

# **New York State Department of Transportation Structural Steel Paint Removal Construction Inspection**

## **LEAD EXPOSURE CONTROL PLAN**

**2018**

## **Construction Inspection Projects**

- Standard Specification 570-3.08 Class A Containment
- Standard Specification 570-3.07 Class B Containment
- Standard Specifications 570-3.05/3.06 Environmental Ground/Waterway Protection

## **Introduction**

This Lead Exposure Control Plan (LECP) includes practices and measures that will be implemented to ensure the safety and health of New York State Department of Transportation (NYSDOT) employees who may be exposed to lead during Construction Inspection (CI) work involving abrasive blast, shrouded power tool and/or manual hand tool cleaning of lead-coated structural steel. This LECP is consistent with the OSHA lead standard (29 CFR 1926.62) and addresses all the requirements of that standard. A copy of this LECP will be maintained in all NYSDOT field offices administering contracts that include Class A, Class B or Environmental Ground/Waterway Protection work for paint removal work associated with lead-coated structural steel.

*Note: The duties of NYSDOT employees are restricted to inspecting work performed by others and they will not be performing any construction activities personally. In addition, the OSHA lead standard does not require a written compliance plan unless employees are exposed to lead above the Permissible Exposure Limit (PEL) of fifty micrograms per cubic meter (50 ug/m<sup>3</sup>). As described further in this LECP, lead exposure of NYSDOT employees is expected to be well below the PEL. Regardless, this LECP will be implemented as an additional precautionary measure.*

## **Project Description(s)**

Project responsibilities include CI during lead-based paint removal from structural steel. Class A, Class B and Environmental Ground and/or Waterway Protection containment systems will be utilized based on the contract scope of work. Descriptions of these containment systems are provided as follows:

**Environmental Ground and/or Water Protection** - protects either ground surfaces or water bodies from being impacted by potential waste material deposition by including platform and/or tarpaulin cover in the area below localized paint removal work associated with repair, rehabilitation and demolition work using manual scraping methods and/or shrouded power tools in project locations with no immediate nearby sensitive public receptors.

**Class B Containment** – in addition to protecting either ground surfaces and/or water bodies from being impacted by potential waste material deposition, this containment level also provides additional protection for immediate nearby sensitive public receptors by including full hard-wall or tarpaulin containment for either localized or medium-scale paint removal work using manual scraping methods and/or shrouded power tools.

**Class A Containment** – in addition to protecting either ground surfaces and/or water bodies from being impacted by potential waste material deposition, this containment level also provides additional protection for immediate nearby public receptors by including full hard-wall or tarpaulin containment and vacuum filtration ventilation for large-scale paint removal work using abrasive blasting methods.

Notes:

- *Vacuum shrouded power tools can include shrouded grinder, needle scaler and vacuum blast equipment*
- *Abrasive blasting can include recyclable or non-recyclable blast media*
- Sensitive public receptors can include occupied residential, commercial or municipal facilities as well as protected natural environments.

**Potential Sources of Lead Exposure**

NYSDOT employees who are assigned to inspect construction work on the subject project(s) may be exposed to lead while performing their duties. This indirect exposure could be in the form of ambient air emissions, containment debris and/or waste handling from the following activities:

- Abrasive blasting of lead-based paint in preparation for repainting
- Cleanup of lead-based paint debris
- Moving, repairing, dismantling or cleaning of containment structure(s)
- Utilization of vacuum shrouded power tools and/or manual scrapers in preparation of repainting
- Accumulation, containerization, onsite storage and transport of lead-based paint removal wastes

**Procedures for Limiting Exposure**

The following is a list of engineering and work practice controls to be implemented and followed to reduce employee lead exposure during CI work on the subject project(s):

