

# Asbestos Awareness

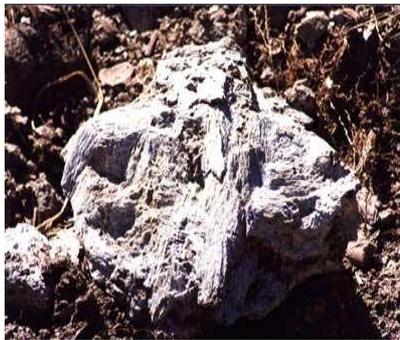


# Training Topics

- History and use of asbestos
- Important definitions
- Properties and usage of asbestos
- Asbestos Abatement Procedures

# What is Asbestos?

- Natural Mineral/Fiber that is mined from the earth.



# History And Use: Ancient Times

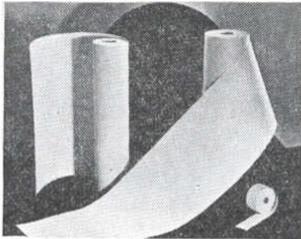
- Wicks in lanterns (Greeks and Romans)
- Cremation clothes (Egyptians and Romans)
- Tablecloths (French Emperor-Charlemagne)
- Clay Potts (Finland)
- Insulation in suits of Armor (Middle Ages)

# History And Use

- World War II/Post-War Building Boom
  - Production of asbestos products becomes extensive, they withstand most extreme conditions (fire, chemical, electrical)
  - Asbestos used in many different building materials during the construction boom after the war
  - >3000 products were developed after WWII

# History and Use

## ASBESTOS ROLLBOARD COMMERCIAL J-M

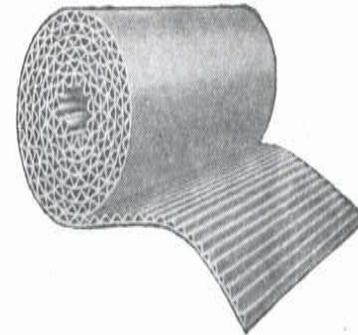


In Rolls 36 in. wide.

Thickness, in. ....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$
Wt. per roll, lbs. ....	50	100	100
Per pound .....	\$		

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## CORRUGATED ASBESTOS PAPER



In 250 Ft. Roll

Asbestocel— $\frac{1}{4}$  in. thick, 36 in. wide..\$..... Per Roll

Approximate weight per roll 50 lbs.

# Asbestos coating, brake lining, cement pipes, floor tile, clutch facing

## ★ ASBESTOS FIBROUS



A high-grade black roof coating made of asbestos fibre and asphalt of the right consistency for brush application. Made in two consistencies, with ground or unground asbestos fibre, with covering capacities of 150 sq. ft. and 90 to 100 sq. ft. per gallon, respectively.

Furnished in ground or unground. (Specify type desired.)

Color: Black.

Per Gal.  
5 Gal. Can—Weight per can 45 lbs. ....\$0.75

Per Carton  
1 Gal. Can—6 cans in a carton. weight  
per carton 60 lbs. ....\$0.85



# Important Definitions

- Asbestos Containing Materials (ACM)- materials that contain >1% asbestos via microscope analysis
- Three Categories of ACM:
  - Surfacing Materials (SM)
  - Thermal System Insulation (TSI)
  - Miscellaneous Materials (Misc.)
- ❖ Presumed asbestos-containing material (PACM) – For buildings constructed no later than 1980, presume that all TSI & SM is ACM until proven otherwise. The same applies to asphalt and vinyl flooring material, and any other suspect material.
  - ❖ In other words, “the materials are guilty until proven innocent.”

# Important Definitions

- Friable- materials that can be crumbled, pulverized, or crushed into powder with hand pressure (when dry).
  - Examples of friable materials: fireproofing, pipe insulation, ceiling tiles, plaster, boiler insulation
- Non-friable-material which becomes broken or damaged by mechanical force.

# Properties and Use of Asbestos

- Fire-resistance
- Heat-resistance
- Chemical-resistance
- Friction-resistance
- Electrical-resistance
- Acoustical properties
- High tensile strength
- Decoration

# Properties and Use of Asbestos

- Fire-resistance

Fireproofing, fire doors, Textiles- fire blankets, gloves, curtains, kids pajamas, protective clothing for firefighters, race car drivers, etc.

# Properties and Use of Asbestos

- Heat-resistance

Insulation on pipes, boilers, furnaces, hot water tanks, components of the HVAC system, including air-handlers and ducts, etc.

