

NORTHWEST TERRITORIES & NUNAVUT
CODES OF PRACTICE

In accordance with the *Northwest Territories Safety Act* and
Occupational Health and Safety Regulations; and *Nunavut Safety Act* and *Occupational Health and Safety Regulations*

May 2017

Working with Lead Guideline



FOREWORD

The Workers' Safety and Compensation Commission (WSCC) produced this industry Code of Practice in accordance with subsections 18(3) and 18(4) of the Northwest Territories and Nunavut *Safety Acts*.

This *Code of Practice* applies to all workplaces covered by the Northwest Territories and Nunavut *Safety Acts* and *Occupational Health and Safety Regulations*.

The *Working with Lead Code of Practice* relates to Sections 4 and 5 of the Northwest Territories and Nunavut *Safety Acts*, and in the Northwest Territories and Nunavut *Occupational Health and Safety Regulations* relates to Part 21 *CHEMICAL AND BIOLOGICAL SUBSTANCES*: Section 309, 311, 313, 314, 315, 316 and *Schedule O*, and *Schedule R* as well as *PART 2 REPORTING* Section 10(2) and *Schedule F*.

This code is in effect as published in the Northwest Territories *Gazette* and Nunavut *Gazette*, in accordance with the *Safety Acts* and *Occupational Health and Safety (OHS) Regulations*.

IN EFFECT DATES:

Northwest Territories: 31 May 2017

Nunavut: 31 May 2017



Chief Safety Officer, WSCC

Disclaimer

This publication refers to obligations under the workers' compensation and occupational health and safety legislation as administered by the Workers' Safety and Compensation Commission.

To ensure compliance with legal obligations always refer to the most recent legislation. This publication may refer to legislation that has been amended or repealed.

Check for information on the latest legislation at wsc.nt.ca or wsc.nu.ca, or contact WSCC at 1-800-661-0792.

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1 WHAT IS A CODE OF PRACTICE?

WSCC codes of practice provide practical guidance to achieve the safety requirements of the Northwest Territories and Nunavut *Safety Acts* and related *Regulations*.

As per subsection 18(3) of the Northwest Territories and Nunavut *Safety Acts*, “For the purpose of providing practical guidance with respect to the requirements of any provision of this *Act* or the regulations, the Chief Safety Officer may approve and issue such codes of practice as he or she considers are suitable for that purpose.”

WSCC codes of practice apply to workplaces in the Northwest Territories and Nunavut. The Chief Safety Officer approves codes of practice for use by all occupational health and safety (OHS) stakeholders. Codes of practice come into effect in each territory on the day they are published in the *Northwest Territories Gazette* and *Nunavut Gazette*.

Codes of practice do not have the same legal force as the *Safety Acts* and related *Regulations*. A person or employer cannot face prosecution for failing to comply with a code of practice. However, in legal proceedings under the *Safety Acts* and related *Regulations*, failure to observe a code of practice may be a consideration when determining whether a worker or employer complies with the *Safety Acts* and related *Regulations*.

Employers and workers should follow WSCC codes of practice unless there is an alternative course of action that achieves the same or better occupational health and safety outcomes.

A Code of Practice

- Provides practical guidelines.
- Adapts to individual work sites.
- May serve as evidence.
- Should be followed unless there’s a better way.

2 GLOSSARY OF TERMS

Abatement: Complete removal of identified hazardous materials

Air Purifying Respirator: A respirator that removes contaminants from the air inhaled by a worker

Employer: Every partnership, group of persons, corporation, owner, agent, principal contractor, subcontractor, manager, or other authorized person having charge of an establishment in which one or more workers are engaged in work

Hazards: A work procedure or controlled substance/material that has the potential to cause harm or injury

HEPA Filter: A high efficiency particulate aerosol filter that is at least 99.97% efficient in collecting a 0.3 μm aerosol

Lead-containing Materials: Industrial materials, including lead paints and coatings that contain 0.1 (or greater) weight % of dry lead, and any lead debris or dusts that were produced from manipulating such industrial lead containing materials

NIOSH: The National Institute for Occupational Safety and Health

Point Source: A stationary location or fixed facility from which pollutants are discharged or emitted, or any single, identifiable discharge point of pollution, such as a pipe, ditch, or smokestack

Personal Protective Equipment (PPE): Any clothing, device, or other article that a worker wears to prevent injury or to facilitate rescue

Qualified Person (Lead Abatement): A qualified person is an individual who possesses a recognized degree, certificate, or professional standing, and has demonstrated, by knowledge, training, and experience, an ability to deal with problems related to a particular subject matter or work

Respiratory Device: A device such as an atmosphere-supplying respirator, an air-purifying respirator, or an escape respirator that is designed to protect a worker from inhaling a hazardous atmosphere

Supervisor: an individual who is authorized by an employer to oversee or direct workers

Time Weighted Average (TWA): Used to calculate a worker's daily exposure to a hazardous substance (such as chemicals, dusts, fumes, mists, gases, or vapours) or agent (such as occupational noise), averaged to an 8-hour workday, taking into account the average levels of the substance or agent and the time spent in the area. The TWA reflects the maximum average exposure to such hazardous contaminants to which workers may be exposed without experiencing significant adverse health effects over the standardized work period. The TWA is expressed in units of parts per million (ppm) or mg/m³

Wastes: Unwanted material that is intended to be treated, recycled, or disposed of at municipal or registered hazardous wastes facilities, or receivers

Worker: A person engaged in work for an employer, whether working with or without remuneration

3 INTRODUCTION

Lead (Pb) is a blue–grey naturally occurring element in the earth’s crust. Its physical and chemical properties make lead a desirable metal component for many industrial applications. Because of its low melting point and ease of castability (ability to be set in a mould), lead is used in manufacturing ammunitions and is easily reprocessed in the mining industry. Its density makes it an effective shield against emitted radiation. Lead’s corrosion resistance in certain environments makes it an attractive metal for electrical communication components and storage vessels.

Within paint, lead–based pigments have historically included white lead (a heavy, white, poisonous substance that is not water soluble, containing a mixture of lead carbonate and lead hydroxide) as well as the bright yellow lead chromate—although titanium–based paints have generally replaced these materials. Although the use of leaded gasoline and lead in household paints has been prohibited since the 1980s, many industrial paint applications still use lead as it is an effective primer and pigment that resists moisture and cracking, and provides flexibility on cured surfaces.

This code of practice lays out the regulatory requirements concerning lead work. In the event an employer does not have a qualified person on staff, they are responsible to acquire the services of an individual with a certified occupational background, and who has appropriate training which qualifies them as a professional in lead hazard identification, control, and remediation.

4 ACTS, REGULATIONS AND STANDARDS

Employers and workers must take every reasonable precaution to maintain a safe workplace, and ensure their own safety and the safety of others as outlined in sections 4 and 5 of the NT and NU Safety Acts.

