**OPP Project Management, Planning, Estimating and Design**

**Hazardous Building Materials Checklist**

*This is a tool for addressing hazardous building materials in renovations and does* ***not*** *have to be provided to EHS. This is* ***not*** *to be used for bidding.*

**Building / Facility Construction Cut-Off Dates:**

Contact EHS when working on projects in, or on, these buildings:

* **Asbestos** - Pre-1990 buildings (interior materials). Post-1990 buildings may have asbestos roofing.
* **Lead Paint** – Pre-1978 buildings, for EPA residential dwelling compliance. OSHA does not recognize a date. ALL paints are assumed to contain lead at some level, even now. Also see Demolition notes in checklist.
* **PCB caulks and glazing putties** – Pre-1980 buildings.

**Building / Facility Surveys and Historical Records:**

* EHS will have information on whether surveys were previously conducted.
* Small surveys are often conducted by EHS. OPP project pays for sample analysis only.
* Larger surveys are coordinated with EHS and conducted by pre-qualified consultants. OPP project pays for labor, lab analysis, etc.
	+ Large surveys are coordinated by EHS.
* **Surveys must be done during programming or early in design (the earlier the better).**

**Asbestos Scheduling and Vendor Information:**

1. OPP 212 Asbestos Crew is available for small-scale, short duration Operations and Maintenance work only.
2. **Prequalified contractors always required, regardless if project is PO, contract, prime contractor or sub-contractor.**
3. Air monitoring is required for all asbestos contractor projects, except for some outdoor work.
4. Air monitoring is required for OPP 212 Asbestos Crew full-containment projects. They rarely conduct these types of projects.
5. Work in occupied areas must be done at night, on weekends or during breaks. Contact EHS if questions.
6. **PO’s or contracts must be in-place and finalized before asbestos vendors mobilize on campus, as per PSU Risk Management. This includes GC’s sub-contracts. Letters of Intent are not acceptable.**

**Asbestos Notifications and Waiting Periods:**

1. Contractor work always requires a PA DEP / PA L&I or EPA Asbestos Notification waiting period.
	1. Notification waiting period is 5 calendar days (PA L&I, **all** projects regardless of scope) or 10 working days (EPA / PA DEP, depending on scope). Plan for 10 working days to allow time to procure air monitoring firm, cut PO’s, move furniture, steam shutdowns, etc.
	2. “Emergency” notifications only allowed for fires, floods or other unplanned significant damage.
	3. Notifications cannot be mailed until scope, schedule, contractor, waste disposal hauler / site, etc. are confirmed. **All** are required on the form sent to the regulatory agencies.
	4. EHS must receive proof-of-mailing from the contractor before work is allowed to start.
	5. Changes to scope, schedule, etc. require a Revision be sent to regulatory agencies. PSU as the owner must track all these changes so the less the better.
	6. **Projects cannot be broken up to make scope fall under the 10 working day scope limit.**

**Asbestos Scope of Work Planning:**

Plan to remove **all** “accessible” ACM in renovation areas (i.e. ACM that does not require demolition of structural supports, unless that is already planned). Some common examples are:

* When removing a tank in small mechanical room, also plan to remove all pipe insulations.
* When removing asbestos ceiling plaster, plan to remove all other ACM in the containment (pipe insulations, floor tile, mastic, covebase adhesives, chalkboard adhesives, etc.).
* When removing floor tile and mastic, plan to remove asbestos cove-base (non-vinyl molded materials).
* New flooring cannot be installed over old.
* New mechanical or electrical equipment cannot be installed over or under ACM, unless there is still **easy** access in the future.