- Chemical-resistance

Chemical filters in laboratories, lab countertops

- Friction-resistance

Braking systems on cars, trains, cranes, etc.; transmission systems, clutch systems

# Properties and Use of Asbestos

- Electrical-resistance
  - Cable wrap
  - Transite- asbestos-cement material
    - Panels
    - Conduit
    - Box- breaker, fuse, switch-gear
- Acoustical Properties
  - Plaster and tiles on ceilings and walls

# Applicable Regulations

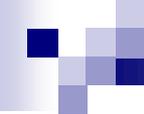
- The Occupational Safety and Health Agency (OSHA) has construction/general industry standard Provisions
  - ❖ Asbestos Work Classification
    - Class I- Removal of TSI or SM ACM
    - Class II- Removal of MISC. ACM
    - Class III- Repair or Maintenance operations where ACM is likely to be disturbed
    - **Class IV- Maintenance and custodial activities during which employees contact but do not disturb ACM (Awareness Level Training)**

# Applicable Regulations

## ❖ Permissible Exposure Limits

With the use of personal air sampling, the workers exposure can be measured. Currently OSHA establishes a Permissible Exposure Level ( .1f/cc fibers per cubic centimeter of air) for a 8Hr shift for General industries and Construction trades.

Workers exposed to and above these limits, are provided protective gear like respirators



# Applicable Regulations

NYS Department of Labor Asbestos Rule Industrial Code Rule (ICR) 56

NYC Department of Environmental Protection Asbestos Rule Title-15 Chapter-1

- Both New York asbestos regulations would **not** allow people with awareness training to conduct cleanup. NYC would require an asbestos handler to conduct any disturbance activity.

# Applicable Regulations: NYS/NYC

- NYS DOL / ICR 56 enforcement covers asbestos contractors and licensing for individuals
- NYC DEP / Title 15 Chapter 1 enforces remediation work in some NYC buildings and licensing of Asbestos Investigators, Workers, and Supervisors.

# Regulated Activities

- Repair and Maintenance activities involving asbestos disturbance can only be performed by employees who have a NYS/NYC Asbestos Handling license
- The Operations and Maintenance license from NYS DOL is for limited repairs

# Applicable Regulations

- ❖ Regulated work areas

Asbestos remediation contractors, must Inform other employers of asbestos work, with signs and notifications

General Contractors must exercise general supervisory authority over the asbestos work

Independent firms take air samples before, during and after the asbestos work to protect building occupants

# Asbestos Work Requirements

- Most asbestos work requires 7-10 day notification to the State and City agencies
- Building Occupants are notified by postings, typically in the lobby
- An independent air monitoring company tests the Air before any work can begin, and continually during the work
- At the completion of the remediation work, a final visual inspection of the affected areas is performed along with air monitoring, before containments can be removed and re-occupancy is allowed

# Agency Inspections

- New York City regulatory agencies can visit the project sites, unannounced, to check on compliance with applicable requirements
  - Public Employee Safety and Health
  - Department of Environment Protection
- Companies not in compliance, can be issued monetary fines or have the project suspended

# Notice of Asbestos Work

**Notice of  
Asbestos  
Abatement**

Project Location: 345 Adams Street, 12<sup>th</sup> Floor & 13<sup>th</sup>  
Floor Mechanical Room  
VAT – 7,366 sq ft & 200 In ft pipe insulation

Type of Abatement: VAT Removal via Interior Foam  
Pipe Tent & Glovebag

Commencement Date: 05/24/2013      Completion Date: 05/23/2014

Asbestos Contractor: B&N&K Restoration Co. Inc.  
223 Randolph Avenue  
Clifton, NJ 07011

Contact: Aleks Kuridza - 973-478-4681  
License #99-1170

Air Monitor: KAM Consultants Corporation  
35-40 36<sup>th</sup> Street  
Long Island City, NY 11101  
718-729-1997

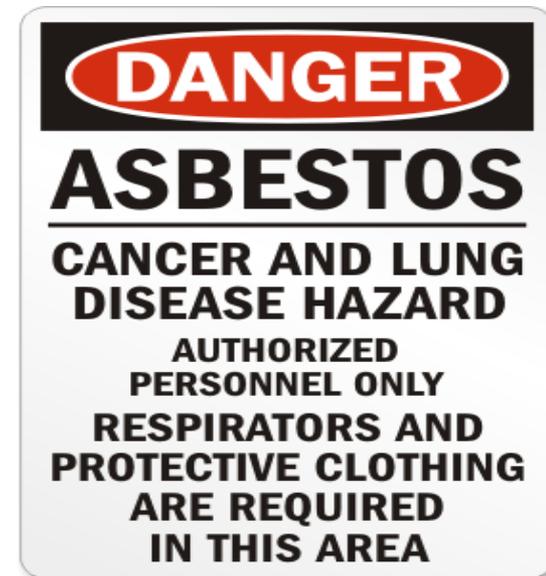
Laboratory: KAM Consultants Corporation  
Elap#: 111273 Tel: 718-729-1997

