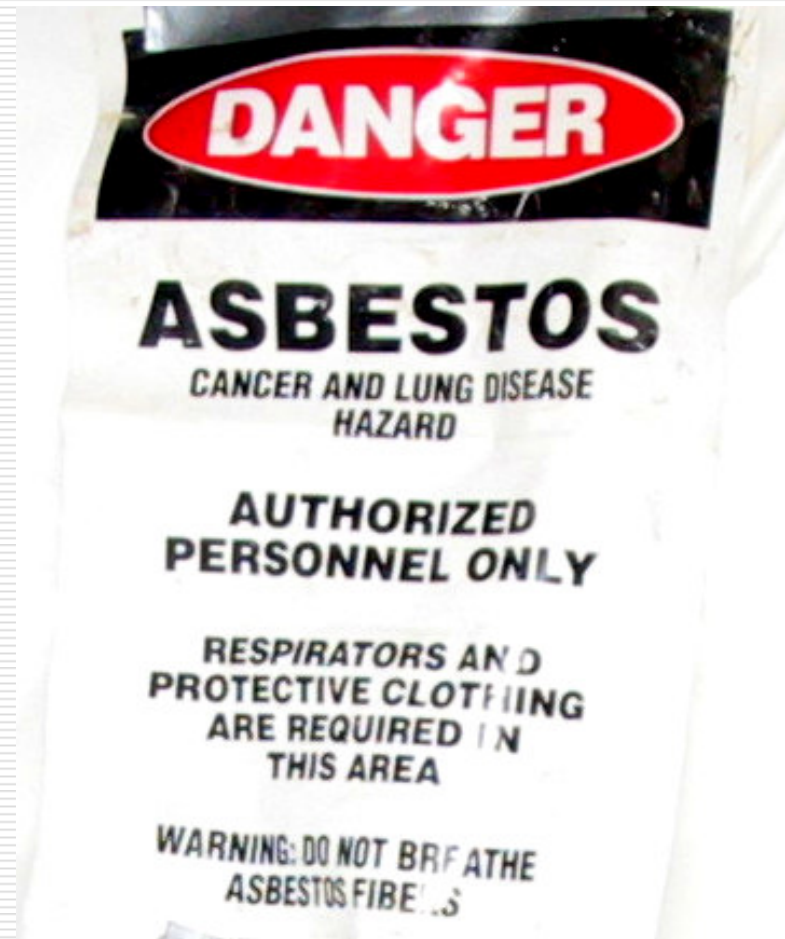


Asbestos and the Abatement Process

Overview

- Asbestos – What is it?
- History
- Abatement Procedures
 - Before
 - During
 - After
- Q&A

