



Washington State
DEPARTMENT OF
ENTERPRISE SERVICES

Hazardous Materials in Construction Projects

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OVERVIEW

- Types of hazardous materials
- Where they may be found in buildings
- Regulations
- Hazmat testing services

TYPES OF HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Lead

Mercury

PCBs

Mold

Silica

Asbestos

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Lead:

- Paint
- Water pipes
- Soil
- Shooting ranges (dust and debris)
- Shielding (radiation/sound barriers)



Lead in construction

WAC 296-155-176

Lead-based paint

RCW 70A.420

WAC 365-230-020

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Mercury:

- Fluorescent lamps
- Thermostats
- Batteries
- Electronics
- Manometers



Dangerous waste
WAC 173-303

Purchase prohibited in schools
RCW 70A.230

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

PCBs:

- Electrical transformers
- Paint *
- Caulking *
- Roofing *
- Fluorescent light ballasts (magnetic)**

* Stormwater permits prohibit pressure washing PCB materials and allowing wash water into storm drain systems

** WA State limits are lower than federal limit on PCB.



Dangerous waste

WAC 173-303

PCB elimination / waste management

RCW 70A.300.150

WAC 173-350-020

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS



Capital Lake contamination \$11.37M clean up

2019 oil spill from a vandalized transformer at the former Olympia Brewery site.

About 602 gallons of oil spilled into storm drains, Tumwater Falls Park and the Deschutes River which flows into Capitol Lake and Puget Sound.

The oil contained toxic polychlorinated biphenyls (PCBs).

When released into water bodies, PCBs can accumulate in the aquatic food web and build up to harmful levels over time, affecting marine life.

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Mold

- Likely after any moisture intrusion
- Drywall
- Ceiling tiles
- Other

Resource: Mold remediation in schools and commercial buildings guide

<https://www.epa.gov/mold/mold-remediation-schools-and-commercial-buildings-guide-chapter-1>



WAC 246-366A-070

Primary and secondary schools:
Moisture control, mold prevention
and remediation.

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Mold:

Dozens of species:

- Allergens
- Respiratory irritants
- Mycotoxins

Growth requires moisture and nutrients.

Health effects vary with individuals.

Air sampling may be inconclusive due to high ambient levels outdoors.



HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Crystalline Silica

- Silica dust is created when cutting, sawing, drilling, grinding, and crushing rock, concrete, brick, block and mortar.
- Can also result from abrasive blasting.



WAC 296-840

Respirable Crystalline Silica

ASBESTOS

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Asbestos:

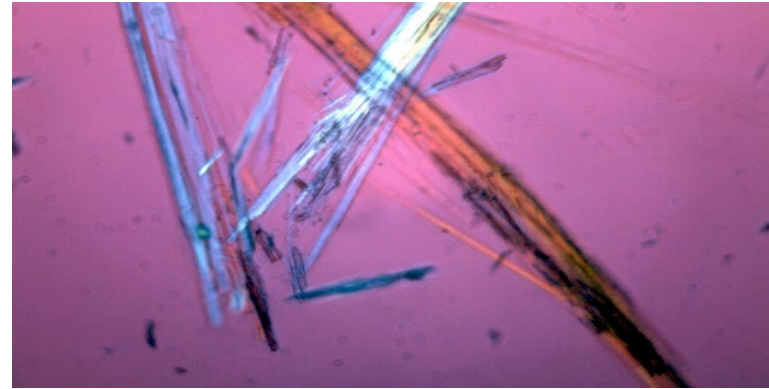
- Where found in buildings
- Inconsistent regulations

More common than you think!

Asbestos Ban and Phase-out Rule (ABPR) 1989:

- Only banned limited products
- Overturned by lawsuit against EPA in 1991

**EPA comprehensive ban on chrysotile
(white) asbestos went into effect in 2024.**



HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Places where asbestos may be found:

(Per L&I)

- Pipe insulation
- Wall and ceiling texture, including popcorn ceiling
- Adhesives, caulking, and joint compound
- Vinyl floor tiles, including backing and adhesives
- Roofing materials and siding shingles
- Walls and floors around stoves and fireplaces



HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Other places where asbestos has been found:

- Soil (possibly naturally occurring)
- Concrete structures
- Cementitious panel systems (marble crete)
- May be present in any material other than unpainted wood, metal and glass



HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Asbestos regulations per RCW:

