



UNIVERSITY AT ALBANY

State University of New York

A Policy

For

Dealing with the Removal and Disturbance of PCB-Containing Caulk (and other potentially PCB- contaminated building materials)

Office of Environmental Health and Safety

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1.0 INTRODUCTION

Polychlorinated biphenyls (PCBs) were included as additives to paints, including floor finishes, as sealants for heating systems and plumbing, as dielectric fluids in transformers and capacitors, and, as well as a plasticizing agent for caulking materials. PCB concentrations in original caulk can vary from less than 50 parts per million (ppm) up to and exceeding 200,000 ppm. In locations where the original caulk has been replaced; PCBs may have leached into the surrounding substrate. In those locations where new caulk has replaced the original PCB caulk, PCBs may have also leached back into the new caulk at concentrations above the 50 ppm regulatory threshold.

The University at Albany (UA) has distinguished several types of projects that could involve the removal and disturbance of PCB-containing caulk and surrounding building materials, including paint:

- 1) Individual window repair/retrofit or replacement under emergency conditions
- 2) Multi-window planned renovation projects
- 3) Door frame replacement
- 4) Podium decking repairs
- 5) Masonry repairs, including stair treads
- 6) General building renovations – including paint removal (**PCBs have been found in paint samples at the University where the paint was not in close proximity to PCB containing caulk.**)

The purpose of this Policy for Dealing with the Removal and Disturbance of PCB-Containing Caulk (and other potentially PCB-contaminated building materials) is to provide guidance and outline best management practices (BMPs) to be utilized by UA personnel, when working with known or suspected PCB-containing/contaminated building materials, more specifically PCB-containing caulk. It is also designed to assist in compliance with federal and state environmental, health, and safety regulations and recommended guidelines encountered when removing or disturbing PCB-containing/contaminated materials during selected maintenance and renovation activities, in order to minimize exposure to the UA Community to PCBs. It provides guidance to ensure that PCB-containing/contaminated materials are properly tested, identified, handled and disposed of, as appropriate; in accordance with applicable PCB regulations. This document further defines the responsibilities of key UA representatives, as well as requirements for appropriate training, work practices, disposal of PCB waste, sampling and recordkeeping. This document does not address management practices associated with sudden “spills” or “releases” of PCBs from electrical equipment, including electrical transformers.

2.0 SCOPE AND APPLICABILITY

This Policy is limited in scope to the management of known or suspected PCB-containing caulk and other potentially PCB-contaminated building materials, and applies to UA and private contractor personnel working with known or suspected PCB-containing caulk on UA campuses. All such personnel must adhere to the provisions of this policy. UA personnel within the following departments may be involved with and/or potentially handle known or suspected PCB-containing caulk and other potentially PCB-contaminated building materials:

1. Office of Environmental Health and Safety
2. Physical Plant *
3. Campus Planning *
4. Architecture, Engineering and Construction Management*
5. Telecommunications
6. University Auxiliary Services (UAS)
7. Athletics Department
8. Performing Arts Center

* Offices within *Facilities Management*

This list may not encompass every UA office/department that may come into contact with PCB-containing caulk or other potentially PCB-contaminated building materials.

3.0 RESPONSIBILITIES

3.1 The Office of Environmental Health and Safety

The Office of Environmental Health and Safety (EH&S) will be responsible for overall implementation and management of the Policy. These responsibilities include, but are not limited to, the following:

1. Reviews and approves the Policy and proposed changes made during reviews and updates, in conjunction with the Office of Facilities Management;
2. Distributes Policy to the appropriate University Departments and maintains current policy on EH&S web site;
3. Receives from the Office of Facilities Management, original copies of PCB-related records and acts as the official keeper of all such records and documents;
4. Coordinates with federal, state, local regulatory agencies regarding PCB management (e.g., reports to regulatory agencies, etc.);
5. Assesses and approves hazardous waste storage areas;
6. Approves and signs Uniform Hazardous Waste Manifests and other documentation required for disposal of PCB wastes;
7. Provides PCB Awareness Health and Safety training, as appropriate and;
8. Provides the appropriate Personal Protective Equipment (PPE), as discussed in this Policy, to UA personnel handling PCB-containing caulk and other PCB-contaminated building materials.

