



Lusail Real Estate Development Company

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

Lusail Construction Safety Management Procedure – Suspended Man Baskets

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1. Description

The below element of the Lusail Construction Safety Management Procedures (LCSMP) is intended to provide personnel with guidance and information for ensuring the safe hoisting of workers using crane-suspended work platforms (man baskets). All aspects of the following Procedure must be followed by Contractors to ensure hoisting equipment meets all testing, certification and design requirements, and man basket workers are properly trained on the hazards associated with suspended man basket work activities.

This Procedure applies to all Lusail personnel, Contractors, Developers, Consultants and subcontractors planning to use crane-suspended man baskets on the Lusail project.

2. Definitions

Term	Description
Crane	A machine that lifts, lowers, and moves a load horizontally. The hoisting mechanism is an integral part of the machine. Cranes (fixed or mobile) are driven manually or by power.
Critical Crane Lift	Any crane lift that requires a Critical Lift Plan
Crane Operator	A person certified by Third Party and Licensed by the State of Qatar as being qualified to operate a specific type model and capacity of crane.
Critical Lift Plan	A Critical Lift Plan is a document that identifies a specific hazardous load and method of hoisting, and the operating restrictions. Pertinent information includes all weights on hook blocks and attachments.
Rigger	A person Third Party certified to prepare a load for lifting
Standard Crane Lift	A standard crane lift is any lift not classified as a critical lift. Crane configuration shall be with main boom only.
Suspended personnel platform	Also know as a suspended work platform, man basket or man cage.
Tailing	The placement of a load resting on the ground from the horizontal position to the vertical position or the vertical position to the horizontal position. Tailing lifts shall be classified as Critical Lifts and handled accordingly.

3. Responsibilities

The Contractor is fully responsible for the planning and implementation of safe hoisting of personnel in platforms suspended on load lines from cranes. 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. General Requirements

The Contractor must first determine whether or not an alternative means of accessing the work location is available, such as by scaffolding, stairs, ladders, supported manlifts, etc.

Note: Hoisting employees in a crane-suspended work platform is strongly discouraged by Lusail. Crane-suspended man basket use shall be authorized only when/where the Contractor has demonstrated that the use of conventional means of accessing a work area (ladder, stairway, aerial lift, elevated work platform, or scaffold) is infeasible because of structural design or worksite conditions, or that use of conventional methods would create a greater hazard to the worker(s).

Where the Contractor can demonstrate the need for suspended man basket use, they shall gain Lusail HSE Department approval in writing prior to commencement of work activities involving the use of suspended man baskets.

5. Man Basket Trial Lift Process

Prior to the start of the trial lift process, a pre trial-lift meeting shall be held. All personnel (riggers, crane operator(s), workers, etc) shall participate in the pre trial-lift meeting. The meeting shall be documented with all participants signing the meeting roster.

Prior to hoisting any person in a crane-suspended man basket, a trial lift procedure including a trial lift of the un-occupied man basket, followed by a trial lift of the occupied man basket shall be conducted. Following the trial lifts, a final inspection of all equipment shall be performed by the competent person to identify deficiencies (Section 8). The trial lift process will be documented on the *Suspended Man Basket Permit* (Section 7).

A trial lift of the un-occupied man basket with a test weight attached that is 125% of rated capacity shall be conducted. The basket will be hoisted from ground level (or the level at which employees will have to enter the basket) to each work location where it is to be positioned.

The trial lift will be conducted prior to placing personnel on the platform. The crane operator will determine that all systems, controls, and safety devices are in place and operating properly. The crane operator will also verify that the man basket can be positioned to all planned work locations without exceeding 50% of the crane's rated load capacity (as determined from the load capacity chart, based upon the crane's lift radius, boom angle, and boom length).

After the un-occupied trial lift inspection, and just prior to commencing work activities, the workers will enter the man basket and the basket will be hoisted a few inches off the ground and inspected to ensure that it is secure and properly balanced.

Note: For the purpose of calculating the total weight of personnel occupying the man basket, the Contractor shall presume each worker to weigh 250 pounds (113.4 kg), minimum.

Note: The trial lift process must be performed each time the crane is moved.

6. Suspended Man Basket Permits

Prior to any use of a crane-suspended personnel platform, a Suspended Man Basket Permit (Attachment [LUS-HSE-FM4-446-082](#)) shall be completed by the Contractor's competent person, and approved by the Contractor's designated representative(s) and the Supervising Consultant.

A separate Permit must be completed for each work area/crane set-up location. Permits are valid for one 10 hour shift unless otherwise approved for extended durations by the Supervising Consultant and Lusail HSE Department. The Permit is required to be posted at the work area for the duration of the work activity, and a copy shall be made available to Lusail HSE department for review upon request.

Permits shall be terminated when working conditions change, when crane operators are changed out, when man basket or rigging deficiencies are identified by workers, crane operators or HSE. Under normal conditions, the Permit shall be terminated by the Supervising Consultant at the end of the shift or upon completion of the work activity.

7. Man Basket Requirements and Criteria

7.1 Design

- The basket should be designed with a 5:1 safety factor by a qualified engineer and welded by a qualified welder.
- The suspension rigging system must be designed in such a way as to minimize tipping of the man basket.
- The maximum rated load and maximum capacity shall be posted on a permanently affixed plate on the man basket.
- The guardrail should be designed to fully enclose the platform on all sides. Railings shall be enclosed from the toeboard to the mid-rail. The enclosure must be either solid construction or expanded metal, having openings no greater than 1/2 inch. The toeboard must be between 4-6 inches in height from the deck and the top rail must be a minimum of 42 inches in height.
- A grabrail must be provided inside the entire basket perimeter.
- Suitable anchorage point(s) for personal fall arrest systems must be provided.
- The access gate must be designed to open inward, and is positively prevented from swinging outward while the man basket is in use.

