, include type and amount of asbestos-containing material being removed or disturbed)

PROTECTIVE MEASURES (Describe below actions taken to ensure occupant safety – attach additional sheet, if needed)
Containment or barrier system (describe negative air system, glovebag, full containment, mini-containment used for barrier)

Ventilation system shutdown (describe areas where ventilation system has been shut down)

Work practices (Describe use of wet methods, debris-lowering system, waste handling methods, etc.)

Final cleaning and clearance (Describe air scrubbing, HEPA vacuuming, wet cleaning, use of encapsulant, air sampling, etc.)

WISCONSIN DEPARTMENT OF HEALTH SERVICES – ASBESTOS PROGRAM
Questions or Concerns? Contact the Asbestos and Lead Section at: 608-261-6876

Reset / Clear Form

Document Recordkeeping

DHS requires new companies to keep records of each project for at least 3 years. These records should include:

- *Any written project contract,*
- *Project Notification, Project Logs, Tenant Protection Plan,*
- *Results of the analysis of the laboratory package samples.*

Asbestos Certification Process in Wiscosin

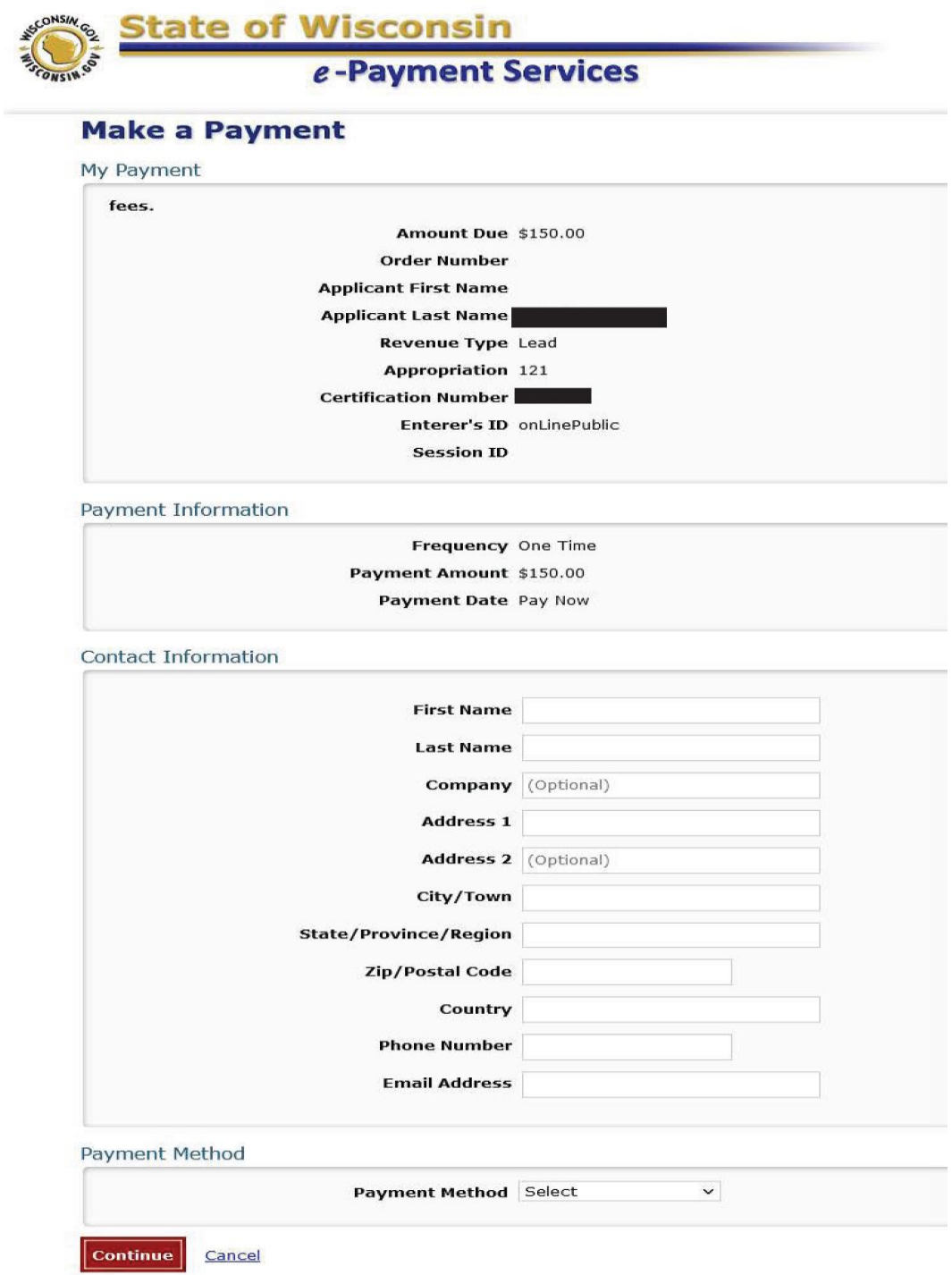
Apply for Lead or Asbestos Certification

Apply online

Most people and companies can apply using our online application.

If you took training outside of Wisconsin, need to submit documents, or are requesting a fee exemption, **you must apply by mail.**

You may also use the system to update information like your mailing address, or order a replacement card.


State of Wisconsin
e-Payment Services
Make a Payment
My Payment
fees.
Amount Due $150.00
Order Number
Applicant First Name
Applicant Last Name [redacted]
Revenue Type Lead
Appropriation 121
Certification Number [redacted]
Enterer's ID onLinePublic
Session ID
Payment Information
Frequency One Time
Payment Amount $150.00
Payment Date Pay Now
Contact Information
First Name
Last Name
Company (Optional)
Address 1
Address 2 (Optional)
City/Town
State/Province/Region
Zip/Postal Code
Country
Phone Number
Email Address
Payment Method
Payment Method Select
Continue
Cancel

OSHA® FactSheet

Asbestos

Asbestos is a naturally occurring mineral fiber. It was used in numerous building materials and vehicle products for its strength and ability to resist heat and corrosion before its dangerous health effects were discovered. Individual asbestos fibers cannot be seen by the naked eye, which puts workers at an increased risk. The Occupational Safety and Health Administration (OSHA) has regulations to protect workers from the hazards of asbestos.

