



Lusail Real Estate Development Company

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

Lusail Construction Safety Management Procedure – Toxic and Hazardous Substances

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COMPANY PROPRIETARY INFORMATION

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Amendment Record

This document is reviewed to ensure its continuing relevance to the systems and process that it describes. A record of contextual additions or omissions is given below:

Rev .No	Description / Comments	Prepared By	Checked By	Approved By	Issue Date
1	(Pg. 1) Company Propriety Information – Not controlled if printed has been added.	HSE Working Group	Michael Ford		1 st April 2015
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1. Description

This element of the LCSMP provides guidelines for projects involving concentrations of specific toxic and hazardous substances potentially exceeding permissible exposure limits. The purpose of this Procedure is to provide guidance in controlling potential exposures to toxic and hazardous substances.

This Procedure applies to all Lusail personnel, Contractors, Developers, Consultants and subcontractors working on the Lusail projects.

2. Definitions

Term	Description
Action Level	Employee exposure, without regard to use of respirators, to an airborne concentration <ul style="list-style-type: none"> • Exposures that reach or exceed the action level trigger several provisions of the standard, such as periodic exposure monitoring, biological monitoring, and initial and annual employee training. • Exposures that reach or exceed the action level for more than 30 days per year trigger the medical surveillance program.
Job Hazard Analysis (JHA)	A process used to identify the hazards or potential hazards associated with each step of a job or work plan to uncover hazards and then eliminate, control, or remove them before the work is started.
Authorized Person	Any person authorized required by work duties to be present in regulated areas.
Clean Room	An uncontaminated room having facilities for the storage of employees' street clothing and uncontaminated materials and equipment.
Competent Person	One who is capable of identifying existing toxic and hazardous substances in the workplace and selecting the appropriate control strategy and who has the authority to take prompt corrective measures to eliminate them.
Critical Barrier	One or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent toxic and hazardous substances in a work area from migrating to an adjacent area.
Decontamination Area	An enclosed area adjacent and connected to the regulated area and consisting of an equipment room, shower area, and clean room, which is used for the decontamination of workers, materials, and equipment
Excursion Limit	The employer ensures that no employee is exposed to a toxic or hazardous substance as averaged over a sampling period of 30 minutes.
Glove Bag	An impervious plastic bag-like enclosure affixed around an asbestos-containing material, with glove-like appendages through which material and tools may be handled.
Heat Stress	The total heat burden to which the body is subjected by both external and internal factors.
High-Efficiency Particulate Air (HEPA)	A filter capable of trapping and retaining at least 99.97% of all monodispersed particles of 0.3 μ in diameter or larger.

Term	Description
Homogeneous Area	An area of surfacing material or thermal system insulation that is uniform in color and texture.
Negative Pressure	A local exhaust system capable of maintaining a minimum pressure differential of minus 0.02 inch of water column relative to adjacent unsealed areas.
Negative Initial Exposure Assessment	A demonstration by the employer that employee exposure during and operation is expected to be consistently below the workplace exposure limit.
Objective Data	Information demonstrating that a particular product or material containing lead or a specific process, operation, or activity involving lead cannot release dust or fumes in concentrations at or above the action level under any expected conditions of use. Objective data can be obtained from an industry-wide study or from laboratory product test results from manufacturers of lead containing products or materials. The data used from an industry-wide survey must be obtained under workplace conditions that closely resemble the processes, types of material, control methods, work practices, and environmental conditions in the anticipated operation.
Workplace Exposure Limit (WEL)	Regulatory limits on the amount or concentration of a substance to which a person may be safely exposed without adverse health effects. They may also contain a skin designation. WELs are enforceable and usually based on an 8-hour time-weighted average (TWA) exposure.
Project Designer	A person who has successfully completed the training requirements for an abatement project designer established by the governing regulatory agency.
Surfacing Material	Material that is sprayed, troweled on, or otherwise applied to surfaces (e.g., acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).

3. Responsibilities

The Contractor is fully responsible for the pre-planning, development of Method Statements, Job Hazard Analyses, and overall safe work planning and implementation. Project Management is responsible for the assurance that all work is planned and conducted according to the pre-planning documents; Contractor and Lusail Health Safety & Environment (HSE) procedures and the Qatar Construction Specifications 2010. Should a conflict occur between procedures/standards or requirements the more stringent shall apply.

4. Toxic and Hazardous Substances

The following are some substances/ materials commonly found on construction sites which are defined as being hazardous and/or toxic. Many of these substances are specifically regulated and carry stand alone regulations for storage, handling and use that the Contractor must be aware of and compliant with.

