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# Polychlorinated biphenyls (PCBs) are showing up in more places than you would think

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Many of the uses of polychlorinated biphenyls (PCBs) are well known, such as in dielectric fluids of transformers; but as building owners, developers, and general contractors are discovering, the presence of PCBs in common building materials is not widely recognized. The historic use of PCBs in products such as paints, coatings, and caulkings/sealants, and their current location in buildings, is a growing concern. If not addressed properly, the presence of PCBs causes significant impacts to building renovation and demolition projects across New England and the nation.

Specific to building materials, PCBs were added to paints, coatings, and caulking (in addition to other items) for durability, resistance to degradation, and as a softener/plasticizer for application. According to U.S. EPA reports, as much as 115 million pounds of PCBs were used by industry in plasticizer applications from the 1930s to the 1970s. It should be noted that PCBs were used in the manufacture of specialty products (e.g., chlorinated rubber paints) usually intended for specific uses, such as industrial or military applications. However, PCBs have been found in these types of materials in numerous buildings nationwide, including schools, residential housing units, and commercial buildings. By the early 1970s, the use of PCBs in plasticizers was drastically reduced and by the late 1970s the manufacture of PCBs in the United States was banned by the EPA. In just a few decades, PCBs went from being one of the most widely used chemicals to one of the most tightly controlled.

Why the concern

Three major concerns associated with PCBs in building materials are: 1) health and safety issues; 2) it is a regulated material requiring proper management and disposal; and 3) impacts from releases to other building materials. High levels of PCBs are considered by the EPA to be a probable human carcinogen and studies have revealed negative effects on immune, reproductive, and nervous system health. They can be absorbed by inhalation or skin contact. Therefore, receptors potentially at risk, depending on PCB concentrations and exposure frequencies, include workers involved in demolition or renovation, or building occupants without proper personal protective equipment.

If the material is at a regulated concentration, proper management and disposal are required by federal regulations. Of particular importance is that some of these materials have been shown to leach and impact adjacent building materials, such as concrete or bricks, which are then also subject to proper clean-up and disposal. Many of these adjacent materials are important to the structural integrity of the building and their remediation is not a straightforward process. The main statute regulating PCBs is the Toxic Substance Control Act (TSCA), but there are state and local restrictions that also need to be followed. Federal disposal regulations, codified under 40 CFR 761,

establish the prohibitions of and requirements for the use, disposal, storage, and marking of PCBs.

## Risk management minimizes the unexpected

Given potential liabilities, risk, and enforcement actions similar to other hazardous building materials, such as asbestos and lead-based paint, it is better to know whether these materials are present in a building in advance of any pending construction or demolition projects. This knowledge allows for the proper incorporation of remedial activities into project schedules and budgets. Testing for PCBs in building materials as part of the due diligence process is relatively inexpensive when compared to the potential impacts that late discovery can cause to a project.

Unexpected PCB abatement and disposal or delays in obtaining regulatory approval can significantly stall a development project. Being forearmed with a plan and having a thorough understanding of the TSCA regulations and their applicability to the project in the early phases, will allow for proper scheduling, budgeting, and risk management.

## What the future holds

More and more, PCB testing and subsequent abatement are being incorporated into building renovation and demolition projects along with other potentially suspect materials like asbestos and lead. If regulated concentrations of PCBs are found, there are real project implications with regard to schedule and costs, including characterization, plan submittals, specialty abatement, worker training, and higher disposal costs. By understanding these issues up front, they can be incorporated and addressed during the project, resulting in a successful re-use of the building or property for redevelopment.

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