

**LEAD-BASED PAINT
MANAGEMENT
ON ROADING
STRUCTURES**

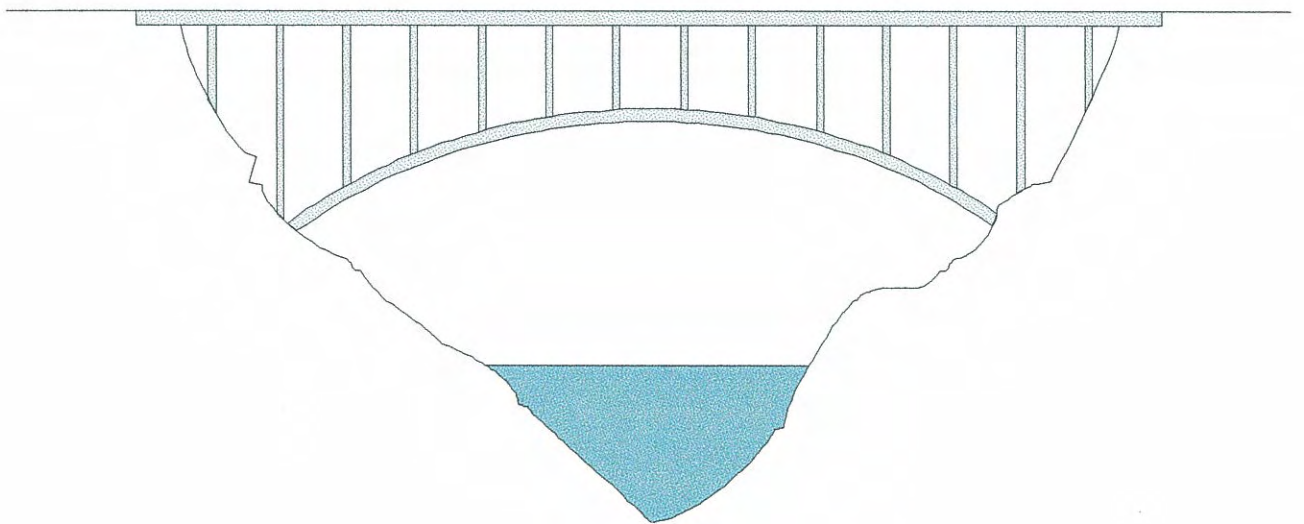
SECTION II

**Code of Conduct for
Contractors**

Transfund New Zealand Research Report 114

Code of Conduct for Contractors

MANAGEMENT OF LEAD-BASED PAINT
ON ROADING STRUCTURES



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FOREWORD

This is Section II of a report on a Research Project that had the objective to develop “environmental and health and safety guidelines, procedures and policies for the management and risk assessment of lead-based paint coatings on bridges and other roading structures in order to minimise the adverse impacts on the environment and thus to provide a consistent approach nationwide”.

Section II is a *Code of Conduct for Contractors*. This is a plain language guideline for contractors who undertake maintenance of roading structures containing lead-based paints, which will help them meet their legal requirements under the Resource Management Act and Health and Safety Act.

Section I reports on the results of a nationwide survey of road controlling authorities. This found that there is wide variation in their level of knowledge as to the extent of lead-based paint on their highway structures. From the data supplied it has been estimated that there are approximately 2300 road and state highway bridges in New Zealand with major steel components that may be protected with lead-based paint. With these bridges there is a potential for adverse impacts on the environment and public health to occur during maintenance painting.

Regional Councils who issue resource consents for the cleaning and painting of road structures coated with lead-based paint were also surveyed. This survey found that the conditions of consent imposed by Regional Councils varied widely, and that the standards required were often non-specific and not as rigorous as those required by AS 4361.1 and regulatory authorities both in Australia and the United States. The potential liabilities of owners of these structures and managers of maintenance work under the Resource Management Act 1991 (RMA) and Health and Safety in Employment 1992 (HSE) Act are discussed.

Section I Appendix 4 contains a *Model Policy Statement for Removal of Lead-based Paint* which is recommended for adoption by owners of these structures to minimise potential detrimental effects both to the environment and to their contractors. This will assist the owners of bridges and other roading structures to meet their statutory obligations with respect to paint removal projects.