What is the hazard?

Asbestos fibers are released into the air during activities that disturb asbestos-containing materials.

The asbestos fibers can then be inhaled without knowing and trapped in the lungs. If swallowed, they can become embedded into the digestive tract as well.

Asbestos is a known human carcinogen and can cause chronic lung disease as well as lung and other cancers. Symptoms and/or cancer may take many years to develop following exposure.

Where is the hazard?

The hazard may occur during manufacturing of asbestos-containing products; performing brake or clutch repairs; renovating or demolishing buildings or ships; or cleanup from those activities; contact with deteriorating asbestos-containing materials and during cleanup after natural disasters.

Some materials are presumed to contain asbestos if installed before 1981. Examples of these materials, as well as other presumed asbestos-containing materials are:

- Thermal system insulation
- Roofing and siding shingles
- Vinyl floor tiles
- Plaster, cement, putties and caulk
- Ceiling tiles and spray-on coatings
- Industrial pipe wrapping
- Heat-resistant textiles
- Automobile brake linings and clutch pads

OSHA Standards

OSHA has three standards to protect workers from the hazards of asbestos depending on the type of workplace. For complete information on all of the requirements, see the standard specific to your type of workplace:

General Industry: 29 CFR 1910.1001 covers work in general industry, such as exposure during brake and clutch repair, maintenance work, and manufacture of asbestos-containing products.

Shipyards: 29 CFR 1915.1001 covers construction, alteration, repair, maintenance, renovation and demolition of structures containing asbestos during work in shipyards.

Construction: 29 CFR 1926.1101 covers construction, alteration, repair, maintenance, or renovation and demolition of structures containing asbestos.

What protections exist in the Standards?

- **Permissible Exposure Limit (PEL)** for asbestos is 0.1 fiber per cubic centimeter of air as an eight-hour time-weighted average (TWA), with an excursion limit (EL) of 1.0 asbestos fibers per cubic centimeter over a 30-minute period. The employer must ensure that no one is exposed above these limits.
- **Assessment** of workplaces covered by the standards must be completed to determine if asbestos is present and if the work will generate airborne fibers by a specific method under each standard.
- **Monitoring** necessary to detect if asbestos exposure is at or above the PEL or EL for workers who are, or may be expected to be exposed to asbestos. Frequency depends on work classification and exposure. The construction and shipyard standards require assessment and monitoring by a competent person.

- If the exposure has the potential to be above the PEL or EL, employers must use proper **engineering controls and work practices** to the extent feasible to keep it at or below the PEL and EL. Where feasible engineering controls and work practices do not ensure worker protection at the exposure limits, employers must reduce the exposures to the lowest level achievable and then supplement with proper **respiratory protection** to meet the PEL. The construction and shipyard standards contain specific control methods depending on work classification, and the general industry standard has specific controls for brake and clutch repair work.
- **Proper hazard communication and demarcation** with warning signs containing specified language in areas that have exposures above the PEL or EL is necessary. No smoking, eating, or drinking should occur in these areas and proper PPE must be provided and used to prevent exposure.
- **Separate decontamination and lunch areas** with proper hygiene practices must be provided to workers exposed above the PEL to avoid contamination.
- **Training** requirements depend on the workplace exposure and classification. Training must be provided to all workers exposed at or above the PEL before work begins and yearly thereafter. All training must be conducted in a manner and language in which the worker is able to understand. Workers who perform housekeeping operations in buildings with presumed asbestos-containing materials but not at the PEL must also be provided asbestos awareness training.
- **Medical surveillance** requirements are different depending on the industry. Medical surveillance must be provided for workers who engage in certain classifications of work, or experience exposures at or above the PEL in construction and shipyards. In general industry, medical examinations must be provided for workers who experience exposure at or above the PEL.
- **Records** must be kept on exposure monitoring for asbestos for at least 30 years, and worker medical surveillance records retained for the duration of employment plus 30 years. Training records must be kept for at least 1 year beyond the last date of employment.

Contact OSHA

For more information on this and other health-related issues impacting workers, to report an emergency, fatality or catastrophe, to order publications, to file a confidential complaint, or to request OSHA's free on-site consultation service, contact your nearest OSHA office, visit www.osha.gov, or call OSHA at 1-800-321-OSHA (6742), TTY 1-877-889-5627.

Worker Rights

Workers have the right to:

- Working conditions that do not pose a risk of serious harm.
- Receive information and training (in a language and vocabulary the worker understands) about workplace hazards, methods to prevent them, and the OSHA standards that apply to their workplace.
- Review records of work-related injuries and illnesses.
- Get copies of test results that find and measure hazards.
- File a complaint asking OSHA to inspect their workplace if they believe there is a serious hazard or that their employer is not following OSHA's rules.
- OSHA will keep all identities confidential.
- Exercise their rights under the law without retaliation or discrimination.

For more information, see OSHA's workers page.

OSHA FactSheet

CONTROL SILICA DUST
Breathe Easier

OSHA's Respirable Crystalline Silica Standard for Construction

Workers who are exposed to respirable crystalline silica dust are at increased risk of developing serious silica-related diseases. OSHA's standard requires employers to take steps to protect workers from exposure to respirable crystalline silica.

What is Respirable Crystalline Silica?

Crystalline silica is a common mineral that is found in construction materials such as sand, stone, concrete, brick, and mortar. When workers cut, grind, drill, or crush materials that contain crystalline silica, very small dust particles are created. These tiny particles (known as "respirable" particles) can travel deep into workers' lungs and cause silicosis, an incurable and sometimes deadly lung disease. Respirable crystalline silica also causes lung cancer, other potentially debilitating respiratory diseases such as chronic obstructive pulmonary disease, and kidney disease. In most cases, these diseases occur after years of exposure to respirable crystalline silica.

How are Construction Workers Exposed to Respirable Crystalline Silica?