3.2 The Office of Facilities Management

The Office of Facilities Management will identify personnel who might be exposed to PCB-containing/contaminated building materials during selected maintenance activities and in third-party construction work and will be responsible for the following:

1. Reviews and approves the Policy and proposed changes made during reviews and updates, in conjunction with the Office of Environmental Health and Safety;
2. Where removal or disturbance of PCB-containing/contaminated building materials is anticipated, arranges for sampling for PCBs of possibly PCB containing/contaminated materials, especially caulk and nearby painted surfaces, including walls, either with in-house resources or through third party contracts for design and construction;
3. Assigns PCB-related work tasks to UA employees;
4. Identifies UA staff, as appropriate, to participate in regular PCB Awareness Health and Safety training;
5. Ensures the utilization of the appropriate BMPs during those activities where potential contact with PCB-containing/contaminated building materials may occur, either through removal or disturbance of such materials;
6. Informs EH&S of concerns or conditions that may result in exposure of PCBs to UA personnel;
7. Works with the independent consultant and/or contractor, as appropriate, to facilitate sampling, encapsulation and/or removal of known or suspected PCB-containing/contaminated building materials and;
8. Notifies contractors of potential PCB-containing/contaminated building materials and of this Policy, oversees contractor operations for adherence to this Policy and consults with EH&S to insure the proper disposal of PCB-containing building materials as hazardous waste from the job site.

4.0 REGULATIONS

4.1 Federal and NYS Environmental Regulations

The Toxic Substances Control Act (TSCA) of 1976 authorized the U.S. Environmental Protection Agency (EPA) to control substances that were determined to cause unreasonable risk to public health or the environment. In 1979, the U.S. EPA banned the manufacture of new products containing PCBs and developed regulatory requirements for the storage, labeling, use, and disposal of materials containing PCBs at levels above the regulatory thresholds. In addition, the regulations under TSCA specify allowed or authorized uses of PCBs in certain situations. If a material or item is not specifically listed, it is considered unauthorized. The U.S. EPA considers building materials containing PCBs, including caulk, with PCB concentration exceeding 50 ppm to be an unauthorized use. Caulking materials with concentrations at or above 50 ppm must be managed as hazardous waste according to NYS Department of Environmental Conservation (DEC) and disposed of following special procedures.

U.S. Occupational Safety and Health Administration (OSHA) Requirements

There are currently no comprehensive OSHA regulations concerning PCB exposure. However, OSHA has set permissible exposure limits (PELs; inhalation) for Aroclor 1242 at 1 milligram per cubic meter (mg/m³) of air, and of Aroclor 1254 at 0.5 mg/m³. In addition, both have been designated as a skin hazard, where contact should be avoided. Exposures exceeding these values would require the use

of respiratory protection in accordance with the UA Respiratory Protection Program. PCB-containing caulk and some surrounding PCB-contaminated building materials, including painted walls and painted radiator covers, have been identified at UA. In addition, due to the age of some UA buildings, there is the potential for additional unidentified PCB-containing building materials to exist, including some painted walls not in close proximity to caulk. As a result of the potential health hazards associated with exposures to PCBs, workers and contractors must be provided information concerning PCB hazards, according to the requirements of OSHA's Hazard Communication Standard (29 CFR 1910.1200). The EH&S Office will provide training to all UA personnel affected by this Policy.

4.2 Additional New York State Regulations

If it is determined that caulk or other building materials contain or are contaminated with PCBs, and said materials are intended to be removed or disturbed, a site specific abatement plan should be developed to address potential environmental and public health concerns. The HUD Technical Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing available at www.hud.gov/offices/lead/guidelines/hudguidelines/ can be used as a basis for developing the steps for abating the contamination and preventing contamination of nearby areas. This is the same guideline required by NYSED to manage lead-contaminated materials in schools under the RESCUE regulations. Caulking materials that contain lead, PCBs, or both can therefore be managed under the same guidance. **Caulking materials that contain asbestos, in addition to either lead or PCBs or samples that contain only asbestos will be managed and abated in accordance with requirements of the NYS Department of Labor Code Rule 56. Caulking materials containing asbestos and/or lead and/or PCBs must be disposed of as hazardous waste depending on the concentration of the lead and/or PCBs.**

As discussed above, disposal of PCB-containing materials from abatement activities (soil, caulk, paint, other building materials, contaminated PPE, etc.) is regulated by the NYS DEC solid waste regulations (6NYCRR Part 360), if concentrations are <50 ppm and by the hazardous waste regulations (6NYCRR 370-373), if PCB concentrations are 50 ppm or greater.