The NT and NU *Occupational Health and Safety Regulations* (Sections 309 and 311) provide additional requirements for employers to develop work procedures and processes to protect workers from chemical and biological substances.

Employers must inform and train workers to be competent on how to minimize exposure to the hazard, and provide their exposure control plans to their Joint Occupational Health and Safety Committees.

Employers must bring in a qualified person in the event such an individual is not already on staff. A qualified person is an individual who possesses a recognized degree, certificate, or professional standing, and has demonstrated, by knowledge, training, and experience, an ability to deal with problems related to a particular subject matter or work.

For lead-containing coatings and metals abatement work, the qualified person must have occupational hygiene experience related to identifying, controlling, and remediating lead hazards and at least one of the following professional designations:

- Canadian Registered Safety Professional (CRSP);
- Certified Safety Professional (CSP);
- Certified Industrial Hygienist (CIH);
- Registered Occupational Hygienist (ROH); or
- Other suitable recognized education and training courses, and industrial management experience related to lead inspections and abatements

Certain workers have more strict requirements under the *OHS Regulations*.

Healthcare providers must report work-related injuries to the WSCC by submitting a *First Medical Report* form within three days of the initial visit. If the medical professional who attends to a worker suspects the condition they are treating is work-related, and a result of exposure to a harmful substance, they must notify the Chief Safety Officer.

Northwest Territories and Nunavut Safety Acts

HEALTH AND SAFETY

4. (1) Every employer shall
- (a) maintain his or her establishment in such a manner that the health and safety of persons in the establishment are not likely to be endangered;
 - (b) take all reasonable precautions and adopt and carry out all reasonable techniques and procedures to ensure the health and safety of every person in his or her establishment; and
 - (c) provide the first aid service requirements set out in the regulations pertaining to his or her class of establishment.
5. Every worker employed on or in connection with an establishment shall, in the course of his or her employment,
- (a) take all reasonable precautions to ensure his or her own safety and the safety of other persons in the establishment; and
 - (b) as the circumstances require, use devices and articles of clothing or equipment that are intended for his or her protection and provided to the worker by his or her employer, or required pursuant to the regulations to be used or worn by the worker.

Occupational Health and Safety Regulations

Northwest Territories and Nunavut

PART 2

REPORTING

Medical Information

- 10 (2) A medical professional who attends or treats a worker who is suffering from or is believed to be suffering from a medical condition that is listed in Schedule F and is related to the worker's present or past work shall, as soon as is reasonably possible, inform the Chief Safety Officer of
- (a) the medical condition from which the worker is suffering or is believed to be suffering; and
 - (b) the name and address of the most recent work site where exposure related to the medical condition is believed to have occurred.

PART 3

GENERAL DUTIES

12. An employer shall, in respect of a work site,
- (c) provide information, instruction, training and supervision that is necessary to protect the health and safety of workers.

Occupational Health and Safety Regulations
Northwest Territories and Nunavut

PART 21

CHEMICAL AND BIOLOGICAL SUBSTANCES

309. (1) An employer shall, at a work site,
- (a) monitor the use or presence of, or a worker's exposure to, harmful or hazardous chemical or biological substances;
 - (b) if reasonably possible, substitute less harmful or hazardous chemical or biological substances for harmful or hazardous chemical or biological substances;
 - (c) subject to subsection 314(1), to the extent that is reasonably possible, reduce contamination of the work site by harmful or hazardous chemical or biological substances; and
 - (d) develop and implement work procedures and processes that are as safe as is reasonably possible for the handling, use, storage, production and disposal of harmful or hazardous chemical or biological substances.
- (2) An employer shall take steps, to the extent that is reasonably possible, to prevent exposure of workers to
- (a) harmful or hazardous chemical or biological substances; or
 - (b) chemical or biological substances in combination or association with other harmful or hazardous chemical or biological substances.
- (3) An employer shall
- (a) inform workers of the nature and degree of the effects to their health or safety of exposure to harmful or hazardous chemical or biological substances; and
 - (b) provide workers with adequate training in
 - (i) work procedures and processes developed under paragraph (1)(d), and
 - (ii) the proper use of personal protective equipment required by these regulations.
- (4) An employer shall make available to the Committee or representative
- (a) results of measurements of worker exposure to, and contamination of a work site by, harmful or hazardous chemical or biological substances; and
 - (b) a description of steps taken to reduce the contamination of a work site by, and eliminate or reduce exposure of the workers to, harmful or hazardous chemical or biological substances.

Precautions for Certain Substances

311. (1) If a chemical or biological substance is listed or identified under subsection 310(1), an employer shall take reasonable steps to
- (a) identify and record the hazards that could arise from the handling, use, storage, production or disposal of the substance at the work site;
 - (b) determine and apply precautions that need to be taken with respect to the substance to ensure the health and safety of workers; and
 - (c) clearly mark the container holding the substance with the name of the substance.

Occupational Health and Safety Regulations
Northwest Territories and Nunavut

Substances Listed in Schedule R

313. If a worker is required or permitted to handle, use, store, produce or dispose of a chemical substance set out in Schedule R, an employer shall
- (a) provide adequate engineering controls to prevent, to the extent that is reasonably possible, the release of the substance into the work site; and
 - (b) take other measures and provide personal protective equipment that meets the requirements of Part 7 to prevent, to the extent that is reasonably possible, exposure of workers to the substance.

Substances Listed in Schedule O

314. (1) Subject to sections 313 and 315, if a chemical or biological substance set out in Schedule O is present at a work site, an employer shall, to the extent that is reasonably possible,
- (a) provide adequate engineering controls to ensure that the contamination limit set out in schedule O is not exceeded; and
 - (b) take steps to ensure that workers' personal exposure does not exceed the contamination limits set out in Schedule O.
- (2) An employer shall, in consultation with the Committee or representative, develop and implement a written procedure in accordance with subsection (3) if a chemical or biological substance set out in Schedule O is present at a work site in an airborne concentration that could be hazardous to workers who
- (a) are regularly required or permitted to work more than eight hours in a day or 40 hours in a week; or
 - (b) could be exposed to a combination or association of substances listed in Schedule O that have similar toxicological effects when acting on the same organ or body system.
- (3) A written procedure required by subsection (2) must identify
- (a) the substances to which workers could be exposed;
 - (b) the conditions under which workers could be required or permitted to work, including the frequency, quantity and duration of exposure to the substances; and
 - (c) the steps that the employer will take to ensure, to an extent that is reasonably possible, that workers' personal exposure does not exceed the equivalent of the contamination limit set out in Schedule O.

Protection of Certain Workers

315. (1) This section applies if a chemical or biological substance is present at a work site in a form and to an extent that could be harmful to a worker who
- (a) has become sensitized to the substance;
 - (b) is unusually responsive to the substance; or
 - (c) is pregnant.