Exposure to respirable crystalline silica can occur during common construction tasks, such as using masonry saws, grinders, drills, jackhammers and handheld powered chipping tools; operating vehicle-mounted drilling rigs; milling; operating crushing machines; using heavy equipment for demolition or certain other tasks; and during abrasive blasting and tunneling operations. About two million construction workers are exposed to respirable crystalline silica in over 600,000 workplaces.

What Does the Standard Require?

The standard (29 CFR 1926.1153) requires employers to limit worker exposures to respirable crystalline silica and to take other steps to protect workers. Employers can either use a control method laid out in Table 1 of the construction standard, or they can measure workers' exposure to silica and independently decide which dust controls work best to limit exposures in their workplaces to the permissible exposure limit (PEL).

What is Table 1?

Table 1 matches 18 common construction tasks with effective dust control methods, such as using water to keep dust from getting into the air or using a vacuum dust collection system to capture dust. In some operations, respirators may also be needed. Employers who follow Table 1 correctly are not required to measure workers' exposure to silica from those tasks and are not subject to the PEL.

Table 1 Example: Handheld Power Saws

If workers are sawing silica-containing materials, they can use a saw with a built-in system that applies water to the saw blade. The water limits the amount of respirable crystalline silica that gets into the air.

Table 1: Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica

Equipment/ Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hrs/ shift	> 4 hrs/ shift
Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. • When used outdoors. • When used indoors or in an enclosed area.	None APF 10	APF 10 APF 10

Excerpt from Table 1 in 29 CFR 1926.1153

In this example, if a worker uses the saw outdoors for four hours or less per day, no respirator would be needed. If a worker uses the saw for more than four

OSHA FactSheet

Protecting Workers from Lead Hazards

Cleaning up after a flood requires hundreds of workers to renovate and repair, or tear down and dispose of, damaged or destroyed structures and materials. Repair, renovation and demolition operations often generate dangerous airborne concentrations of lead, a metal that can cause damage to the nervous system, kidneys, blood forming organs, and reproductive system if inhaled or ingested in dangerous quantities. The Occupational Safety and Health Administration (OSHA) has developed regulations designed to protect workers involved in construction activities from the hazards of lead exposure.

How You Can Become Exposed to Lead

Lead is an ingredient in thousands of products widely used throughout industry, including lead-based paints, lead solder, electrical fittings and conduits, tank linings, plumbing fixtures, and many metal alloys. Although many uses of lead have been banned, lead-based paints continue to be used on bridges, railways, ships, and other steel structures because of its rust- and corrosion-inhibiting properties. Also, many homes were painted with lead-containing paints. Significant lead exposures can also occur when paint is removed from surfaces previously covered with lead-based paint.

Operations that can generate lead dust and fumes include:

- Demolition of structures;
- Flame-torch cutting;
- Welding;
- Use of heat guns, sanders, scrapers, or grinders to remove lead paint; and
- Abrasive blasting of steel structures

OSHA has regulations governing construction worker exposure to lead. Employers of construction workers engaged in the repair, renovation, removal, demolition, and salvage of flood-damaged structures and materials are responsible for the development and implementation of a worker protection program in accordance with Title 29 Code of Federal Regulations (CFR), Part 1926.62. This program is essential to minimize worker risk of lead exposure. Construction projects vary in their scope and potential for exposing workers to lead and other hazards. Many projects involve only limited exposure, such as the removal of paint from a few interior residential surfaces, while others may involve substantial exposures. Employers must be in compliance with OSHA's lead standard at all times. A copy of the standard and a brochure — Lead in Construction (OSHA 3142) — describing how to comply with it, are available from OSHA Publications, P.O. Box 37535, Washington, D.C. 20013-7535, (202) 693-1888(phone), or (202) 693-2498(fax); or visit OSHA's website at www.osha.gov.

Major Elements of OSHA's Lead Standard

- A permissible exposure limit (PEL) of 50 micrograms of lead per cubic meter of air, as averaged over an 8-hour period.
- Requirements that employers use engineering controls and work practices, where feasible, to reduce worker exposure.
- Requirements that employees observe good personal hygiene practices, such as washing hands before eating and taking a shower before leaving the worksite.
- Requirements that employees be provided with protective clothing and, where necessary, with respiratory protection accordance with 29 CFR 1910.134.

- A requirement that employees exposed to high levels of lead be enrolled in a medical surveillance program.

Additional Information

For more information on this, and other health-related issues impacting workers, visit OSHA's Web site at www.osha.gov.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For more complete information:

OSHA Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov

(800) 321-OSHA

DSTM 9/2005

OSHA FactSheet

Mold

Molds are the most common forms of fungi found on earth. They can grow on almost any material, as long as moisture and oxygen are available. Most molds reproduce through the formation of spores, tiny microscopic cells that are resistant to drying and are released into the air. Airborne spores are found both indoors and outdoors. When spores land on a suitable moist surface, they begin to grow and release chemicals that digest and can eventually destroy the surface and underlying materials. Molds can also cause adverse health effects.

Health Effects of Mold Exposure

Molds can cause mild to severe health problems in sensitive individuals when a sufficient number of airborne spores are inhaled. Some individuals are far more sensitive than others. The most common health effects associated with mold exposure are allergic reactions. Symptoms may include:

- Sneezing
- Runny nose
- Eye irritation
- Cough
- Congestion
- Aggravation of asthma
- Dermatitis (skin rash)

People at Greatest Risk

Infants, children, and the elderly are more susceptible to health problems attributable to molds. In addition, people with the following underlying health conditions may be more sensitive to molds:

- Individuals with allergies or existing respiratory conditions including asthma, sinusitis, or other lung diseases.
- Individuals with a weakened immune system (e.g., HIV patients).
- Recent organ or bone marrow transplant patients.
- Patients recovering from recent surgery and receiving chemotherapy or long-term steroid treatment.

How to Recognize Mold

Mold may be recognized by:

- Sight – They usually appear as distinctly colored woolly mats (e.g., mildew is black and is one of the most common molds in a household).
- Smell – They often produce a foul odor, such as a musty, earthy smell.

Preventing Mold Growth

The key to mold prevention is moisture control. Mold will not grow if moisture is absent.