- 49.26 Health and safety—Asbestos
- 49.26.010 Legislative declaration
- 49.26.013 Inspection of construction projects required
- 49.26.016 Inspection of construction projects—Penalties
- 49.26.020 Asbestos use standards
- 49.26.030 Containers for asbestos products
- 49.26.040 Regulations—Enforcement
- 49.26.100 Asbestos projects—Definitions
- 49.26.110 Asbestos projects—Worker's and supervisor's certificates
- 49.26.115 Asbestos abatement projects—Contractor's certificate required
- 49.26.120 Asbestos projects—Qualified asbestos workers and supervisor—Prenotification to department—Fire personnel
- 49.26.125 Prenotification to department—Exemptions
- 49.26.130 Asbestos projects—Rules—Fees—Asbestos account
- 49.26.140 Asbestos projects—Enforcement—Penalties
- 49.26.150 Discrimination against employee filing complaint prohibited
- 49.26.901 Effective dates—1988 c 271 ss 6-18

HAZARDOUS MATERIALS IN CONSTRUCTION PROJECTS

Asbestos regulations per WAC:

- 296-62-077 Asbestos, tremolite, anthophyllite, and actinolite
- 296-62-07701 Scope and application
- 296-62-07703 Definitions
- 296-62-07705 Permissible exposure limits (PEL)
- 296-62-07706 Multiemployer worksites
- 296-62-07709 Exposure assessment and monitoring
- 296-62-07711 Regulated areas
- 296-62-07712 Requirements for asbestos activities in construction and shipyard work
- 296-62-07713 Methods of compliance for asbestos activities in general industry
- 296-62-07715 Respiratory protection
- 296-62-07717 Protective work clothing and equipment
- 296-62-07719 Hygiene facilities and practices
- 296-62-07721 Communication of hazards
- 296-62-07722 Employee information and training
- 296-62-07723 Housekeeping
- 296-62-07725 Medical surveillance
- 296-62-07727 Recordkeeping
- 296-62-07728 Competent person
- 296-62-07733 Appendices A-K

HAZMAT CONSULTANT SERVICES

HAZARDOUS CONSULTANT SERVICES

Agreement options:

Testing services as subcontractor to design team (not recommended).

Direct agreements through DES on-call consultants (best approach).

Building owners are ultimately responsible for their dangerous and hazardous wastes so good oversight on disposal matters.

2025-807 Hazardous Materials + Environmental Assessment	
A	GeoEngineers, Inc.
B	Haley & Aldrich, Inc.
C	NV5, Inc.
D	PBS Engineering and Environmental Inc.
F	Terracon Consultants, Inc.

HAZARDOUS CONSULTANT SERVICES

Good faith report:

- Required to be provided to contractors prior to bidding
- Review of existing data
- Retesting of materials previously determined ACMs is not required
- Site visit (inspection)
- Sampling and testing of suspect materials

The report includes:

- Inspection details
- List of sampled and tested materials
- Location of each bulk sample
- Test results by sample
- List of suspect materials not sampled (assumed ACMs)
- Documented methodology
- AHERA credentials of inspector and firm (K-12 Schools)

HAZARDOUS CONSULTANT SERVICES

Abatement specifications:

- Contractor submittal requirements:
 - Permits/notifications
 - Contractor licensing requirements
 - Emergency planning
- Workspace preparation procedure
- Detailed specifications of hazmat removal procedure
- Clean up procedure
- Worker decontamination facilities
- Waste disposal procedure
 - Cradle to grave: Building owner is responsible for proper disposal
- Required monitoring (air monitoring and environmental monitoring)

HAZARDOUS CONSULTANT SERVICES

Construction administration:

- Review hazmat contractor submittal
- Pre-abatement meeting(s)
- Post-abatement inspection
- Daily inspections and reporting (when appropriate)
- Additional testing of materials discovered
- Air quality testing
- Review of waste disposal documentation
- Notification of non-compliance

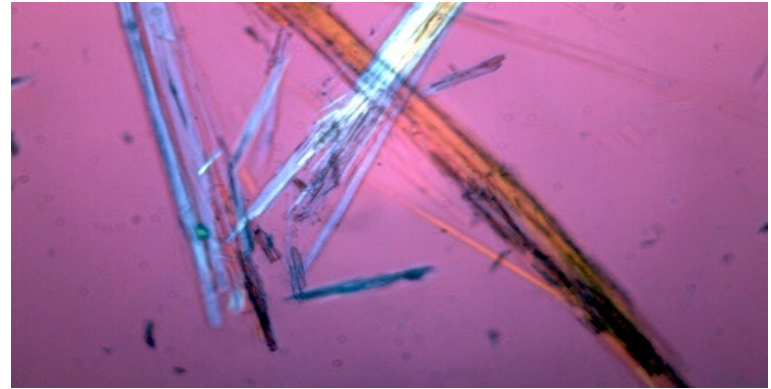
HAZARDOUS CONSULTANT SERVICES

Under the microscope:

Polarized light microscopy (PLM) vs. transmission electron microscopy (TEM).

DES has direct experience with ACM materials that did not show in PLM but were proven to be ACM using TEM.

Vermiculite has specific testing procedures.





QUESTIONS?

THANK YOU



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