Occupational Health and Safety Regulations
Northwest Territories and Nunavut

315. (2) An employer shall, after being made aware of a worker's condition of a type described in subsection (1),
- (a) if reasonably possible, take steps to minimize the exposure of the worker to the substance; or
 - (b) on the worker's request, assign the worker to less hazardous alternate work, if that work is available.

Respiratory Protective Devices

316. If it is not reasonably possible to reduce a worker's personal exposure to a chemical or biological substance to the contamination limit set out in Schedule O, an employer shall provide an approved respiratory protective device that meets the requirements of Part 7 and require the worker to use it.

SCHEDULE F (Subsection 10(2))

Notifiable Medical Conditions Resulting from Occupational Exposure

1. Acute, sub-acute or chronic disease of an organ resulting from exposure to lead, arsenic, beryllium, phosphorus, manganese, cadmium or mercury or their compounds or alloys
2. Neoplasia of the skin or mucous membrane resulting from exposure to tar, pitch, bitumen, mineral or cutting oils or arsenic or their compounds, products or residue
3. Neoplasia of the renal tract in a worker who works in rubber compounding, in dyestuff manufacture or mixing or in a laboratory
4. Pneumoconiosis resulting from exposure to silica or silicate, including asbestos, talc, mica or coal
5. Toxic jaundice resulting from exposure to tetrachloromethane or nitro- or amidoderivatives of benzene or other hepato-toxic or haemato-toxic substances
6. Neoplasia or any form of sickness resulting from internal or external exposure to ionizing radiation or electro-magnetic radiation
7. Poisoning by the anti-cholinesterase action of an organophosphorous or carbamate compound
8. Any form of decompression illness
9. Toxic anaemia resulting from exposure to trinitrotoluene, or any other haematogenic poison, including chronic poisoning by benzene
10. Mesothelioma of the pleura or peritoneum
11. Angiosarcoma of the liver
12. Malignant neoplasm of the nasal cavities resulting from exposure to chromium or its compounds, wood dust or formaldehyde
13. Malignant neoplasm of the scrotum resulting from exposure to petroleum products
14. Malignant neoplasm of lymphatic or haematopoietic tissue resulting from exposure to benzene

15. Cataract resulting from exposure to ionizing radiation, electro-magnetic radiation or nitrophenols
16. Male infertility resulting from exposure to glycol ethers, lead or pesticides
17. Spontaneous abortion resulting from exposure to ethylene oxide or antineoplastic drugs
18. Inflammatory and toxic neuropathy resulting from exposure to organic solvents
19. Asthma resulting from exposure to isocyanates, red cedar, amines, acid anhydride, epoxy resin systems, reactive dyes, metal fumes or salts, enzymes or bisulphites
20. Extrinsic allergic alveolitis resulting from exposure to mould or organic dust

5 EXPOSURE AND HEALTH EFFECTS OF LEAD

Exposure to lead among humans exists from indoor and outdoor environments; it's found in the air, soil, dust, drinking water, food and various consumer products.

In industry and among the general population approximately 1.5 million people are potentially exposed to lead. Worker exposure occurs during production, use, maintenance, recycling and disposal of lead materials and products. Industry sectors most impacted by lead exposure include: construction; manufacturing; wholesale trade; transportation; remediation and recreation. The leading sector for lead exposure is the construction industry.

Examples of lead exposure in construction include, but are not limited to the following:

- removal, renovation or demolition of structures containing lead based paints;
- installation, maintenance, or demolition of lead pipes and fittings,
- lead linings in fuel tanks;
- linings used for radiation protection;
- soldering metal substrates; and
- working with lead metal or lead alloys.

Lead exposure includes the handling of lead containing materials and products such as:

- lead solder
- plumbing fixtures;
- batteries;
- lead bullets;
- leaded glass;
- brass, or bronze objects; and
- radiators.

5.1 HEALTH EFFECTS

Lead, which has biochemical similarities to the necessary calcium, zinc, and iron minerals, has toxic effects on humans. The human biological processes that use these valuable minerals take up lead instead, which will disrupt their essential biochemical reactions within the body. Once in the body, lead can circulate in the bloodstream and pass to soft tissues, such as the liver, brain, and kidneys. It can also be stored in teeth or bone. Lead stored in bone can remobilize into the bloodstream during periods of stress, for example, during pregnancy. Lead is excreted through the body, but the process is very slow.

In February 2013, [Health Canada](#) reported human Body Lead Levels (BLLs) associated with environmental conditions and industrial lead practices for different demographics.

Health Canada's most recent report cites studies that suggest that BLLs less than 5 µg/dL (as low as 1–2 µg/dL) may adversely affect neurodevelopmental, cardiovascular, renal, and reproductive systems. Currently there are no strict BLL intervention thresholds.

Common side effects to lead exposures include:

- Fatigue and weakness;
- Headaches and memory loss;
- Confusion and emotional irritation; and
- Nausea and loss of appetite.

Long term health impacts from lead exposures are:

- Severe abdominal pains and constipation;
- Chronic muscle and joint pains; and
- Decreased libido.

Severity of symptoms and body tolerances depend on the exposed individual. All workers should be diligent in avoiding and limiting lead exposure. Pregnant women and children are particularly susceptible to the effects of lead. It is important to not accidentally take lead materials offsite (i.e., on footwear or other clothing) to expose family members.

Sources and Additional Information:

Health Canada – Final Human Health State of the Science Report on lead. February 2013.

<http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/dhhsr/rpcscepsh/index-eng.php>

5.2 ROUTES OF ENTRY INTO THE BODY

Ingestion

Ingestion happens through eating, drinking, or smoking in lead contaminated areas. Non–food items containing lead include:

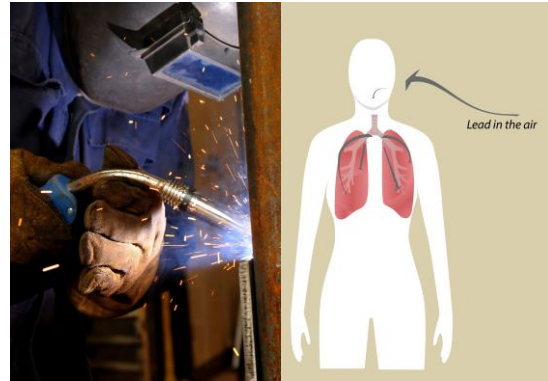
- Lead–based paints in older homes;
- Surrounding dust, especially from nearby lead point sources;
- Soils, especially near lead point sources (and in urban areas with historic deposition from leaded gasoline vehicle emissions); and
- Toy and furniture products with coatings containing lead, and artists' pencils and pens.



Inhalation

Inhalation is a concern when lead is present in the form of dusts/debris and fumes. Although exposures through inhalation were significantly reduced after the prohibition of leaded gasoline, the following pose risks for lead inhalation, especially for those who live near point sources:

- Mining facilities and smelters processing and recycling lead-containing metals and scrap;
- Fumes and metal debris caused by heating, cutting, welding, or smoldering of lead metals; and
- Any disturbance of lead-containing paints, coatings, or metals by heating, cutting and abrasions (e.g. sanding/refinishing).