- Remove excess moisture with a wet-dry vacuum and dry out the building as quickly as possible (preferably within 24 to 48 hours).
- Use fans to assist in the drying process.
- Clean wet materials and surfaces with detergent and water.
- Discard all water damaged materials.
- Discard all materials visibly contaminated with mold.
- Remove and discard all porous materials that have been wet for more than 48 hours. Porous materials cannot be cleaned and may remain a source of mold growth. These materials include the following:
  - Carpeting and carpet padding;
  - Upholstery, wallpaper, drywall;
  - Floor and ceiling tiles, insulation materials;
  - Clothing;

- Leather;
- Paper, wood;
- Food.

- Homeowners may want to temporarily store items outside of the home until insurance claims can be filed.

General Cleanup Tips

- Make sure the working area is well ventilated.
- Place mold damaged materials in a plastic bag and discard.
- Clean mold off hard surfaces and other nonporous materials with detergent and water, and dry completely.
- Disinfect these cleaned surfaces with one of the following household bleach solutions:
  - 1/4 cup household bleach per 1 gallon of clean water for light contamination.
  - 1 1/2 cups household bleach per 1 gallon of clean water for heavy contamination.

CAUTION: Do not mix bleach with other cleaning products that contain ammonia. Highly toxic chlorine gas can be produced.

- Avoid breathing mold spores. A N-95 respirator is recommended.
- Avoid touching mold with your bare hands. Long gloves that extend to the middle of the forearm are recommended. Use ordinary household rubber gloves when cleaning surfaces with water, bleach, and a mild detergent. Gloves made from natural rubber, neoprene, nitrile, polyurethane, or PVC are recommended if using a disinfectant, biocide, or strong cleaning solution.
- Avoid getting mold spores in your eyes. Goggles without ventilation holes are recommended.

Additional Information

Visit OSHA's Safety and Health Topics webpage on Molds and Fungi at http://www.osha.gov/SLTC/molds/index.html

For more complete information:

OSHA Occupational Safety and Health Administration

U.S. Department of Labor
www.osha.gov
(800) 321-OSHA

DSG 9/2005

10. Insurance and Liability

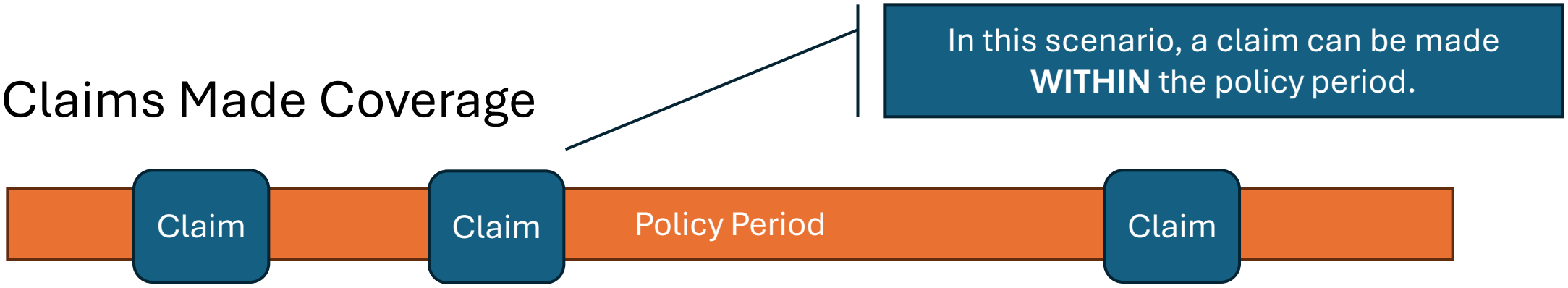
Topic 10.

- General Liability
- Pollution Liability
- Errors and Omissions
- Workman’s Compensation

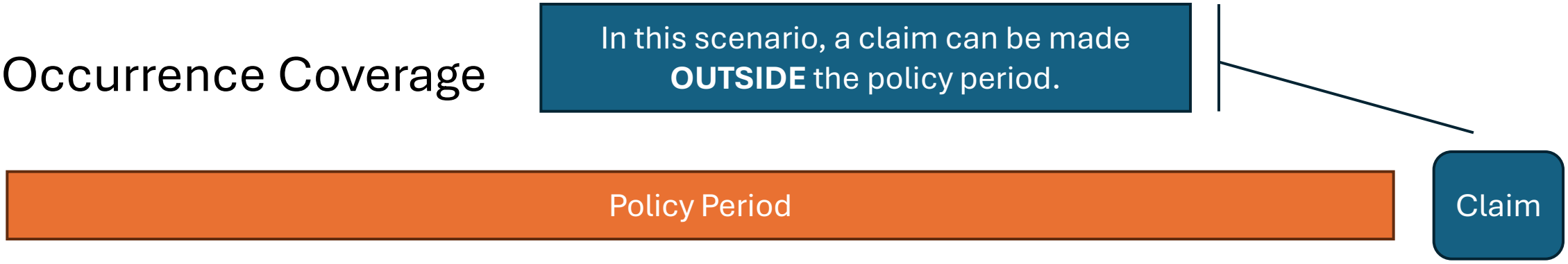
Examples of Coverage

- Mike, and employee of XYZ, Inc. fell from a ladder. What insurance coverage will cover Mike?
- A project supervisor is performing a walkthrough of a small abatement project. During the project, a state inspector realizes that the supervisor failed to install critical barriers. . What insurance coverage will cover this?
- Company ABC Environmental caused a fire while torching some pipes in a school building's basement. What insurance coverage will cover this?
- Company ABC Environmental didn't use smoke to test the glovebags used during a project. As a result, the surrounding rooms became contaminated with asbestos. What insurance coverage will cover this?

- Claims Made Coverage



- Occurrence Coverage



Bonding

- **Bid Bond** = Pays if bid is not honored by contractor who was awarded the bid.
- **Performance Bond** = Pays if project is not performed or finished by contractor who was awarded the bid.

- **Payment Bond** = Pays if contractor does not pay labor and materials used during the project.

Note: *These bonds are usually required by the building owner as an assurance that the contractor will perform according to the contract requirements*.

11. Record Keeping and Project Forms

Topic 11.

