



Asbestos and Lead Regulatory Program and The Role of Town Health Officers

Guidance • Support • Prevention • Protection

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Asbestos

- What you should know as a Town Health Officer

Topics

- Background
- Health Effects
- Regulatory Requirements
- Examples

THO's encounter asbestos issues in routine duties?

Tips, complaints and public inquiries

Response to rental tenants reports of suspected health hazards

Neighboring properties near renovation or construction projects

Construction activity associated with public buildings

What is Asbestos

- A naturally Occurring mineral
- Has many beneficial properties
 - Cheap
 - Chemical resistant
 - Fire resistant
 - Low conductivity
- It can be a health hazard when inhaled
- Three most common types
 - Chrysotile (white)
 - Amosite (brown)
 - Crocidolite (blue)

History

- Used by Greeks, Romans, and Chinese
- First commercial mine in Quebec Canada in 1870's
- Until 1940's asbestos was primarily used on steam pipes and boilers
- After WWII expanded to other uses. Use peaked in late 70's.
- Generally, 1980's phase down in US manufacturing, but not banned
- Some uses still allowed



Asbestos Background

- Naturally occurring group of minerals
- Chrysotile, Amosite, Crocidolite
- Crystals form long thin fibers 0.1 to 10 microns
- Currently, primarily mined in Canada, Russia, South Africa and other locations
- No longer mined in US, but imports still allowed



What is ACM?

- **Asbestos Containing Material**
 - Also known as ACBM (asbestos containing building material)
- Any material containing more than 1% of asbestos by weight
- Can be “friable” or “non-friable”
 - Friable = “able to be crushed or reduced to powder under normal hand pressure”

Why is asbestos harmful?

- When disturbed it can break down into sharp fibers and be breathed in.
- The fibers lodge in the lungs and do not dissolve.
- Blue and brown asbestos can be even more hazardous than white.
- Inhaling asbestos fibers can lead to three main diseases:
 - Asbestosis
 - Lung cancer
 - Mesothelioma

HEALTH RISKS

- ASBESTOS FIBRE BUNDLES CAN SPLIT WITH SMALL FINE FIBRES BREAKING AWAY.
- IF INHALED THE BODY IS ABLE TO RESIST MOST OF THE LARGE PARTICLES, *BUT FINE FIBERS*, TOO SMALL TO SEE, CAN LODGE DEEP IN THE LUNGS

Health Effects

- Small fibers are particulate respiratory hazard
- Latency period
- Smoking (Synergistic effect)

Asbestos Diseases

- Asbestosis: Scarring of lungs
- Lung cancer
- Mesothelioma: Cancer of chest (pleural) or abdominal (peritoneal) cavity
- Pleural Plaque: lesions on chest wall
- Pleural Effusion: fluid in lining of lungs

Physical Properties

- Chemical resistance
- Bacterial resistance
- Incombustibility
- Good thermal and electrical insulator
- Good acoustic insulator
- Tensile strength close to steel
- Good flexibility
- Abundant, inexpensive, virtually indestructible

WHEN IS ASBESTOS A RISK TO HEALTH

- CONSIDER THE TYPE OF PRODUCT.
- HOW WELL IS THE ASBESTOS BONDED INTO IT?
- IS IT LIKELY TO CONTAIN A SMALL OR LARGE AMOUNT OF ASBESTOS?
- *And, consider the condition;*
- GOOD? E.G. SEALED, PAINTED.
- DAMAGED? EXTENT OF DAMAGE

WHY IS ASBESTOS STILL A PROBLEM?

- **Between 1940s and 1980s asbestos used extensively in US as building material.**
- **Some uses banned in the 1980's.**
- **Thousands of tons of asbestos still remain in buildings.**
- **About 4 to 5 million non-domestic premises may contain asbestos.**

Asbestos Products

- **ASBESTOS CEMENT**

- SHEETS - FLAT OR CORRUGATED
- USED AS: ROOFING, WALLS, CEILINGS
- PANELS/PARTITIONING, BATH
- PANELS, UNDER STAIRS, DOOR-
- LININGS, CLADDING TO DUCTS

- FLUES - FROM BOILERS / WATER HEATERS
- RAINWATER PIPES / GUTTERING
- WATER STORAGE TANKS
- DECORATIVE PLASTER FINISHES (ARTEX)
- FLOOR TILES/ ROOF TILES/ CAR PARTS (BRAKE CLUTCH LININGS)

Asbestos Products

- **ASBESTOS INSULATING BOARD**
- **USED AS: CEILING PANELS / TILES**
- **WALL PANELS/PARTITIONING**
- **SOFFITS - INTERNAL/EXTERNAL**
- **DOOR LININGS, ESPECIALLY FIRE DOORS,
HEATING UNIT CUPBOARDS**
- **CLADDING TO DUCTS**

Which types of facilities or premise may have asbestos present?