Absorption

Some forms of lead may be absorbed through the skin, specifically organic compounds. Tetraethyl lead in gasoline was previously a significant hazard. The current risk of exposure through absorption is much lower since leaded gasoline was banned (*Gasoline Regulations, 1990*).



Lead absorption through skin surrounding nails

6 WORKPLACE RESPONSIBILITIES

Everyone in the workplace is required to comply with *OHS Regulations*, as well as internal policies and procedures. They must also be able to demonstrate due diligence in ensuring that work is completed without compromising the health and safety of themselves and others.

6.1 EMPLOYER RESPONSIBILITIES

In the Northwest Territories and Nunavut *Safety Acts*, an employer is defined as every partnership, group of persons, corporation, owner, agent, principal contractor, subcontractor, manager, or other authorized person having charge of an establishment in which one or more workers are engaged in work.

Some examples of Employers' responsibilities include, but are not limited to:

- Maintaining the worksite to ensure the health and safety of all workers.
- Identifying workplace hazards, and assessing their associated health and safety risks.
- Notifying and providing workers of any known information or documents pertaining to the existence of, or potential presence of lead hazards on the workplace, including non-lead hazards.
- Ensuring all workers comply with *Occupational Health and Safety Regulations*, and demonstrate due diligence.
- Ensuring that training records are current.
- Providing workers appropriate training for tasks assigned to them.
- Arranging services of a qualified professional (lead consultant), as needed.
- Enforcing workplace monitoring programs to ensure only authorized, trained workers are completing assigned tasks, and are doing so safely.
- Establishing and communicating an occupational health and safety program that includes:
 - i) A risk assessment for exposure;
 - ii) An exposure control plan;
 - iii) Work procedures, and;
 - iv) An intervention plan for observed and reported incidents.
- Enforcing regular health and safety inspections to ensure safe work procedures are consistently followed.
- Reporting all exposure incidents to the Workers' Safety and Compensation Commission (WSCC).
- Providing and maintaining first aid services and Personal Protective Equipment (PPE).
- Complying with, and ensuring workers comply with all pertinent sections within the Northwest Territories' and Nunavut *Safety Acts* and *Occupational Health and Safety Regulations*.
- Ensuring workers have access to all related health and safety documents.

6.2 SUPERVISOR RESPONSIBILITIES

A supervisor is defined as an individual who is authorized by an employer to oversee or direct workers. Supervisors must ensure workers under their direction and control receive proper instruction to safely perform their duties. They are responsible for ensuring workers perform their duties without undue risk, in compliance with any requirements of the *Safety Acts* and related *Regulations*.

Supervisors must have completed an approved regulatory familiarization program and have the knowledge and skills to:

- Supervise worksites.
- Have sufficient knowledge in, but not limited to, the following:
 - Occupational health and safety programs applicable the worksite;
 - The safe handling, use, storage, production, and disposal of hazardous lead and non-lead substances;
 - Safe use of personal protective equipment; and
 - Worksite specific emergency procedures.
- Know and comply with the *Safety Acts, Regulations, Codes of Practice* and company policies.
- Respond appropriately to any reports of unsafe work practices and conduct investigations.
- Follow instruction from the qualified professional (lead consultant).
- Ensure workers comply with the *Safety Acts, Regulations, safe lead work plans* and company policies.

6.3 WORKER RESPONSIBILITIES

A worker is defined as a person engaged in work for an employer, whether or not the worker is paid for the work. Workers' responsibilities include, but are not limited to:

- Understanding the importance of, and encouraging, safe work practices/procedures.
- Communicating concerns (including doubts) to their employer before starting work or during the course of work.
- Being up to date in all relevant health and safety training courses.
- Being diligent in identifying any unidentified hazards, and reporting any unsafe work practices conducted by co-workers and employers.
- Report all incidents, accidents and unsafe work practices.
- Informing employer of any disabilities—mental or physical—that may impact an ability to complete work within the health and safety requirements.

6.4 QUALIFIED PROFESSIONAL RESPONSIBILITIES

Qualified Professionals (QP) are accredited occupational health and safety professionals with experience in lead hazards and abatement work involving coated structural materials. They must have qualifications and working knowledge with the applicable health and safety standards, and should oversee the following activities:

- Identifying, interpreting, and applying relevant standards.
- Lead sampling, and interpreting analytical results.
- Developing and implementing risk exposure control plan and work procedures.

In addition, consultant responsibilities are the same as those of employers and workers in ensuring a safe work place.

7 IDENTIFICATION AND ASSESSMENT OF LEAD HAZARDS

This section describes the techniques and procedures to detect and assess lead in paints, coatings, and surroundings. A qualified person must oversee and coordinate sampling and clean-up complying with health and safety procedures. Ensure to submit the [Lead Project Notification](#) form to the Chief Safety Officer prior to starting the work and coordinate sampling procedures, debris clean-ups, and repairs with applicable health and safety procedures to prevent contaminating nearby areas. Clear working procedures and Personal Protective Equipment is required (section 9.4).

7.1 SITE RECONNAISSANCE

Before starting any onsite assessment activities, review all documents related to the environmental condition of the worksite. Conduct research and interview people familiar with worksite activities. Site review should include:

- History of worksite activities and any previous incidents.
- Environmental site assessments previously completed for the site.
- Material Safety Data Sheets (MSDSs) or Safety Data Sheets (SDSs) for materials used onsite.
- Worksite health and safety records.

7.2 SAMPLING METHODS

7.2.1 Destructive Sampling of Lead Paints and Coatings

Collect bulk samples to submit to an accredited laboratory for analysis by physically detaching (scraping) a cross-sectional area of coating/paint layers until the substrate is exposed. Submit all detached layers, with each layer weighing a minimum of 300 mg, and/or at least 2.5 cm × 2.5 cm in size. Express results in parts per million/billion by mass (mg/kg), or mass per area (mg/cm²).

Analytical techniques and procedures for lead samples recommended by The National Institute for Occupational Safety and Health (NIOSH) include:

- Heated Graphite Furnace Atomic Absorption Spectroscopy ([HGFAAS or GFAAS](#)).
- Flame Atomic Absorption Spectroscopy ([FAAS](#)).
- Inductively Coupled Plasma ([ICP](#)).

Sources and Additional Information:

World Health Organization – Brief guide of analytical methods for measuring lead in paint. 2011.

http://www.who.int/ipcs/assessment/public_health/lead_paint.pdf

NIOSH Method 7105 – Lead by GFAAS.

<http://www.cdc.gov/niosh/docs/2003-154/pdfs/7105.pdf>

NIOSH Method 7082 – Lead by Flame AAS.

