

ASBESTOS REGULATIONS AND RESIDENTIAL RENOVATIONS

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Key Topics

- Asbestos – how did we get into this mess?
- Rules, Regulations & Policies – What You Don't Know Hurts **YOU!**
- Forecasting abatement costs and avoiding potential liability.

Getting Started: The Asbestos Crisis

- State and federal regulators – regulating asbestos since the 1970's.
- Asbestos is **EVERYWHERE!**
- Urban flight + Urban Decay =
1,000's of Urban Demolitions.

Getting Started: Asbestos 101



ASBESTOS

The “Miracle Mineral”

- High Tensile Strength
- Flexible
- Resists Corrosion & Chemicals
- Melts at 2200° -- 2700° F
- Poor Conductor
- Effective Insulator -- Hot & Cold
- Multiple Applications (3,000+ Products)

ASBESTOS

The “Miracle Mineral”

- Widespread use – cheap, readily available and plentiful.
- Unique properties well suited for many uses.

Construction Materials

ROOFING & SIDING

Roofing felts, shingles & tiles siding shingles (transite)

WALLS & CEILINGS

Sprayed-on fireproofing plaster & joint compound

cement sheet textured paints

Construction Materials

FLOORS

tile & sheet flooring, mastic adhesives

PIPES & BOILERS

cement pipe & fittings, preformed & block insulation
corrugated sheets, paper tape, putty, plumbing joints

OTHER BUILDING PRODUCTS

gaskets, packing, cement, insulation

Relevant Regulations

- NESHAP (40CFR 60 Subpart M) – residential demos/renos exempt
- Ohio EPA – OAC 3745-20 – residential demos/renos exempt
- ODH – OAC 3701-34 – NO residential exemptions
- OSHA – Construction standards 29 CFR 1926.1101

Do Ohio EPA Regulations Apply To My Project?

NO - IF:

Structure has ALWAYS been residential

Structure contains ≤ 4 residential units

Demo/reno NOT part of “installation” or “facility”

Emergency Demolitions

- Don't require 10-day notice.
- Do require verification letter signed by authorized official.
- Survey should be conducted if not dangerous
- If RACM found in debris, ALL material disposed as RACM (unless survey shows below thresholds or no asbestos).

All notification, emission control/work practices, handling and disposal requirements apply to debris removal



Demo Or Reno?

Renovation: altering a facility or one or more facility components in any way.

Demolition: the wrecking or taking out of any load-supporting structural member of a facility.

What Is A “Facility”?

Any institutional, commercial, public, industrial or residential structure, installation, or building (excluding residential buildings having four or fewer dwelling units) (OAC 3745-20-01 (B))

What Is An “Installation”?

“.....any building or structure or group of buildings or structures....under the control of the same owner or operator....” (40 CFR 61.141)

Residential structures demolished (or renovated) as part of commercial or public project lose their residential exemption and must comply with the NESHAP (July 28, 1995 Federal Register)

What Is An “Installation”?

More than one residential building on the same reno/demo site that are under the ownership or control of the same owner or operator **ARE NOT** exempt.

Fire Department training conducted on **ANY** residential structure is not exempt. (The building becomes an institutional structure.)

ODH & Ohio EPA Asbestos Amounts Requiring Notification

Ohio EPA:

Non-residential – 260 ln ft/ 160 sq ft/ 35 cu ft

Residential – no threshold

ODH:

Non-residential & Residential:

50 ln ft/ 50 sq ft

Asbestos Defined: Four Categories

- Friable
- Category I Non-friable
- Category II Non-Friable
- Regulated Asbestos-containing Material (RACM)

