



# Lusail Real Estate Development Company

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

### Lusail Construction Safety Management Procedure – Tools

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## CONTENTS

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- 1.0 DESCRIPTION
- 2.0 DEFINITIONS
- 3.0 RESPONSIBILITIES
- 4.0 GENERAL PRECAUTIONS FOR OPERATORS
  - 4.1 GUARDS
- 5.0 STORAGE
- 6.0 HAND TOOLS
  - 6.1 HYDRAULIC POWER TOOLS
- 7.0 ELECTRIC POWER TOOLS
- 8.0 PNEUMATIC POWER TOOLS
- 9.0 FUEL-POWERED TOOLS
- 10.0 ABRASIVE WHEELS
- 11.0 WOODWORKING TOOLS
- 12.0 CHAINSAWS
- 13.0 POWDER-ACTUATED TOOLS
  - 13.1 GENERAL OPERATING REQUIREMENTS
  - 13.2 FASTENER REQUIREMENTS
  - 13.3 STORAGE AND HANDLING REQUIREMENTS
- 14.0 PERIODIC INSPECTION
- 15.0 TRAINING
  - 15.1 QUALIFIED OPERATORS OF POWDER-ACTUATED TOOLS

- 15.2 RE-TRAINING**
  
- 16.0 DOCUMENTATION**
  
- 17.0 REFERENCES**
  
- 18.0 ATTACHMENT**

## 1. Description

This element of the LCSMP details Lusail Construction HSE requirements to ensure the safety of employees using tools. This element applies to all Lusail personnel, Contractors, Developers, Consultants and subcontractors working on the Lusail project.

## 2. Definitions

| Term                        | Description  |
|-----------------------------|--|
| Abrasive wheel              | A cutting tool consisting of abrasive grains held together by organic or inorganic bonds. Diamond and reinforced wheels are included.  |
| 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.   |
| Cup Wheels (Types 6 and 11) | Wheel types that have been numerically designated by ANSI, using grinding wheel design as criteria. Types 6 and 11 are of cup wheel design.  |
| Direct-Acting Tool          | A powder-actuated tool in which the expanding gas of the powder load acts directly on the fastener to be driven.   |
| Flange                      | A collar, disc, or plate between or against which wheels are mounted and are referred to as adapter sleeve, straight relieved, or straight unrelieved type. The flange disseminates the driving torque of the spindle to the grinding wheel and assists in maintaining the integrity of the wheel.   |
| Flywheels                   | Flywheels, balance wheels, and flywheel pulleys mounted and revolving on crankshaft of engine or other shafting.   |
| High Velocity Tool          | A tool whose test velocity has been measured ten (10) times while using a combination of: <ul style="list-style-type: none"> <li>• The lightest commercially available fastener designed for the tool.</li> <li>• The strongest commercially available powder load that properly chambers in the tool to produce an average velocity greater than 492 ft/sec (150 m/sec) from the ten (10) tests.</li> </ul>   |
| Indirect-Acting Tool        | A powder actuated tool in which the expanding gas of the powder load acts on a captive piston, which, in turn, drives the fastener.  |
| Low-Velocity Tool           | A tool whose test velocity has been measured ten (10) times while using the highest velocity combination of: <ul style="list-style-type: none"> <li>• The lightest commercially available fastener designed for that specific tool.</li> <li>• The strongest commercially available powder load that properly chambers in the tool.</li> <li>• The piston designed for that tool and appropriate for that fastener that produces an average test velocity of no greater than 328 ft/sec or 10 m/sec from the ten (10) tests with no single test showing a velocity greater than 354 ft/sec (108 m/sec).</li> </ul> |

| Term                 | Description  |
|----------------------|--|
| Medium-Velocity Tool | <p>A tool whose test velocity has been measured ten (10) times while using the highest velocity combination of:</p> <ul style="list-style-type: none"> <li>• The lightest commercially available fastener designed for the tool.</li> <li>• The strongest commercially available powder load that properly chambers in the tool.</li> <li>• The piston designed for that tool and appropriate for that fastener that produces an average test velocity greater than 328 ft/sec (100 m/sec) but no greater than 492 ft/sec (150 m/sec), with no single test having a velocity greater than 525 ft/sec (160 m/sec).</li> </ul> |
| Point of Operations  | That point at which cutting, shaping, boring, or forming is accomplished upon the stock.   |
| Safety Guard         | An enclosure designed to restrain the pieces of the grinding wheel and furnish all possible protection if the wheel is broken in operation.  |