Section III contains the *Guidelines for the Management of Lead-based Paint on Roading Structures*. This document provides information for owners of these structures and their maintenance engineers, consultants and contractors which will assist them to utilise the risk management process outlined in AS 4361.1 and so identify the most cost-effective maintenance strategy while minimising environmental, and health and safety risks during the maintenance work.

Section IV contains a *Model Specification for the Cleaning and Coating of Steelwork*. This is a generic standard specification that can be used as a base document for a steelwork maintenance contract where lead-based paint is to be removed, and which sets out information to be supplied by the owner, and requirements to be met by the Contractor. Guidance is given on the selection and specification of coating systems, and requirements covering the safety of contractors and the public, environmental protection, monitoring and inspection of the work are recommended. Also included are standards for paint materials, surface preparation and containment structures where required for lead abatement.

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Contents

What is the Purpose of this Code?	6
What Legal Requirements Do I Need to Meet?	6
How Do I Identify Lead Painted Structures?	7
How Do I Minimise the Effects of my Work on the Environment?	8
What Should I do to Minimise the Hazards of Lead to My Employees or Subcontractors?	9
What other Health and Safety Precautions Do I Need to Be Aware of?	11
How Do I Get Further Information on the Management of Lead-Based Paints?	12
Lead Paint Removal from Rooding Structures Checklist for Contractors	13
Project Health and Safety Plan Checklist for Contractors	14

What is the Purpose of this Code?



Removal of lead-based paint from timber or steel work on bridges and other roading structures can cause contamination of the environment that may last for many years. In addition, some removal practices can lead to serious health problems to your employees and to the general public.

By following this Code of Conduct you will:

- ☞ Protect your employees and any sub-contractors from the hazards of lead and help meet your requirements under the Health and Safety in Employment Act 1992.
- ☞ Minimise the likelihood of your work causing lead contamination in the surrounding environment and help meet your obligations under the Resource Management Act 1991.
- ☞ Be taking positive steps to ensure that your activities do not endanger the health of people that live or use the land or waterway in the vicinity of the structure.

What Legal Requirements Do I Need To Meet?

Resource Management Act 1991

Section 15 of the Resource Management Act controls the discharge of contaminants into the environment. A resource consent is required from a Regional Council for any discharge into water, or onto or into land in circumstances where the contaminant may enter water, unless a rule in a regional plan permits the activity. Discharges into air, or onto land, from an industrial or trade premises, also require a consent, unless a rule permits otherwise.

Regional Councils may issue you with a consent to abrasive blast structures in a certain area but this is normally associated with certain conditions. Commonly such conditions exclude the abrasive blasting of lead painted structures. If you want to abrasive blast a lead painted structure most Regional Councils will require a separate consent to be obtained for that job.

Health and Safety in Employment Act 1992

Exposure to lead during paint removal work is a well recognised occupational hazard and cause of serious harm (lead poisoning). Therefore it is a “significant hazard” under the Act.

As a contractor and employer you must take “all practicable steps” to:

- Protect your employees and people in the vicinity from lead and other hazards of your work.
- Monitor the health of your employees if they are exposed to lead hazards.

This means that your work methods should minimise as far as possible the likelihood that either your employees, other subcontractors or the general public (even after the work is finished) may be affected by the lead hazard.

Lead poisoning of an employee is a “serious harm” occupational illness and must be notified to OSH. As an employer you may need to arrange to have your employees take blood tests for lead before and during the paint removal project. This allows you to monitor if your employees are absorbing too much lead into their systems.

If engaged on a project involving lead-based paint, the HSE Act also requires the Principal (the organisation who contracts you to do the work) take steps to ensure that the Contractor is not harmed by hazards associated with the contracted work. This includes advising you if the situation does or may present a lead paint hazard. Note that the key duty of the Principal is largely to ensure they select contractors who are aware of the hazard and capable of managing it effectively.

Health Act 1956

The Health Act 1956 deals with controlling health hazards to the public at large. If you are undertaking work that is creating a potential health hazard to the public, a local authority Environmental Health Officer can stop the work under the nuisance provisions of the Act and may require you to take steps to remove contamination that is a public health threat.

