

HEALTH AND SAFETY REGULATIONS



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH
Servei de Prevenció de Riscos Laborals

OVERHEAD CRANE

CODE

SHR 223

Date:

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DESCRIPTION OF THE OVERHEAD CRANE

An overhead crane is used for lifting and transporting materials in storage or manufacturing processes.

It consists of a dual structure topped by two synchronised self-propelled end trucks with double-flange wheels. This structure supports a self-propelled trolley that runs on a track along it, carrying a hoist block with a wire rope hanging between the two parts of the structure.

The maximum load of the overhead crane must be indicated in a visible place.

The combined movements of the structure and the trolley allow it to operate at any point of an area delimited by the length of the end truck rails and the distance between them.

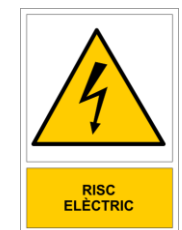
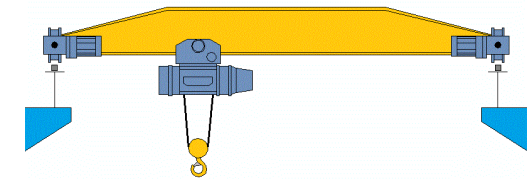
The overhead crane is controlled by an operator from the ground using a remote control.

Unlike in gantry cranes, the rails are approximately in the same horizontal plane as the trolley and their height determines the maximum operating height. The overhead rails require a structure to support them.

Workers authorised to use an overhead crane must have received **appropriate accredited training** on how to operate it, the risks to which they and the people working in the same space may be exposed and the preventive measures to be taken into account before, during and after its use.

The most common risks in the use of overhead cranes are the following:

- Knocks and contact with moving objects.
- Falling of objects due to collapse.
- Electrical contact.



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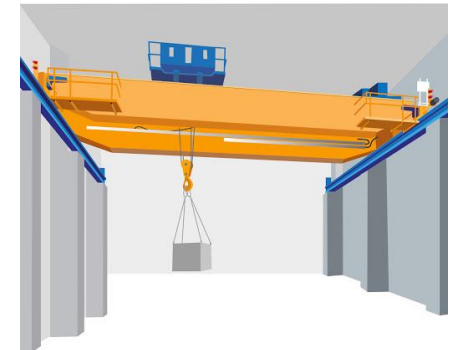
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GENERAL SAFETY REGULATIONS

Safety regulations that must be observed in using an overhead crane:

- Do not lift loads greater than those set out in the crane diagram or loads attached or adhering to the ground. Do not exceed the maximum load.
- Do not pass the load over people.
- Do not lift and transport people with the crane.
- Do not lift loads that are not well secured or have not been properly slung.
- Raise and lower the loads at the appropriate speeds, using reduced speeds when starting to lift and when releasing the load.
- Always lift loads vertically. Do not lift a load obliquely.
- Do not leave loads suspended and do not swing the load from a vertical position on the hook.
- Avoid rubbing the hoist rope against any part of the building.
- When a load has to be taken to a point not directly visible to the operator, another trained person must help direct the manoeuvre.
- Never pass the hoist rope at a distance of less than 5 m from power lines.
- Do not disconnect any safety devices.
- The overhead crane should be painted yellow and the hoist block should be painted with diagonal black and yellow stripes so that its movement can be easily detected. The hook must have a safety latch.
- All electrical systems must be properly insulated and powered by double-insulated flexible cables.



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PERSONAL PROTECTIVE EQUIPMENT (PPE)

EYE AND FACE PROTECTORS

Use goggles/face shields for protection against the release of particles such as dust and sand from the load.

If a foreign body does get into an eye:

- Do not rub it because you could cause an injury.
- Clean with plenty of clean water and cover the eye with gauze fixed with adhesive tape.
- Go to the nearest healthcare centre.



PROTECTION OF HANDS AND ARMS

Wear protective gloves for handling loads and placing slings.

PROTECTION OF FEET AND LEGS

Wear safety footwear with deep-tread rubber soles to avoid injuries caused by falling loads and prevent slipping.



HEAD PROTECTORS

Use a safety helmet when handling loads with the overhead crane.

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BEFORE USING THE OVERHEAD CRANE

Before starting the crane, the following checks must be carried out:

1. Check that the slings and chains for holding the load are in good condition and are suitable for the load to be moved.
2. Check the acoustic warning signal of movement of the crane by applying continuous pressure to the control.

The following steps must be followed before transporting a load:

1. Notify all persons that a load is being lifted and moved.
2. Check that the load has an acceptable weight and dimensions.
3. Decide where the load is to be located.
4. Make sure that the path to be travelled by the load is free of obstacles and the presence of people.
5. The crane operator must be able to see the position of the load to be transported at all times.
6. Check the correct condition of the ropes, hook and controls.
7. Do not deposit loads in circulation areas.

ONLY AUTHORISED PERSONNEL WITH ACCREDITED TRAINING CAN USE THE OVERHEAD CRANE.

IT IS FORBIDDEN TO STAND OR PASS UNDER SUSPENDED LOADS.

WHILE USING THE OVERHEAD CRANE

- Always lift loads vertically. Do not exceed the maximum load of the overhead crane.
- Before starting the load transfer movement, check the balance of the load when it is suspended. If you observe that the load is not properly slung, you must lower it and rest it in the starting position in order to solve the problem.
- The load must be moved at the lowest possible height, taking into account the height of the facility and the safety of users.
- Do not abandon the overhead crane controls with the load suspended.
- If the overhead crane is moved without a load, the operator must raise the hook sufficiently to ensure the safety of people and objects.
- In the event of a power failure, the operator must place all controls in the rest position (at zero) in order to avoid unintentional start-up when the power supply returns.
- Do not change direction when the crane is in motion. To reverse the direction of movement, stop the control in the direction of travel, leave it in the zero position and, once the crane has stopped, reverse the direction.
- The loads must be lowered onto a platform or supports in order to remove the cables and slings without subjecting them to friction with the ground and the load.
- After using the overhead crane, the operator must reset all switches, disconnect the main switch and leave the hoist block raised and without load.

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MAINTENANCE, ORDER AND CLEANING

REGULATORY AND PERIODIC MAINTENANCE:

- Only staff accredited by the maintenance company are authorised to carry out repair or maintenance work.
- Whenever any repair or maintenance work is carried out on the overhead crane, the accredited staff of the maintenance company must wear appropriate personal protective equipment to carry out the action safely.
- The overhead crane must only be inspected, greased or cleaned when it is at rest and without load. Check the state of the grounding periodically.
- During the servicing, place a sign in a visible place with the text "SERVICE OPERATIONS UNDERWAY. DO NOT USE THE OVERHEAD CRANE".
- After greasing operations, all surfaces that may have become dirty must be inspected and cleaned.
- After a repair, the operator must perform the overhead crane tests without compromising user safety.



MAINTENANCE OF RIGGING ELEMENTS: CABLES, CHAINS AND SLINGS

- The rigging must be examined periodically by a competent person. Rigging that is not in proper condition should be removed and should not be stored along with other rigging. The expiration date must be checked periodically.
- At the end of a manoeuvre, the rigging must be stored in a dry place or hung without being in contact with the ground or corrosive products.
- Rigging must not be dragged over the ground or over rough surfaces or places where it may come into contact with sand, mud or any substance that may affect it.
- The cables must be inspected periodically. In the event of broken wires, kinks, oxidation, crushing or any other anomaly, they must be removed.
- Chains that are stretched or have a deformed, worn or cracked part should be removed.
- Inspect the hook's safety latch to check that it prevents release of the cable, chain or sling fasteners.