### 3. Responsibilities

The Contractor is fully responsible for the pre-planning, development of Method Statements, Job Hazard Analysis, overall safe work planning and implementation. The Contractor's 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 Precautions for Operators

All tools must be maintained in a safe condition. Employees must inspect tools before work. Subcontractors are responsible for maintaining their own tools. Any tools found to be defective must be removed from service and tagged "DEFECTIVE" or "DO NOT USE."

JHAs will identify the tools necessary for all tasks and the specific hazards of working with tools for a particular job.

In accordance with [LUS-HSE-WG3-446-006](#), Personal Protective Equipment (PPE), workers shall use PPE necessary to protect against hazards such as dusts, fumes, mists, vapors, gases, falling objects, or flying, abrasive, and splashing objects.

While work is being performed near energized electrical circuits or equipment, do not use the following tools:

- Hammers with metal handles
- Screwdrivers
- Knives with metal continuing through the handle
- Metallic measuring tapes

Do not depend on the insulation on hand tools to protect you from shock.

Machines designed for fixed locations must be anchored to prevent them from moving or walking.

When powder-operated tools are designed to accommodate guards, the guard must be in place on the tool except during active maintenance:

- The point of operation (the area on the machine where the work is being performed) must be guarded to prevent the operator from having any part of his or her body in the danger zone when there is exposure that could cause injury to the operator.
- Belts, sprockets, gears, chains, spindles, drums, flywheels, or any moving or rotating part of equipment must be guarded if the parts could injure employees or otherwise create a hazard.

- The periphery of blades must be guarded with guards with openings no larger than ½ inch.

Only cutting tools can be used to cut metal strapping or banding used to secure cargo.

All hand-held powered circular saws that have a blade diameter greater than 2 inches, electric, hydraulic or pneumatic chain saws, and percussion tools without positive accessory holding means shall be equipped with a constant pressure switch or control that will shut off the power when the pressure is released. All hand-held gasoline powered chain saws shall be equipped with a constant pressure throttle control that will shut off the power to the saw chain when the pressure is released.

All hand-held powered drills, tappers, fastener drivers, horizontal, vertical, and angle grinders with wheels greater than 2 inches in diameter, disc sanders with discs greater than 2 inches in diameter, belt sanders, reciprocating saws, saber, scroll, and jig saws with blade shanks greater than a nominal one-fourth inch, and other similarly operating powered tools shall be equipped with a constant pressure switch or control, and may have a lock-on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

All other hand-held powered tools, such as, but not limited to, platen sanders, grinders with wheels 2 inches in diameter or less, disc sanders with discs 2 inches in diameter or less, routers, planers, laminate trimmers, nibblers, shears, saber, scroll, and jig saws with blade shanks a nominal one-fourth of an inch wide or less, may be equipped with either a positive “on-off” control, or other controls as described in this section.

The operating control on hand-held power tools shall be so located as to minimize the possibility of its accidental operation, if such accidental operation would constitute a hazard to employees.

**EXCEPTION:** This section does not apply to concrete vibrators, concrete breakers, powered tampers, jack hammers, rock drills, garden appliances, household and kitchen appliances, personal care appliances, medical or dental equipment, or to fixed machinery.

#### 4.1 Guards

Guards shall be in place and operable at all times while the tool is in use. The guard may not be manipulated in such way that will comprise its integrity or compromise the protection in which intended. Guarding shall meet the requirements set forth in ANSI B15.1.

## 5. Storage

- Provide racks to transport axes and brush hooks.
- Never store or transport tools with uncovered/unguarded sharp edges. Cover the edges with leather or another durable material.
- Store and handle tools with sharp edges so that they do not cause injury or damage. Do not carry sharp-edged tools in pockets.
- Keep all cutting tools such as saws, wood chisels, drawknives or axes in suitable guards or in special compartments.
- Do not leave tools where they could cause a person to trip or stumble.
- When working on or above open grating, use a canvas or other suitable covering to cover the openings to prevent tools or parts from dropping on someone below. The danger area may be barricaded instead.