How Do I Identify Lead Painted Structures?



The Principal to the contract should tell you if the structure has been coated with lead-based paint. In some situations this may be unknown. In such cases you can test the paint for lead using a lead paint test kit. Such kits are available from some laboratories, Public Health Units and paint outlets¹ for a small cost.

¹For example, “LEADCHEQ” manufactured by Schooner Enterprises, PO Box 8026, Dunedin.

The sodium sulphide kit turns paint flakes dark if the lead content is greater than 5% and grey if the lead content is 1-5%. The rhodizonate test kit changes the colour of lead paint from pink to red which will occur if the lead content exceeds 0.5%. If there is uncertainty about whether a colour change has occurred then samples should be taken to a laboratory for testing.

How Do I Minimise the Effects of My Work on the Environment?

Where lead has been identified on the structure and it has been decided that total coating removal and replacement is required then you will need to do the following:

Follow the contract specification for containment and removal closely

This will describe the removal and containment method necessary to ensure there is minimum likelihood of contamination to the environment. The need for containment (such as the use of an enclosure) will depend on the risks involved and the coating removal method. For example, if abrasive blasting a structure over a waterway, you will be required to follow very strict procedures to ensure lead contaminated blasting material does not pollute the waterway or its surrounds.

Check adequacy of blasting enclosures, ventilation and debris collection system before starting.

Depending on the method of removal and the risks involved check that blasting enclosures are correctly in place and, if stated in the specification, that the enclosure joints are sealed up, and that ventilation systems and debris collection systems are working efficiently.

Undertake regular inspections for discharges

You should undertake regular visual assessments of the work area to ensure containment measures are working (ie. there are no airborne emissions from the containment, if used), and that no debris is being deposited on land or into water-courses.

Make sure you have an efficient way of collecting waste

Waste may include paint flakes, spent abrasive, dirt, dust, contaminated waste water and other debris.

All lead contaminated solid waste must be collected and disposed of as a hazardous waste, in accordance with the requirements of the relevant local authority. You must ensure all waste is collected at least daily and stored in containers with drum lids or bin covers until disposal. Hazardous waste containers must be labelled clearly as containing hazardous waste.

Wastewater produced should be filtered to collect lead debris which must be treated as solid waste. Wastewater must be tested for lead concentrations prior to discharge as per the stated Resource Consent conditions and relevant local authority requirements.

Carefully clean up the site and site equipment at the end of the project

At the end of the project the structure confined within containment should be cleaned of visible dust using compressed air hoses or other means.

Then prior to removal of containment facilities around the structure being worked on, the containment (if required as part of the contract) and the equipment and structures within (eg scaffolding) should be cleaned using vacuum cleaners with HEPA (High Efficiency Particulate) filters and visually inspected to check for residual dust.

You will also need to clean down all equipment used such as blast hoses and ductwork used in ventilation systems.

A thorough visual inspection is necessary at each stage of the cleanup (particularly prior to dismantling of containment structures) to ensure the site is not contaminated with lead debris or dust.

You may be required to test soil samples from the project vicinity to check for contamination. Any soil obviously contaminated by the paint removal work should be treated as hazardous waste and removed from the site.

What Should I do to Minimise the Hazards of Lead to My Employees or Subcontractors?

Identify the area where lead dust levels may be hazardous.



You must identify the area surrounding the structure where airborne lead in dust levels may be hazardous. This may change depending on the wind direction.

Signs reading “respirators and protective clothing required in this area” or similar must be placed at the boundary of the hazardous area on the most likely approaches. These signs must be obvious to both trained lead workers or any bystanders.

Supply respirators to all workers in the hazardous zone

Good quality, properly-fitted, toxic dust filter-respirators should be provided to employees working near blasting areas in the hazardous zone (if using a disposable type, only those with double headstraps are suitable). Filters on respirators must be changed regularly.

