

**H E A L T H**  
&  
**S A F E T Y**  
**M A N U A L**



**KIRTI**

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KISL



*Kirti Infrastructures Ltd.*

## **SAFETY POLICY**

The company strives to attain and maintain high standards of Safety, Health and Environment at all work places, besides adherence to statutory requirements.

The company has the following objectives concerning HSE:

- To have ZERO accident on work site.
- To ensure that all personnel are qualified to do their job and have undergone HSE induction training.
- To comply with the HSE requirements of the client at work site.



To achieve this objective the company is committed to:

- Ensure that employees are adequately trained in safety.
- Integrate safety Issues In managerial decisions.
- Ensure that all vendors are made aware of the company's safety instructions.
- Conduct periodic Inspection and safety audit and ensure remedial actions.
- Ensure proper investigation about the potential cause of accidents.
- Allocating adequate resources for effective HSE management.

The employees of the company will be responsible for:

1. Observing safety at work and prevention of accidents.
2. Observing safety rules, Instructions and statutory rules and regulations.
3. Promoting safety as an Integral part of the work culture.
4. Identifying potential hazards and Introducing appropriate safety measures.



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## **Introduction:**

Accidents at construction sites cause socio-economic problems and have a demoralizing effect on the work environment. Accidents are caused mainly due to negligence and failure to adopt safety measures. **KISL** is committed to protect its precious assets in terms of man, material and machinery by strictly enforcing the safety codes on all works.

It is extremely important that we understand how each task is to be done in a safe manner as well as the subcontracts should be aware about it.

## **Site entry:**



Personnel, equipment and material shall enter and exit the site only through the gate designated. Personnel should not walk through or around the existing plant at any time.

## **House keeping:**

A clean site is a safe site. Safety has high priority as well as a daily responsibility.

Good House keeping IS AN IMPORTANT TOOL FOR ACCIDENT PREVENTION. The important measures to be undertaken are as below:

### # Storage Area:

All material should be maintained in neat stockpiles with well laid aisles and walkways for ease of access without having undesired projections.

### # Work Areas:

Loose material, scraps, tools etc. should not be lying in the working areas, especially in the vicinity of ladders, ramps stairs etc. This is more important at heights, where the loose materials are liable to

fall down, Spills of oil and grease should be removed immediately. An effective means of preventing loose places lying dangerously at heights is the provision of suitable receptacles for waste and scrap pieces.

#### # Protruding Nails:

Protruding nails in wooden pieces is a chronic problem on civil sites. It is worth while to have one or two helpers for retrieving protruding nails.

#### # Scrap Yard:

Wooden scrap yard should be at a safe distance from any gas cutting or welding operations. It should be treated as “No Smoking” zone.

#### # Lighting:

Adequate lighting should be provided in and around the work areas, passages, stairs, ladders etc.

#### # Opening on floors:

All opening on floors where workmen are liable to work or even pass through shall be either kept closed or barricaded.

The approach road from and to the work site should not be blocked by parking vehicles or stacking materials to avoid possible blockage during emergency.

#### # Orderliness:

Scrap, trash and other wastes shall be placed in designated containers. Work areas shall be cleansed up as the job progresses. Cords and hoses shall be cleaned up as the job progresses. Cords and hoses shall be routed in manner that will present no tripping hazard-preferably overhead. All material, tools and equipment shall be stored in a stable position (Tied, stacked or choked) to prevent rolling or falling. All vehicles shall be parked in their



proper parking space. A safe access way shall be maintained to all work areas and emergency exits. Daily cleaning up of site will be the responsibility of the labor contractor of respective activity, and if the clean up is not adequate it will be the responsibility of KISL to maintain it on weekly basis.

### **Authority and Authorization:**

- The personnel shall be thoroughly scrutinized, tested and provided with required documents prior to providing him the authorization to operate their respective machinery! Vehicles by site administrative officer.
- Only the authorized personnel shall operate their respective machinery/vehicles.
- Every employee shall be provided with a proper Identity Card.

### **Posters & Signs:**

Posters and Signs shall be adopted as visual aid for accident & fire prevention. Posters shall be written In English, Hindi or the local language prevalent in that state. They shall be conspicuously displayed. Clear Indications will be provided to ear mark the working areas e.g. Fabrication yard, Material yard, Store etc.