5.0 PCBs IN BUILDING MATERIALS

Potential PCB-containing caulk exists in buildings which were constructed or renovated between about 1950 and 1980 around windows, door frames, masonry columns and other masonry building materials on interior and exterior surfaces, as well as in expansion joints. PCB-containing caulk may have leached PCBs into adjacent surfaces including painted walls, concrete, soils, and impacted dust inside of buildings with PCB-containing caulk. We have found PCBs on painted walls (sometimes not in close proximity to PCB containing caulk), windows and radiators here at the University.

An inventory of PCB-containing/contaminated building materials at the University is not practical or necessary unless renovation projects, which could disturb building materials suspected of containing or being contaminated with PCBs, are undertaken. **These building materials include but are not limited**

to all caulk and some painted surfaces. Under these circumstances, an evaluation for PCBs of those building materials scheduled for removal or disturbance is warranted. The locations and types of known PCB-containing and/or contaminated building materials at UA are maintained in the PCB Sampling Records maintained at the Office of Environmental Health and Safety.

6.0 BEST MANAGEMENT PRACTICES (BMPs)

This section describes the best management practices (BMPs) that UA personnel will utilize for those activities that may involve PCB-containing/contaminated building materials. BMPs include recommended engineering and administrative controls, personal protective equipment (PPE), personal hygiene and sanitation procedures to be followed, in order to reduce or eliminate potential exposures of the UA Community to PCBs. While interim risk minimization procedures are provided, each task will involve unique factors and create specific conditions that would require an assessment as to the subsequent risk level. This will require an assessment of the area where the work is required and the implementation of BMPs based on the specific task(s) to be conducted. EH&S is available to consult on any project where PCB containing/contaminated materials will be removed or disturbed.

All or some of the following work practices shall be implemented, depending on the size of the job, to prevent or limit potential occupational exposures to PCBs during abatement of PCB-containing caulk and surrounding building materials, unless the caulk contains asbestos and then NYS Code Rule 56 must be followed, except for the disposal of the material:

1. EHS will be notified of the proposed work and the locations a week in advance, except in the event of an emergency;
2. If UA employees are performing the work, they must be first adequately trained on this Policy and BMPs by EH&S;
3. Employees will wear protective Tyvek® coveralls and nitrile gloves to protect against skin exposure; Safety glasses or goggles will be worn to protect against foreign material impacting the eyes; A filtering face piece respirator , N95s or greater, will be worn to protect against inhalation of dusts during work involving caulk suspected of containing PCBs and other potentially PCB-Contaminated building materials. This PPE will be provided by EH&S;
4. The work area will be delineated with caution tape to keep unnecessary personnel out of the work area and plastic sheeting hung up to protect building occupants and the surrounding environment from PCB-contaminated dust;
5. Close and seal the ventilation in the work area, and if necessary turn off forced air heating and air-conditioning systems;
6. Unless conditions prohibit, work will be performed from exterior locations. Thick plastic sheeting will be placed on interior locations to protect the floor from any dust and debris that could be generated during work activities;
7. Manual tools are recommended for the removal of caulk;
8. Use only replacement caulk/sealant that is free of environmental hazard;
9. The work area will be wet cleaned and HEPA vacuumed upon completion of work with no visible

- debris left behind;
10. All personal protective equipment, plastic sheeting, and any items used for cleaning will be disposed of as PCB hazardous waste. All waste will be containerized in an appropriately labeled sealed container. EH&S will assist in the labeling and;
 11. No eating, drinking or smoking will be allowed in the work area. Also, all employees must discard their PPE as hazardous waste before leaving the work area and wash their hands and face upon exiting the work area.

6.1 Contact Minimization

Efforts to minimize contact with known or suspected PCB containing/contaminated materials should be evaluated, and as necessary, the following management practices can be implemented:

1. Change of use patterns which may include area isolation, traffic pattern changes, or the re-designation of a use area from high occupancy to low occupancy;
2. Delineation of areas to keep unauthorized individuals from accessing work areas or high risk locations;
3. Isolating areas utilizing polyethylene sheeting to contain dust and debris from impacting surrounding areas and;
4. Surfaces from which PCB-containing materials (i.e., caulk) have been removed, may be protected by the application of two dissimilar colored coats of waterproof epoxy paint.