## 6. Hand Tools

- Sharp tools are safe tools: sharpen tools regularly and inspect them for defects.
- Do not use wrenches such as adjustable, pipe, end, and socket wrenches when the jaws are sprung and slippage could occur.
- Use suitable holders or tongs to grip chisels, drills, punches, ground rods and pipes while they are being struck by another employee. Do not hold them with your hands.
- Do not use pipe to extend a wrench handle for added leverage unless the wrench was designed for such use.
- Ensure that impact tools such as drift pins, wedges, and chisels are kept free of mushroomed heads.

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- Replace wooden-handled tools if the handles become splintered or cracked. Wooden handles must be tight. Never use tools with damaged or broken handles. Do not tape or lash the handle with wire.

### 6.1 Hydraulic Power Tools

The manufacturer's safe operating pressures for hoses, valves, pipes, filters, and other fittings shall not be exceeded.

## 7. Electric Power Tools

Electric power tool use must be in conformance with [LUS-HSE-WG3-446-024](#), Electrical, including site-specific requirements in the project assured grounding plan, which includes the following:

- Competent persons and qualified electricians
- Identification
- Grounding
- Ground fault circuit interrupters (GFCIs)
- Testing and color-coding
- Visual inspection

Portable electric tools and appliances, except double insulated tools, must be grounded.

Portable electric tools that are held in the hand must be equipped with switches of a type that must be manually held in the closed position.

Electric power tools that are damaged in any way must be marked as such and taken out of service immediately.

The use of electric cords for hoisting or lowering tools shall not be permitted.

## 8. Pneumatic Power Tools

- The hose and hose connections used for conducting compressed air to pneumatic equipment must be designed for the pressure and service to which they are subjected. The manufacturer's safe operating pressure for hoses, pipes, valves, filters, and other fittings shall not be exceeded.
- Pneumatic power tools must be secured to their hoses or whips by a positive means to prevent the tools from being disconnected accidentally, unless a suitable ball check device or equivalent is provided at the air source. Hose connections must be secured with a pin or wire. All hoses exceeding ½ inch inside diameter must have a safety device at the source of supply or branch line to reduce pressure in case of hose failure.
- Pneumatic impact tools must have safety clips or retainers securely installed to prevent attachments from accidentally disconnecting.
- All pneumatic nailers (or other similar equipment with automatic fastener feeds that operate at 100 psi) must have a device that will allow fasteners to eject only when the muzzle is in contact with the work surface and when a triggering device that is separate from the muzzle is activated simultaneously.
- Compressed air used for cleaning must be less than 30 psi. Effective chip guarding and PPE such as safety glasses or face shields must be used during cleaning. Compressed air may not be used to clean any part of a person.
- Hoses must not be used to hoist and lower objects.
- Airless spray guns that atomize paint or other fluids at high pressures ( $\geq 1,000$  psi) must have a manual or automatic device that prevents the trigger from being pulled until the safety device is manually released.
- In lieu of the above requirement, a diffuser nut may be used that prevents high-pressure, high-velocity release and a nozzle tip guard that prevents the tip from coming into contact with the operator.
- Abrasive-blast cleaning nozzles must have a valve that must be held open manually.
- A tool retainer must be installed on each piece of equipment which, without such a retainer, may eject the tool.
- Pneumatically powered drills and grinders must be guarded in the same manner as those powered by electricity.



- Tamperers must be equipped with hand guards to protect employees when working close to walls or other fixed objects or structures.

## 9. Fuel-Powered Tools

Fuel powered tools may be refueled, serviced, or maintained only while the tools are stopped and not operating.

Fuels must be transported, handled, and stored in accordance with [LUS-HSE-WG3-446-017](#), Hazardous Materials Handling, Transportation and Storage.