Government Information Call Center: 311

Building C

# Asbestos Abatement

- When asbestos removal, enclosure, or encapsulation (abatement) is performed by licensed contractors, work areas are isolated by plastic barriers and signs.
- Decontamination chambers are required so Abatement Workers can prevent spreading contamination outside the work-areas



# Health Effects

Routes of Entry into the body for asbestos:

1. Inhalation- breathing through the nose or mouth.  
Primary route of entry.
2. Ingestion- swallowing

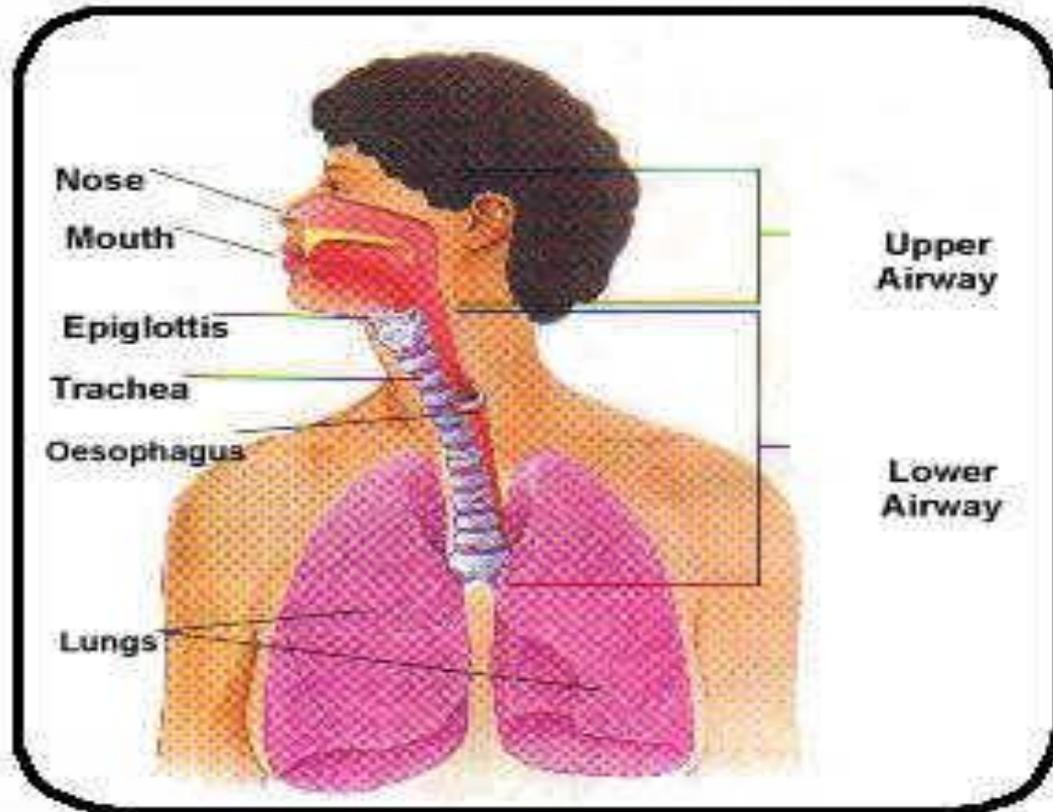
# Health Effects

- Inhalation- In the lungs

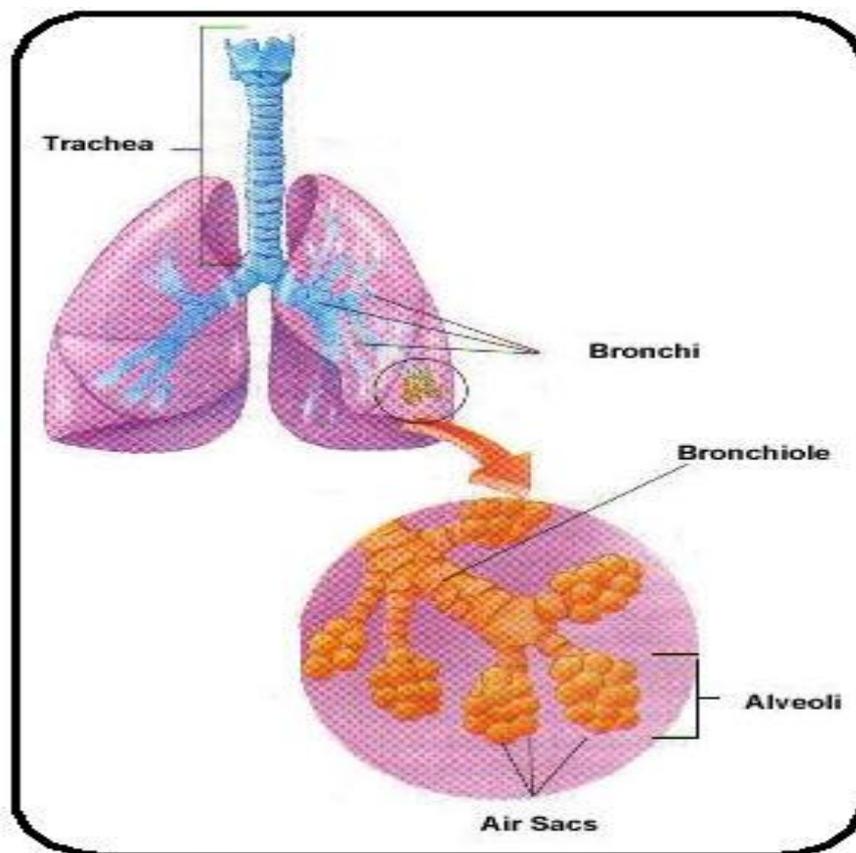
- Gas Exchange-

Air goes through various air passageways and eventually passes through air sacs (alveoli) into the blood system. Oxygen ( $O_2$ ) will go into the blood while carbon dioxide ( $CO_2$ ) will be exhaled from the blood through the lungs.