- Use of containment systems by the Contractor in accordance with Standard Specifications 570-3.08 (Class A), 570-3.07 (Class B) or 570-3.05/570-3.06 (Environmental Ground/Waterway Protection)
- Use of High Efficiency Particulate Air (HEPA) filtered vacuums by the Contractor to remove all containment dust and debris
- Not allowing NYSDOT employees inside containment until paint removal and containment cleaning activities have stopped and no significant visible dust or waste debris is present. For Class A Containment, this also includes a minimum of twenty minutes of running vacuum filtration ventilation following tarpaulin blow down and cleaning activities. Waiting periods associated with ventilation running times should be proportional to the volume and complexity of the containment cells under negative pressure. Larger and more complex containment cells may require additional ventilation run time to adequately clear visible airborne dust from the containment.
- Limiting inspections inside the containment(s) to as few as are necessary, remaining inside for as short a time as possible
- Performing onsite visual monitoring outside containment no closer than necessary and doing so from upwind locations as much as feasible

### **Initial Exposure Assessment**

Based on historical personal air quality monitoring data for similar NYSDOT work it is expected that no CI employees for lead paint removal work will be exposed above the OSHA lead action level of  $30 \mu\text{g}/\text{m}^3$ , calculated as an 8-hour Time Weighted Average (TWA).

### **Exposure Monitoring**

Even though it is expected that no NYSDOT employees will be exposed above the action level, personal exposure may be randomly monitored by Department Construction Safety and Health or consultant staff as an added precaution in annually updating historical data. Personal exposure monitoring may also be requested by employees on a project basis through the Project Engineer in Charge (EIC) and the Regional Construction Safety Coordinator. Personal samples will be collected on representative CI staff on days which are indicative of maximum exposures they can reasonably receive during their typical daily work assignments. All results of employee personal air sampling shall be provided within 5 working days of collection and added to the employee's personal work history folder.

### **Training**

Every NYSDOT employee assigned to the subject projects will be given Hazard Communications (HAZCOM) training in accordance with the requirements of 29 CFR 1926.59(h). This training will be provided by Department Safety and Health staff.

Since it is expected that no NYSDOT employees will be exposed above the action level, no additional training is required by the OSHA Lead in Construction Standard. Regardless, NYSDOT employees assigned to the subject projects will be provided training regarding the project-specific operations which entail exposure to lead, the exposure control measures that must be followed, and the contents of this LECP.

### **Medical Surveillance**

Medical surveillance will be performed upon the request of the employee to the project Engineer in Charge (EIC) and the Regional Construction Safety Coordinator. This will be arranged for by the Region on a requested basis even though the exposure of NYSDOT employees is not expected to exceed the PEL.

### **Respiratory Protection**

Respiratory protection will be provided on a voluntary basis upon the request of the employee. A copy of Appendix D (provided as Appendix D in this LECP) from the OSHA Standard 29 CFR 1910.134 N-95 will also be provided to any employee receiving a respirator.

Respirators will be provided even though the exposure of NYSDOT employees will not exceed the PEL. N-95 disposable respirators have a protection factor of 10 times the PEL and do not require fit testing or physical examination prior to be worn.

### **Personal Protection**

It will be required that NYSDOT employees wear disposable Tyvek coveralls while conducting inspection activities inside any of the containment scenarios after lead paint removal work has been started. For Class A Containment, this shall also include Tyvek head and foot covering as well as disposable rubber gloves.

### **Hygiene Facilities and Practices**

It will be required that NYSDOT employees wash their hands and face using the nearest convenient wash facility immediately after exiting any containment system and prior to smoking, eating or drinking. Discarded PPE including Tyvek coveralls and disposable respiratory protection may be disposed of as a non-hazardous, solid industrial waste.

### **Signs**

The following warning sign will be posted by the Contractor in all areas where exposure may exceed the PEL, including entrance points to containment structures/covers, and in any areas where work involving lead-based paint will be conducted:

WARNING  
LEAD WORK AREA  
POISON  
NO SMOKING, EATING OR DRINKING

### **Inspection**

The jobsite will be inspected at frequent and regular intervals by a competent person (the Regional Construction Safety Coordinator or a designated representative) for compliance with the requirements of the OSHA Lead in Construction Standard and of this LECP.