When fuel powered tools are used indoors, use extreme caution to prevent the buildup of carbon monoxide or other hazardous gases to concentrations that exceed established safe levels. Air movers, ventilation, and exhaust ducts are some potential controls to reduce unsafe levels of hazardous gases, in accordance with [LUS-HSE-WG3-446-037](#), Ventilation. In accordance with [LUS-HSE-WG3-446-006](#), Personal Protective Equipment, PPE such as respirators must be used only after it has been determined that engineering controls will not reduce contaminant concentrations to levels below applicable safe exposure levels.

## 10. Abrasive Wheels

Wear safety glasses and face shields when grinding with abrasive wheels.

Inspect and ring-test abrasive wheels before mounting to ensure that the wheels are free of cracks or defects. Immediately after mounting the wheel and before turning on the power, the operator will turn the wheel by hand for a few revolutions to ensure that it revolves properly.

Do not exceed the operating speeds indicated on the abrasive wheel.

Ensure that floor-stand and bench-mounted abrasive wheels are provided with substantial guards. The maximum angular exposure must not exceed 90 degrees. When the work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure must not exceed 125 degrees. Exposure must not begin at more than 65 degrees above the horizontal plane of the spindle.

Guards for portable abrasive wheels used for external grinding must be mounted so that they maintain proper alignment with the wheel, and the guard and its fastenings must be of sufficient strength to retain fragments of the wheel in case of accidental breakage.

Do not force abrasive wheels onto spindles or over tighten the wheels onto the spindles.

Floor- and bench-mounted grinders must be provided with work rests adjusted to no more than ¼ inch from the surface of the wheel.

Peripheral protecting members can be adjusted to the constantly decreasing diameter of the wheel by means of an adjustable tongue or similar device. The maximum distance between the wheel periphery and the torque or end of the peripheral band at the top of the opening must not exceed ¼ inch.

Cup wheels (Types 6 and 11) must be protected by fixed guards that mount behind the wheel, enclose the wheel sides downward, and are attached to the housing of the grinder.

Grinders must be guarded. The top half of the wheel must be enclosed at all times. The maximum angular exposure of the grinding wheel must not exceed 180 degrees. Exceptions are:

- When the work location makes the use of such guards impossible. In such circumstances, a wheel equipped with safety flanges must be used for wheels designed to fit the flanges.
- When using wheels of 2 inches or less in diameter securely mounted on the steel mandrel. In such circumstances, a wheel equipped with safety flanges must be used for wheels designed to fit the flanges.
- When the wheel is entirely within the work being ground. In such circumstances, a wheel equipped with safety flanges must be used for wheels designed to fit the flanges.

Abrasive wheels greater than 2 inches can only be used on machines with safety guards.

General precautions when using flanges include:

- Ensure that both flanges are of equal diameter.
- Do not use washers in place of flanges.

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- Ensure that flanges have proper clearance or relief.
  - Do not over tighten flanges causing them to bend.
  - Clean all dirt and foreign material from sides of wheels and flanges.
  - Check that the flange diameter is no less than one-third of wheel diameter and is preferably made of mild steel.

## 11. Woodworking Tools

Ensure that all fixed woodworking tools are equipped with a “disconnect” that can only be locked in the OPEN position.

Do not exceed the operating speeds indicated on the saw blades.

All portable power saws must be equipped with guards above and below the baseplate shoe. When the tool is withdrawn from the work, the lower guard must automatically and instantly return to the covering position.

Belt sanding machines must be equipped with guards at each nip point where the sanding belt runs onto a pulley. These guards prevent the operator’s hands and fingers from coming into contact with the nip points. The unused run of the sanding belt must also be guarded against accidental contact.

Portable power-driven circular saws must be equipped with guards above and below the base plate or shoe. The upper guard must cover the saw to the depth of the teeth, except for the minimum arc needed to permit the base to be tilted for bevel cuts. The lower guard must cover the saw to the depth of the teeth, except for the minimum arc needed to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard must automatically and instantly return to the covering position.

Guards on portable band saws must be provided at each pulley and extend along the non-cutting portion of the band saw.

For tools such as electric drills, saber saws, portable band saws, and portable routers that are not compatible with guards because of their physical characteristics in conjunction with their function, employees must be trained on hand position as the primary accident prevention measure.

Combs (featherboards) or suitable jigs shall be provided at the workplace for use when a standard guard cannot be used, as in dadoing, grooving, jointing, molding, and rabbeting.