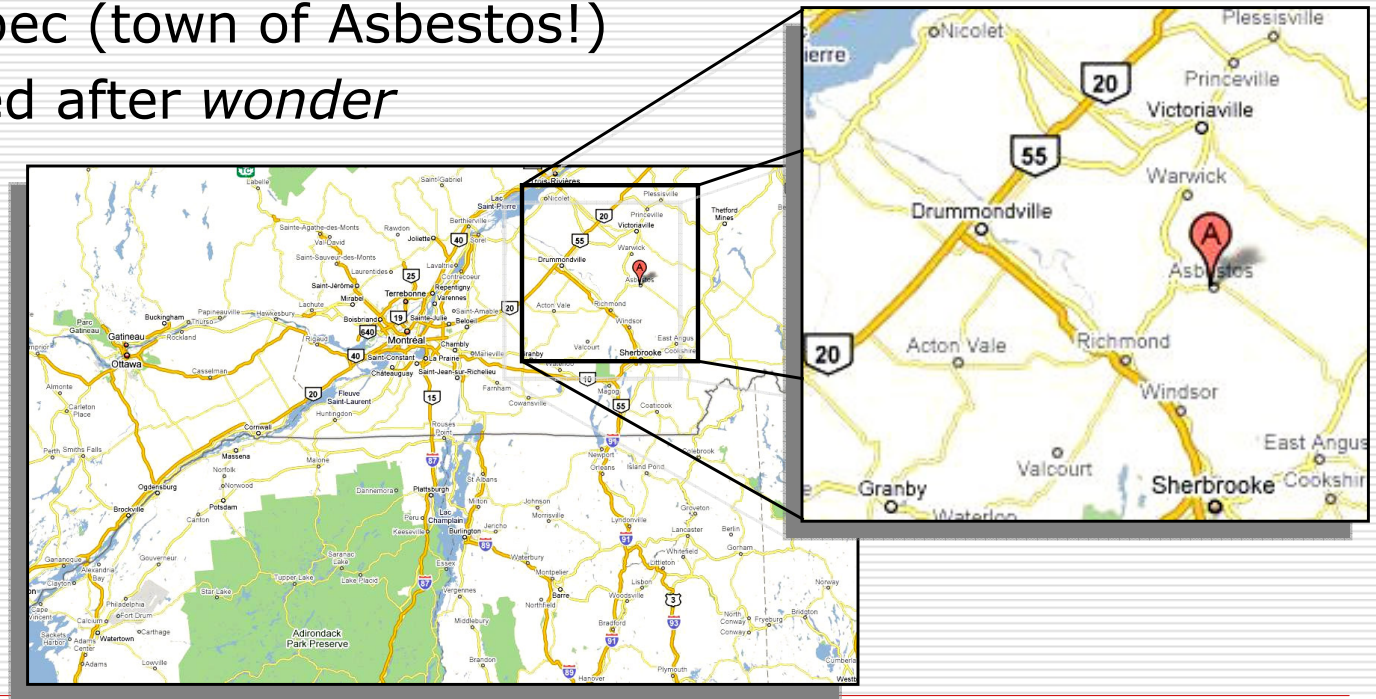


Asbestos - What is it?

- ❑ Asbestos is a generic term for a group of *naturally occurring* silicate minerals which are separable into usable fibers.
- ❑ When crushed, asbestos breaks into tiny sharp fibers that are too small to see
- ❑ You cannot see, feel, smell, or taste asbestos fibers in the air
- ❑ Only harmful *if* inhaled - NOT a danger when it is not airborne
- ❑ Human hair ~ 180 microns thick
- ❑ Asbestos fibers ~ .01 microns thick (18,000 x smaller)

Asbestos History

- ❑ Use dates back to ancient Greeks
- ❑ Asbestos use started to become more wide spread during the industrial revolution
- ❑ First commercial mine
 - 1879, Quebec (town of Asbestos!)
 - Town named after *wonder mineral*



Asbestos History

- Mid-20th century it was seen as a “miracle mineral” and was added to many building materials in addition to numerous other products
 - Brake Pads, Fire Protection Clothing, Cigarettes, etc.

Asbestos Umbrellas for Firemen

THE utilization of asbestos umbrellas has helped the “smoke-eaters” of a German provincial city to combat the fire peril. The novel device, illustrated below, is an imitation of the asbestos protective method used during the World war by Allied troops against the terrible effects of liquid fire.

Every brigade member is equipped with one of these umbrellas, which permits closer approach to base of flames.



This large type of asbestos umbrella permits several hose nozzles to be thrust through it, protecting firemen from heat.

