



SESAC MULTIPLE LIFT RIGGING SAFETY PROCEDURE

Overview

Multiple Lift Rigging, or “Christmas Treeing,” is a recognized procedure that when used safely and efficiently, can be beneficial for not only steel erectors but Controlling Contractors as well by:

- Reducing the number of crane swings thus decreasing the exposure of overhead loads to ground level workers.
- Reducing incoming loads for ironworkers to be subject to.
- Reducing the total time ironworkers are exposed working on the structure.

Although both worker safety and productivity can both be increased while performing multiple lifts, it should also be recognized that the now regulated procedure for Multiple Lift Rigging has its own hazards that must be dealt with accordingly.

1. Keep a Clean Organized Lay Down Area

Multiple lifts require a generous amount of clear lay down space in order to have safe access around the steel members. All steel should be organized during the shake out process as to allow for easy rigging of multiple pieces. The following are a few guidelines when unloading and shaking out in your designated lay down area.

- Always make sure that lay down and storage areas are dry and level.
- Make sure your crew has enough cribbing and /or dunnage to support all the steel members to be placed in the area. Using makeshift supports can cause overturning of steel members resulting in the crushing of hands feet and other limbs.
- During the stacking of members, make sure to keep stacks low and at the center of gravity, do not stack joist bundles higher than two levels and deck bundles higher than 5 levels. When stacking, cribbing should be placed to provide stability and access for attaching slings. Cribbing should also be kept in alignment with the bottom layers provide support up the entire stack.

2. Never Exceed the Capacity of the Rigging Equipment

For multiple lifts, all rigging must be manufactured by a rope rigging supplier. It must have a 5 to 1 safety factor on all components. Remember to use manufacturer approved rigging assembly and not just multiple loads on the same hook. Verify the crane capacity at the distance you will be hoisting and always notify the crane operator of the weight of the piece or pieces you are about to lift. Rigging shall be inspected before each use. (see rigging inspection policy)

The three acceptable methods for determining load weights are:

1. Bill of Lading
2. Shop Drawings
3. Weight estimation by a qualified person

During the rigging process, the rigger must be aware of the proper hitch to use for each member. The most common hitch is the choker hitch. When used correctly, the choker hitch has the benefit of “biting” against the steel which will prevent slipping during hoisting.

Remember: A choker hitch’s maximum strength is only 75% of a single leg hitch. Be sure to account for this reduction during rigging calculations.

Also take the time to make sure that the load is balanced and not heavy to one side. This can be determined by visually inspecting the piece as it’s lifted to see if one end is hanging lower than the other. Since it is critical to maintain a seven-foot distance between pieces in a multiple lift, the load must remain level.

The MLR bridle or “Bull’s Tail” shall be utilized with two employees: One to make the connection at the rigging point and another to handle the MLR bridle and watch for entanglement issues in the laydown yard. This is important to prevent accidental roll over of steel members in the laydown yard.

Remember: Proper rigging saves time and effort during erection, so remember to “rig it right the first time”.

4. Use Clear Signals

All employees involved with MLR activities shall have documented training for Rigger/Signalperson as required by Subpart CC. There are specific signaling requirements set forth to be used by ASME. The most important part of this

procedure is the pre-lift meeting where operator and flagmen can discuss the plan of action. Clear consistent signaling is key for the safety of all parties involved.

5. Rules and Regulations

Rule 1: No more than 5 pieces are to be rigged during any single lift.

Rule 2: There must be seven feet between each rigged member.

Rule 3: Do not make multiple lifts in excessively windy conditions. Check with your supervisor and crane operator if wind is becoming a potential hazard. If so, the crane operator has the right to stop work until conditions permit safe hoisting.

Rule 4: Always figure out a safe hoisting route. Avoid swinging loads over other workers and buildings. When members of your crew are working under suspended loads, remain alert and help protect your fellow workers.

Rule 5: The only items that are to be rigged for multiple lifts are “like members” such as beams and some open web joists. Under no circumstance should multiple lifts be made with columns, deck, or other misc. structural members.

Rule 6: The crane operator should always use controlled load lowering, or power down, when the load is above connectors.

Remember to communicate with your co-workers including your operator and always put safety first.