### **Personnel Protection:**



Suitable protective equipment required personal, such as clothing, eye protection, gloves, respiratory equipment ,hard hats, hearing protection, and toe protection, shall be provided by the employer and shall be worn where required.

The employer can avoid costly delay in proceeding with the work by ensuring that all personnel report with the required personal protective equipment.

Employer shall train and ensure that all employees should wear appropriate personal protective equipment that is maintained in good condition. Employees shall not commence on work unit till they are wearing proper protective equipment, proper clothing to be worn at site.

### **Head and Scalp:**

Hard hats worn properly and in good Condition shall be worn under the following conditions.



- In any area posted as hard hat area.
- Beneath any overhead work, including areas below ladders (e.g. Ground man working with a man on a ladder), Scaffolds, open gratings, and other openings.
- In any other area where a head bumping hazard is present.
- 

### **Eyes and Ears:**

#### **Eyes:**

- Safety glasses shall be worn by everyone who is (a) doing mechanical /Electrical work (b) in an area where mechanical/electrical work is being done, or (c) in an area where chemicals are stored or handled (which included, but is not limited to all laboratories) safety glasses with side shields shall be worn in all designated construction areas and in operating areas that are designated by the contract Administrator /Supervisor.



- cover all goggles or full- Face shield worn (over approved safety glasses) shall be worn for power chipping, removing or installing ceiling panels, and drilling above shoulder height.

- Full face shields shall be worn ( over approved safety glasses) for handing molten materials (Such as lead or tar), grinding, or performing abrasive cutting.
- Special protection shall be worn for handing acids or caustics, of for grit blasting. The Contract Administrator supervisor should be consulted.
- Burning goggles shall be worn for all gas welding and burning. They shall have a No. 3 density minimum fitter lens and a safety lens on both sides of the filter lens.

### **Ears:**

Hearing protection shall be worn in areas where noise levels exceed 90 dba, where exposure to 85-90 dba exceeds 8 hours per day, or where posted.

### **Finger, Hands and wrists (Glove Rule):**



Gloves suitable for the job being performed shall be won unless the job cannot be done with gloves or unless wearing gloves increases the hazard.

### **Toes, Feet and Legs:**

- Industrial-Quality leather work shoes, safety shoes or toe protection shall be worn at all times by persons doing mechanical electrical contraction work or in an area where such workings being performed. Safety shoes or toe protection shall also be worn in all area so posted.
- Rubber boots with safety toe protection should be used on job with the potential for chemical hazardous conditions.
- Foot guards are worn for using jack hammers, tampers, and similar equipment.



- Shin guards, chaps, spates, etc. should be worn tar using some special equipment such as chainsaws, brush hooks, and where snake bites are possible.

Minimum stock will always be kept at site. Minimum level will be based on judgment of site in charge

**Smoking:**

Smoking shall be allowed only in the designated area under controlled conditions. Smoking is prohibited in vehicles at the job site.

**Fire Protection:**

Fire hydrants, fire extinguishers, etc., shall be plainly marked and shall be kept clear of all obstructions. A fully equipped first aid box shall be available at site, easily accessible and marked.

Fire Buckets:

Where the nearest fire bucket is located.  
Whether it is adequately filled with sand.  
Whether it is placed in position/location.

Extinguishers:

Where the nearest fire extinguisher is located.  
How to operate it  
The type of fire on which it should be used. Check the label.



*Be aware that ...*

- All extinguishers shall be recharged or replaced promptly after use. Use of any company extinguishers shall be reported to the Contract Administrator/ Supervisor immediately.

**Fall Prevention / Protection:**

- To be effective, fall prevention must be initiated in the construction planning phase with a close study of operations



and tools having fall hazard potential. The basic idea is to map out effective ways to get rid of the fall hazards and minimize the need for fall arrest equipment.

- Fall protection is using fall arrest equipment to minimize the detrimental effects of a fall once it occurs. When fall arrest equipment is utilized, employee training must be provided before starting work to assure proper use. Fall arresting systems shall consist of a full body harness, shock absorbing lanyard, and adequate anchorage points. Consult with local/site safety specialists for additional details.
- Water storage tank shall be fenced and necessary jail on top shall be provided.
- All open excavated pits or trenches must be barricaded to avoid slipping or falling inside.