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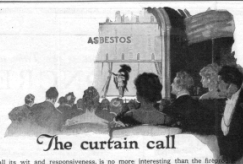
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ASBESTOS

The curtain call



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Abatement Procedures

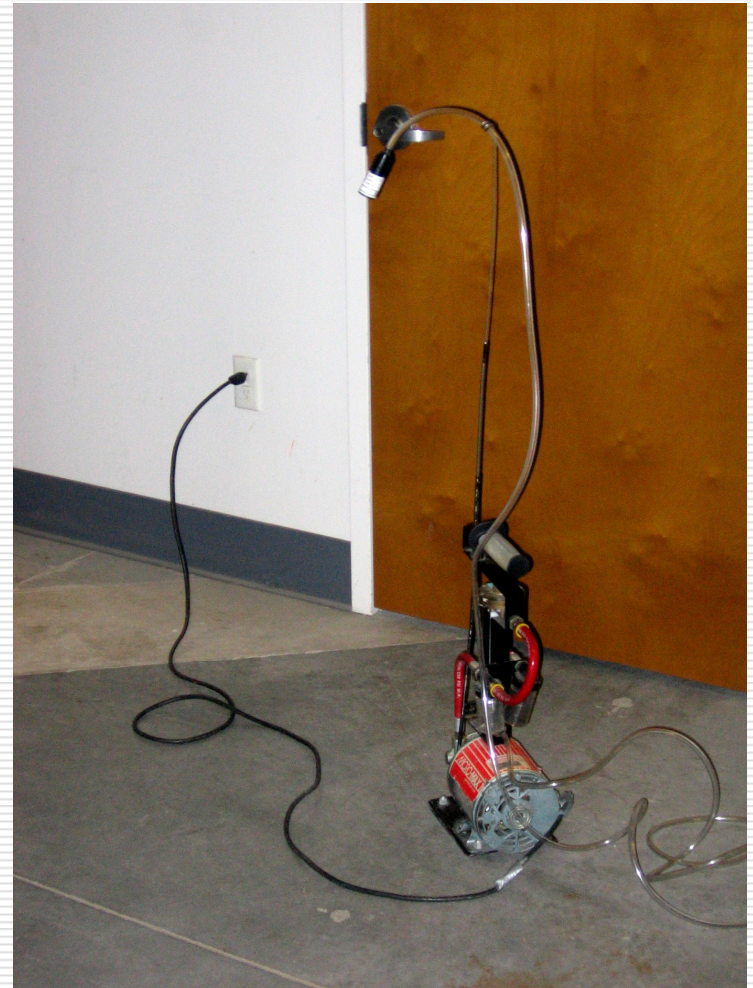
- Referendum Vote
- Project Creation
- Building Survey & Sampling
- Abatement Design
- Project Bidding
- Pre-Construction Coordination
- Pre-Abatement Process
- Abatement Process
- Post-Abatement Process

Abatement Procedures

- Abatement Team – Who's Who in Minisink?
 - Architect / Engineer / Construction Administrator
 - Tetra Tech
 - Asbestos Survey / Testing & Abatement Design
 - AECOM
 - Air Sampling / Project Monitoring Firm
 - Envirollogic
 - Abatement Contractor
 - TBD – Sub Contractor to GC

Pre-Abatement Process

- Pre-abatement air sampling
 - “Background” air samples taken by air tech/monitor
 - Samples taken inside work area AND directly outside it
 - Compare post-abatement clearance air samples to backgrounds; levels must be below background air sample results to achieve clearance
 - Verifies that no asbestos remains or further contamination has occurred



Pre-Abatement Process

- ❑ Contractor arrives on site, establishes regulated work area
 - Project monitor verifies workers certifications
- ❑ Installation/Initiation of engineering control systems
 - Neg. pressure, containment
- ❑ Contractor disables electrical and HVAC systems within the work area
- ❑ Contractor installs electrical system to power negative air machines, lights etc.
- ❑ Contractor erects decontamination enclosure systems (Waste and Personal)



Pre-Abatement Process



- ❑ Erect critical seals over penetrations and openings
- ❑ Pre-cleaning: wet wipe/HEPA vacuum moveable/non-movable objects
- ❑ Remove movable objects from the work area
- ❑ Seal non-movable objects under plastic sheeting and duct tape
- ❑ Plasticize floor, walls and/or ceilings as needed to protect surfaces not being abated
- ❑ Placement of asbestos notification signs at entrances and openings
- ❑ Install negative pressure equipment – operates *continuously* until final air sample clearance