Friable

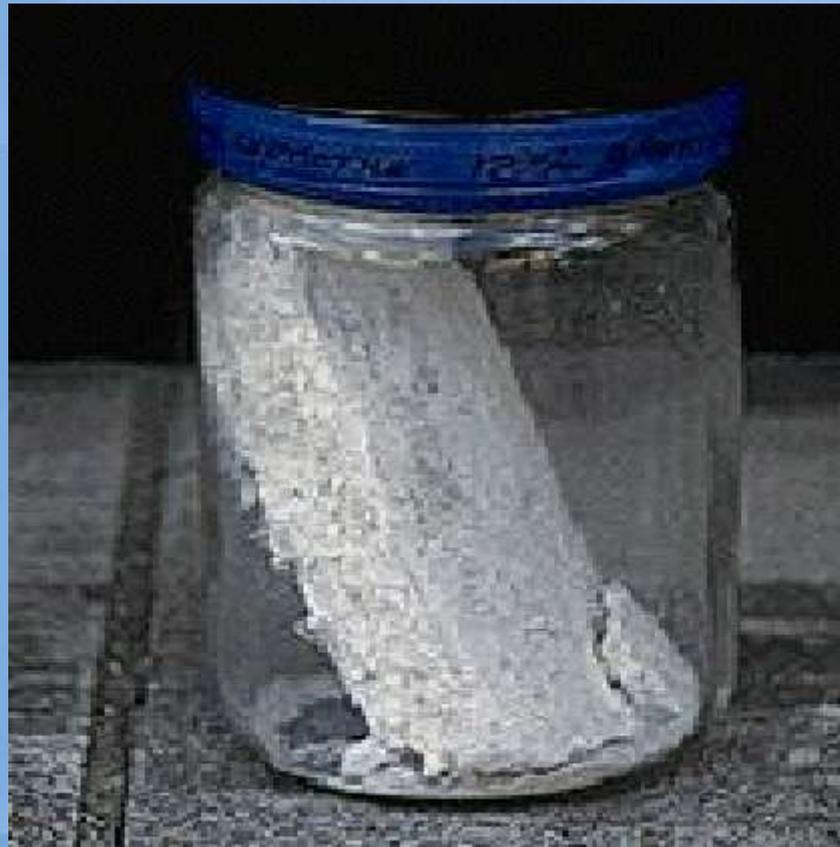
- material containing **>1%** asbestos
- when dry, can be crumbled, pulverized, or reduced to a powder by hand pressure

(Thermal system insulation, fireproofing, plasters and ceiling tiles)

Friable Asbestos



Friable Asbestos



Friable Asbestos



Category I Non-Friable

- Cannot be crumbled, pulverized or reduced to a powder using hand pressure
- ACM > 1% asbestos
- (Asbestos-containing packing, gaskets, resilient floor covering or asphalt roofing products)
- “softer, more flexible ACM”

