



# Crane Safety Awareness Tech Guide

## Introduction

Improper use and set up of cranes is a significant source of injuries and fatalities on construction sites. Most of the accidents involving a crane on a construction site are due to improper set up of the equipment. Improper set of the equipment contributes to 50% of all accidents.

Hazards from the use of cranes on a construction site may include: struck by either a fallen load or the equipment, failure of crane by tipping over or the breaking of the boom, falls, or caught in hazards, such as the swing radius or moving equipment.

Cranes of today are stronger and lighter than equipment that was used in the past. All crane operators must be trained and qualified to use the equipment in safe manner to prevent injuries and accidents on the site.

## Oversight of Crane Use on Construction Sites



The Superintendent is on the front line to ensure the cranes are set up and used properly on the construction site. Therefore, all superintendents need to understand how the crane should be set up (right crane for the job, firm foundation, adequate clearances to handle the materials, guarding of moving parts, proper set up of the outriggers) and basic crane operations, such as the following: two block, level, load charts, and load moment.

Cranes must be inspected daily by the operator. All daily crane inspections should be documented.

Several work practices can be implemented to protect employees associated with crane operations. The first priority should be to eliminate the hazard.

## Preplanning

The best way to ensure that we do not introduce hazardous conditions to the jobsite is to perform preplanning. We want to ensure that we provide the equipment that is appropriate for the lift and the jobsite conditions.

Some issues that need to be addressed in the preplanning stage are:

- The type of crane that can safely perform the lift;
- Access to the areas, staging areas, and the amount of space that is required to maneuver the equipment and materials;
- The proximity of overhead power lines near the work;
- A firm and adequate foundation for the crane;
- Proper use and extension of the outriggers;
- Guarding of the machine and all pinch points, especially the swing radius; and
- Congestion in the work areas.

### **Equipment**

The crane must be set up and used properly on the construction site. One of the most important issues is to make sure all of the equipment is functioning properly. Prior to use, all cranes are required to be inspected. A thorough annual crane inspection is required to be performed on all machines. Look for evidence, such as an inspection sticker or written certificate, to document that an annual inspection has been performed. All crane operators are also required to perform a crane inspection before each shift of use. The inspection should be documented and kept on file.

The equipment must also have the appropriate devices to ensure it operates within the required parameters. The equipment consists of the following: two block, load moment indicator, mechanical level, boom angle indicator, load indicator, lifting charts, and outriggers/support pads.

### **Operators**

All operators must be trained in the use of the specific equipment that is to be used on the construction site. Look for evidence of training, such as a certificate or wallet card, issued by a qualified trainer. Since all operators must be familiar with the equipment to use it properly, make sure operators have access to the manufacturers' specifications and load charts. All operators must be able to calculate loads to ensure they do not exceed the limitations of the equipment.

### **References (for further information)**

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