

## LIFTING DEVICES AND LIFTING EQUIPMENT - USE AT INOVYN

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## 1. Lifting devices and lifting equipment

### General

The purpose of this instruction is to describe how work with lifting devices and lifting equipment must be planned, organised and implemented so that dangerous and unsafe situations do not occur.

A risk assessment must always be carried out before lifting devices and lifting equipment are used.

Documented expertise and a written permit issued by the employer is required in order to use a lifting device and lifting equipment.

Lifting devices and lifting equipment must be regularly checked.

*See AFS 2006:6 "Use of lifting devices and lifting equipment" Swedish Work Environment Authority and "OPS-SHE-19" INEOS GROUP OPERATION GUIDANCE NOTE*

### Lifting devices and lifting equipment

Lifting devices and lifting equipment is work equipment whose primary area of use is lifting, lowering, moving or securing loads in the form of people or goods. Examples of lifting devices are cranes, mobile working platforms, lifts and elevators.

Examples of lifting equipment are slings, pulley tackle, hooks and chain slings.

### Inspection and risk assessment

The working conditions must be inspected and the risks assessed when lifting devices and lifting equipment must be used.

In a risk assessment, the following situations in particular should be considered:

1. The lifting devices stability on different ground and in different weather conditions (for example underground lines, uncompacted filling, heavy and long lasting rain, strong wind)
2. Access to the lifting area. Cordons
3. The employees' theoretical and practical knowledge
4. Working under raised loads
5. Lifting people
6. Securing loads, attaching loads and manual control of loads
7. Several cranes within the same work area. Risk of collision.
8. There is a risk of the lifting device being driven into by another vehicle
9. Using several lifting devices to lift a common load. (Combined lift)
10. Maintenance, checks and service life of lifting devices and lifting equipment

The tools to be used for inspection and risk assessment are:

- SJA, must be carried out according to instruction HMSS-331
- Min Take 2
- Risk inventory operations personnel
- HSE round

## Equipment requirements

All lifting equipment must be clearly marked.

Lifting equipment must be stored so that there is no risk of damage or breakage.

Overload device and limit switch must be correctly adjusted so that the safety function is activated before danger occurs.

### Lifting device

Must be fitted with:

- Identification number
- Manufacturer
- Year of manufacture
- CE marking

### Lifting equipment

Must be fitted with:

- Identification number
- Information about maximum load
- Length
- Date of manufacture
- CE marking

Soft lifting equipment that is to be used must have legible markings.

Soft lifting equipment that is damaged must not be used, it must be disposed of or sent for repair.

Daily checks must be carried out before using lifting devices and lifting equipment. These checks must be carried out by the user.

Material that is to be lifted onto platforms must not be lifted on pallets but must be lifted using containers approved for lifting.

The above requirements for equipment and lifting devices apply to contractors using their own equipment and lifting devices within INOVYN's area.

## Training and written permission

Documented practical and theoretical knowledge is required to use the lifting equipment, lifting tools and mobile working platforms.

### Minimum training requirements:

- Safe lifting (training repeated every five years)
- Driving permit mobile working platform

### Written permission

All employees using lifting equipment must have the employer's written permission to use a machine powered lifting device.

The permit must state which types of lifting device and lifting equipment and what work tasks and roles in conjunction with lifting are covered.

### Issuer of written permission

The issuer of written permission for lifting and lifting devices is the relevant operations manager.

The permission form is under Forms and templates/Permission for use of lifting devices and lifting equipment.

Current list of approved users of lifting devices is with the maintenance manager.

### Contractors

For contractors that use lifting devices and lifting equipment there must be documented practical and theoretical knowledge.

Contractors/ hired personnel must have both the employers and hirer's (Inovyn) written permission to use a machine powered lifting device.

## 2. Crane lifts

### **Roles and responsibility during crane lifts.**

#### Crane operators

Crane operators are responsible for operating and setting up the crane.

For easier lifts, the crane operator is responsible for planning the lift and for ensuring that it is carried out safely.

Crane operators must be trained and authorised and have a permit to operate the lifting equipment.

The crane operator must always check that the lifting device and lifting equipment has been inspected and is in good condition before each use

#### Lift supervisor

A lift supervisor is required for all difficult lifts and temporary lifting of people with crane or forklift. The lift supervisor plans and coordinates the whole lifting operation and ensures that everyone involved is familiar with the whole lifting plan.

The lift supervisor has the overall responsibility for the lift being supervised. The Crane operator and slinger are only responsible for their own work tasks.

### Slinger

The task of the slinger is to attach and detach the load. The Slinger participates in planning the lift by selecting the correct lifting equipment, ensuring that the equipment is in good condition and by ensuring that the load is attached securely and safely.

If there is a clear line of sight between the slinger and the crane operator, the slinger can also act as the signaller.

### Signaller

A signaller must always be used when loading and unloading when the crane operator cannot see the load. The task of the signaller is maintain contact between the crane operator and the slinger during the lift operation, using hand and arm movements or radio. Signaller must stand in a location with a clear view over the whole lift in order to warn of any unforeseen events.

Signaller must:

- Attentively follow the current load handling
- monitor the safety of the work within his/her work area
- position him/herself very visible to the crane operator and so that he/she is well protected from any falling loads
- specially attentive slinging of goods and load conditions of lines, slings etc.
- stop any work immediately if he/she notices faults that could in his/her opinion compromise safety
- during breaks in work and when it is concluded for the day check that all employees he/she has been monitoring leave their workplaces

### Lift monitor

The lift monitor is responsible for cordoning off the lifting area, in consultation/communication with the crane operator, lift supervisor and permit issuer, . The lift monitor is responsible for removing the cordons immediately after the lift is completed.