- Project Log
- Occupant Protection Plan
- Project Notification Form
- Air Sampling Results
- Employee Documents
- Waste Disposal Receipts and Manifests

DEPARTMENT OF HEALTH SERVICES
Division of Public Health
F-02052 (03/2017)

STATE OF WISCONSIN
Bureau of Environmental and Occupational Health
Wis. Admin. Code ch. DHS 159

ASBESTOS ABATEMENT PROJECT LOG

Wis. Admin. Code § DHS 159.21 (2) Project Log. The company shall maintain a project log onsite for each workday of an asbestos abatement activity. The daily project log shall include the date, project number as identified on the notification form required under Wis. Admin. Code § DHS 159.20, project address, printed name and certification number of the site supervisor, and the printed name, signature, reason for entry, department certification number, if appropriate, and the in and out times for each person who enters the regulated area. **Note**: asbestos abatement activities include both setup and teardown.

Date of Log	Project Number	Name – Project Supervisor (Printed)	Supervisor DHS Certification No.
Project Address			

NAME (printed)	SIGNATURE	DHS CERT. NO.	REASON ENTERING REGULATED AREA	TIME IN	TIME OUT	TIME IN	TIME OUT	TIME IN	TIME OUT

DEPARTMENT OF HEALTH SERVICES
Division of Public Health
F-44016 (Rev. 09/2020)
Page 1 of 1

STATE OF WISCONSIN
Bureau of Environmental and Occupational Health
DHS 159, Wis. Adm. Code

ASBESTOS OCCUPANT PROTECTION PLAN

This occupant protection plan is mandatory for asbestos abatement in an occupied or furnished facility and shall remain posted for the duration of the asbestos project.

Anyone entering the regulated area must sign in to the project log and should wear appropriate personal protection.

Contractor - Describe the actions taken to ensure the health and safety of building occupants during this project in space below. If handwritten, **write clearly and legibly.** Post this plan in plain view outside the regulated area for the project.

Occupants - Asbestos is a hazardous substance. The actions described below are meant to protect you and others nearby during this asbestos removal project. It is important to stay out of work areas while work is in progress and until permission is given to re-enter upon completion. The contractor will do daily clean-up, but the regulated work area may still contain dangerous levels of asbestos until final cleaning is completed.

ASBESTOS COMPANY INFORMATION

Company Name		DHS company No.	
Address	City	State	Zip Code
Company Contact Person	Telephone No. ( )		

ASBESTOS PROJECT INFORMATION

Property Type or Property Name		
Address	City	
Property Contact Person	Telephone No. ( )	
Project start date (mm/dd/yy)	Project end date (mm/dd/yy)	Project work shifts ☐ am ☐ pm ☐ night

PROJECT DESCRIPTION (Type of project, include type and amount of asbestos-containing material being removed or disturbed)

PROTECTIVE MEASURES (Describe below actions taken to ensure occupant safety – attach additional sheet, if needed)

Containment or barrier system (describe negative air system, glovebag, full containment, mini-containment used for barrier)

Ventilation system shutdown (describe areas where ventilation system has been shut down)

Work practices (Describe use of wet methods, debris-lowering system, waste handling methods, etc.)

Final cleaning and clearance (Describe air scrubbing, HEPA vacuuming, wet cleaning, use of encapsulant, air sampling, etc.)

WISCONSIN DEPARTMENT OF HEALTH SERVICES – ASBESTOS PROGRAM

Questions or Concerns? Contact the Asbestos and Lead Section at: 608-261-6876

Reset / Clear Form

Topic 12.

12. Supervising Asbestos Activities

Asbestos project supervision activities involve overseeing and managing all aspects of asbestos abatement projects to ensure compliance with regulatory requirements, industry standards, and safety protocols. Here's a synopsis of key activities involved in asbestos project supervision:

1. **Pre-Project Planning**: Supervisors begin by developing a comprehensive plan for the asbestos abatement project. This includes conducting site assessments to identify asbestos-containing materials (ACMs), assessing risks, and developing strategies for containment, removal, and disposal.
2. **Regulatory Compliance**: Supervisors ensure that the project complies with all relevant federal, state, and local regulations governing asbestos abatement, including the Occupational Safety and Health Administration (OSHA) regulations, the Environmental Protection Agency (EPA) regulations, and state-specific asbestos regulations.
3. **Personnel Training and Certification**: Supervisors ensure that all personnel involved in the project, including workers, contractors, and inspectors, receive appropriate training and certification in asbestos handling, removal, and disposal procedures. This includes training on the proper use of personal protective equipment (PPE), containment techniques, and waste management practices.
4. **Work Area Preparation**: Supervisors oversee the setup of containment barriers using polyethylene sheeting to isolate the work area from the rest of the building. They ensure that proper signage, access controls, and ventilation systems are in place to minimize the spread of asbestos fibers.
5. **Safe Work Practices**: Supervisors enforce the use of safe work practices, including wet methods to suppress dust, HEPA vacuuming to clean up debris, and proper decontamination procedures for personnel and equipment exiting the work area.

6. **Air Monitoring and Sampling**: Supervisors conduct air monitoring before, during, and after abatement activities to assess airborne asbestos fiber levels and ensure that exposure limits are not exceeded. They may also collect bulk samples of materials suspected to contain asbestos for laboratory analysis.
7. **Quality Control and Assurance**: Supervisors implement quality control measures to ensure that asbestos removal is performed safely and effectively. This includes conducting visual inspections, reviewing documentation, and addressing any deviations from the work plan.
8. **Documentation and Reporting**: Supervisors maintain detailed records of all aspects of the asbestos abatement project, including work plans, training certifications, air monitoring results, waste disposal manifests, and incident reports. They ensure that all required reports are submitted to regulatory agencies in a timely manner.
9. **Project Completion and Clearance**: Supervisors oversee the final cleanup and decontamination of the work area after asbestos removal is complete. They coordinate with third-party inspectors to conduct clearance sampling and inspections to verify that the area is safe for reoccupancy.
10. **Post-Project Review and Lessons Learned**: After the project is completed, supervisors conduct a post-project review to evaluate the effectiveness of the abatement activities, identify any areas for improvement, and document lessons learned for future projects.