<http://www.cdc.gov/niosh/docs/2003-154/pdfs/7082.pdf>

NIOSH Method 7300 – Elements by ICP.

<http://www.cdc.gov/niosh/docs/2003-154/pdfs/7300.pdf>

7.2.2 Non-Destructive Analysis of Lead Paints and Coatings Using X-Ray Fluorescence Spectroscopy (XRFS)

Portable [XRFS](#) units can rapidly identify elements, and in some cases determine relative concentrations, without physically damaging the examined area. The XRFS instrument bombards the test area with x-rays, and then detects the characteristic fluorescence radiation emitted from present elements.

XRFS units are convenient but limited with respect to quantitative analysis, particularly where other materials cover the lead-based products. For that reason it is strongly recommended that XRFS units are only used for a screening process to detect the presence of lead within suspected paints and coatings.

Use the techniques in *Destructive Sampling of Lead Paints and Coatings* (section 7.2.1) to confirm if lead concentrations exceed permitted limits. Consider the following when using a portable XRFS unit:

- **Coating thicknesses:** Fluorescence signals originating from the coating layers near the substrate may be absorbed within the coating layer itself, resulting in a loss of informative signals.
- **Interferents:** Field analysts should follow operating instructions provided by the instrument's manufacturer. Be aware of any chemicals that interfere with detecting lead.
- **Safety and Training:** Follow radiation health and safety protocols when operating a portable XRFS unit. Operators should receive suitable training. Document all training. Operators of tube-based devices must have a valid x-ray Fluorescence Operator Certification from Natural Resources Canada. Units that utilize a radioactive source are licensed to employers by the Canadian Nuclear Safety Commission (CNSC).
- **Calibration:** Corroborate detectable elements and their mass coverages (mass per unit area) with standards and calibration procedures provided in the instrument's manual.

XRFS instruments may be also used to detect the presence of lead in sampling wipes, soil, and air samples and on filters.

U.S. Environmental Protection Agency (EPA) states the following values as positive for lead within lead-containing paints/coatings:

- 1 mg/cm².
- 5,000 µg/g (mg/kg) or 5,000 parts per million (ppm).
- 0.5 % by weight.

This threshold is also used to derive the recognized Time Weighted Average (TWA) airborne exposure limit of 0.05 mg/m³. However, if you are applying aggressive removal techniques (see Table 2) on materials containing < 0.5 weight % lead, consider air monitoring to confirm that airborne lead concentrations are below 0.05 mg/m³. Assess lead concentrations below EPA's recommendations, especially for high-risk individuals in the workplace.

Sources and Additional Information:

NIOSH Method 7702 – Lead by Field Portable XRF.

<http://www.cdc.gov/niosh/docs/2003-154/pdfs/7702.pdf>

U.S. Environmental Protection Agency – Federal Register.

<https://www.gpo.gov/fdsys/pkg/FR-2001-01-05/html/01-84.htm>

U.S. Environmental Protection Agency – Lead-Based Paint Renovation, Repair and Painting Program.

<https://www.epa.gov/sites/production/files/documents/sbcomplianceguide.pdf>

Ontario Regulation OHS Act. Designated Substances. January 2013.

<https://www.ontario.ca/laws/regulation/090490>

Ontario Regulation OHS Act. Control of Exposure to Biological or Chemical Agents.

November 2015. <https://www.ontario.ca/laws/regulation/900833>

7.2.3 Detecting Lead in Surface Dust

Collect dust samples by wipe and vacuum sampling. To collect using wipe sampling, wipe a surface area, typically no smaller than 10 cm × 10 cm (0.1 sq. ft.), with a lead-free commercial wipe, or wipes provided by an accredited laboratory. Wipes prepared by the analyst (on-site sampler) using ashless filter paper or sterile cotton gauze are also acceptable. Vacuum sampling is ideal on soft surfaces and is commonly performed using a personal sampling pump equipped with a sampling cassette.

The sampler should confirm that the vacuum cassettes used for sampling are compatible with accredited laboratory methodologies. Laboratories may provide or recommend certain types of sampling cassettes. You may also use high-flow vacuums to sample lead dust. The analyst should note and delineate the sampled area to be able to quantify detected lead by mass per unit area.

Wipe and vacuum sampling are useful for:

- Confirming the effectiveness of lead abatement procedures. Lead residue on surfaces following abatement should not exceed 40 µg/ft².
- Assessing potential dermal and air exposures to workers.

Applicable standard methodologies for lead wipe and sampling and suitable analytical tests are described in NIOSH Method [9100](#). Analytical lead tests appropriate for vacuum cassettes are NIOSH Methods 7082 and 7105. See *Non-destructive Analysis of Lead Paints and Coatings using X-Ray Fluorescence Spectroscopy* (section 7.2.2).

Sources and Additional Information:

EACO – Lead Guideline for Construction, Renovation, Maintenance and Repair. October 2014.

<http://www.eacoontario.com/pdf/2014/EACO%20Lead%20Guideline%20FINAL.pdf>

NIOSH Method 9100 – Lead in Surface Wipe Samples.

<http://www.cdc.gov/niosh/docs/2003-154/pdfs/9100.pdf>

7.2.4 Detecting Lead in Workplace Air

Air sampling is usually performed with a sampling pump that collects debris and dust onto a cassette filter. Base sampling methodologies (such as number of samples and duration of sampling) depend on the nature of the work. Air samples should be representative of workers' breathing zones and exposure times associated with worksite tasks susceptible to the release of lead-containing materials. Depending on worksite air circulation, worksite spaces free of lead-containing materials, but adjacent or near to lead related work activities, may be considered for sampling. It is recommended that you conduct air sampling:

- Prior to starting the work project to establish baselines (i.e., background concentrations);
- During the project to assess and review implemented exposure control plans;
- After any work procedures are significantly changed, or a new exposure control plan is implemented. See *Developing Lead Exposure Control Plans* (section 8); and
- To confirm the effectiveness of lead abatement procedures.

The recognized TWA exposure limit for airborne lead is 0.05 mg/m³. TWAs are based on 8 hours/day, 5 day work weeks.

7.2.5 Toxicity Characteristic Leachable Procedure (TCLP)

To classify the type of wastes generated, especially when using dampening methods, conduct analytical TCLP tests on the lead-containing debris produced during work activities. TCLP tests should follow EPA's Test Method [1311](#). TCLP determines the analyte's susceptibility to leaching (drawn out or mobilized from soil medium).

7.2.6 Lead Clearance Criteria

To confirm the work area has been effectively cleared of lead following work project activities, conduct wipe sampling. Wipe sampling should follow these procedures:

- 1 sample for < 1 m².
- 2 samples for > 1 m² and < 10 m².
- 3 samples for > 10 m² and < 100 m².
- An additional sample for every additional 100 m².
- Extra sampling should be considered at entrance boundaries (i.e., exits from workspaces) to ensure external environment is clear.

