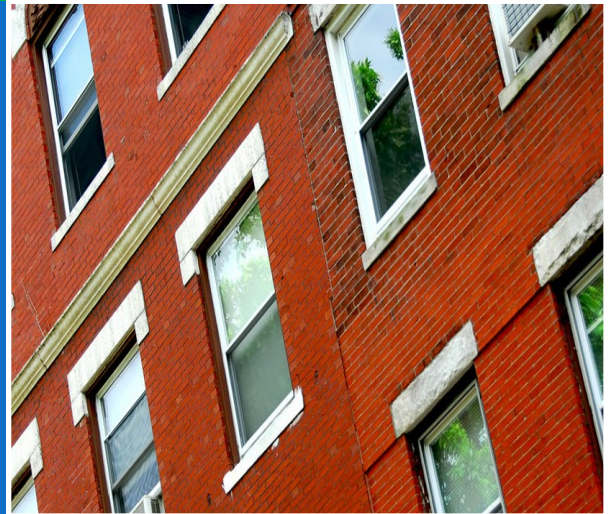


Practical Actions for Reducing Exposure to PCBs in Schools and Other Buildings

Guidance for school administrators and other building owners and managers



July 28, 2015

Polychlorinated Biphenyls (PCBs) in Building Materials

Based on the information available, the EPA believes that there was potential widespread use of PCB-containing building materials in schools and other buildings built or renovated between about 1950 and 1979. This is an important issue because PCBs have been identified as probable human carcinogens and may cause a variety of non-cancer health effects. Although the presence of PCBs in schools and other buildings may be a concern, the presence of PCBs alone is not necessarily a cause for immediate alarm. However, if PCBs are present or suspected of being present, EPA recommends actions outlined in this document be taken by school administrators, building owners and building managers to reduce PCB exposures. You may also reference the document *PCBs in Building Materials—Questions & Answers* for more information.

What do I do if I think PCBs are in my building?

Regardless of whether PCBs are known to be present, the EPA recommends that all schools and other buildings built between about 1950 and 1979 implement the following best management practices to minimize potential building occupant exposure to PCBs:

- Remove all PCB-containing fluorescent light ballasts (FLBs) (details on page 2)
- Conduct the following best management practices (BMPs) listed below on a frequent ongoing basis to minimize potential exposures to PCBs (details on page 2)
- Remove PCB-containing caulk, paint and other PCB-containing building materials during planned renovations and repairs (when replacing windows, doors, roofs, ventilation, etc.) (details on page 3)
- Consider encapsulation to reduce PCB exposure (details on page 4)



What do I do if I think PCBs are in my building?

Remove all PCB-containing fluorescent light ballasts (FLBs)

EPA recommends that non-leaking PCB FLBs be removed and retrofitted as part of lighting upgrades or as a stand-alone project. Leaking PCB FLBs must be removed and disposed of as required under 40 CFR part 761, subpart D. The EPA recommends that an experienced contractor or properly trained facilities maintenance staff person perform the removal, cleanup and disposal of PCB-containing FLBs, light fixtures and building surfaces. Consult with your [EPA Regional PCB Coordinator](#) to ensure that all relevant cleanup procedures are followed; see <http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/coordin.htm>. The EPA's recommended procedures for the proper removal and disposal of PCB FLBs are listed at: <http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/ballasts.htm>.

Conduct the following best management practices (BMPs) listed below on a frequent ongoing basis to minimize potential exposures to PCBs

- ✓ Ensure that ventilation systems are operating properly and are regularly inspected and maintained according to system manufacturer instructions and guidelines or ANSI/ASHRAE/ACCA Standard 180-2012—Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems. If system cleaning is needed, follow [ANSI/ACCA Standard 6 – Restoring the Cleanliness of HVAC Systems \(2007\)](#).
- ✓ Clean inside schools and other buildings frequently to reduce dust and residue.
- ✓ Use a wet or damp cloth or mop to clean surfaces.
- ✓ Use vacuums with high efficiency particulate air (HEPA) filters.
- ✓ Do not sweep with dry brooms or use dry cloths for dusting.
- ✓ Wash hands with soap and water, particularly before eating.
- ✓ Wash children's toys.

For EPA's general school cleaning recommendations, visit: http://www.epa.gov/iaq/schools/clean_maintenance.html.

Due to building specific factors, these BMPs may not always adequately reduce PCB exposure. In some cases, additional and more frequent cleaning or other actions to identify and address PCB sources may be warranted.

Remove PCB-containing caulk, paint and other PCB-containing building materials during planned renovations and repairs (when replacing windows, doors, roofs, ventilation, etc.)