LEGAL ISSUES: CONTRACTS

- ❑ Recordkeeping
- ❑ Adequate time for completion
- ❑ Disposal of ACM waste
- ❑ In – house personnel
- ❑ Selection of qualiflied contractors
- ❑ Job site cleanliness
- ❑ Air sampling profesional
- ❑ Bonding

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

TYPES OF INSURANCE COVERAGE

❑ **Errors & Omissions (O&E)**

- Protection against misjudgments during inspection.
- Very expensive for asbestos industry.

❑ **General Liability**

- Protection for events that occur during inspections

❑ **Occurrence Insurance**

- When incident occurs while policy is in forcé, coverage is afforded even years later
- Carriers have been adding exclusions for occurrence claims on asbestos – related policies.

PUBLIC RELATIONS

PUBLIC RELATIONS

Relations with the public, employees and occupants of structures, including all of teh following:

a) Notifying employee organizations or other building occupants about the inspection.

b) Signs to warn building occupants

c) Tact in dealing with occupants and the press.

d) Scheduling of inspections to minimize disruption

e) Education of occupants about actions being taken.

PRE-INSPECTION PLANNING

Inspection Team:

a) Asbestos Building Inspector

b) Building Owner's Representative

c) Original Building Architect (if available)

d) Facilities Manager or Maintenance Director

e) Consultant't Staff

f) Possible Advisors:

EPA Representative

Building Owner's Attorney

Topic 13.

13. Contract Specifications

Types of Contracts:

AIA Form 101

AIA Form 201

Overview of current worker safety and occupant protection practice relating to asbestos abatement.

Worker Safety Overview:

- Proper use of PPE
- Proper implementation of work practices (wetting, not dropping waste, no dry sweeping)
- Proper decontamination and showering

Occupant Protection Overview:

- Implementation of OPP
- Letting occupants know about the project to take place
- Not allowing occupants to enter contaminated areas

RECENT LEGAL COURT CASES

- **Case 1: Johns-Manville Corporation** (Year 1982)
- **Description**: One of the earliest and largest asbestos-related bankruptcies in the US. Johns-Manville Corporation filed for Chapter 11 bankruptcy due to an overwhelming number of asbestos-related claims.
- **Case 2: W.R. Grace and Co.** (Year 2001)
- **Description**: W.R. Grace filed for bankruptcy after facing extensive asbestos liabilities related to its vermiculite mining operations in Libby, Montana.
- **Case 3: Philip Morris USA, Inc.** (Year 2005)
- **Description**: Philip Morris, a tobacco company, faced asbestos litigation due to its use of asbestos-containing filters in some of its cigarette products.
- **Key Takeaways:**

- These cases reflect the far-reaching impact of asbestos-related diseases and the extensive legal and financial consequences for corporations.
- The Johns-Manville case set the precedent for asbestos-related bankruptcies and established asbestos trust funds to compensate victims.
- The W.R. Grace and Philip Morris cases highlight the unexpected industries affected by asbestos litigation.

- Hands-on skills training and practice in one or more of the activities listed in the Asbestos Supervisor Initial Course.

LEGAL REVIEW & UPDATE

Regulatory Review

❑ **FEDERAL AGENCIES**

- U.S. Environmental Protection Agency (EPA)
- U.S. Occupational Safety and Health Administration (OSHA)
- Department Transportation (DOT)
- National Institute for Occupational Safety and Health (NIOSH
- National Institute of Standards and Technology (NIST)
- Consumer Product Safety Commission (CPSC)

❑ **SUMMARY OF REGULATIONS**

- Asbestos Hazard Emergency Act (AHERA)
- Asbestos School Hazard Abatement Reauthorization Act (ASIARA)
- National Emission Standards for Hazardous Air Pollutants (NESHAP)
- Asbestos Ban and Phase-Out Rule
- Worker Protection Rule
- OSHA Asbestos Standards

REGULATION CITATION
29 CFR 1926,1101 (A)

TITLE	CODE	PART	SECTION
BREAKDOWN OF CITACION			
Title	Agency	29	OSHA Regulations
Code	Source	CFR	Code of Federal Regulations
Part	Aspect	1926	Construction Industry
Section	Issue	1101	Asbestos Standard
Paragraph	Topic	(a)	Scope and Applicability

Government Agencies, OSHA

❑ **OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION**

- Protects Workers (29 CFR)
- Regulations (Law)

❑ **ASBESTOS STANDARD IN GENERAL INDUSTRY**

- 29 CFR 1910,1001

❑ **ASBESTOS STANDARD FOR CONSTRUCTION**

- 29 CFR 926,1101

❑ **RESPIRATORY PROTECTION STANDARD**

- 29 CFR 1910,134

ASBESTOS CONSTRUCTION -29 CFR 1926,1101

❑OSHA ASBESTOS STANDARD

▪ Work Classifications.

- Class I- Removal of (TSI), SURFACING CM/PACM
- Class II- Removal of ACM that is not TSI or surfacing material
- Class III- Repair and Maintenance operations where ACM/PACM is likely to be disturbed
- Class IV- Maintenance and custodial construction activities where employees contact but don´t disturb ACM/PACM

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

AHERA

Asbestos Hazard Emergency Response Act (AHERA)

- ❑ **Establishes rules for asbestos-containing materials (ACM)**

- Identifying
- Evaluating
- Controling in schools

- ❑ **Applies to:**
- U.S. public and private schools
- American schools on military bases in foreing countries

- ❑ **Final rules became effective in 1987**
- 40 CFR 769 Subpart E
- Under Toxic Substance Control Act (TSCA)

ASBESTOS HAZARD EMERGENCY RESPONSE ACT (AHERA)

❑Requires schools (K-12) to:

- Perform asbestos inspections every 3 years
- Maintain asbestos management plans
- Provide yearly notifications (parents, teacher, employees)
- Designate a contact person
- Perform periodic surveillance every 6 months
- Ensure the use of properly accredited profesionals
- Provide custodial staff with proper training

EXCLUSIONS

❑ Inspection is not necessary under certain circumstances:

- Previous inspection identified friable and non-friable ACBM
- Prior sampling showed no ACBM
- All ACM was removed
- School was built after October 12, 1988

Building Inspector, Management Planners, Project Designers, Abatement Supervisors, and Abatement Worker must be accredited under AHERA

ASBESTOS ABATEMENT METHODS

- ❑Remove or control the Hazard (airborne asbestos)
- ❑Prevent asbestos fibers from gettint
- ❑5 ways to control reléase
  - Encapsulation
  - Enclosure
  - Repair
  - Removal
  - Operations and Maintenance (O&M)

AHERA – TRAINIG

❑Who needs training under AHERA?