The following table lists recognized clearance levels for common industrial areas. These values should be referenced as clearance criteria after completion of work projects and abatements. They are not intended to be used as action levels or to initiate clean-up protocols.

Table 1: Wipe sampling clearance levels criteria for industrial surfaces.

Surface Area	Maximum Clearance Level Criteria ($\mu\text{g}/\text{ft}^2$)
Concrete and rough surfaces (exterior)	800
Concrete and rough surfaces (interior)	400
Window sills	250
Firing ranges	200
Floors (non-residential)	200
Floors (residential)	40
All surfaces routinely accessible by occupants or used in food processing (i.e. child care facilities, schools, hospitals etc.)	40

Sources and Additional Information:

U.S. Environmental Protection Agency – Test Method 1311.

<https://www.epa.gov/sites/production/files/2015-12/documents/1311.pdf>

8 DEVELOPING LEAD EXPOSURE CONTROL PLANS

A qualified person must develop exposure control plans, and the employer must submit the plans to the WSCC as part of the project notification process. The control plans detail work procedures and controls implemented in the workplace to eliminate or limit lead exposures to workers. The following headings should be included in exposure control plans:

- Statement of Purpose
- List the Employer and Worker Responsibilities
- Risk Assessment—Classifying Abatement Risk Levels

8.1 STATEMENT OF PURPOSE

State main objectives of the exposure control plan, specifically:

- Describe the nature of present lead hazards (such as, within paint or coating, airborne).
- Explain how the company will implement the control plans and who must follow them.
- The company name implementing the plan along with contact information and worksite address.

8.2 RESPONSIBILITIES OF EMPLOYERS AND WORKERS

The control plan may include additional responsibilities beyond those listed under *Workplace Responsibilities* (section 6) depending on the scope of the control plan. The supervisor responsibilities align with the employer to make sure all the responsibilities are met and the workers follow the exposure control plan and other company policies. A non-exhaustive list has been provided as an example.

8.2.1 Employer Responsibilities:

- Submitting a project notification to the WSCC Prevention Services unit at least five working days before the project starts. This document must include the location of the work site, exposure control plans, and the project start and completion dates. A copy of the Lead project notification form can be found [online](#).
- Ensuring that workers understand the exposure control plan, and a copy is readily available at all times.
- Conducting onsite reviews of control plan to determine its effectiveness and identify areas for improvements.
- Documenting reviews, and immediately implementing recommendations, if any.

8.2.2 Worker Responsibilities:

- Fully understanding exposure control plans and associated hazards.
- Communicating any doubts or questions to the employer before starting work, or during work, should they arise.
- Following the control plan work procedures using the prescribed PPE.
- Reporting any inconsistencies noted within the control plan.




8.3 RISK ASSESSMENT—CLASSIFYING ABATEMENT WORK RISK LEVELS

Following analytical testing of the lead-containing materials a qualified person must complete an assessment. The assessment is based on the nature of the lead hazards, (such as within coating/paints, airborne, surface dust/debris), concentrations, and related work activities to determine which control measures are best to implement for removal or limiting of hazardous exposures. Include a summary table of the substrate medium tested, lead concentration, and accepted thresholds.

Lead abatement work can be classified according to low, moderate, and high risk levels. Table 2 lists risk levels defined by lead airborne concentration limits and recommended respirators for each risk level of lead work activities. The risk level for each activity is based on the activity's relative potential to produce lead dust, friable debris, and fumes. Note that this is not a definitive table and you should confirm risk levels for all activities with air monitoring programs as previously described.

Refer to the Northwest Territories and Nunavut Codes of Practice on [Personal Protective Equipment – Respiratory Protection](#) for information on the maintenance and proper use of various respirators used on the worksite.

TABLE 2: RISK LEVELS AND ASSOCIATED LEAD CONCENTRATIONS AND WORK ACTIVITIES.

Risk Level	Work Activities: risk level based on the potential exposure to friable lead debris and dust. Confirm lead exposures for all activities with air monitoring.	Recommended Respirators	
Low	<ul style="list-style-type: none"> • Applying lead coating/paints with a brush or roller. • Installing or removing lead containing non-friable metal parts. • Removing lead-containing materials using a power tool equipped with a HEPA filter system capable of collecting dust at an adequate rate. • Soldering. • Transporting sealed, labeled containers containing lead waste. • In general, removing the lead-containing materials, which remain mostly intact and do not become friable. 	<ul style="list-style-type: none"> • Half-mask particulate respirator equipped with N-, R-, or P-series filters and designated with 95, 99, or 100 % efficiencies. 	
Moderate	<ul style="list-style-type: none"> • Removing lead-containing materials by abrading or scraping with hand tools. • Removing lead-containing materials with chemical solvents. • Applying high temperature activities such as welding, burning, or cutting on exposed substrates previously coated/painted with lead-containing materials. • Applying lead coating/paints with spray applicators. 	<ul style="list-style-type: none"> • Full face-piece air purifying respirator equipped with N-, R-, or P-series filters and designated with 100 % efficiency. • Tight fit air-purifying powered respirator with high efficiency filter. • Full face-piece on-demand supplied air respirator. • Continuous air flow half-mask or full face piece respirator. 	
High	<ul style="list-style-type: none"> • Removing lead-containing materials using power tools not equipped with a HEPA filter system. • Applying any form of abrasive blasts (i.e., wet, slurry, dry) onto lead-containing materials. • Repairing, removing, or decommissioning ventilation systems used for controlling lead exposures. • Removing lead dust/debris using an air compressor. • Demolishing or decommissioning facilities operating with lead-containing materials. • High temperature cutting, torching, or welding of lead-containing materials in confined spaces indoors. 	<ul style="list-style-type: none"> • Type CE supplied air respirator with tight-fit mask or face-piece. • Full face-piece pressure demand or positive pressure supplied air. 	

9 RISK CONTROLS

Risk controls are the control measures implemented to eliminate, or limit the identified lead hazards. Whenever possible, the following controls combined with work and safety goals should be considered in the order given:

1. Elimination and Substitution: Prevent lead paints/coatings dusts, debris, and fumes from getting into the air, on the floor, or surrounding workspaces, such that airborne lead concentration levels are at all times below the accepted low risk thresholds. Note the risk level is only for airborne exposure. Always consider and assess the risk of ingestion.
2. Engineering Controls: If significant lead concentrations are present, implement methods and equipment to control and limit, as much as possible, workers' exposures so that they are below acceptable levels.
3. Administrative Controls: If significant lead concentrations are present, implement methods that decrease the number of workers potentially exposed and implement monitoring programs and procedures.
4. Personal Protective Equipment (PPE): If the workers must encounter lead hazards directly to complete the work task, provide the workers with the appropriate, certified PPE to avoid inhalation, ingestion, or absorption (i.e. for lead-containing organic compounds) of hazards produced from the work task.

