



SHOULD YOU BE CONCERNED ABOUT LEAD PAINT?

BY GERARD MCCARTEN

We've probably all heard of 'lead paint' and are aware that it is not safe. But why was it used at all, why is it so dangerous, and why is it still an issue for childcare centres today?

Throughout human history lead has proved itself to be an incredibly useful metal. It does not rust and is highly malleable. It has been put to all sorts of uses such as pottery, painting, cosmetics, piping, batteries, roofing, radiation shielding, the list goes on.

In different forms: lead carbonate and lead sulphate (white lead), lead oxide (red lead), and lead chromate (yellow lead) has been used in paint since ancient Greek times as a pigment, to speed up drying, and to improve a paint's durability and resistance to moisture. These qualities make lead paint ideal for protecting and decorating buildings.

Lead also has a sweet taste, which might be why ancient Romans added it to their wine and dinnerware. It is also why kids of yesteryear liked to chew their painted cots, windowsills, and painted toys.

But despite its usefulness, lead is also a poison. Toxic levels of lead in the body (lead poisoning) can cause a variety of symptoms such as tiredness, high blood pressure, abdominal pain, difficulty with memory, mood disorders, and can ultimately lead to death.

In children, lead affects the developing

brain and nervous system and can result in impaired cognitive and neurobehavioural development of children. Exposure to lead in the womb can slow a foetus' growth, result in lower birth weight and even cause premature birth.

Lead is a bioaccumulative toxin meaning prolonged exposure to a low level of contamination can result in noticeable lead concentration in the body over time.

Lead was widely used in paint in New Zealand until 1965, when white lead was banned. Red lead and lead chromate were used until the late 1970s and early 1980s. Another lead containing compound, calcium plumbate, continued to be used as a primer for galvanised roofing until the 1990s. It wasn't really until 1996, when the government finally banned lead in petrol, that lead was properly phased out of widespread use in New Zealand.

This means that many properties in New Zealand contain or used to contain buildings that were painted with lead-based paints. Over time or as a result of sanding and repainting, paint flakes or dust will have found its way into the soil surrounding the building. It may also have been buried through redevelopment. Lead is a persistent environmental pollutant which means it doesn't break down and the soil can remain contaminated long after a building may have been removed.

Ministry of Health guidance¹ advises that studies have found ingestion to be the primary route for lead entering a child's body. Pre-school children are particularly vulnerable as they tend to eat, chew, lick or suck anything they can get their hands on. We all try in vain to get our children to wash their dirty hands before eating. It is conservatively estimated that children may ingest up to 100 mg/day of soil. Further studies have shown a correlation between hours spent playing outdoors and blood lead level, especially for preschool children. Therefore, outdoor play poses a significant risk for children.

Given the widespread use of lead based paint in New Zealand and the age of many of our buildings, the potential for young children to come into contact with lead contaminated soils needs to be carefully considered when looking to establish an early childhood education centre or home-based childcare centre on a property.

The Resource Management Act (the RMA) and the national environmental standard on soil contamination² (the NES) provide a regulatory framework under which any childcare centre must comply.

The Ministry for the Environment publishes a Hazardous Activities and Industries List (the HAIL) that lists activities and industries considered likely to cause land contamination. Under this list, land that

has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment is captured. This can include land that may be subject to soil contamination from the past use of lead-based paints.

Under the NES, changing the use of HAIL land to a use that is reasonably likely to harm human health, disturbing the soil, or subdividing it, is likely to trigger the need for specialist investigation by qualified experts to determine whether lead is present in the soil and whether it exceeds normal background levels. The Ministry for the Environment has produced guideline levels for various soil contaminants including lead³. Depending on the results of the investigation

and level of contamination found a resource consent and/or remediation work may be necessary.

For both new and altered childcare centres, councils are increasingly requiring evidence of whether the potential for lead contamination in soils has been investigated and what measures are proposed to remediate contamination if found.

A detailed site investigation and remediation action plan will be able to determine an appropriate methodology for decontamination. For example, this might involve the removal of contaminated soil to an approved disposal facility or constructing a hard cover such as concrete or asphalt.

As a rule of thumb, establishing a childcare

centre use (including home-based care) on a site that contains or contained a building built before 1996 will require consideration of the potential for soil contamination from historical use of lead-based paint. The likelihood of contamination on the site will increase the older it is, with tests on properties that have or had pre-1980 buildings likely to produce results indicating lead contamination of the soil.

As part of its services, Establish can ensure soil contamination issues are fully addressed. We would be happy to assist you should you have any questions about the impact of the soil contamination on your childcare centre plans. For further information don't hesitate to contact us.



About Gerard and Establish: Gerard McCarten is Operations Manager at Establish and has over 16 years' experience in the regulatory, planning and resource management sector working for local authorities and private organisations both in New Zealand and overseas. Establish is New Zealand's only specialist ECE development consultancy and are industry leaders in providing comprehensive development services for the childcare sector, including site finding, due-diligence, resource consenting and complete childcare developments.

For more information visit www.establish.co.nz or email info@establish.co.nz

¹Ministry of Health. 2012. *The Environmental Case Management of Lead-exposed Persons: Guidelines for Public Health Units: Revised 2012*. Wellington: Ministry of Health

²Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

³Ministry for the Environment. 2011. *Methodology for Deriving Standards for Contaminants in Soil to Protect Human Health*. Wellington: Ministry for the Environment.