Ensure all lead paint removal workers wear suitable protective clothing.	<p>Overalls and a hat (or disposable coveralls) should be provided to prevent dust accumulation in clothing and hair. Non-disposable overalls should be changed twice weekly (or more frequently if necessary) and laundered separately from other domestic clothing and linen. Disposable coveralls are recommended for dusty work, as this removes the need to launder contaminated clothing.</p> <p>Boots and gloves should be worn.</p>
Provide adequate facilities for washing	<p>As lead dust can be easily absorbed by eating food with contaminated hands or by smoking, facilities for washing hands and showering must be provided. Separate storage facilities in change areas for street and work clothing will be needed.</p>
Educate staff on the importance of personal hygiene	<p>The following personal hygiene instructions must be clearly communicated to employees involved in lead paint removal operations.</p> <ul style="list-style-type: none">☞ That workers should not smoke while working in the designated “hazardous area”, as hand to mouth contact may increase the risk of eating or inhaling lead paint dust.☞ That workers should not eat or smoke in the work area. They should remove contaminated overalls, then leave the work area and wash the hands and face thoroughly before eating or smoking.☞ That contaminated overalls must be placed in clean polythene bags and sealed before they leave the work area, as they are a significant source of contamination to others.☞ That contaminated work clothes must not be taken home for washing but, as with contaminated overalls, should be laundered commercially.☞ That contaminated equipment must be thoroughly cleaned of dust and paint fragments before it leaves the work area. A vacuum clean followed by a wet wipe would normally be sufficient.
Train employees adequately	<p>Employees must be educated on the reasons why the procedures for containment, collection of waste and use of protective clothing and equipment are necessary. They should be trained on how to use respirators properly, including how to check for an adequate seal around the face.</p>

Undertake personal health surveillance (when necessary)	Depending on the duration of the lead removal project and the frequency of other lead work undertaken by your staff you may have to offer your employees lead in blood tests. The criteria for this is discussed in detail in the Guidelines for the Medical Surveillance of Lead Workers, produced by OSH in 1993. You can get this from your local OSH office. You should seek advice from an Occupational Health doctor or an OSH medical practitioner as to whether blood lead tests should be sought.
Project health safety plan	As part of the contract specification you will normally be required to prepare a project health and safety plan. This should describe the health and safety precautions and standards that you will observe in this project and how hazards specific to the project should be managed. A checklist describing the minimum contents of a health and safety plan is given at the end of this Code.

What other Health and Safety Precautions do I Need to Be Aware of?

Abrasive blasting restrictions	If the work allows abrasive blasting you should not be using a sand that contains more than 5% silica because of the dangers of lung diseases (including cancer) that can be caused by silica. This is enforced by OSH.
Noise	As abrasive blasting, waterblasting and power tool operation is typically noisy, hearing protection must be provided to employees and its use enforced in high noise areas.
Notifiable work	<p>Work is notifiable to OSH 24 hours before the work starts if the project involves:</p> <ul style="list-style-type: none"> • Work where a fall of 5 metres or more is possible, or • Erection or dismantling of scaffolding from which a person may fall 5 metres or more, or • Breathing of air that has been compressed.

There are also other activities that are notifiable to OSH which are listed in the Health and Safety in Employment Regulations 1995. You should ensure you have made all the necessary notifications.

Scaffolding If scaffolding is required it must be erected by a certified scaffolder when the scaffolding is 5 metres or more above the ground. You must ensure the scaffold is inspected before use and weekly after that and keep a scaffold register. You must comply with the OSH Code of Practice on the Safe Erection and Use of Scaffolding.

Working at heights Some projects may require work to be carried out at heights exceeding 3 metres. You must ensure measures are taken to prevent falls. This may include use of:

- Guard rails around platforms,
- Safety Nets, or
- Fall arrest systems such as a safety harness.

You will need to decide on the best option for each situation and describe this in your Project Health and Safety Plan.

How Do I Get Further Information on Management of Lead-Based Paints?

Australian standard on lead paint management Australian Standard AS 4361.1-1995 (Industrial Applications) contains information on selecting the best maintenance strategy for a lead-based paint coated structure, assessing risks to the environment and public health, monitoring and minimising effects on the environment. You can borrow or interloan this from your nearest Public Library or purchase it from NZ Standards.

Lead-Based Paint Management on Roading Structures Section III Guidelines This document (Transfund New Zealand Research Report 115) is available for adoption by road controlling authorities such as Transit New Zealand and various Local Authorities to regulate work on roading structures that contain lead-based paint. The work you do may be subject to the requirements of these guidelines.