**Asbestos Design Questions:**

|  |  |  |
| --- | --- | --- |
| **Yes** | **No** |  |
|  |  | 1. Walls or ceilings affected or being demolished (ACM joint compounds, plasters, textured paints, chalkboard adhesives, ceiling tile adhesives, etc.)?
 |
|  |  | 1. Pipe or duct affected (ACM insulations, duct seam tapes, sealants, etc.)?
 |
|  |  | 1. Are pipes or ducts visible? If no, are they in walls or ceilings? **If in walls or ceilings and ACM found, asbestos workers must conduct demolition in most cases.**
 |
|  |  | 1. Flooring affected (ACM floor tile, linoleum, mastic, covebase / adhesive)?
 |
|  |  | 1. Carpet being replaced? Check for old flooring under carpet. **If tile is under carpet, asbestos workers need to pull carpet**.
 |
|  |  | 1. Mastic need to be chemically stripped or shot-blasted? Check with new flooring installer or designer.
 |
|  |  | 1. Fixed casework, chairs or partition walls installed over flooring? **If yes, asbestos workers must demolish, especially in labs.**
 |
|  |  | 1. Lab bench tops or fume hoods affected (ACM soapstone, Transite, adhesives under tops or at seams)?
 |
|  |  | 1. Chalkboards / bulletin boards affected (ACM adhesives)?
 |
|  |  | 1. Windows or doors being replaced (ACM caulks, glazing putties, Transite panels)?
 |
|  |  | 1. Masonry restorations that affect caulks?
 |
|  |  | 1. Roofing affected?
 |
|  |  | 1. Foundation affected (ACM tar vapor barrier)?
 |
|  |  | 1. Excavation? Buried steam lines?
 |

**Lead Based Paint Design Information:**

|  |  |  |
| --- | --- | --- |
| **Yes** | **No** |  |
|  |  | 1. Is this a LEED project? **Painted CMU, block, concrete or brick cannot be reused as Clean Fill on PSU or any other property**.
 |
|  |  | 1. Painted surfaces being restored to bare wood or concrete? **If yes, an “abatement” project is needed**. In-house work may still be possible. Most asbestos contractors also do lead paint abatement. Contact EHS during design.
 |
|  |  | 1. Steel beams, etc. need to be cut or welds needed? **If yes, paint removal may be needed**.
 |

**PCB Design Information:**

PCB removal requires same procedures and scope of work planning as asbestos.

|  |  |  |
| --- | --- | --- |
| **Yes** | **No** |  |
|  |  | 1. Windows or doors being replaced (PCB caulks, glazing putties)?
 |
|  |  | 1. Masonry restorations that affects caulks?
 |
|  |  | 1. Building façade cleaning planned (PCB contaminated run-off)?
 |
|  |  | 1. Masonry being removed? Enlarging door / window openings? Attaching new wing? Masonry may be PCB contaminated.
 |
|  |  | 1. Bricks being re-pointed near caulking?
 |

**Lab Renovations Design Information:**

|  |  |  |
| --- | --- | --- |
| **Yes** | **No** |  |
|  |  | 1. Lab cabinets being replaced or moved (ACM flooring underneath, mercury precautions needed?)
 |
|  |  | 1. Fume hoods or duct affected (perchloric acid hoods, radioisotopes)?
 |
|  |  | 1. Drains being demolished or moved (mercury precautions)?
 |

**Pre-Project Coordination Information:**

1. Furniture, stored items moved out of space?
2. Steam, etc. or other utilities shut down or locked / tagged?
3. HVAC shut down in asbestos work areas?
4. Keys / swipe cards signed out for contractor (building, Janitor Closet, M key)?
5. PO’s or contracts in-place? Hazardous materials vendors cannot mobilize without them.
6. Office or desk space for air monitoring technician to set up microscope / air sample analysis?

**Demolition (Structural):**

1. **Prequalified structural demolition contractors are always required, regardless of whether work is a PO or contract, prime contractor sub-contractor.**
2. EHS will assist with coordination, hazardous building material surveys and regulatory notifications.
3. PA DEP / EPA Demolition Notifications are **always** required.
	1. Forms must be reviewed or completed by EHS before mailing.
	2. Forms must be post-marked at least 10-working days before any structural demolition starts.
	3. Notifications cannot be sent until schedule, contractor, etc. are confirmed.
	4. EHS must receive proof-of-mailing from the contractor before demolition will be allowed to start.
4. **Cut off dates do NOT apply to structural demolition. EPA rules require this for ALL buildings.**
5. ALL ACM’s and PCB’s must be removed before any demolition begins (structural or non-structural).
6. **Painted CMU, block, concrete or brick from pre-1978 facilities cannot be reused as Clean Fill on PSU or any other property.**

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**Additional Design and Planning Information Related to Hazardous Building Materials**

**(Asbestos)**

**Flooring:**

All floor tile, linoleum and adhesives are assumed to be ACM until proven otherwise. This includes both 9"x9" and 12"x12" tile.