An automatic cutoff saw that strokes continuously shall not be used if the operator is exposed to the hazards of the saw and is not able to control each stroke.

Arbors and mandrels shall be constructed so as to have firm and secure bearing and be free from play.

Sharpening or tensioning of saw blades or cutters shall be done only by persons with experience and skill in this kind of work.

Saw frames or tables shall be constructed with lugs cast on the frame or with an equivalent means to limit the size of the saw blade that can be mounted so as to avoid overspeed caused by mounting a saw blade larger than intended.

Circular saw fences shall be so constructed so that they can be firmly secured to the table or table assembly without changing their alignment with the saw. For saws with tilting tables or tilting arbors, the fence shall be so constructed that it will remain in a line parallel with the saw blade, regardless of the angle of the saw blade with the table.

Circular saw gauges shall be so constructed as to slide in grooves or tracks that are accurately machined to ensure exact alignment with the saw blade for all positions of the guide.

Hinged saw tables shall be so constructed that the table can be firmly secured in any position and in true alignment with the saw blade.

Ripsaw spreaders shall be made of hard tempered steel, or its equivalent, and shall be thinner than the saw kerf. The spreader shall be of sufficient width to provide adequate stiffness or rigidity to resist any reasonable side thrust or blow tending to bend or throw it out of position.

Ripsaw spreaders shall be attached so as to remain in true alignment with the saw blade even when either the blade or table is tilted, and shall be placed so that there is not more than 1/2-inch space between the spreader and the back of the saw blade when the largest blade is mounted in the machine. The provision of a spreader in connection with grooving, dadoing, or rabbeting is not required. On the completion of such operations, the spreader shall be immediately replaced.

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The hood shall be made of adequate strength to resist blows and strains incidental to reasonable operation, adjusting, and handling, and shall be so designed as to protect the operator from flying splinters and broken saw teeth. It shall be made of material that is soft enough so that it will be unlikely to cause tooth breakage.

The hood shall be so mounted as to ensure that its operation will be positive, reliable, and in true alignment with the saw blade; and the mounting shall be adequate in strength to resist any reasonable side thrust or other force tending to throw it out of line.

For all circular saws where conditions are such that there is a possibility of contact with the portion of the saw blade either beneath or behind the table, that portion of the blade shall be covered with an exhaust hood, or if an exhaust system is not required, with a guard that shall be so arranged as to prevent accidental contact with the saw blade.

Revolving double arbor saw blades shall be fully guarded in accordance with all the requirements for circular crosscut saws or with all the requirements for circular rip saws, according to the kind of saws mounted on the arbors.

No saw blade, cutter head, or tool collar shall be placed or mounted on a machine arbor unless the tool as been accurately machined to size and shape to fit the arbor.

Each machine shall be designed, constructed, and mounted in a manner that will eliminate hazardous vibration at any operating speed while using any tool designed for the machine.

On machinery and equipment where injury might result if motors were to automatically restart after power failures, provision shall be made to prevent machines and equipment from automatically starting upon restoration of power.

**Exception:** Portable power tools intended to be handheld during use.

## 12. Chainsaws

- When operating a chainsaw, wear safety footwear, snug-fitting clothing/chaps, protective gloves, eye, hearing and head protection.
- Inspect the chainsaw before use. Do not operate a chainsaw that is damaged, improperly adjusted or not completely and securely assembled. Be sure that the chainsaw stops moving when the throttle control trigger is released.
- Do not begin cutting until the work area has been cleared, secure footing is established and a retreat path from the falling tree or branches is identified.
- Make sure that the area where cutting will be performed is free from obstruction.
- Give ample warning before felling a tree. Do not allow other persons near the chainsaw when starting or cutting with the chainsaw. Keep bystanders away from the work area.
- Keep all parts of your body away from the chainsaw when the engine is running.
- Do not overreach or cut above shoulder height.
- **WARNING:** Kickback may occur when the nose or tip of the guidebar touches an object, or when wood closes in and pinches the saw chain during the cut. Tip contact may cause a lightning-fast reverse reaction, kicking the guidebar up and back toward the operator and resulting in serious personal injury.
- Always maintain a firm grip on the saw using both hands: the right hand on the rear handle and the left hand on the front handle. Use a firm grip with fingers and thumbs encircling the chain saw handle.