“Guidelines for the Provision of Facilities and General Safety in the Construction Industry” These guidelines are produced by OSH and include a short section on lead. However other general safety requirements (preventing falls, personal protective equipment, washing facilities) are included. You should follow the general health and safety precautions outlined in these guidelines.

Lead Paint Removal from Roding Structures Checklist for Contractors

	YES	N/A
1. Have you obtained the necessary consents and permits for the work:		
A Resource consent (if required by Regional Council).	<input type="checkbox"/>	<input type="checkbox"/>
B Notified OSH if working where falls exceeding 5 metres are possible.	<input type="checkbox"/>	<input type="checkbox"/>
C Approval from appropriate local authority for disposal of lead waste.	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the paint on the structural steel been tested for lead content?	<input type="checkbox"/>	<input type="checkbox"/>
3. If lead is present have the risks to environment and public health been considered (according to the Transfund NZ Guidelines for the Management of Lead-based Paints on Roding Structures) and appropriate measures specified to minimise effects on the environment? (Note: This should have been carried out by the project consultant or road controlling authority and clearly explained in the specification.)	<input type="checkbox"/>	<input type="checkbox"/>
4. Have you provided adequate numbers of labelled sealable bins, drums or containers for the collection of lead waste?	<input type="checkbox"/>	<input type="checkbox"/>
5. Have you determined a no-go zone around the work area and erected appropriate signs, so that unprotected people are not exposed to lead containing dust?	<input type="checkbox"/>	<input type="checkbox"/>
6. If you need to erect an enclosure to contain dust emissions and paint debris have you checked that all joints are adequately sealed (if specified) and that no dust or debris will escape from the enclosure, once work begins?	<input type="checkbox"/>	<input type="checkbox"/>
7. If required in the specification have you checked the ventilation in the enclosure to see if it is working properly?	<input type="checkbox"/>	<input type="checkbox"/>
8. If wet abrasive blasting or water blasting is used are all discharges being contained so that lead contaminated run-off is not flowing into watercourses?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have toxic dust respirators and protective clothing been provided to employees exposed to dust that may be contaminated with lead? Has hearing protection and other protective equipment been provided where necessary?	<input type="checkbox"/>	<input type="checkbox"/>
10. Has the blood testing of employees been considered and arranged where necessary?	<input type="checkbox"/>	<input type="checkbox"/>
11. Have you given someone the job of carrying out regular checks to ensure there is no contamination on soil or water from work activities and that all enclosures (if required) are working well?	<input type="checkbox"/>	<input type="checkbox"/>
12. Have you provided for employees suitable		
• Washing facilities?	<input type="checkbox"/>	<input type="checkbox"/>
• Shower facilities?	<input type="checkbox"/>	<input type="checkbox"/>
• Fresh drinking water, and a	<input type="checkbox"/>	<input type="checkbox"/>
• Place for meals away from work area?	<input type="checkbox"/>	<input type="checkbox"/>

Checklist Completed By:

Date:

Project Health and Safety Plan Checklist for Contractors

Your project Health & Safety Plan should cover the items in the following check list:

	YES	N/A
1. Washing facilities and amenities that will be provided at the site.	<input type="checkbox"/>	<input type="checkbox"/>
2. Protective equipment that will be issued to employees.	<input type="checkbox"/>	<input type="checkbox"/>
3. A description of measures taken to reduce employee exposure to lead dust, including full details of containment systems, ventilation and frequency of site inspections.	<input type="checkbox"/>	<input type="checkbox"/>
4. Measures taken to minimise any other health and safety hazards. This may cover traffic safety, fall protection etc.	<input type="checkbox"/>	<input type="checkbox"/>
5. Acknowledgment that blood lead tests have been offered to employees or confirmation from an occupational physician or OSH medical practitioner that blood tests are not required for a contact of this nature.	<input type="checkbox"/>	<input type="checkbox"/>
6. The contact person at the site responsible for health, safety and environmental protection matters.	<input type="checkbox"/>	<input type="checkbox"/>

Checklist Completed By:

Date: