

SAFETY MEMO

May 2nd, 2022 – Pre-Work Testing: Asbestos and Lead



Did you know?

Introduction

Asbestos and Lead are toxic substances that present a significant health hazard within the workplace; therefore, it is essential to conduct pre-work testing to manage the potential health risks to workers and the environment. This memo provides an overview of both materials and pre-work testing regulations of these hazards.

Asbestos

Asbestos is a naturally occurring fibrous substance which refers to six unique minerals - chrysotile, amosite, crocidolite, anthophyllite, tremolite and actinolite. Chrysotile is the most predominant form of asbestos accounting for the majority of all uses [Figure 1]. As of 1987 the World Health Organization has declared all asbestos minerals as human carcinogens. Modern genotoxicity studies conclude that inhaled asbestos fibers can lead to numerous lung diseases including fibrotic lung disease, mesothelioma, and lung cancer.

Historically asbestos was widely used in the manufacture of many industrial and domestic products including insulation, flooring tiles, plaster, glue, drywall, and roofing. Its prohibition and regulations vary by country as follows:

- **France** – Prohibited since 1997
- **Canada** – Prohibited with exemptions since 2018
- **United States** – Permissible



Figure 1 – Raw Chrysotile Asbestos Sample¹

Lead

Lead (Pb) is a toxic heavy metal, with high ductility and weak reactivity which has historically been used for centuries to make tools, pipes, and jewelry. In a modern context lead can appear in paint, metal work, fuels, pipes, ammunition, and fishing tackle, making it the most widely scattered toxic metal

in the world. Exposure to lead can have severe health impacts as it mimics other metals in enzymatic reactions within the brain, kidneys, and liver. There is no safe level of lead exposure. Lead exposure is possible through both inhalation and ingestion of lead particles. Inhalation can occur during the burning of metals, stripping of leaded paint, and aviation fuel combustion. Ingestion can occur from lead-contaminated dust particles, paint chips, and lead water pipes. Its prohibition by country varies.



Figure 2 – Pure Lead Sample²

Pre-Work Testing

Asbestos and lead pre-work testing are intended to identify the hidden health hazards that are presented to workers. According to the regulations, it is required that a sample of material and product likely to contain asbestos be analyzed off-site and the employer must ensure that the air is breathable according to the relevant standards. Lead tests should also be performed either onsite or offsite.

Regulations surrounding Pre-Work Testing vary by country:

- **France** – [Code du Travail](#) – Book IV: Chapter II:
 - Section 2: Special provisions for dangerous carcinogenic, mutagenic and reprotoxic chemical agents – [Item R4412-70](#)
 - Section 3 – Risks of exposure to asbestos – [Item R4412-97](#)
- **Canada** – [Canada Occupational Health and Safety Regulations](#) – Part X
 - Division 1 – Hazard Investigation – 10.4
 - Division 2 – Asbestos Exposure Management Program – 10.26.1
- **United States** – OSHA
 - Asbestos – Occupational Safety and Health Standards [1910.1001](#) – 1910.1001(j)(3)
 - Asbestos – Safety and Health Regulations for Construction [1926.1101](#) – 1926.1101(k)(2)&(3)
 - Lead – Occupational Safety and Health Standards – [1910.1025](#) – 1910.1025(d)(3)
 - Lead – Safety and Health Regulations for Construction – [1926.62](#) – 1926.62(d)(3)

¹ Institute national de santé publique du Québec. Amiante. Retrieved from <https://www.inspq.gc.ca/amiante>

² Wikimedia Commons. Category: Lead. Retrieved from https://commons.wikimedia.org/wiki/Category:Lead#/media/File:A_piece_of_lead.jpg