## 13. Powder-Actuated Tools

A number of tools that use explosive charges to drive fastenings and perform similar functions are in wide use throughout the industry. Operate tools in strict accordance with the manufacturer's instructions and current ANSI/ASSE A10.3-2006.

Only manufacturer-trained, qualified operators may use powder-actuated tools.

Operators and assistants must wear PPE, including safety goggles and hearing protection, at all times while operating powder-actuated tools. If a potential hazard could cause injury to an operator's face, use transparent face shields in addition to safety goggles.

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Notify personnel when a powder-actuated tool is to be used in the area. In areas where powder-actuated tools are being used extensively, warning signs (available from manufacturers) and barriers (if necessary) identifying the hazard area are recommended.

Operators and other personnel in the immediate area must wear eye, face, and hearing protection in accordance with [LUS-HSE-WG3-446-006](#), Personal Protective Equipment.

Only tools approved by a state or other governing agency can be used. Each day, prior to use, the operator must inspect the tool to determine that it is in accordance with manufacturers' recommendations to ensure that they are as follows:

- Safety devices are in proper working condition
- Tools are clean
- All moving parts operate freely
- Barrels are free from obstruction

If a tool is not in working order or if it develops a defect during use, immediately remove it from service and do not use it until proper repairs have been made by competent personnel. If a tool is found to be defective, remove it from service and tag it "DEFECTIVE – DO NOT USE."

### 13.1 General Operating Requirements

Keep an operator's instruction manual in the carrying case for the specific tool being used for reference, when necessary, concerning proper operation, service, etc., and follow those instructions at all times. Call on the assistance and services of the tool manufacturer or authorized distributor to resolve questions concerning proper use or service, or if operator training is required.

The three classes of tools are as follows: (1) low velocity; (2) medium velocity; and (3) high velocity. Many applications requiring powder-actuated tools can be successfully accomplished using the low-velocity piston tool (trigger or hammer actuated). The low-velocity piston tools will be used whenever possible because they present the least risk to operator safety.

Do not use powder-actuated tools where flammable gases, vapors, dusts, or explosives are present.

Do not load a tool unless it is being prepared for immediate use. If the work is interrupted after loading, unload the tool immediately. Even if the tool is equipped with keepers, restrainers, or captive stud capabilities, do not point the tool at any person, and keep hands clear of the open muzzle end at all times.

Hold the tools firmly against, and perpendicular, to the surface being driven into, except for specific applications recommended by the tool manufacturer.

Use the proper shield, fixture, adapter, or accessory suited for the application, as recommended and supplied by the manufacturer. Use the appropriate safety guards supplied by the manufacturer.

Always use the proper type and powder level load. The standard means of identifying powder levels of loads used in tools uses the uniform colors and printed descriptions printed on the load containers, as shown in the Identification of Power Load Charge form (Attachment [LUS-HSE-FM4-446-064](#)).

In selecting the proper powder load to use for any application, it is important to start with the lightest powder level recommended for the tool being used. If the first test fastener does not penetrate to the desired depth using the lightest load, try the next higher powder load.

### 13.2 Fastener Requirements

Use only those fasteners that are specially designed and manufactured for use in powder-actuated tools. Refer to the manufacturer's recommendations if doubt exists about a fastening application.

- To prevent flying hazards, do not drive a stud or attachment without first conducting the center punch test to determine base material suitability. Use a fastener as a punch on the actual base material for the following conditions:
  - If the material shows a clear fastener point impression and the fastener point is not blunted, proceed with the first test fastening.
  - If fastener point is blunted, the material is too hard.