### **Ladders:**

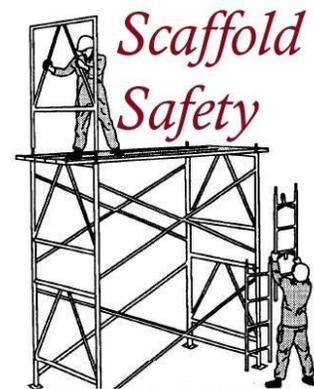
- Inspect every ladder before using it, if any ladder is found defective remove from service.
- Painted ladders are not permitted.
- If it is necessary to place a ladder in or behind a doorway, barricade the work area and post warning signs on both sides of the door.
- While ascending and descending a ladder, hold on to a stepladder with at least one hand. Use an available handrail.
- Keep both feet on the ladder rungs. Do not reach out too far. Do not place one foot on a line or piece of equipment and the other on a ladder rung. Change the position of the ladder as often as necessary to keep within reach of the work.
- Face a ladder when working from it. Use fall protection if you must stand backwards on a ladder, and under certain other conditions.
- Do not allow more than one person on a ladder unless the ladder is designed for more than one person.
- Do not use metal ladders for electric welding or near energized electric lines or service.
- If it is necessary to use a ladder on top of a scaffold, or close to the edge of an elevated platform, roof, or floor opening, tie off the ladder and utilize fall protection equipment.

- Under no circumstances use chairs or other furniture as ladders.
- Every ladder shall be adequately tied off or held.
- Set stepladder level on all four feet, with spreaders locked in place. Do not use a stepladder as a straight ladder.
- Never stand or sit on the top of a stepladder.

### **Scaffolding:**

Before work on a scaffold is begun, it shall be inspected visually to ascertain that:

- Handrails, mid rails, Toe boards, and Decking are in place.
- All wheels are locked, if it is a movable scaffold.
- Locking pins are in place at each joint.
- Personnel shall wear fall-arrest equipment properly tied off on any scaffold platform not equipped with standard handrails. Incomplete scaffolds shall be reviewed by the Contract Administrator/Supervisor prior to use.
- All scaffolds shall be erected level and plumb, on a firm base.
- A scaffold shall be tied off or stabilized with outriggers when its height is more than three (3) times the smaller dimension of its base. Scaffolds shall also be tied off horizontally every 30 feet.
- The safe working loads on all scaffolds shall not be exceeded.



### **Form work:**

- Formwork shall be placed on firm base
- Care should be taken to keep it in level and plumb.
- Adequate bracing and ties should be provided with cuppler.
- Any staging of height more than 8.0m shall be checked by Senior Engineer at site to ensure it's strengthen and proper supporting system.

### **Barricades:**

- Barricades are required around work areas, including areas beneath concrete slab floors that have openings in floors, roofs, and elevated platforms, around overhead work, and wherever necessary to warn people of falling or tripping hazards.
- A warning barricade shall be kept five (3) feet back from the edge of any excavation, hole, platform or roof. A protective barricade may be placed closer.
- Barricades shall be erected before a hole is cut and extended as the excavation progresses.
- Barricades shall be removed when no longer needed.
- Numerous excavations and work areas in one general area may be barricaded effectively by erecting a barricade around the general area. However, a barricade should not encompass more area than is needed to safely perform the task.
- Blinking lights shall be used on road closures after dark and as required by the Contract Administrator Supervisor.
- An access opening or gate should be provided where practical.
- Barricade signs shall be fully informative, legible, and visibly displayed.

### **Hole covers In Floors and Decks:**

All holes or openings through floors or decking at all elevations shall be provided with hole cover or barricades Immediately. Material and equipment shall not be stored on a hole cover.

Every hole cover shall have a sign reading: "WARNING TEMPORARY COVER DO NOT REMOVE UNLESS AUTHORIZED", or shall be otherwise identified.

### **Material Hoists:**

- Hoists shall be operated only by Authorized Operators.
- Hoists **shall not** be used to transport personnel.
- The weight of the material and capacity of the elevator or hoist shall be known before it is used. Material shall be positioned so it cannot shift and does not extend beyond the cage limits.
- The single system shall be posted at each landing.

