



# Lusail Real Estate Development Company

## Health, Safety, Security, Environment, Logistics & Quality Department

### Lusail Construction Safety Procedural Forms/Checklists – Lead Exposure Prevention

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#### COMPANY PROPRIETARY INFORMATION

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## Interim Protection Measures

Until the initial exposure assessment is conducted, the following measures must be implemented:

### Respiratory Protection

- ◆ Provide half face air purifying respirators (APR) with high efficiency cartridges where lead coatings or paint is present and any of the following activities will occur:
  - Manual demolition of structures.
  - Manual scraping
  - Manual sanding
  - Heat gun applications
  - Power tool cleaning with dust collection applications
  - Spray painting with lead paint
- ◆ Provide full face APR or powered APR with high efficiency filters, or full face supplied air respirator operated in a demand mode when performing tasks involving:
  - Lead-containing mortar
  - Lead burning
  - Rivet busting
  - Power tool cleaning without dust collection systems
  - Cleanup activities where dry expendable abrasives are used
  - Abrasive blasting enclosure movement and removal
- ◆ Provide full face supplied air respirators operated in pressure demand or other positive pressure when performing tasks involving:
  - Abrasive blasting
  - Welding
  - Cutting
  - Torch burning

### Personal Protective Equipment (PPE)

- ◆ Provide coveralls or other similar full body covering.
- ◆ Provide gloves, head coverings, shoes, or disposable shoe coverings.
- ◆ Provide face shields, goggles, or other appropriate protective equipment.
- ◆ Provide change areas and either hand washing or showering facilities.
- ◆ Provide medical monitoring
- ◆ Provide training regarding hazard communication and the use of respiratory protection.

**Initial Exposure Assessment**

- ◆ In the absence of representative historical data, conduct air monitoring
- ◆ Negative Initial Determination
  - Exposure to lead at or below an 8-hour time-weighted average of  $30 \mu\text{g}/\text{m}^3$  requires a written record that includes the following:
    - Date of determination
    - Location within the job site
    - Name of each employee monitored
    - Monitoring results
    - Type of activity conducted during monitoring
  - ◆ No further action regarding lead is required unless there has been a change of equipment, process, or control, or a new task has been initiated that may result in additional employees being exposed to lead at or above the action level.
  - ◆ Exposures to lead above an 8-hour time-weighted average of  $30 \mu\text{g}/\text{m}^3$  and below  $50 \mu\text{g}/\text{m}^3$ 
    - All employees potentially exposed to lead must:
      - Be enrolled in a Medical Surveillance Program
      - Have received training
      - Utilize appropriate PPE and personal hygiene procedures as outlined in the project-specific safety plan.
  - ◆ Exposures above the 8-hour time-weighted average Permissible Exposure Limit of  $50 \mu\text{g}/\text{m}^3$  require a Lead Compliance Plan.

**Lead Compliance Plan**

- ◆ The compliance plan must include the following topics:
  - Description of work activities that expose personnel to lead.
  - Equipment to be used and procedures to be followed during lead exposure activities.
  - Employee job responsibility and crew size during lead exposure activities.
  - Maintenance practices to be followed for servicing and cleaning equipment and disposing of waste.
  - Specific instructions on how to set up engineering controls (ventilation, containment, etc.).
  - Description of technology considered in meeting the permissible exposure limit.
  - Air monitoring data from the initial determination.
  - A detailed work schedule and supporting documentation (e.g., copies of purchase orders for equipment) for implementation.
  - Description of the work practice program (e.g., protective work clothing and equipment, housekeeping, change areas, and other relevant work practices).
  - An administrative control schedule, if administrative controls are being used.
  - Recordkeeping requirements.

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- A description of arrangements made among contractors on multi-contractor sites with respect to informing affected employees of potential exposure to lead.
  - The name of the Competent Person for the site.
  - ◆ Appoint a Competent Person who will be responsible for performing regular inspections of the job site, materials, and equipment during the job.
  - ◆ Revise and update the Lead Compliance Plan at least annually to reflect the current status of the program.
  - ◆ Order the PPE specified in the Lead Compliance Plan.
  - ◆ Provide for the cleaning, laundering, and disposal of protective clothing and equipment.
  - ◆ Notify the Project Manager whenever there is a change in the lead job that has not been addressed by the Lead Compliance Plan.
  - ◆ Perform air monitoring quarterly (every three (3) months) and continue monitoring at the required frequency until at least two consecutive measures, taken at least seven (7) days apart, are at or below the permissible exposure limit.
  - ◆ Implement the engineering controls specified in the Lead Compliance Plan for the site. Require engineering controls to be on site and installed correctly by qualified persons before work begins.
  - ◆ Provide the following hygiene facilities:
    - A clean change room equipped with separate lockers for the storage of street clothes and work clothes.
    - Hand washing facilities.
    - Showering facilities, where feasible.
    - Eating facilities free from lead contamination.
  - ◆ Establish rules that will maintain proper housekeeping in the lead abatement area, specifically:
    - Prohibit contaminated clothing and equipment outside of lead work areas.
    - Require lead workers to shower (where feasible) and/or wash hands and face at the end of the shift, and to wash hands and face before eating, drinking, smoking, or applying cosmetics outside the lead area.
    - Segregate dirty or contaminated equipment from clean work areas.
    - Vacuum all lead-contaminated surfaces using a high-efficiency particulate air (HEPA) filter.
  - ◆ Label Lead Hazard Areas and Equipment.
    - Mark lead hazard areas with boundary tape and signs as follows:

**WARNING****LEAD WORK AREA****POISON****NO SMOKING OR EATING**

- Ensure that signs are illuminated and cleaned as necessary to assure visibility.
- Mark lead-contaminated equipment and debris with labels warning of the lead hazard.

- ◆ Notify Contractors and Subcontractors Before Work Begins. Require contractors to know the location of lead at the job site. Even if contract workers are not directly exposed, they may still need to perform training required under the hazard communication procedure.
- ◆ Maintain Requirements of the Lead Compliance Plan throughout the job. Direct the Competent Person to inspect the job site at least daily on those days when lead operations are performed.
- ◆ Provide training for all employees subject to lead exposure at or above the action level, or subject to exposure to lead compounds that may cause skin or eye irritation (e.g., lead arsenate, lead azide).
- ◆ Prior to the job assignment and at least annually, assure that each employee is trained in the following:
  - The content of lead in construction activities
  - The specific nature of the operations that could result in exposure to lead above the action level.
  - The purpose, proper selection, fitting, use, and limitations of respirators.
  - The purpose and description of the Medical Surveillance Program and medical removal protection, including information concerning the adverse health effects associated with excessive exposure to lead.
  - The engineering controls and work practices associated with the employee's job assignment, including training of employees to follow relevant good work practices.
  - The contents of any Lead Compliance Plan and the location of regulated areas in effect.
  - Instructions to employees that chelating agents should not be routinely used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician.
  - The employee's right to access records.

### **Documentation**

The following documentation will be maintained in the project file:

- ◆ Physician's medical clearance for lead workers
- ◆ Proof of blood lead testing for personnel
- ◆ Exposure monitoring records
- ◆ Lead Compliance Plan (as necessary)

### **References**

- ◆ OSHA Standard – Lead – 29 CFR 1910.1025
- ◆ OSHA Expert System – Lead in Construction Advisor
- ◆ OSHA Technical Links – Lead
- ◆ LUS-HSE-WG3-446-001, Medical Certification and Surveillance
- ◆ LUS-HSE-WG3-446-035, Toxic and Hazardous Substances