## **Other regulations at crane lifts**

Cordons The Crane operator is responsible for cordoning off the support legs for the crane. Cordons for the actual lift are the mutual responsibility of permit issuer and work client. See HMSS-341

Ground conditions A lifting device must be prevented from sliding, tipping or other unexpected movement. INOVYN is responsible for ensuring that the ground conditions are checked and approved before a lifting device is set up in the allotted location.

Strong wind The permit issuer and the crane operator, in consultation with each other, decide whether the lift can be carried out safely.

**Thunderstorms** In event of thunderstorms, lifting work and work at height must be risk assessed and stopped if necessary. (See HMSS-329)

**Lifting gas bottles** Gas bottles must not be thrown, tipped or subjected to hard impacts or blows. The protective covers over the valves must be in place. During transportation, the bottles must be positioned and secured so that they cannot roll, knock against each other or fall. Lifts of gas bottles must be carried out using lifting devices intended for that kind of lift.

### 3. Lifting people

People may only be lifted in a device that is designed and manufactured for the purpose. Exceptions may be made in emergency situations. Cranes and forklifts that are not intended for lifting people can be fitted with equipment for temporary lifts of people. Special requirements are then set. See section *Temporary lifts of people using crane or forklift truck*.

#### **Personal fall protection equipment**

Personal fall protection equipment must always be used when working on a working platform.

Fall protection equipment must be attached to the working platform.

When using a working platform, it is only permitted to enter and exit the working platform when it is on the ground.

#### **Rescue plan**

A rescue plan must be in place when lifting people, which describes how a person can be rescued in event of a fall and how people should be evacuated from the working platform in event of the crane shutting down or in the event of an emergency situation. See HMSS-331

### 4. Mobile working platform

A mobile working platform means a sky lift, scissor lift and boom lift for example.

#### **Regulations when using a mobile working platform**

- Before using a mobile working platform all safety functions must be tested.
- *Personal fall protection equipment* must always be used when working on a working platform.
- Fall protection equipment must be attached to the working platform.
- A standby person must be present when moving or changing the position of a work platform.
- A mobile working platform must not be used as a lift or a crane.
- When using a working platform, it is only permitted to enter and exit the working platform when it is on the ground.
- Ladders must not be used with the working platform.

- Objects must not be dropped from the working platform.
- Loose objects such as tools must be stored in a bucket or bag.

#### **When transporting a mobile working platform**

- Check that the boom and working platform are locked in the transport position
- Check that the support legs are locked in the transport position
- When transporting a mobile working platform in the transport position, no guard is required.

### **5. Temporary lifts of people using crane or forklift truck**

Temporary lifts of people using cranes or forklifts may only be used if it is difficult or inappropriate to use equipment that is manufactured and designed for lifting people, for example a sky lift or scissor lift.

Temporary lifting of people is regulated in AFS 2006:7 "Temporary lifts of people using crane or forklift truck".

#### **Inspection and risk assessment**

Working conditions must be inspected and the risks assessed before lifting people using a crane or forklift.

The following must be specially checked:

1. That the base machine and the working platform are suitable for the task
2. Stability in the prevailing ground and weather conditions
3. The employees' theoretical and practical knowledge
4. Activities and ongoing work in the adjacent area
5. Movement in the working platform or work object due to external factors.

#### Regulations for temporary lifts of people using crane or forklift truck

- Work with temporary lifts of people must be supervised by a *lift supervisor*. This person must have sufficient knowledge of lifting and the equipment.
- Before temporary lifts of people using crane or forklift truck a *self check* must be carried out.
- *Personal fall protection equipment* must always be used when working on a working platform.
- Fall protection equipment must be attached to the working platform.
- The working platform must be suspended from the crane's load hook.
- During temporary lifts of people using crane or forklift truck, work must be carried out from inside the working platform.
- A working platform intended for lifting people must be used for temporary lifts of people.
- The base machine (Crane or forklift truck) must be inspected with the working platform.
- A working platform for lifting people must not be used as a lift or a crane.
- When using a working platform, it is only permitted to enter and exit the working platform when it is on the ground.
- Ladders must not be used with the working platform.
- Objects must not be dropped from the working platform.

- Loose objects such as tools must be stored in a bucket or bag.

### **Self checks**

Self checks must be carried out before temporary lifts of people in a working platform using crane or forklift truck.

Self checks can be carried out by the following posts:

- Chief safety officer IF Metal or PTK
- Work environment engineer
- Supervisor or equivalent Mech
- Supervisor or equivalent Weld
- Safety officer

Times for checks:

- The first time lifting people
- If a fixed working platform has been removed and reinstalled
- If the crane has been outside the INOVYN area
- Each day, if lifting goes on for a longer period

### Crane

Check points:

Locking pins on shackles from hooks and downwards

Free hanging working platforms:

- The base machine (crane) must be inspected together with the working platform
- The stop functions so that the working platform cannot go to the top
- The wire runs freely in all blocks and that the rollers are not jammed
- The shackles on the working platform are locked
- An insulated ball-bearing swivel, type SKI, is secured between the crane hook and working platform when welding is to be carried out.  
(This is supplied by the crane company).

A nylon lifting strap can also be used when welding to prevent the working platform from grounding.

### Forklift

Check points:

When lifting people with a forklift truck, check that

- The base machine (forklift) must be inspected together with the working platform
- The working platform is installed on the truck's fork arm
- The functions that are used for people lifting work safely

**Appendix 2 - Self check for temporary lifts of people using crane or forklift truck**

[Self check for temporary lifts of people using crane or forklift truck](#)

**Appendix 3 - Register permit holder for use of lifting devices and lifting equipment**

[Permit for use of lifting devices and lifting equipment](#)