

13.4: Material Hoists and Elevators

Material Hoists, Personnel Hoists and Elevators

General requirements

The employer shall comply with the manufacturer's specifications and limitations applicable to the operation of all hoists and elevators. Where manufacturer's specifications are not available, the limitations assigned to the equipment shall be based on the determinations of a professional engineer competent in the field.

Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be posted on cars and platforms. The use of endless belt-type manlifts on construction shall be prohibited.

Material Hoists

Operating rules

Operating rules shall be established and posted at the operator's station of the hoist. Such rules shall include signal system and allowable line speed for various loads. Rules and notices shall be posted on the car frame or crosshead in a conspicuous location, including the statement "No Riders Allowed."

No person shall be allowed to ride on material hoists except for the purposes of inspection and maintenance.

Hoistway entrances

All entrances of the hoistways shall be protected by substantial gates or bars, which shall guard the full width of the landing entrance. All hoistway entrance bars and gates shall be painted with diagonal contrasting colors such as black and yellow stripes.

Overhead protection

Overhead protective covering of two inch planking, 3/4-inch plywood, or other solid material of equivalent strength, shall be provided on the top of every material hoist cage or platform.

Hoist towers

Hoist towers may be used with or without an enclosure on all sides. However, whichever alternative is chosen, the following applicable conditions shall be met:

1. When a hoist tower is enclosed, it shall be enclosed on all sides for its entire height with a screen enclosure of 1/2-inch mesh, No. 18 U.S. gauge wire or equivalent, except for landing access.
2. When a hoist tower is not enclosed, the hoist platform or car shall be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with 1/2-inch mesh of No. 14 U. S. gauge wire or equivalent. The hoist platform enclosure shall include the required gates for loading and unloading. A six foot high enclosure shall be provided on the unused sides of the hoist tower at ground level.
3. Car arresting devices shall be installed to function in case of rope failure. All material hoist towers shall be designed by a licensed professional engineer.

Personnel Hoists

Outside hoist towers

Hoist towers outside the structure shall be enclosed for the full height on the side or sides used for entrance and exit to the structure. At the lowest landing, the enclosure on the sides not used for exit or entrance to the structure shall be enclosed to a height of at least 10 feet. Other sides of the tower adjacent to floors or scaffold platforms shall be enclosed to a height of 10 feet above the level of such floors or scaffolds.

Inside Hoist towers

Towers inside of structures shall be enclosed on all four sides throughout the full height. Towers shall be anchored to the structure at intervals not exceeding 25 feet. In addition to tie-ins, a series of guys shall be installed. Where tie-ins are not practical, the tower shall be anchored by means of guys made of wire rope at least one-half inch in diameter, securely fastened to anchorage to ensure stability.

Personnel hoist requirements

Hoistway doors or gates shall be not less than six feet six inches high and shall be provided with mechanical locks which cannot be operated from the landing side, and shall be accessible only to persons on the car. Cars shall be permanently enclosed on all sides and the top, except sides used for entrance and exit, which have car gates or doors. A door or gate shall be provided at each entrance to the car, which shall protect the full width and height of the car entrance opening. Overhead protective covering of two inch planking, 3/4- inch plywood or other solid material or equivalent strength shall be provided on the top of every personnel hoist. Doors or gates shall be provided with electric contacts, which do not allow movement of the hoist when door or gate is open. An emergency stop switch shall be provided in the car and marked "Stop."

Data plate

Cars shall be provided with a capacity and data plate secured in a conspicuous place on the car or crosshead.

Inspection

Following assembly and erection of hoists and before being put in service an inspection and test of all functions and safety devices shall be made under the supervision of a competent person. A similar inspection and test is required following major alteration of an existing installation. All hoists shall be inspected and tested at not more than three month intervals. The employer shall prepare a certification record which includes the date the inspection and test of all functions and safety devices was performed; the signature of the person who performed the inspection and test; and a serial number, or other identifier, for the hoist that was inspected and tested. The most recent certification record shall be maintained on file.

Specifications

All personnel hoists used by employees shall be constructed of materials and components, which meet the specifications for materials, construction safety devices, assembly, and structural integrity as stated in the American National Standard A 10.4-1963, Safety Requirements for Workmen Hoists.

Hoist tower that is not enclosed

When a hoist tower is not enclosed, the hoist platform or car shall be totally enclosed (caged) on all sides for the full height between the floor and the overhead protective covering with

3/4-inch mesh of No. 14 U. S. gauge wire or equivalent. The hoist platform enclosure shall include the required gates for loading and unloading.

These hoists shall be inspected and maintained on a weekly basis. Whenever the hoisting equipment is exposed to winds exceeding 35 miles per hour it shall be inspected and put in operable condition before reuse.

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