Covebase adhesives are assumed ACM.

Installation of new floor tile, linoleum, wood or concrete over old materials is prohibited.

Carpet tile installation (not broadloom) over old flooring may be allowed but only with approval from EHS. Plan to remove the ACM flooring.

Mastic and covebase adhesives must be removed whenever floor tile or linoleum is removed, unless they are proven to be asbestos-free.

Common issues with flooring removal:

* Floor tile installed in layers (new over old)? Check for “high” transition areas.
* Floor tile under casework?
	+ Remove bottom drawers of case work to check.
	+ Remove end panels from lab islands.
* Floor tile under carpet?
	+ Lift carpet in several areas.
	+ Look in closets or at transitions.

Carpet removal:

* Plan to have the carpet, floor tile and mastic removed by PA licensed Asbestos Workers. This will avoid delays when tiles come up with carpet.
* Make note on estimates, drawings or in project file that asbestos removal may be needed so that OPP, contractors or occupants can plan accordingly.
* Make sure contractors / workers know to stop immediately if tile comes up with carpet. Sometimes there are partially tiles areas that were not visible when area was initially inspected.

**Pipe / Fitting, Duct, Tanks and Sealants:**

Thermal insulations not obviously yellow or pink fiberglass or black foam rubber are assumed to be ACM (i.e. pipe, duct, heat exchanger, valve, fitting, tank, etc.).

* Cementitious, or "mudded", pipe fitting insulations present?
* Sealers / putties painted or troweled over fiberglass flanges, butt ends, seams, etc.?
* Mastics or tar on fiberglass?
* Pipe insulation not visible?
	+ Are pipes in walls or ceilings? If yes, demolition precautions required in design, in drawing notes and during work activities.
	+ In most cases demolition must be done by Asbestos workers.
* Duct flex connectors / vibration dampers (white, coarse weave cloth)?
* Duct gaskets between flanges?
* Mechanical system being demolished?
	+ If yes, ACM insulations can sometimes be “wrapped-and-cut”.

**Ceiling / Wall Plasters, Ceiling Tile / Adhesives:**

* Ceiling tiles not clearly marked with the Armstrong, Inc. logo are assumed to be ACM.
* Tiles glued to ceilings or walls?
* ACM ceiling / wall / tile locations at UPark can be found on the Asbestos Blockplans on the EHS website. See Asbestos Resources page at: <http://www.ehs.psu.edu/workplace-safety/asbestos-management/resources>.

**Dry-wall and Joint Compounds:**

* Pre-1990 installations are assumed ACM.

**Chalkboard Adhesives:**

* Chalkboards being replaced?
	+ If yes, must be taken down by an asbestos contractor or OPP 212 Asbestos Crew. Adhesives can then be sampled to determine if what remains on the walls or boards must be removed as ACM.

**Caulking and Glazing Putties:**

* All caulks and glazing putties are assumed to be ACM. Plan accordingly during window / door replacements, masonry restoration / cleaning, etc.
* ACM caulks and glazing putties must be removed from frames, glazing or substrate during abatement to reduce the quantity of asbestos waste generated.

**Asbestos Blockplans:**

The EHS Asbestos Blockplans only show ACM ceiling / wall materials (plasters, spray-on fireproofing, decorative coatings, ceiling tiles and Transite panels). See notes on plans.

