



Lead & Asbestos Residential Home Demolitions Portland, Oregon

Residential home demolitions have surged in the Portland metropolitan area in recent years. According to data from the City of Portland Bureau of Development Services, there have been over 1,600 residential home demolitions between 2010 and mid-2017. Most of these demolished homes likely contained lead-based paint and asbestos. These materials were used extensively in homes across the country through the late 1970s. Residential demolitions in Portland have been poorly regulated, and permitting rarely included validation of safe removal of lead and asbestos.

It's often said that "The greenest house is the house already built." Portland city government prides itself on being "green," and trumpets its increasing number of LEED-certified homes and buildings. The reality is that the tons of toxic dust and waste generated during demolitions of buildings to create the spaces for these new structures is overlooked in these "green" ratings.

Asbestos in Home Demolitions

Asbestos is a naturally occurring silicate mineral made up of thin fibrous crystals, each fiber made up of millions more microscopic fibers. It was once valued for its sound absorption, fire resistance, and strength. Asbestos was used heavily in building materials from the early 1900s through the 1970s, and some types of asbestos are still being used today. Asbestos in older homes can be found in blown-in attic insulation, thermal pipe and HVAC duct

insulation, window caulking and glazing, siding material such as fiber cement siding, plaster, and textured paint. Asbestos can also be found in vinyl floor tiles and linoleum and in the glue that attaches flooring. Finally, asbestos can be in roofing material, usually on flat roofs, or in shingles.



The World Health Organization classifies all forms of asbestos as a Group 1 Carcinogen, meaning that *all* forms are known to cause cancer in humans. Mesothelioma is a type of cancer of the lungs, kidneys, or larynx that is almost always caused from exposure to asbestos fibers, usually by breathing or swallowing. Mesothelioma usually occurs between 20 and 50 years after exposure to asbestos.

The National Institute for Occupational Health and Safety says "all levels of asbestos exposure studied to date have demonstrated asbestos-related disease and there is no level of [asbestos] exposure below which clinical effects do not occur."

In a series of articles written by Fedor Zarkhin for the *Oregonian*/OregonLive, he finds that 80 to 90 percent of homes in the Portland area facing

demolition can be expected to contain asbestos. Contractors reported removing some asbestos in only 33% of the homes demolished between 2011 and 2014, leaving approximately 350 homes demolished with asbestos still inside.

Lead in Home Demolitions

Lead-based pigments were used in interior and exterior paint from colonial times until 1978, their use peaking in 1922. By the mid-1950s the public was aware of the dangers of lead-based pigments, and their use was banned in interior paints. Between the 1950s and the 1970s, lead-based pigments were phased out of exterior paints until they were banned completely in 1978. Most homes in Portland facing demolition were built prior to the lead pigment ban. Lead in homes is harmful when it is disturbed, creating chips or dust that can be swallowed or inhaled.

According to a study conducted by the Oregon Department of Human Services, home renovations and remodeling contribute to nearly half of the childhood lead poisonings in Oregon. The developing brains, kidneys, and nervous systems of children and unborn babies are easily damaged by lead exposure, resulting in lower IQ and behavioral problems that may result in irreversible, lifelong disabilities. The Centers for Disease Control and Prevention states that “no safe blood lead level in children has been identified.” Lead accumulates in bones over time. During pregnancy, lead can cross the placental barrier, exposing the fetus and causing miscarriage. Lead can also be transmitted from mother to baby through breast milk.

During a home demolition, lead dust can travel up to 400 feet, contaminating surrounding soil, garden plants, buildings, people, pets, and

wildlife, according to a study by Jacobs *et al.* Until recently, the City of Portland required notification of a demolition only to neighbors living within 150 feet of a demolition site. This 150-foot radius was woefully inadequate and did not allow residents within the full fallout area to adequately protect their families and property from exposure.

Jacobs *et al.* found that airborne lead dust during a demolition can be effectively suppressed by wetting down the debris as the home is being demolished. However, when debris is wetted,

lead is washed into the soil and groundwater where people—especially children, and animals may still be exposed.

Other toxic metals in demolitions

The Jacobs *et al.* study also found arsenic, chromium, copper, iron, and manganese that were significantly higher than levels found outside of the 400-foot demolition dust fallout area.



Laws, Forms, and Enforcement

Due to increasing concerns about the potential health hazards resulting from residential demolitions, Oregon Governor Kate Brown signed Senate Bill 871 into law in August of 2017. SB 871 states that cities in Oregon may establish their own programs for residential demolitions. In response, the City of Portland quickly adopted an ordinance introduced by City Commissioner Chloe Eudaly that includes new regulations and best practices for inspecting, handling, and oversight of asbestos and lead-based paint during residential demolitions of homes and structures with up to four dwelling units. The new ordinance took effect for demolition permits applied for on or after July 1, 2018. The new regulations include these, among other, requirements for each demolition—

- A Demolition Plan describing methods of debris and dust control, including monitoring and erosion control measures.
- A designated Demolition Manager (DM) who is a certified asbestos inspector and is certified in lead-based paint, must be on-site during all demolition activities.
 - If the DM is not certified, someone who is certified must be present.



Demolition workers are at increased risk of exposure due to contact with dust and debris at demolition and major renovation sites. Often, as evidenced in photographs and videos of demolitions, workers lack personal protective gear such as dust masks and gloves. Videos and photographs of demolitions depict inadequate wetting down of surfaces being disturbed, creating large plumes of dust. This dust is

inhaled by workers, neighbors, and passersby during the hours and sometimes days it takes to demolish and remove the debris of a home.

Where Does Demolition Debris Go?

Until late 2015, wood debris containing lead-based paint was incinerated to power the WestRock paper mill in Newberg,

- Three site inspections by the Bureau of Development Services (BDS)—one before the demolition begins, one during, and one after to ensure the Demolition Plan is followed.
- Notification to properties within 300 feet of the demolition site.
- Demolition activities must cease if wind speeds exceed 25 mph.
- Dust must be suppressed by continuously wetting the structure, debris, and equipment.
- Debris must be covered with plastic at the end of each day.

The implementation and enforcement of SB 871 by the City of Portland, the Oregon Health Authority (OHA), and the Department of Environmental Quality (DEQ) is critical to whether residential demolitions become safer and developers are held more accountable.

Oregon. This facility processed over 85% of the reclaimed wood in the Portland metro area and used a baghouse filter to catch particulates. Wood previously incinerated at the WestRock mill is now sent directly to landfills.

What We Can Do About Demolitions

Until it is known how new regulations resulting from SB 871 are implemented, neighbors near a demolition site should take the following precautions.

- Contact DEQ for asbestos survey details.
- Close doors, windows, and storm windows.
- Keep children and pets inside.
- Cover your garden and outdoor play or recreation areas.
- Make sure that the demolition team keeps the structure wet.

If you see health or safety violations of the workers, including lack of proper Personal Protective Equipment, contact the Occupational Safety and Health Administration (OSHA) at (503) 229-5910.

If you have questions about your health and well-being concerning toxins from a demolition, contact the Oregon Health Authority (OHA) at (971) 673-0440.

For asbestos concerns contact the Department of Environmental Quality at (503) 229-5982.

Portland Clean Air can put you in touch with others who are working to change the rules and discuss options of how you can get involved. Volunteers help with talking to legislators, research, and contacting media. Email: greg@portlandcleanair.org

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