- Answer... any type (most common in pre-1988).
- **Schools.**
 - **Factories.**
 - **Offices.**
 - **Farms.**
 - **Hospitals.**
 - **Homes.**

Common in Schools and Residential

- **electrical insulation**
- **floor tiles**
- **paper and cardboard**
- **decorative textural coatings**
- **pipe lagging**
- **boiler insulation**
- **acoustic tile**

Why and when people are at risk.

- Asbestos is most harmful if fibres are released into the air.
- cutting, machinery, removal, drilling, sawing, repair/replacement, unintentional damage.
- People may have been unknowingly exposed to asbestos.
- Previous regulations did not cover those people who could come into contact with asbestos unknowingly.

Who is usually at risk

Examples of persons who may disturb asbestos unknowingly:

Heating and ventilation engineers.

Roofing contractors.

Fire and burglar alarm installers.

General maintenance staff.

Electricians.

Plumbers

Building Occupants

Carpenters and joiners.

Plasterers.

Gas fitters.

Cable layers.

Demolition workers.

Painters and decorators.

Home Owners

General Public

Uses in Construction

- Thousands of uses, asbestos containing material (ACM)
 - Fire protection: theater curtains, fire resistant partitions, fire retardant additive in roofing, flooring, siding, sprayed on fireproofing
 - Insulator against heat, cold, noise, and electricity: brake/clutch linings, fireproof steelwork, acoustic ceiling tile, popcorn ceiling
 - Reinforcing agent: cement pipes, shingles, clapboard, grouts, spackling
 - Other uses: corrosive resistance, filtering element, plastics

Asbestos Regulations

- Vermont Regulations for Asbestos Control
- Vermont Agency of Natural Resources
- Vermont Occupational Health and Safety Agency
- US EPA

Vermont Regulations for Asbestos Control

- Vermont Regulations for Asbestos Control (VRAC)
 - Requires inspections before demolition/renovation
 - All friable asbestos removed prior to demolition
 - 10 day advance notification and permit: 10 sq. ft. or 10ln. ft.,
 - Courtesy notification required – for Small Scale Short Duration removal/clean up/ abatement (3 sq. ft. to 10 ln. ft.)
 - disposal manifests, keep copies, signed copy received within 30 days.
 - Should be adequately wet (from point of disturbance to final disposal)
 - No visible emissions

Vermont Regulations for Asbestos Control

Conditional regulatory exemptions for specific asbestos containing materials

Vinyl asbestos flooring and mastics

Exterior asbestos roofing or siding materials

Exterior asbestos cement piping

Exterior asbestos (transite) piping

Asbestos cement (transite) board/panels in open air buildings

Asbestos transite board in Agricultural Barns

VRAC - Section 6 Exemptions – Expected work Practices

- Adequately wet at all times
- No excessive breakage, drilling, sawing, sanding or otherwise abrading in a manner that generates dust
- Compliance with worker safety regulations
- Proper cleanup, packaging, labeling, transportations and disposal in accordance with VT State Waste Management requirements



EPA Regulations

- 40 CFR 61 Subpart M: National Emission Standards Hazardous Air Pollutants (NESHAP)
 - Requires inspections before demolition/renovation
 - All friable asbestos removed prior to demolition
 - EPA notification: 160 square feet or 260 linear feet,
 - disposal manifests, keep copies, signed copy received within 45 days.
 - Adequately wet
 - No visible emissions



EPA Regulations Cont.