Acrylonitrile	4-Nitrobiphenyl
Asbestos	alpha-Naphthylamine
Benzene	Methyl chloromethyl ether
Cadmium	3,3'-Dichlorobenzidine
Chromium (VI)	bis-Chloromethyl ether
Coke Oven Emissions	beta-Naphthylamine

Cotton Dust	Benzidine
Ethylene Oxide	4-Aminodiphenyl
Formaldehyde	Ethyleneimine
Hydrogen Sulfide	beta-Propiolactone
Inorganic Arsenic	2-Acetylaminofluorene
Lead	4-Dimethylaminoazobenzene
Methylene Chloride	N-Nitrosodimethylamine
Methylenedianiline	
Vinyl Chloride	
1,2-dibromo-3-chloropropane	
1,3-Butadiene	

5. Procedural Requirements

5.1 Identification & Control

The Contractor must evaluate the work area and work activities to identify the potential for worker exposure. This is to be performed during the pre-mobilization and planning phases.

- Determine whether there is potential for exposure to any of the hazardous substances (identified in Section 4 of this LCSMP) in the work area prior to performing any work that may result in exposure to any of these substances through activities such as drilling, excavation, demolition, alteration, salvage, repair, restoration, welding, brazing, grinding, or other surface-disturbing activities.
- Determination may include the evaluation of Material Safety Data Sheets (MSDSs) where any hazardous substance(s) are part of a mixture.

The Contractor need determine the potential for employee exposure to the hazardous substance

- If any of the substances are identified, conduct an exposure assessment based on the type of work to be performed to determine whether employees have the potential to be exposed above any action level identified in the substance-specific regulations. This assessment must be reviewed and approved by the Project Manager and the HSE Representative.
- Include the results of the initial exposure assessment in the site specific health and safety plan.

Controlling Potential Employee Exposures

- Where the initial exposure assessment identifies the potential for employee exposures above an established action level or permissible exposure level, develop a facility or site-specific program to address all required regulatory concerns for that substance(s). Completed programs and/or guidance documents are to be included in the facility or site-specific health and safety plans.

5.2 Compliance Programs

When compliance programs are required by a specific standard, the following outline will be used unless otherwise directed by the standard:

- Description of work activities that expose personnel.
- Engineering controls and personal protective equipment to be used and procedures to be followed during exposure activities.
- Employee job responsibility and crew size during exposure activities.
- Work practice program (e.g., protective work clothing and equipment, housekeeping, change areas, hygiene practices).

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- Maintenance and decontamination practices to be followed for servicing and cleaning equipment and disposing of waste.
 - Specific instructions on how to set up engineering controls (e.g., ventilation, containment).
 - Procedures to be followed in regulated areas where the chemical hazards are present (e.g., restricted access, signage and instruction, contamination control, emergency procedures).
 - Exposure monitoring data from the initial assessment.
 - Exposure monitoring data from ongoing monitoring as required by the specific standard.
 - Medical surveillance program requirements.
 - A detailed work schedule for implementation.
 - Recordkeeping requirements.
 - A description of arrangements made among contractors on multi-contractor sites with respect to informing affected employees of potential exposure.
 - Name of competent person who will be responsible for performing regular inspections of the job site, materials, and equipment during the job.

The Project Manager must approve all compliance programs.

5.3 Training Requirements

All employees with potential exposure to the substances covered by this LCSMP must receive appropriate training prior to performing activities that could result in exposure. This training must be performed initially, upon any substantial changes to the operation covered, and annually, at a minimum.

In general, the training should cover the following topics unless otherwise indicated by the specific standard:

- Basic Employee Training
 - Regulated areas: authorizations, entrance restrictions.
 - Signs and warnings.
 - Container contents identification.
 - Nature of the specific hazards, including local and systemic toxicity.
 - Specific nature of the operations that could result in exposure.
 - Medical surveillance program and, as appropriate, methods for self-examination.
 - Personal protective equipment and procedures.
 - Engineering controls.
 - Hygiene practices and procedures.
 - Decontamination practices.
 - Respiratory protection requirements and program, if applicable.
 - Emergency practices and procedures.
 - Employee's specific role in emergency procedures.
 - Recognition and evaluation of potential hazardous situations.
 - Employee's specific duties and responsibilities.
 - Employee's rights to access records.
 - First aid procedures and practices.
- Supervisor Training (in addition to basic employee training)
 - Operations reports required.

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- Incident reports required.
 - Medical surveillance program.
 - Medical examinations.
 - Recordkeeping.
 - Training program and outline.

All training performed as part of this LCSMP will be documented and tracked in accordance with [LUS-HSE-WG3-446-046](#), Training. Training records will be maintained for a minimum of ten (10) years.

Staff potentially exposed to lead at or above 30 ug/m³ time-weighted average (TWA) for more than one year will attend refresher training each year this potential exposure exists. After a lapse of more than one year, staff will be retrained prior to working on sites with the potential to exceed a TWA of 30 ug/m³.

6. References

Qatar Construction Specifications 2010 Part 2.3.2 “COSHH (Control of Substances Hazardous To Health)”

7. Attachments

LUS-HSE-FM4-446-070	Chromium (VI) Exposure Protection
LUS-HSE-FM4-446-071	Lead Exposure Prevention
LUS-HSE-FM4-446-072	Lead Task List
LUS-HSE-FM4-446-073	Employee Asbestos Exposure Log
LUS-HSE-FM4-446-074	Employee Lead Exposure Log
LUS-HSE-FM4-446-075	Lead Respiratory Protection Table