(It must be noted that studies have indicated that encapsulation of window caulking that contains PCBs may offer limited protection, as the PCBs have been shown on occasion to migrate into applied encapsulates.)

6.2 Surveillance

Surveillance will be on-going by the Office of Facilities Management through the observation of conditions found during normal maintenance activities that could increase potential risks of exposure, such as deterioration or damage to caulk. Deterioration can be caused by age, temperature, vibration, chemicals, or by intentional or accidental acts. During routine activities, should confirmed or suspected PCB containing and/or contaminated building materials be observed to be damaged, it will be documented and EH&S will be notified and a further assessment will be conducted. Should removal or interim controls be required, they will be coordinated and conducted in accordance with the provisions outlined in the plan.

6.3 Personal Hygiene

Following the completion of selected maintenance activities that involve known or suspected PCB containing building materials, employees will follow general health and safety guidelines for proper hygiene.

1. PPE used while conducting maintenance activities involving the removal or disturbance of known or suspected PCB-containing and/or contaminated building materials will be removed and disposed of properly as PCB hazardous waste;

2. Employees shall wash hands, face, and other potentially exposed surfaces of the body with soap and water and;
3. If warranted, employees may change out of work clothes to prevent bringing PCB contamination home.

6.4 Planned Renovation

Prior to the initiation of planned renovation activities, the status of building materials suspected of containing PCBs that will be impacted, removed or disturbed) will be determined through sampling and laboratory chemical analysis. Planned renovation activities are those activities above and beyond the scope of individual window repair/replacement and include, but are not limited to:

1. **Multi-window and/or door replacement;**
2. **Exterior wall renovation/re-pointing;**
3. **Brick/masonry demolition/renovation involving expansion joint caulking;**
4. **Partial or whole building demolition and/or renovation and;**
5. **HVAC system/duct modification and/or replacement;**
6. **Removing paint.**

Large planned renovation activities that have been identified to involve PCB containing/contaminated building materials will require the completion and submission of a remediation plan to EHS. **It should be noted that many renovation projects which may affect PCB-containing and/or contaminated building materials could include lead-based paint and/or asbestos.** UA will notify contractors that may disturb building material, if the affected materials are known or suspected to contain PCBs, lead, and/or asbestos. **Pre-construction surveys, where testing for asbestos, lead and PCBs is performed of suspect materials, must take place before any project is allowed to begin at UA.**

6.5 Waste Disposal

Following the completion of work, removed material will be collected and handled as contaminated hazardous waste and disposed of properly. Waste generated during individual window repair/replacement projects will be collected and placed into an appropriate, hazardous waste labeled container. Recommendations regarding containers for the collection of PCB-containing/contaminated building materials for repair/replacement projects may be acquired at EH&S with advance notice. Upon completion of the project, EH&S will be notified for appropriate off-site transport and disposal, at the expense of the generating party. Large scale projects involving PCBs will require the collection and disposal to be specified in the remediation plan and coordinated by the remediation contractor and EH&S. Only EH&S can sign Uniform Hazardous Waste Manifests and need advance notice for such signatures.

If the paint being removed is known to contain lead, it should also be tested for PCBs and vice versa. This will enable the Uniform Hazardous Waste Manifest to be filled out correctly.

6.6 Prohibited Practices

To minimize the potential for exposure to PCBs during in-house activities where suspected or known PCB-containing caulk is present, the following practices are prohibited:

1. Dry sweeping or dusting, only wet moping or wiping permitted. This includes routine dusting around window sills. The wet rags should be disposed of as PCB hazardous waste in most instances;
2. Activities involving the mechanical removal/impact of caulking, including other potentially PCB contaminated building materials that would include the use of abrasive grinding wheels, power saws, sanding, or other means that would generate dust;
3. The use of ordinary vacuums to clean up dust and debris. Vacuums equipped with high efficiency particulate air (HEPA) filtration must be utilized and their filters and bags disposed of as PCB hazardous waste and;
4. No heat treatment will be used, as heat will volatilize the PCBs into the air.