- The access gate must have a positive locking system to prevent accidental opening during operation/occupancy.
- The design must allow enough headroom for employees to stand upright.
- There should be no rough/sharp edges on any man basket surface.
- In addition to hard hats, overhead protection should be provided when employees are exposed to falling objects.

7.2 Pre planning

Precautions shall be taken to protect employees from any special hazards in the work area where the crane and man basket will be operating. For example, near overhead power lines or areas where the man basket will be out of the operator's view. The Contractor shall adhere to all critical crane lift, communication, and other procedures applicable to work conditions presented by special hazards.

Special precautions must be taken to protect personnel from electrical hazards. When the suspended man basket is working near electrical lines or devices, the minimum allowable working distance from energized electrical lines shall be 6 meters(20').

8. Man Basket Inspection

Following the trial lift process and prior to issuance of the Permit, the man basket must be hoisted a few inches off the ground to verify its hang level. It shall then be given a final inspection by the crane operator or Contractor designated competent person(s). Inspection items include:

- Crane base, sheaves, drums, ropes
- Rigging and tackle
- Man basket
- All hoist ropes must be free of kinks
- Multi-part lines are not twisted around each other
- The hook must be centered directly over the basket
- The hoist lines are laying properly on hoist drums and in the sheaves
- The crane bearing surface has been checked and crane leveled, as necessary

The inspector shall determine if the testing process exposed any defects or adverse conditions. Any defects found during the inspection must be adequately corrected before issuance of the Permit and commencement of work activities.

Following corrections, the Contractor shall re-perform the trial lift process, re-inspect all equipment and verify that corrections made adequately addressed the issue(s). Upon passing this follow-up inspection, the *Suspended Man Basket Permit* shall be approved and issued.

9. Crane Operation with Suspended Man Baskets

Operators of cranes used for hoisting suspended man baskets shall be adequately trained and experience in this activity. Contractors should avoid use of operators with no such experience.

The crane operator must be advised that the load and boom hoist drum brakes, swing brakes, and locking devices such as pawls or dogs must be engaged when the occupied man basket is in a stationary working position. The crane operator shall also ensure that the basket is hoisted/lowered in a slow, controlled manner with no sudden rapid movement of the crane.

All employees must be advised to keep all body parts inside the platform during hoisting/lowering. This provision does not apply to an occupant of the basket who is performing the duties of a signal person.

The operator must be advised to remain at the controls at all times while the crane engine is running and/or the occupied man basket is suspended.

The operator must ensure that the area surrounding the man basket is clear of personnel, structures, and equipment before hoisting/lowering the basket.

10. Work Practices

Only the number of workers needed for the task are permitted in the basket while suspended.

Personnel must be advised that they are not permitted to exit a suspended man, basket which has been secured to a structure, until securing to the structure using 100% personal fall arrest techniques. A worker shall be anchored to the structure prior to releasing anchorage from the man basket.

All workers must be advised that they are not allowed to exit the man basket before it has fully landed on the ground/structure.

Riggers shall use taglines at all times with suspended man baskets, unless their use would create an unsafe condition.

Basket occupants shall never stand upon railings to gain additional working height, regardless of being properly secured to the basket with fall arrest.

Suspended man baskets shall be promptly lowered to the ground/structure and vacated where/when there is any indication of dangerous weather conditions (high wind, lightning) or other impending danger.

Note: Weather conditions must be continuously monitored during suspended man basket use, and operations halted when sustained wind speeds exceed 35 kph.

Basket occupants shall wear a personal floatation vest/device when working over water.

Materials and tools which may be displaced during hoisting/lowering must be adequately secured to the man basket

If welding is to be performed by employees occupying the platform, the electrode must be protected from touching the metal components of the platform.

Workers shall load the man basket only with those tools required for the task. Housekeeping shall be well maintained inside the basket to minimize the potential for worker slips, trips and falls.

11. Communications

The crane operator must be in constant contact with basket occupants (s) by use of standard hand signals or voice communications. Communication system(s) used must be adequate in allowing basket occupants to quickly signal for assistance during an emergency event.

Radio or other verbal communications device is required when direct visual contact between crane operator and basket occupants is not possible, as well as where the use of a signal person is infeasible or insufficient.

All manuals, operating instructions, and load charts have been read and are understood by the involved personnel prior to starting the suspended man basket work operation.

12. 3rd Party Certification

The Contractor shall ensure that all suspended man baskets and man basket rigging and tackle are current in 3rd Party Test, Inspection and Certification. Certification must be from a Lusail approved agency. Certificates shall be maintained on file in the Contractors site office, and made available for Supervising Consultant and Lusail review, upon request.

Suspended man baskets and lifting tackle shall be 3rd party certified on an annual basis, at a minimum.

Contractors need ensure that crane operators training and certification includes use of suspended man baskets with cranes. Ideally, the Contractor will require that suspended personnel platforms training is clearly indicated on the operators training certificate.

After any repair or modification of the suspended man basket, the unit shall be re-certified by the approved 3rd Party Agency prior to being placed into service.

13. References

Equipment operators must adhere to relevant Qatar laws and Lusail policies and procedures for hoisting activities. Refer to the relevant procedure below in regards to further specification for hoisting.

[LUS-HSE-WG3-446-026](#) Cranes, Hoists & Lifts

[LUS-HSE-WG3-446-042](#) Permit to Work Program

14. Attachment

[LUS-HSE-FM4-446-082](#)

Suspended Man Basket Permit