- O&M Workers
- Designated Person
- Building Inspector
- Mangement Planner
- Abatement Supervisor
- Abatement Worker
- Always follow the most stringent regulations (federal, state, local).

SWC Institute
Asbestos - Lead - Mold - HazWoper - OSHA

ASHARA

❑Asbestos School Hazard Abatement Reauthorization Act

- Passed in 1990

❑Model Accreditation Plan (MAP) revised to:

- Require accreditation of personnel working on asbestos, activities in achoola, public and comercial buildings
- Require more training for workers and supervisors working in schools and/or public and commercials buildings

❑ Defines inspection as:

- Determine presence or location of ACBM
- Access condition of ACBM

NESHAP, DEFINITIONS

	DEFINITION
Category I – Nonfriable ACM	Asbestos containig packages, gaskets, resilient floor covering and asphalt roofing more thant 1% asbestos.
Category II – Nonfriable ACM	Material containing more thant 1% asbestos that when dry can be reduced to poder.
Friable asbestos material	Material containing more tan 1% asbestos that when dry can be reduced to poder.
Regulated asbestos containig material	a) Friable asbestos material (b) Category I that has become friable © Category I that has been sanded, grinded, cut or abraded (d) Category if that Will be reduce to poder during work operations.

METHODS OF ANALYSIS UNDER NESHAP

- Polarized Light Microscopy (PLM)

- Point Counting

NESHAP Regulation also incluides specific notification, work practice, packaging and disposal requirements.

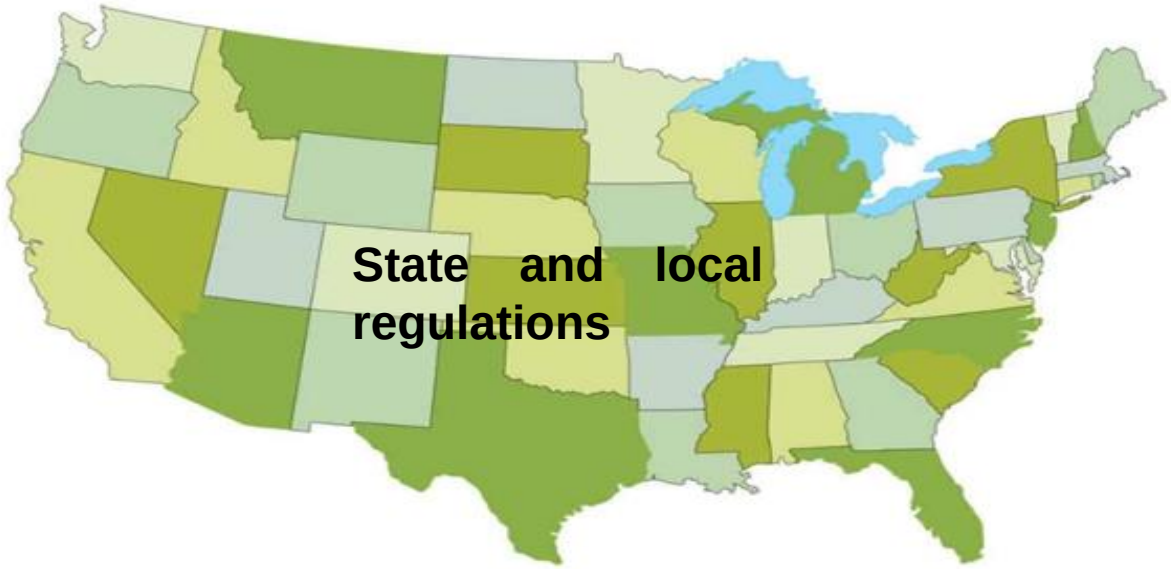
BAN AND PHASE OUT

- The six asbestos – containing products that ae subject to the ruke are:

- Corrugated
- Rollboard
- Commercial paper
- Speciality paper
- Fllooring felt and
- New uses of asbestos

STATE AND LOCAL REGULATIONS

- ALWAYS CHECK



Before working with asbestos

GOVERNMENT AGENCIES

❑STATE & LOCAL GOVERNMENTS

Illinois Department of Public Health (IDPH)

- Licenses asbestos personnel

Illinois Environmental Protection Agency (IL

- Same responsibilities as US EPA

Indiana Department of Environmental Mana

- Licenses asbestos personnel

Wisconsin Department of Health Services (D

- Licenses asbestos personnel

Wisconsin Departament of Natural Resource

- Same responsibilities as US EPA

Cook Country Dept. of Environmental Control

Chicago Dept. of Enviaronment

COMPANY CITED FOR ASBESTOS VIOLATIONS

MAY 23, 2024

Recent inspections by the Washington Department of Labor & Industries (L&I) revealed that **Seattle Asbestos of Washington**—a Lynnwood, Washington-based asbestos removal contractor—has been fined nearly $800,000 for repeated hazard exposure.

MassDEP Fines Medway Construction Company for Asbestos Violations During Home Renovation

NEWS PROVIDED BY
Massachusetts Department of Environmental Protection
May 15, 2024,

- **BOSTON** — The Massachusetts Department of Environmental Protection (MassDEP) has fined Made 2 Build Inc., a Medway-based construction company, $58,550 for asbestos-related violations that occurred during a home renovation project in the Town of Medway.
- Responding to a complaint, MassDEP conducted an inspection and determined Made 2 Build Inc. failed to notify MassDEP of asbestos removal work. State regulation requires that companies, contractors, and operators notify MassDEP ten working days before any asbestos removal work. The Company also failed to follow proper removal and handling procedures for asbestos-containing materials.