7.0 TRAINING

Training will be required for UA employees identified in Section 3 to ensure that personnel having potential contact/exposure to PCBs have knowledge of job hazards and are aware of the established BMP's. The training will be provided prior to job assignment, if the Policy changes and refresher training will be provided once every three for each aforementioned worker. The training will include discussions on the following:

1. The history and use of PCBs and the potential locations where PCBs could be encountered at UA;
2. Exposure routes and potential health effects associated with PCB exposure;
3. Work activities that could result in exposure to PCBs;
4. The purpose, selection, fitting, use, and limitations of personal protective equipment (PPE);
5. The proper work practices associated with the workers' job assignment, focusing on techniques for minimizing PCB exposure and;
6. The contents of the UA Policy for Dealing the Removal or Disturbance of PCB-containing Caulk (and other potentially PCB-contaminated building materials).

8.0 SAMPLING

To assist in protecting all UA employees and students from potential exposures, and to ensure the appropriate waste characterization, the following section outlines UA policy and procedures for sampling.

There are currently no regulatory requirements to sample building materials for the presence of PCBs. However, UA must ensure that PCB waste in concentrations equal to or above 50 ppm is not

introduced into construction or solid waste streams. Suspected building materials are to be assumed to be PCB containing or contaminated until that time representative samples are collected and analyzed for PCBs by an independent consultant, and laboratory analysis confirms the absence or absence of PCBs. The following sampling guidelines have been established.

8.1. Sampling of suspected bulk PCB building materials

To assist with evaluating waste streams, sampling of suspected PCB building materials, including painted surfaces, will be limited to those materials that are scheduled to be impacted by planned renovation/demolition activities. Those materials that are sampled are considered PCB hazardous waste, if the concentration of PCBs is greater than or equal to 50 ppm.

8.2 Sampling of PCB bulk remediation waste

In addition to the bulk building materials as described above, substrates in contact with those suspected building materials, especially paint, will be sampled to evaluate potential PCB distribution and to assist with the development of remediation plans. Sampling of substrates will be conducted, should bulk sampling as described above meet or exceed 50 ppm following approved U.S. EPA sampling methodologies.

8.3 Air Sampling

Air sampling will be coordinated on an as need basis, based on the results of bulk/remediation sampling results as described above, periodic surveillance, scheduled maintenance activities, the scope of anticipated building construction/renovation projects, and/or current/future occupancy. Should it be determined that there is a reasonable chance that PCBs could be rendered airborne during scheduled activities, EH&S should be contacted to discuss the need for sampling and the appropriate method(s) to be used. Air sampling results will be compared to the OSHA PEL as described previously and/or the maximum recommended EPA public health target. See below.

EPA advises that total exposure to PCBs from all sources be kept below the reference dose of 20 ng/kg-day. Based upon a background scenario limiting total exposure to the RfD, EPA has developed maximum values for the concentrations of PCBs in indoor air in schools that would result in total PCB exposures below the EPA's public health target. For a typical school day, these values range from a low of 70 ng/m³ for toddlers age 1 to <2, to a high of 600 ng/m³ for high school students, age 15 to <19. Details for each age group are provided in the table below.

Maximum Concentrations of PCBs in School Indoor Air (ng/m ³)						
Assuming a background scenario of no significant PCB contamination in building materials and average exposure from other sources, these concentrations should keep total exposure below the reference dose of 20 ng/kg-day.						
Age 1-<2 yr	Age 2-<3 yr	Age 3-<6 yr	Age 6-<12 yr Elementary School	Age 12-<15 yr Middle School	Age 15-<19 yr High School	Age 19+ yr Adult
70	70	100	300	450	600	450

8.4 Surface (Wipe) Sampling

Wipe sampling will be conducted in areas to determine surface concentration of PCBs, where bulk sampling results indicate PCBs at or above 50 ppm, as described above. Wipe sample results will be used to assist in evaluating PCB distribution and for evaluating potential exposure risks for inclusion in the remediation plan. Surface wipe sampling will be conducted by an independent consultant. Wipe sampling and subsequent analysis will be conducted following approved U.S. EPA sampling methodologies.

9.0 RECORDKEEPING

PCB records will include, but not be limited to:

- Copies of approved remediation plans;
- Copies of laboratory analytical reports;
- Hazardous waste manifests;
- Official correspondence (government agencies);
- Training records and;
- Other records as deemed necessary.

Records associated with remediation efforts involving PCB caulk and other PCB-contaminated building materials will be maintained in the Office of Environmental Health and Safety. A copy of remediation records will also be maintained on-site, throughout the duration of remedial activities. U.S. EPA requires that records will be retained for a minimum of five years. For building information and for use during future potential renovation/demolition projects, records will be retained indefinitely.