- The Operator of a hoist engine shall have overhead protection of 2-inch unfinished planking, or Its equivalent, supported to develop its full strength.
- Hoist brakes shall be capable of stopping and holding 150% of the rate hoisting capacity.

### **Walk way / Khapeda:**

- Ensure that the walkway/khapeda is designed with proper spacing of pipe, so as to avoid trapping of foot between the gaps.
- Ensure that proper welding of pipes has been carried out prior to its use.
- The walkway should be of adequate strength.
- The placement of walkway should be such that it is in proper Inclination and adequately supported to avoid tripping.

### **Electrical:**

- All Electrical units and related network shall qualify clients safety requirements.
- All Electrical items, machinery, lights, extension cords, portable tools are acceptable for use if the tools and power cord are approved by site safety personals / committee.
- Non conductive materials shall be used for securing lighting strings to supports.

### **Electric Shock:**

The following precautions shall be taken to prevent electric shocks:

- Voltage required for arc welding are low and normally would not cause injury or serve shock.
- These voltages are, nevertheless, sufficiently high that under certain circumstances they may be dangerous to life.
- This danger is particularly marked in very hot weather when the welder is sweaty or when he is wet.
- He shall never permit the metal part of an electrode, the electrode coverings or any metal part of the electrode holder to touch either his bare skin or any wet coverings on his body.

## **Welding:**

- Each welder is responsible for containing sparks and slag.
- All leads, grounds, clamps, welding machines, hoses, gauges, torches and cylinders shall be inspected before use.
- All fittings, couplings and connections shall be "leak free".
  - Remove the rod from the electrode holder when laying it down. Discard the stub ends in a metal container.
  - Shield all arcs and post warning signs in operating areas. .
  - Turn the machine off at the end of workday or when not using it for extended periods.
  - Wear an approved welding hood. Use no less than a No. 10 filter with a safety lens on both sides of the filter. Hard hat-hood combination shall be worn in hard hat areas.
  - Electric welding is prohibited from a metal ladder.
  - Welding leads shall be adequately insulated from the machine to the electrode holder.
  - Before connecting regulators to cylinders, carefully "crack open" the cylinder valve to blow out any foreign particles. Close the valve. After the regulator is connected, ensure that the second stage of the regulator is closed. Stand to one side and open the cylinder valve slowly.
  - Never use oxygen in pneumatic tools, to pressurize a container, to blowout lines or as substitute for compressed air or other gases.
  - Place cylinders and hoses where they are not exposed to sparks or slag from a burning operation.
  - Lift cylinders to upper levels with approved methods only. Do not use slings or lift a cylinder by the protective cap.
  - Do not strike an arc on cylinders.
  - Do not use cylinders as rollers.

## **Gas Cutting Equipment:**

Before connecting regulators to cylinder, carefully "crack open" the cylinder valve to blow out any foreign particles. Close the valve. After the regulators are connected, ensure that the second stage of

the regulator is closed. Stand to one side and open the cylinder valve slowly.

When lighting a torch, (1) open the fuel gas valve, (2) light the torch (3) then open the oxygen valve, Use an approved spark lighter. Do not use matches, cigarette lighter or cigarettes to light a torch.

Wear approved burning goggles.

**Basic Amenities:**

Water supplied at site should be potable. Proper storage facility should be provided at site as well as labor camp. Adequate sanitary arrangements should be provided with proper drainage system. Periodical checks are required, to ensure proper cleanliness during monsoon, extra precaution needs to be taken, like spraying of insecticides, spreading of kerosene In water logged areas etc.

Cleaning of drinking tanks should be carried out at predefined regular Interval.

**EMERGENCY CONTACT NO**

- 1. \_\_\_\_\_ # \_\_\_\_\_
- 2. \_\_\_\_\_ # \_\_\_\_\_
- 3. \_\_\_\_\_ # \_\_\_\_\_
- 4. \_\_\_\_\_ # \_\_\_\_\_
- 5. \_\_\_\_\_ # \_\_\_\_\_
- 6. \_\_\_\_\_ # \_\_\_\_\_
- 7. \_\_\_\_\_ # \_\_\_\_\_
- 8. \_\_\_\_\_ # \_\_\_\_\_
- 9. \_\_\_\_\_ # \_\_\_\_\_