### **Revisions to the LECP**

When the results of exposure monitoring indicate that any NYSDOT employees are exposed above the Lead action level, an investigation shall be conducted by a competent person (the Regional Construction Safety Coordinator or a designated representative). Based on the results of the investigation, the LECP may be revised to include one or more of the following additional elements:

- Provisions for follow-up medical surveillance and medical removal
- Additional lead-specific training as required by the OSHA Lead in Construction standard (29 CFR 1926.62)
- Additional exposure monitoring
- Protective work clothing and equipment, with designated changing areas and shower facilities
- Respiratory protection program, including respirator fit testing, training and provisions for appropriate respirators
- Additional stringent hygiene practice

### **Recordkeeping**

Records of exposure assessment, medical surveillance and medical removals will be kept and maintained in the employees' Personal History Folders at the respective Regional office for a minimum of 30 years. These records will be made available, upon request, to employees or their designated representatives.

### **Appendices**

- A. Inspector Project Schedule (supplied by Region from Project Records)
- B. Specification Containment Items to be used (supplied by Region from Project Proposal)
- C. Construction Inspection Employee Name(s) (supplied by Region per project)
- D. Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard
- E. Name of Inspection Competent Person (supplied by Region per project)
- F. Material Safety Data Sheet (MSDS) for Lead
- G. LECP Review Acknowledgement Sheet
- H. Historical Personnel Monitoring Data

APPENDIX A.

INSPECTOR PROJECT SCHEDULE  
(supplied by Region from Project Records)



## APPENDIX B.

### SPECIFICATION CONTAINMENT ITEMS TO BE USED (supplied by Region from Project Proposal)

APPENDIX C.

CONSTRUCTION INSPECTION EMPLOYEE NAMES(S)  
(supplied by Region per project)

## APPENDIX D.

### Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard

*Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.*

*You should do the following:*

- 1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.*
  - 2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.*
  - 3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.*
  - 4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.*
- [63 FR 1152, Jan. 8, 1998; 63 FR 20098, April 23, 1998]*

APPENDIX E.

NAME OF INSPECTIONCOMPETENT PERSON  
(supplied by Region per project)

## APPENDIX F.

### Material Safety Data Sheet (MSDS) for Lead

# **MATERIAL SAFETY DATA SHEET FOR LEAD**

## **SECTION 1 – MATERIAL IDENTIFICATION**

### **Material Name: Lead**

Description: Bluish-Grey metal, apparently odorless

Other Designations: Soft lead, Hard Lead, Calcium lead.

Manufacturer: Mars Metal Company,

4130 Morris Drive,

Burlington, Ontario

L7L 5L6

Emergency Phone Number: (905) 637-3862

## **SECTION II – HAZARDOUS INGREDIENTS EXPOSURE GUIDELINES**

Base Metal: Lead – C.A.S. #7439-9201/Exposure Limits: 1.05 Mg/M3 ACGIH TWA

Alloys: Sb, Sn, As, Cu, Ca – Antimony C.A.S. #7440-36-0/

Exposure Limits: 0.50 Mg/M3 ALGIH TWA

## **SECTION III – PHYSICAL DATA:**

Boiling Point: 3164 degrees Fahrenheit

Melting Point: 622 degrees Fahrenheit

Specific Gravity: (H<sub>2</sub>O = 1) Approximately 10.3

Vapour Pressure: (MM HG) N.A.

Solubility in Water: Negligible

## **SECTION IV – FIRE AND EXPLOSION DATA**

Hazards: Toxic fumes and vapours are produced by molten lead.

Dust explosion potential exists

Extinguishing Media: Dry chemical or carbon dioxide should be used on surrounding Area.