DO NOT assume a building not on the EHS Asbestos Blockplans does not contain ACM. Use the above assumptions at all times when dealing with other ACM (insulations, flooring, lab bench tops, cooling towers, roofing, caulking, glazings, etc.). Also see notes on plans.

For more information see the EHS Asbestos Resources webpage at: <http://www.ehs.psu.edu/workplace-safety/asbestos-management/resources>.

**Asbestos Project Set-up and Coordination:**

**OPP In-House Work – Small-Scale and Flooring:**

* OPP 212 Asbestos Crew is the only team that handles all types of ACM.
	+ OPP 212 Crew does **not** report to EHS.
	+ OPP 212’s allowable scope-of-work is limited to small-scale, short-duration projects only.
	+ OPP 212’s larger projects are mostly completed by "prequalified" contractors.
* OPP Reno handles ACM flooring only and their allowable scope is limited to what they can handle based on manpower and schedule.
	+ OPP Reno does **not** conduct shot-blasting or grinding of mastics, which requires full-containment and air monitoring.

**OPP In-House Work – Larger Scale:**

* All OPP 212 work that must be done under full-containment requires third party consultant air monitoring (e.g. ceilings, chalkboard adhesives, etc.). Call EHS to assist with coordination.
* Full-containment work in occupied areas can only be conducted at night, on weekends or over breaks. If this is not possible areas must be isolated with plywood or drywall. Call EHS if you are not sure.

 **Contractor Work:**

* All interior asbestos contractor work requires third party consultant air monitoring and must be coordinated with EHS.
* Exterior work may not require air monitoring. Contact EHS to confirm.
* Asbestos contractors must be prequalified.
* Contractor work in occupied areas can only be conducted at night, on weekends or over breaks. If this is not possible, areas must be isolated with plywood or drywall.

**Asbestos Consultants:**

All asbestos consultants must be prequalified by EHS. Contact EHS for assistance when planning projects.

**Additional Asbestos Information:**

Additional information can be found on the EHS Asbestos website at: <http://www.ehs.psu.edu/workplace-safety/asbestos-management>.

**(Lead Paint)**

Lead paint “abatement” is only required during restorations, when steel needs to be cut or torched or if paint is severely deteriorated.

Clean Fill – Painted brick, concrete or CMU from pre-1978 facilities cannot be used as Clean Fill on PSU or any other property.

Additional information can be found on the EHS Lead Based Paint website at: <http://www.ehs.psu.edu/workplace-safety/lead-based-paint>.

**(PCB’s)**

All caulks and glazing putties on, or in, pre-1980 buildings are assumed to contain PCB’s.

PCB’s are handled similar to asbestos, except waste disposal is coordinated and handled by EHS.

* PCB caulks and glazing putties must be removed from frames and / or glazing during abatement to reduce the quantity of PCB waste generated.
* PCB’s may have contaminated masonry.
	+ Is masonry affected?
	+ Window or door openings being enlarged or enclosed?

**(Lab Renovations – Current or Previous Labs)**

* Drains are assumed to contain mercury. See OPP Design Standards.
* Mercury is assumed to be under lab casework, in drawers, etc. Look for silver beads.
* Fume hoods or ducts marked with “Radiation” signs or stickers must be checked by EHS before renovations. Contact the Radiation Safety division for questions.

**(Demolitions of Buildings, Structures or Load Bearing Beams)**

All structural demolition must be coordinated with EHS from planning to completion (i.e. when taking down entire structures or wings or buildings).

Separate procedures apply that are not covered here.

All demolition contractors must be prequalified.

**(Regulation Summary)**

**Asbestos Removal, Repair or Clean-Up:**

Only PA Labor and Industry certified asbestos workers may handle, remove or dispose of any asbestos containing materials (except exterior non-friable, tar-based, built-up roofing, flashing, caulking and glazings).

**Asbestos Surveys and Sampling:**

Only PA Labor and Industry certified asbestos inspectors may sample suspect asbestos.

Call Environmental Health and Safety (EHS) at 865-6391 (8AM - 5 PM) or 863-1111 (after 5PM) if you have any questions or need a material identified or confirmed.

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