Prior to removal, EPA recommends PCB testing for caulk and other building materials that are going to be removed to determine what protections are needed during removal and to determine proper disposal requirements. Where testing confirms the presence of PCBs at regulated levels in building materials, they must be disposed of or decontaminated in accordance with the PCB regulations at 40 CFR part 761, subpart D. In lieu of testing, caulk, paint and other building materials potentially containing PCBs that are part of building repair and renovation activities may be assumed to contain PCBs at regulated levels and disposed of in accordance with 40 CFR part 761, subpart D.

To ensure that PCB-containing building material does not contaminate surrounding surfaces when it is removed and disposed of, repairs that disturb PCB-containing building material, such as window removal and replacement, should be conducted by trained workers who use safe work practices to minimize dust and contain contaminated waste. EPA has developed guidance for minimizing exposures when conducting repair and renovation activities, including cleaning the work area once the work is completed; see <http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/guide/index.htm>.

Actions contractors should take include:

- Ensure workers are properly trained and are using gloves, eye goggles, skin protection and approved particulate breathing masks.
- In dusty work areas, have showers available and separate changing areas so that dust on clothing is not brought home.
- If working with solvents, provide respirators.
- Use heavy plastic sheeting to cover floors and other fixed surfaces like large appliances in the work area.
- Close and seal vents in the work area and turn off forced-air heating and air-conditioning systems.
- Regularly clean the work area using a HEPA vacuum and wet mopping.
- Properly dispose of personal protective equipment and cleaning material.

Building occupants should be notified of the PCB repair and renovation activities (including PCB FLB removal) and be completely isolated from the parts of the building undergoing PCB repair and renovation activities to prevent exposure to PCBs. Additional actions, including physically isolating the work space with physical barriers and negatively pressurizing work areas may be necessary (see <http://www.epa.gov/iaq/schooldesign/renovation.html>). If complete isolation of the work space cannot be assured, school administrators and building owners and operators should temporarily remove occupants from the area of the building while the work is underway.

For additional guidance on protecting occupants during renovations or other construction activities, see ANSI/SMACNA 008-2008: IAQ Guidelines for Occupied Buildings Under Construction. The guidelines are available from the Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) at <http://www.smacna.org>.

Consider encapsulation to reduce PCB exposure

Encapsulation may be useful for the reduction of air emissions from secondary sources such as contaminated building materials under and around PCB-containing caulk or paint that has been removed. Because each site will present unique circumstances, please consult your EPA [Regional PCB Coordinator](#) regarding the application of encapsulation measures on a case-by-case basis. EPA has conducted research on the effectiveness of encapsulation and additional details may be found at: <http://www.epa.gov/pcbsincaulk/caulkresearch.htm>.

Contact your EPA Regional PCB Coordinator

After implementing BMPs, school administrators should consult with the [EPA Regional PCB Coordinator](#) to assess if there still may be the potential for PCB releases in their school and whether to consider testing indoor air for PCBs. Each school is unique, which means that many factors should be considered when deciding whether and how to test the indoor air at a school. This decision should be made in consultation with the [EPA Regional PCB Coordinator](#) and the decision makers should thoughtfully consider all available information, such as: school-specific conditions (e.g., building age, types of materials used in construction, layout, maintenance or renovation history), BMPs already implemented to address PCB sources, and available technical resources, costs, and public concerns.

Only air testing can determine if PCBs are present in indoor air after BMPs and other actions have been implemented. In cases where school administrators, building owners and building managers have implemented BMPs and taken other actions but still have concerns about PCB exposure and potential sources, EPA recommends that they consult with their [EPA Regional PCB Coordinator](#) on appropriate next steps.

For more information visit:

epa.gov/epawaste/hazard/tsd/pcbs/pubs/caulk/index.htm

Or Call:

EPA Region 1 (CT, MA, ME, NH, RI, VT) Tel: 617-918-1527

EPA Region 2 (NJ, NY, PR, US Virgin Islands) Tel: 732-906-6817

EPA Region 3 (DE, DC, MD, PA, VA, WV) Tel: 215-814-2177

EPA Region 4 (AL, FL, GA, KY, MS, NC, SC, TN) Tel: 404-562-8512

EPA Region 5 (IL, IN, MI, MO, OH, WI) Tel: 312-886-7890

EPA Region 6 (AK, LA, NM, OK, TX) Tel: 214-665-6796

EPA Region 7 (IA, KS, MO, NE) Tel: 913-551-7504

EPA Region 8 (CO, MT, ND, SD, UT, WY) Tel: 303-312-6446

EPA Region 9 (AZ, CA, HI, NV, American Samoa, Guam) Tel: 415-972-3360

EPA Region 10 (AK, ID, OR, WA) Tel: 206-553-1616