Firefighting Procedures: Full body protective clothing should be worn and positive pressure breathing apparatus used.

Flammability: Metal is not flammable, powders or dust may be flammable.

## **SECTION V – REACTIVITY DATA**

Chemical Stability: Metal is stable.

Incompatibility: Strong oxidizers, Hydrogen Peroxide, Active metals.

Hazardous Decomposition Products: High temperature may produce hazardous fumes.

## **SECTION VI – HEALTH HAZARD DATA AND FIRST AID**

Threshold Limit Value: Time weighed average exposure 0.15 MG/M3. Short term

Exposure 0.30 MG/M3.

Routes of Exposure: Ingestion, Inhalation, and Eyes.

## **EFFECTS OF EXPOSURE:**

Acute Overexposure: May cause weakness, vomiting, loss of appetite and Constipation.

Chronic Exposure: May cause weakness, Insomnia, Hypertension, Anemia, Neuromuscular dysfunction's and joint pain.

## **EMERGENCY AND FIRST AID PROCEDURES:**

Ingestion: Rinse mouth, give plenty of water, get medical attention.

Inhalation: Remove from exposure to fresh air, get medical attention.

Eyes: Rinse thoroughly with water, get medical attention.

Skin: Remove contaminated clothing and wash effected area with water and soap.

**SECTION VII – SPILL AND LEAK PROCEDURES:**

Released or Spilled: Sweep up carefully using water (or other suitable wetting agent) to

prevent emissions, place waste in sealable containers which are to be disposed of in accordance with local legislation.

Waste Disposal Method: Contact local authorities for instructions on proper disposal procedures in your area.

**SECTION VIII – SPECIAL PROTECTION INFORMATION:**

Respiratory: Use respirators as per the regulations respecting Lead.

Eye Protection: Face shield/approved safety glasses.

Hands: Protective gloves should be worn when handling Lead.

Other Protective Equipment: Clean overalls, safety boots, and helmets.

Local Exhaust: Adequate local and general ventilation must be provided.

**SECTION IX – SPECIAL PRECAUTIONS:**

Handling and Storage: Lead dust should be handled in sealed containers. Every effort should be made to prevent dusts from becoming airborne.

Other Precautions: Use wet methods for dust control whenever possible. Ensure that there is sufficient ventilation in areas of lead use.

January 2008

APPENDIX G.

LECP REVIEW ACKNOWLEDGEMENT SHEET



## LECP REVIEW ACKNOWLEDGEMENT SHEET

NYSDOT D# \_\_\_\_\_

PROJECT NAME:

I acknowledge that I have read and understood the referenced NYSDOT project Lead Exposure Control Plan for inspection activities associated with this project and have had any questions associated with it answered by the Project Inspection Competent Person.

NAME PRINT

SIGNATURE

DATE \_\_\_\_\_

[illegible]

APPENDIX H.

HISTORICAL PERSONNEL MONITORING DATA



TABLE 3-1

PERSONAL MONITORING LEAD DATA SUMMARY  
NY Route 37 Bridge over the Brandy Brook  
(Region 7) St. Lawrence County, NY  
(PIN 7152.69.321/ Project Contract No.: D263252)

AQM Event	Date	Filter Sample ID	Run Time (Min)	Run Time (Hrs)	Sample Lead Concentration ( $\mu\text{g}/\text{m}^3$ )		OSHA Lead Criteria 8-Hr TWA ( $\mu\text{g}/\text{m}^3$ )	
					Sample Result	8-Hr TWA	AL	PEL
RT-02	9/25/2017	1023870-20170925	540	9.0	1.18	1.33	30	50
RT-04	10/3/2017	1023870-20171003	295	4.9	1.21	0.74	30	50
RT-05	10/4/2017	1023870-20171004	355	5.9	8.56	6.33	30	50

AL - OSHA Action Level

PEL - OSHA Permissible Exposure Limit

TWA - Time-Weighted Average