# Health Effects



# Health Effects



# Health Effects

## ■ Definitions

- Dose-Response: The more you get exposed to asbestos (dose) the greater the risk (response)
- Latency Period: Time between exposure and symptoms of disease, usually decades (chronic illnesses)
- Synergistic effect: The increased risk for people who smoke and are also exposed to asbestos, without protection

# Health Effects

## In the Lungs

## Outside Lungs

Scarring:

ASBESTOSIS

*PLEURAL PLAQUES*

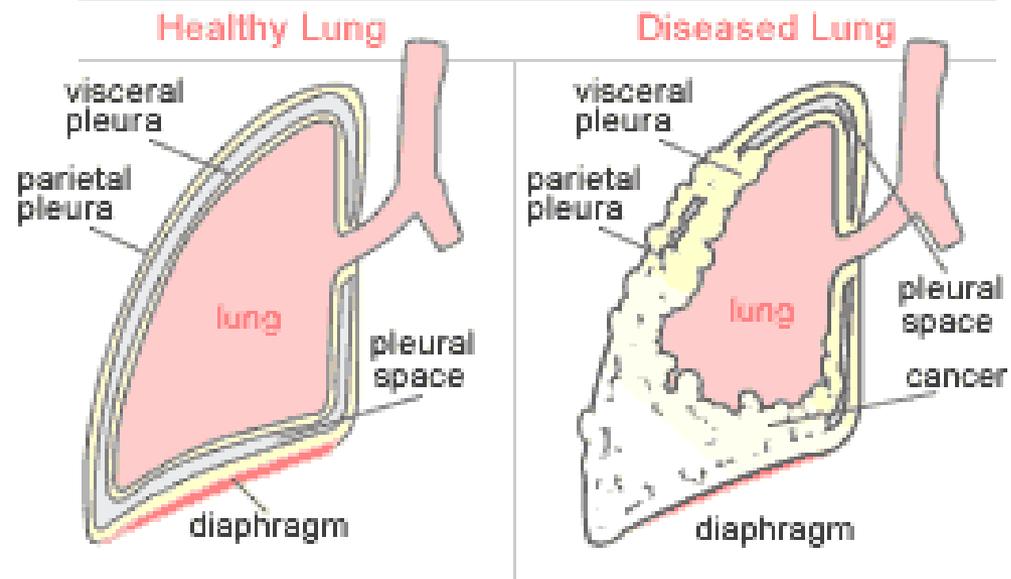
Cancer:

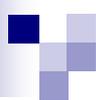
LUNG CANCER

MESOTHELIOMA

# Health Effects

## Pleural Mesothelioma





# For additional safety and health information

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[www.nyc.gov/cosh](http://www.nyc.gov/cosh)