In addition to the engineering and administrative controls, the following control measures should be implemented for all types of lead work projects:

- Prohibit eating, chewing gum, smoking, and food storage within the defined workspaces.
- Equip washing facilities with soap, wash basin and wipes. Workers should use this facility before and after all work activities.
- Visibly post information on the specific use and contents within the rooms, i.e. specific work activities being conducted, PPE required, and associated hazards at all workspaces and entrances.
- Safely secure drop sheets on workspace floors beneath any lead-containing material related work activities.
- Use only HEPA filter vacuums to clean up debris and wastes.
- Ensure all workspaces, chemicals, and waste containers are easily identifiable by sight with pertinent safety and warning labels.
- Clean-up workstations at regular intervals.
- Use additional control measures and PPE if compressed air is required for certain lead dusts/debris clean-up operations.

The following section describes recommended risk controls associated with lead-containing work activities and their risk levels. The detailed work procedures developed by the qualified person should describe how to implement the controls during work activities.

9.1 ELIMINATION AND SUBSTITUTION

Substitute hazardous materials with non-hazardous materials. For example, apply non-hazardous paints/coatings instead of lead paints/coatings. Consider if possible, maintaining existing lead coatings/paints intact and avoid production of friable lead debris, dusts, or lead fumes. This may include encapsulating the existing coating with a non-hazardous material. Always review MSDSs/SDSs to ensure that the replacement materials are less hazardous than lead-containing materials.

9.2 ENGINEERING CONTROLS

Engineering controls are specific equipment and machinery implemented to limit lead exposures. Examples include, but are not limited to: barriers such as rope and fences to prevent accidental exposures; enclosures (partial or full) that surround lead-containing areas, local ventilation systems that isolate lead-containing regions; and modifying equipment used for work tasks to reduce lead distribution outside of the lead-containing region (i.e., selecting less hazardous abrasive blasts).

9.2.1 Barriers

Barriers and structural boundaries—such as fences, ropes, pylons—that mark off a specific workspace area. They are used to clearly identify the hazard, not to physically contain the lead exposures. Where enclosures are impracticable, restrict areas with barriers for specific work tasks to limit lead dusts/debris and fumes from migrating to adjacent workspace areas.



9.2.2 Enclosures (partial and full)

Enclosures typically made out of gypsum, plywood, metal, or polyethylene sheeting generally constructed into walls or wall-like structures. They contain hazardous exposures within the enclosed area, as well as restricting access. By definition, partial and full enclosures, partially and fully contain the exposures, respectively. The type of enclosure depends on work activities and associated risk levels (see Table 3 for suggestions). Requirements to ensure effective sealing and supporting ventilation for enclosures are:

- Windproof enclosures to prohibit outside dust/debris from entering enclosed space and vice versa.
- Seal enclosure joints. Equip entrances with overlapping tarps or air locks.
- Control hazards within the enclosure with air supply points using baffles, louvers, flap seals, and filters.

9.2.3 Enclosure Ventilation

Equip enclosures with a ventilation system that both exhausts contaminated air and replenishes the enclosed space with filtered air at suitable rates to maintain pressure equilibrium. Specific considerations are:

- Lead-containing regions should be at a slight negative pressure, consistent with best practices.
- Filter air discharged from the enclosure with a HEPA filter capable of retaining lead dusts, debris, and/or fumes. Position the discharge exit so air flows directly away from surrounding workspaces.
- Air flow within enclosures should satisfy the following minimum rates: cross draft velocity of 0.5 m/s (100 ft./min) and down draft (capture) velocity of 0.25 m/s (50 ft/min)
- Specific recommendations for filter materials set up and air flow rates can be found in [ASHRAE](#).

9.2.4 Dampening methods

Dampening methods use solvents (typically water) to immobilize and localise lead dusts and debris. Common methods involve manually spraying surfaces prior to clean-up activities, or using tools equipped with spray applicators such as wet slurry and hydro abrasive blasts systems.

9.2.5 Lead waste storage and disposal

Lead waste storage within workspaces should only be temporary. Consider the following for the storage and proper disposal of generated lead wastes:

- Store lead wastes in containers specifically manufactured, or compatible for metal waste containment.
- Tightly seal clearly identifiable containers with labels consistent with the Workplace Hazardous Materials Information System (WHMIS).
- Submit a transportation manifest to the WSCC.
- Submit lead waste samples and contacting substrate to an accredited laboratory for TCLP analysis to determine the leaching characteristics of lead wastes and waste disposal designation. The accredited laboratory should confirm/provide sample size and containers.
- The classification and packaging of lead wastes while being transported must conform to the federal and territorial *Transportation of Dangerous Goods Act and Regulations*.
- The transport of lead wastes by air must conform to the *International Air Transport Association (IATA) Dangerous Goods Regulation* and *International Civil Aviation Organization (ICAO) Technical Instructions*.
- Conform to the *International Marine Dangerous Goods Code* when transporting lead wastes by water.

- Transport all stored lead wastes to a metals foundry or smelter, or a registered hazardous wastes receiver. Carriers must be certified and licensed. Transportation of lead wastes must comply with Transport Canada and the applicable transport authority (i.e., road, marine, or air). Registration numbers, waste manifests, and registered hazardous wastes carrier lists are available from the Government of Northwest Territories Environmental Protection Service (EPS).

Sources and Additional Information:

ASHRAE Handbook – HVAC Systems and Equipment. 2012.

<https://www.ashrae.org/resources--publications/handbook>

Government of Nunavut – Guideline for the Management of Waste Lead and Lead Paint.

http://gov.nu.ca/sites/default/files/waste_lead_and_lead_paint_2014.pdf

Government of the Northwest Territories – Guideline for Management of Waste Lead and Lead Paint.

http://www.enr.gov.nt.ca/sites/default/files/guidelines/guideline_waste_lead_and_paint.pdf

9.3 ADMINISTRATIVE CONTROLS

Administrative controls limit workers' exposure through the management of human resources and data keeping; examples include:

- Modifying work schedules specific to work tasks (i.e., limiting length of shift for high risk exposure work activities).
- Implementing decontamination facilities for high risk activities.
- Implementing health monitoring programs, including biological testing.
- Ensuring safety training and equipment maintenance are up to date.
- Implementing work and safety inspections to ensure good housekeeping and ensuring that the risk control exposure plan is followed.
- Implementing policies, procedures and best practices.

9.3.1 Health monitoring programs

In some cases a health monitoring program, involving blood and/or urine sampling for lead, may be implemented to monitor any overexposures to lead. Health monitoring is not a substitute for air monitoring. Typical health monitoring programs:

- Include medical examinations or reviews of workers before starting the work project.
- Schedule medical examinations and blood testing during the work project.
- Include intervention levels for urine and blood sampling results in the risk exposure plan.
- Medical exams at the end of the project.
- Are overseen by a physician.