Pre-Abatement Process

- ❑ Set-up complete
- ❑ Pre-Abatement Visual Inspection
 - Conducted by the Project Monitor/Air Sampling Technician (Envirologic) and accompanied by abatement contractor supervisor
- ❑ 4-hour wait period once visual inspection complete before removal work can begin
- ❑ Project monitor reviews work plan with contractor before work begins



Pre-Abatement Process

- Worker Protection
 - Removal of clothing
 - Don abatement suits, gloves, mask/goggles, and boots
 - Respiratory protection
 - Personnel air monitoring
 - Contractor responsible for personal air monitoring of workers (OSHA required)
 - Project monitor responsible for quality control air monitoring

Abatement Process

- ❑ Wet removal methods required
- ❑ Utilize hand tools to remove material
- ❑ Material to be removed in top-down fashion, friable materials first
- ❑ Placement of asbestos material into asbestos disposal waste bags, gooseneck and seal bag with duct tape
- ❑ Once all material has been removed from each work area, each bag is double bagged as it is taken out through waste decon unit. Then all waste is stored in specially labeled trailer or dumpster which has been lined with protective poly and covered to protect the public.
- ❑ Daily cleaning of work area at end of shift

Abatement Process

- Materials scheduled for abatement:
 - Elementary/intermediate school
 - TSI (pipe insulation, fire doors, gaskets, duct insulation...)
 - Floor tile/mastic
 - Door/window caulk
 - High school
 - Duct vibration dampers in gym & locker room
 - Boiler room gaskets
 - Bus garage
 - Roof flashing

Post-Abatement Process

- ❑ Project monitor visual inspection to ensure all ACM are removed, including debris
- ❑ First cleaning – wet wipe all surfaces in work area
- ❑ Lockdown encapsulant applied to all surfaces
- ❑ Wait period for drying/settling (2-12 hours)
- ❑ Removal of first layer of poly
- ❑ Second cleaning – HEPA vacuum and wet wipe all surfaces in work area
- ❑ Wait period for drying/settling (2-12 hours)
- ❑ Removal of second/final layer of poly (critical barriers remain, and negative pressurization continues)



Post-Abatement Process

- ❑ Third cleaning - all room surfaces are HEPA vacuumed & wet wiped
- ❑ Wait period for drying/settling
- ❑ Abatement contractor supervisor performs visual inspection to ensure all ACM removed, work area is visibly clean of debris/residue, pools of liquid or condensation
- ❑ Project monitor verifies on behalf of district that above visual inspection is adequate and all cleaning has been completed
- ❑ Clearance air sampling by Air Tech/Project Monitor begins
 - Aggressive air entrainment (leaf blowers and fans)
 - Start sample pumps – Large project 5/5, Small project 3/3
 - Sample results received within 48 hours max
 - If unsatisfactory results are received, re-clean area and re-sample air
 - Repeats until satisfactory samples are received



Post-Abatement Process

- Now that satisfactory air samples have been received:
 - Negative pressure can stop
 - Removal of tools and equipment
 - Removal of all remaining critical barriers
 - Removal of decon enclosures
 - Cleaning of all glue/adhesives from surfaces from containment barriers
 - Removal of waste from site to authorized landfills within 10 days of completion
 - Removal of waste to be documented and disposed in compliance with regulations

Project Monitor Responsibilities

- ❑ Independent company hired directly by owner to be the eyes and ears during construction
- ❑ Ensure contractor adheres to governmental regulations and work plan
- ❑ Air monitoring of inside and outside the work area to comply with regulations and to verify no outside contamination occurs
- ❑ Checks and verifies that containment barriers are in good condition
- ❑ Responsible for Project Record
 - Daily log & sign-in sheets
 - Copies of worker certifications
 - Copy of supervisors project log
 - Air and bulk sample results
 - Waste manifest tickets
 - Any incidents



Question & Answers

Thank You!