Category I Non-Friable



Category I Non-Friable



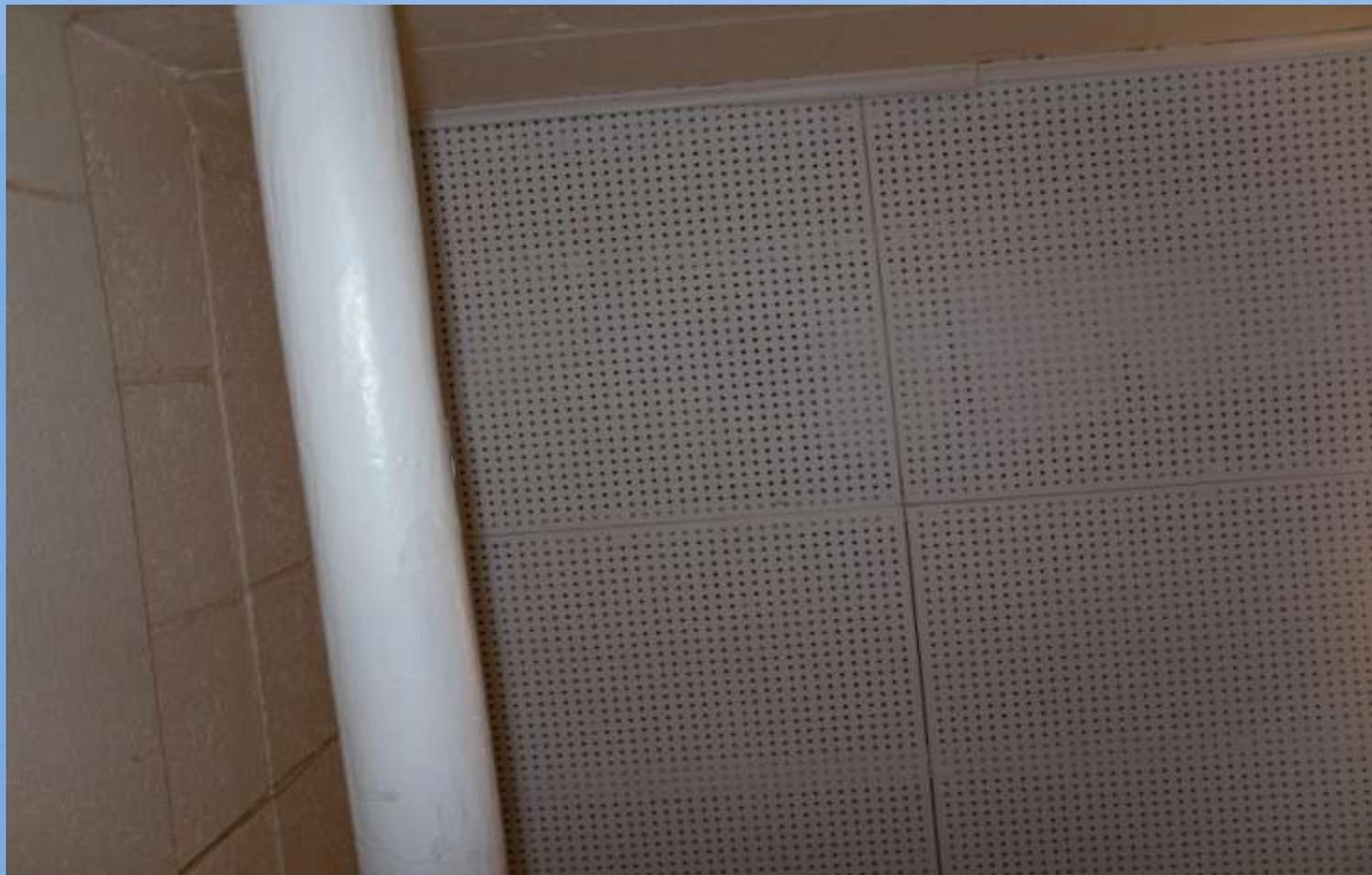
Category II Non-Friable

- Cannot be crumbled, pulverized or reduced to a powder using hand pressure
- ACM (excluding Category I non-friable ACM)
- contains >1% asbestos
- (Transite siding or shingles, cement pipes, mastic, clapboard) – “harder ACM”

Category II Non-Friable



Category II Non-Friable



Regulated Asbestos-Containing Material (RACM)

- Friable asbestos material
- Category I non-friable ACM -- now friable
- Category I non-friable ACM has or will be sanded, ground, cut or abraded
- Category II non-friable ACM has or will be crumbled, pulverized, or reduced to powder by demolition

RACM



RACM



RACM



Fire-Damaged Materials

- CANNOT be disposed of as CD & D waste
- MUST be disposed as solid waste
- Burned materials segregated from unburned (multiple waste streams)

Fire-Damaged Structure



Fire-Damaged Material



Water-Damaged Material

All construction materials CAN be disposed of
in a CD & D LF

Water-Damaged Material



The Complicated Case of Vermiculite



Vermiculite

**YOU SHOULD ASSUME THE VERMICULITE
CONTAINS ASBESTOS AND DO NOT
DISTURB IT!**

Vermiculite

Libby, MT mine only domestic producer (inactive)

- 70%+ of all Vermiculite from 1919 – 1990 came from Libby – worldwide.
- Present in approximately 35 million U.S. homes
- Often sold under the name “Zonolite.”
- Ongoing \$125 M U.S. EPA Superfund clean-up.

U.S. EPA Recommendations for Vermiculite Handling

- Leave vermiculite insulation undisturbed.
- Do NOT attempt to remove the insulation.
- Hire a professional asbestos contractor.

Vermiculite Abatement



Cost Considerations in Asbestos Removal

- Survey costs
- Regulatory Involvement
- Type of Removal
- Material Handling & Disposal

Asbestos Survey Cost Considerations

- Survey costs*:
 - \$700 undamaged or water damaged
 - \$900 - \$1,200 fire-damaged
 - Cat 1 & 2 non-friable are considered “friable” after a fire – not so after flooding
 - Wet ACM can go to a CD&D LF – NOT burned!
- * (assume 1,500 sq ft 2-story structure)

Regulatory Involvement in Residential Structures

- No EPA involvement – if exempt criteria met
- ODH – if RACM > 50 ln ft/ 50 sq ft, then it is an “abatement activity”
- Check with ODH for notification and work practice requirements

Asbestos Removal Cost Considerations

- OSHA work practices – **ANY** detectable level of asbestos.
- Cat 1 & 2 non-friable are considered “friable” after a fire = > handling, packing, transport & disposal costs.
- “Bells & Whistles” removal increases abatement costs by 2 – 3 X.

Asbestos Removal Cost Considerations

- Labeled Asbestos Waste Disposal Bag



Asbestos Removal Cost Considerations

- Material Loading Costs
 - Fire-damaged -- \$8 - \$10/ton (volume reduced)
 - Undamaged -- \$10 – 12/ton
 - Segregating materials = more time & money

Landfill Costs for ACM Disposal

- CD & D LF - \$475 - \$525/40 cu. yd. roll-off box
- MSW LF - \$650 - \$850 cu. yd. roll-off box
- RACM LF - \$1,100 - \$1,200 cu. yd. roll-off box

When Things Go Bad.... Who's Left Holding The Bag?



When Things Go Bad.... Who's Left Holding The Bag?

Contractor and Owner are responsible for:

- Fugitive air releases (DO/LAA air regulations)
- Off-site waste mishandling (OEPA/local HDs)
- Making sure project is exempt (ODH/OEPA)
- Compliance with OSHA Regulations

Any Questions? (No Rocks, Please)



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