Magistrate Recommends $19.8 Million Penalty for Asbestos Violations at Troubled Columbus Apartment Complex

5/3/2024

- (COLUMBUS, Ohio) — In response to arguments by Ohio Attorney General Dave Yost, a Franklin County Magistrate recommended a $19,840,000 civil penalty against the owners and property manager of an affordable housing apartment complex for violating Ohio's asbestos regulations, including exposing workers to asbestos danger without their knowledge.
- The recommended **penalty stems from work done at Sawyer Towers, a 400-unit complex** on the near east side of Columbus. This case was referred to the Attorney General's Office by the Ohio Environmental Protection Agency in March 2023.
- Franklin County Common Pleas Court Magistrate Jennifer D. Hunt recommends imposing the penalty against Boruch Drillman and Paxe Latitude LP, a limited partnership that Drillman fully controls, and a property management company, Aloft Management LLC.
- In August 2021, Paxe bought the Sawyer Towers complex, which needed extensive repairs and maintenance. The situation was so bad that the City of Columbus repeatedly cited the complex for extensive health code violations, even taking Paxe and Drillman to court.

- During the 2022 Christmas season, in an extreme cold spell, **water pipes burst and flooded the buildings**, forcing city officials to immediately evacuate residents from more than 160 apartments. The tenants left with nothing more than what they could carry, leaving most of their belongings in the buildings.
- Paxe, Drillman and Aloft hired contractors to fix the water damage and remove the mess – which included soaked drywall, carpets and ceiling tiles. But the owners and **property management company ignored the asbestos abatement plans** they had on file, **failed to inform contractors of the potential danger or supply the contractors' employees** with protective gear and caused significant harm to the environment and endangered residents. **The cleanup and restoration work led to the release of asbestos fibers throughout the complex**, preventing the return of residents and contaminating the belongings that tenants had been forced to leave behind.
- In addition, Paxe, Drillman and **Aloft also neglected to secure the apartment complex** after the tenants were evacuated, further spreading asbestos due to vandalism.
- In setting the recommended penalty, the court considered the extensive harm caused by the asbestos to contractors' employees. It also weighed the harm suffered by the community, the financial benefit received by the companies for avoiding appropriate remediation and the defendants' flagrant disregard for safety regulations and court orders.

WISCONSIN ASBESTOS COURT CASE # 1

- Wisconsin Appeals Court Doubles Punitive Damages to $13.4M in Pabst **Asbestos Death Suit**
- A Wisconsin Court of Appeals has denied an appeal by Pabst Brewing Company in an asbestos case, doubling the amount of punitive damages awarded by a jury at the trial court.
- The decision was issued by a three judge panel in early May 2024, in ***Lorbiecki v. Pabst Brewing Company***
- Brewery tanks
- BySeth Mills, J.D.

WISCONSIN ASBESTOS COURT CASE # 2

- Wisconsin Jury Awards $9.7 Million Asbestos Verdict in Secondary Exposure Case
- May 26, 2023
- SWMW Law attorneys secure justice for family of **Wisconsin mother who died from mesothelioma after exposure to asbestos fibers from stepfather's clothing**
-
- ST. LOUIS, MO (May 25, 2023) – SWMW Law, one of the top law firms in the country focusing on plaintiffs' asbestos, consumer and product liability litigation, has secured a $9.7 million verdict on behalf of the family of Sarah Krentz, a Wisconsin mother who died in 2019 of mesothelioma, a rare and fatal cancer caused by asbestos exposure.

- During the 2022 Christmas season, in an extreme cold spell, **water pipes burst and flooded the buildings**, forcing city officials to immediately evacuate residents from more than 160 apartments. The tenants left with nothing more than what they could carry, leaving most of their belongings in the buildings.
- Paxe, Drillman and Aloft hired contractors to fix the water damage and remove the mess – which included soaked drywall, carpets and ceiling tiles. But the owners and **property management company ignored the asbestos abatement plans** they had on file, **failed to inform contractors of the potential danger or supply the contractors' employees** with protective gear and caused significant harm to the environment and endangered residents. **The cleanup and restoration work led to the release of asbestos fibers throughout the complex**, preventing the return of residents and contaminating the belongings that tenants had been forced to leave behind.
- In addition, Paxe, Drillman and **Aloft also neglected to secure the apartment complex** after the tenants were evacuated, further spreading asbestos due to vandalism.
- In setting the recommended penalty, the court considered the extensive harm caused by the asbestos to contractors' employees. It also weighed the harm suffered by the community, the financial benefit received by the companies for avoiding appropriate remediation and the defendants' flagrant disregard for safety regulations and court orders.

Review Questions for Test

- ACBM
- >1% asbestos
- No Visible Emissions
- Mini-containment
- 0.01 f/cc
- Glovebags
- Encapsulant
- Surfactant
- Protection Factor of 10
- 0.1 f/cc in 8 hours TWA

- A Control Method
- The Clearance Level
- Add to Amended Water
- The Asbestos PEL
- ACM
- Can be done by 2 Workers
- NESHAP Requirement
- AHERA Asbestos Containing Materials
- Half Face Mask
- Must Be Clear

Numbers to Remember

0.01 f/cc = Clearance Level

0.1 f/cc = PEL

1.0 f/cc = EL

10

50

70 st/mm2

1000

10,000

Abbreviations to Remember

- EPA
- OSHA
- IDPH
- MDPH
- DNR
- DHS
- NIOSH
- PEL
- EL
- IDEM

FOR MORE INFORMATION ON AGENCIES

SOURCE	WEB
EPA	www.usepa.gov
OSHA	www.osha.gov
DOT	www.usdot.gov
State of Illinois	https://dph.illinois.gov/topics-services/environmental-health-protection/asbestos.html
State of Indiana Asbestos	https://www.in.gov/idem/asbestos/
Minn. DOH	www.mdh.gov
Missouri Department of Natural Resources	https://dnr.mo.gov/air/business-industry/asbestos
Wisc. DHS	https://www.dhs.wisconsin.gov/asbestos/index.htm
Wisc. DNR	https://dnr.wisconsin.gov/topic/Demo/Asbestos.html