9.3.2 Decontamination facility

For high risk activities, make specialized decontamination facilities available to workers, as close as is practical to the intended workspace area. The facility should be well marked to prevent access of non-lead workers to decontamination area and contain the following:

- A room exclusively for storing used PPE and changing into and out of protective clothing.
- A shower facility adjacent to the above mentioned room, containing soap dispensers, paper towels, air dryers, and sinks.
- A room for the exclusive storage of clean clothes and unused PPE.

Following work shifts, workers should follow the general personal clean-up procedures:

- Clean reusable PPE with a HEPA filter vacuum or wet wipes.
- Place non-reusable PPE into suitable lead-containing waste storage/containers.
- Shower with respirator on. After showering remove and clean the respirator.

9.4 PERSONAL PROTECTIVE EQUIPMENT (PPE)

For each work task, make sure there are clear working procedures which identify necessary PPE, and how to treat the PPE before, during, and after work activities. Common PPE, with corresponding risk level requirements include:

- Gloves (all risk levels).
- Coveralls, disposable coverlets or full-body clothing (moderate and high, optional for low).
- Hard hats and footwear (generally all risk levels, depending on other industrial hazards at the site).
- Face shields, safety glasses, and goggles (generally all risk levels, depending on other industrial hazards at the site).
- Respirators (all risk levels as per Table 2).

For additional detailed information on various PPE, and how to use and maintain it, refer to Northwest Territories & Nunavut Codes of Practice, [Personal Protective Equipment Basics](#) for further guidance. Workers must be trained on all PPE being used.

9.4.1 Respirators

Employers should implement a respirator program to enforce the proper use and fit for specific respirators. Required respirators are outlined within Table 2 for low, moderate, and high risk activities. Train personnel utilising respirators in their proper usage, and document the training. Refer to Northwest Territories & Nunavut Codes of Practice on *Respiratory Protection* for guidance on training, fitting, and selection of various respirators.

Always assess risk levels against results from lead air and surface sampling and monitoring. Table 3 provides recommendations for engineering and administrative controls based on risk levels defined in section 8.3 *Risk Assessment—Classifying Abatement Work Risk Levels*.

Table 3: Recommended Controls Based on Risk Levels Defined in Table 2.

Recommended Controls Based on Risk Levels	
Lead Abatement General Provisions for All Risk Levels (Low, Moderate, High)	
	<ol style="list-style-type: none"> 1. The Chief Safety Officer must receive <i>Project Notification</i> from the employer before any work may begin. 2. All risk activities should follow general procedures based on: <ul style="list-style-type: none"> • Worksite isolation • Worker protection • Minimising exposure to lead • Ensuring appropriate worksite clean-up and decontamination 3. Maintain all worksite equipment and PPE. Use only as intended. 4. Use only qualified workers. Retain training records. 5. Workers must participate in all training courses and apply safe work practices. 6. Employers should ensure all workers are familiar and qualified to complete assigned tasks. 7. In addition to the lead risk exposure control plan, employers must include procedures that address who will deal with unidentified hazards on the workplace. 8. Prohibit eating, chewing gum, smoking, and storing food within the defined workspaces. 9. Equip washing facilities soap, wash basin, and wipes. Workers should use this facility before and after all work activities. 10. Visibly post information at all workspaces and entrances on the specific use, and contents within the rooms, i.e., specific work activities being conducted, PPE required and associated hazards. 11. Safely secure drop sheets on workspace floors beneath any lead-containing material related work activities. 12. Only use HEPA filter vacuums to clean up debris and wastes. 13. Ensure all workspaces, chemicals, and waste containers are easily identifiable by sight by pertinent safety and warning labels. 14. Complete workspace clean-ups at regular intervals. 15. Implement additional control measures and PPE if using compressed air for certain lead dusts/debris clean-up operations. 16. Although not required, coveralls and respirators should be available if requested by the employee.

Recommended Controls Based on Risk Levels

Low Risk Lead Abatement

1. Delineate localized area with labelled borders such that any lead debris and dusts will not migrate outside the area to adjacent workspaces.
2. Restrict access of non-lead workers to delineated area.
3. Safely secure drop sheets on floors beneath any lead-containing material related work activities.
4. Implement HEPA vacuuming procedures for clean-up and HEPA ventilation during work activities. Conduct lead wastes clean-ups at regular intervals. Store wastes in classified areas in appropriate containers.
5. Wear appropriate gloves, boots, and coveralls.
6. Provide washing facilities consisting of wash basin, soap, and towels in designated rooms separate from workspaces.
7. For worker protection use respirators noted in Table 2.

Moderate Risk Lead Abatement

1. Follow safety measures listed under general provisions and low risk activity.
2. Delineate a large enough area with labelled borders such that any lead debris and dusts will not migrate outside the area to adjacent workspaces.
3. Restrict access of any non-trained workers and visitors within the delineated work area.
4. Depending on the work area and accessibility, if possible, ventilate the medium risk activity with fans.
5. Isolate or shut-down all indoor air handling and ventilation systems that are capable of distributing lead debris prior to work activities.
6. Lock-out and isolate all electrical and mechanical equipment within the workplace.
7. Supply electrical power for lead abatement work through a Ground Fault Circuit Interrupter (GFCI).
8. Post visible signs on each border entrance and side indicating the hazards involved and the required PPE to enter.
9. Restrict using compressed air for clean-ups of lead debris in inaccessible workspaces and cleaning or rinsing of PPEs. Only use compressed air clean-up activities when using high risk PPEs and controls listed below.
10. Conduct scheduled air and surface monitoring to confirm risk levels and clearance.
11. Use recommended PPE.

Recommended Controls Based on Risk Levels

High Risk Lead Abatement

1. Follow all work controls listed above.
2. Consideration of the workspace area size, scope of work, and location (i.e., indoor or outdoor) will determine the extent of the enclosure. For example, for large outdoor infrastructures requiring abrasive blast operations, full enclosures may not be practical. In this case apply the medium risk approach, ensuring that during work activities workers present in the area are a significant distance away. Consider external environmental conditions, (i.e., wind direction and rain) when conducting work, and implement more stringent air monitoring programs to protect surrounding workspaces and landscapes.
3. Fit all indoor high risk activity workspaces with full enclosures supported with applicable negative pressure ventilation systems. Whenever possible use dampening methods (i.e., wet instead of dry abrasives) to immobilize lead debris during abrasive blast operations.
4. Always consider the nature of the work and area size of the workspace; for example, a series of smaller enclosures instead of one large enclosure may be more effective at maintaining the negative pressure required to contain the lead hazards.
5. Provide a dedicated decontamination facility to all workers conducting high risk level activities.

Working with Lead Guideline

Workers' Safety & Compensation Commission
Northwest Territories and Nunavut

WSCC Emergency Reporting
24-hour Incident Reporting Line

1 800 661-0792

WSCC



If you would like this code of practice in another language, please contact us.