- 40 CFR 763: Asbestos Hazard Emergency Response Act (AHERA)
 - Applies to schools K-12
 - Requires 3 year inspections, 6 month surveillance
 - Management Plan
 - Annual notification of parents, students, and teachers
 - Established employee training standards

Categories of ACM

- ACM: More than 1% asbestos
- Friable vs non friable
- EPA Categories
 - Surfacing materials: sprayed or trowled on
 - Thermal system insulation (TSI)
 - Miscellaneous materials

OSHA Regulations for Worker Protection

- 29 CFR 1910.1001 General Industry
- 29 CFR 1926.1101 Construction
 - Permissible exposure limits (0.1 f/cc 8 hr TWA)
 - Employee monitoring
 - Work practices
 - Training

Analysis

- Instrumental analysis required to determine if asbestos is present.
- Polarized Light Microscopy (PLM)
 - Bulk samples
- Transmission Electron Microscopy (TEM)
 - Clearance air monitoring in schools
 - Negative determination for non friable organically bound
- Phase Contrast Microscopy (PCM)
 - Air samples

VRAC Requirements

- Demolition/Renovation requires an asbestos inspection by EPA certified inspectors
- Abatement (Removal), management and control are necessary when subject to impact by general construction
- copies of disposal manifests and notification forms in the project file

Example



Example



Example of textured ceiling



Example



Example, boiler removed, thermal system asbestos remains



Example of damaged textured ceiling



Example of fireproofing on structural systems



Example - Piping Insulation



Example - Troweled Ceiling - Damaged / Delamination



Example : Textured ceiling coating, damaged



Example: Damaged thermal system insulation



Example: Damaged thermal system insulation





Example



Example



Example



Example



ALRP Staff may ask THO's to assist with:

- investigating possible public health hazards and risks within the municipality or town jurisdiction
- taking action to prevent, remove or destroy any such hazards
- taking action to mitigate significant public health risks
- enforcing health laws, rules and permit conditions, and taking the steps necessary to enforce orders
- The local presence of the THO is an essential component of the Public Health Team Resources. We really need your help.

What is the Town Health Officer role regarding lead related tips / complaints?

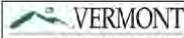
- **Provide assistance to the ALRP Staff**
- **to conduct an initial site visit associated with a tip/complaint**
- **To provide direct observation of site activities and conditions**
- **To issue health orders and provide status report**
- **To identify property owner and contractor who may be disturbing painted surfaces**

We are asking for your help generally on day one, with occasional follow up

- On the day of a tip or complaint you may be asked to assist, with a housing or a public health concern only,
- As deemed necessary or appropriate, program staff will arrange to travel to site within 24 – 48 hours for follow up compliance inspections.
- ALRP staff will provide technical assistance to THO's on an as needed basis. Please call us anytime.

Useful tools for you to consider

- Field Inspection form
- Digital Camera
- Health Orders

 VERMONT DEPARTMENT OF HEALTH Town Health Officer Complaint & Inspection Form		Complaint Received By: Title/Program: _____ Date: _____ Complainants Name, Address, & Phone #: _____
Owner Name, Address, & Phone Number: _____		Property Location: <input type="checkbox"/> Rental <input type="checkbox"/> Owner <input type="checkbox"/> Occupied <input type="checkbox"/> Other _____
Reason for Complaint: _____		
Town: _____	Town Health Officer Name: <input type="checkbox"/> Health Officer <input type="checkbox"/> Deputy Health Officer <input type="checkbox"/> Other _____	
Date of Inspection: _____	Type of Inspection: <input type="checkbox"/> Initial <input type="checkbox"/> Follow-up Last inspection date: _____	
Inspection Observations: _____ _____ _____ _____ _____ _____		
Overall Inspection Findings and Required Corrections: _____ _____ _____		
Required Compliance Date: _____	Follow-up Inspection Date Set: _____	
Referred to Other State Agency/Department or Other Organization: <input type="checkbox"/> Yes <input type="checkbox"/> No Details/Comments: _____		

2.2009

THO may received tips or complaints:

- Damaged or disturbance of typical suspect asbestos containing materials
- Recommend inspection, testing, or assessment when necessary.
- Factsheets and listing of licensed asbestos service providers online at:
- <http://healthvermont.gov/enviro/asbestos/index.aspx>

Questions

- VDH Staff Contact Information
- Asbestos Information Resources

Vermont Department of Health (800) 439-8550

<http://healthvermont.gov/>

Feel free to contact program staff with any questions:

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Environmental Protection Agency (EPA)

<http://www.epa.gov/asbestos/>