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- If material cracks or shatters, the material is too brittle.
  - If fastener sinks into material with an average hammer blow, the material is too soft.
  - In the event of a misfire, do not remove tools from the working surface for a minimum of 30 seconds; then follow the instructions in the manufacturer's manual for the specific tool.
  - Do not fire fasteners into very hard or brittle materials such as cast iron, glazed tile, surface hardened steel, glass block, live rock, face brick, and hollow tile.
  - Do not drive fasteners into soft or thin materials that could be completely penetrated by the fastener unless there is a backing to prevent penetration through the other side.
  - Do not drive fasteners into concrete unless the material's thickness is at least three times the fastener shank penetration.
  - Do not drive fasteners into any spalled area.
  - Do not drive fastener into an existing hole unless a guide supplied by the manufacturer is used to ensure proper alignment.
  - When using a standard-velocity tool, do not drive fasteners directly into masonry materials closer than 3 inches from an unsupported edge or corner, or into steel closer than ½ inch from an edge or corner, except for specific applications recommended by the manufacturer.

### 13.3 Storage and Handling Requirements

The issuing supervisor maintains security over powder-actuated tools and powder loads and maintains a current list of certified operators, authorized personnel, and quantities of powder-actuated tools.

- Keep powder-actuated tools and powder loads in a dry metal container and secure them by lock and key. The container must be painted red with white letters, and only authorized personnel are permitted access to it. The outside of the container must be labeled, "Powder-Actuated Tool" and "For Use by Authorized Personnel Only"; the inside of the container must be labeled "Keep Locked When Not in Use."
- The issuing supervisor ensures that an instruction manual, a powder load chart, repair tools, cleaning tools, and a tool inspection log are stored in the tool container.
- Do not throw unfired powder loads into trash containers or carelessly discarded. Return the unfired powder loads to the original place of issuance.
- Store powder loads of different powder levels separately.
- Never carry a loaded tool away from a worksite. Always leave tools unloaded until ready for use. Never leave loaded tools unattended. If a tool is not in use, keep it a locked case labeled "Powder-Actuated Tool."
- Never store or use powder-actuated tools in explosive atmospheres, in the vicinity of highly flammable materials, or where non-sparking tools are required.

## 14. Periodic Inspection

- Employees must inspect all tools before work.
- When tools or equipment are found to be in need of inspection or repair, tag them defective and send them to the responsible department for inspection and repair. Under NO circumstances may defective tools and equipment remain in service.

## 15. Training

Contractors shall train employees in proper tool selection, use, guarding, and maintenance.

The HSE Representative arranges employee training at the time of their initial assignment. Supervisors are responsible for identifying additional employee training needs during risk mitigation planning (2-week look-ahead). Training can be organized and presented to groups or on a work area by work area basis, depending on the operation.

### 15.1 Qualified Operators of Powder-Actuated Tools

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The HSE Representative arranges for users of powder-actuated tools to be trained as qualified operators by the tool manufacturer or by an authorized representative of the tool manufacturer.

All authorized instructors must have in their possession a valid authorized instructor's card issued and signed by an authorized representative of the manufacturer.

Qualified operators are issued qualified operator's cards, which are issued by only after thorough training. Operators must have their training cards in their possession when using tools.

Follow-up measures in the form of proper supervision, regular inspections, and accident investigations are necessary to ensure that machine guarding regulations and practices are in compliance.

### **15.2 Re-Training**

Re-training is provided for all authorized and affected employees when there is a change in job assignment or a change in tools, equipment, or processes that present a new hazard.

Additional re-training is conducted whenever there are deviations from, or inadequacies in, the employee's knowledge or use of the energy control procedures. The re-training re-establishes employee proficiency and introduces new or revised energy control methods and procedures, as necessary.

Using an acceptable training form, the HSE Representative maintains a record of all training or instruction given to employees.

## **16. Documentation**

Every tool must have an operator's instruction manual in its carrying case to be used as necessary for reference.

The issuing supervisor maintains a current list of certified operators, authorized persons, and quantities of powder-actuated tools.

The HSE Representative documents all tool training and re-training records. Records verifying completion of powder-actuated tool training are kept in employee individual training files and archived a minimum retention time of 10 years from creation date.

## **17. References**

Qatar Construction Specifications 2010 Section 11 Part 1.4 "Safe Use of Equipment"

ANSI/ASSE A10.3, Safety Requirements for Powder-Actuated Fastening Systems (2006)

## **18. Attachments**

[LUS-HSE-FM4-446-064](#)

Identification of Power Load Charge