

## **4123:1-5-25 Vehicle-mounted elevating and rotating work platforms.**

### **(A) Vehicle stability.**

The employer shall provide a vehicle that will assure a stable support for the aerial device.

#### **(1) Alternative configuration.**

(a) If the aerial device is capable of alternative configurations, these configurations, including the rated capacity in each situation, shall be stated on the operating instruction plate(s). Examples of alternative configurations requiring such a description on operating instruction plate(s) are as follows:

(i) Without extending outriggers vs. with outriggers extended to firm footing;

(ii) With spring lock-outs engaged vs. without spring lock-outs engaged.

(iii) With only one platform attached vs. with two platforms attached;

(iv) With digger attached to boom vs. with digger removed from boom;

(v) As a personal carrying device only vs. as a personnel carrying and material handling device.

(b) If the rated capacity of an alternative configuration is related to an angle which a boom makes with the horizontal, then a means shall be provided by which the operator can determine if the boom is at a safe angle, using permanent and legible characters where marking is necessary.

#### **(2) Stability on level surface.**

Each aerial device when mounted on a vehicle and used in a specific configuration, shall be capable of sustaining a static load one and one-half times its rated capacity when the vehicle is on a firm and level surface.

#### **(3) Stability on slopes.**

Each aerial device, when mounted on a vehicle and used in a specific configuration, shall comprise a unit capable of sustaining a static load one and one-third times the rated capacity for that specific configuration in every position in which the load can be placed within the definition of the specific configuration, when the vehicle is on a slope of five degrees downward in the direction most likely to cause overturning. If having the outriggers extended to a firm footing is a part of the definition of the configuration, then outriggers shall be extended to provide maximum leveling for the purpose of determining whether the unit meets the stability requirements. If other facilities, such as means of turntable leveling are provided to minimize the effect of sloping terrain, then those facilities shall be utilized for the purpose of determining whether the unit meets the stability requirement.

### **(B) Operating instruction plates.**

Operating instruction plates shall be provided and attached to all aerial devices. The plate or plates shall be located in a readily accessible area, shall be clearly visible, and shall state the following: make, model and manufacturer's serial number; rated capacity; platform height, manufacturer's recommended operating pressure of pneumatic and hydraulic systems; caution and restrictions of operation; operating instructions and manufacturer's rated line voltage. Alternative configurations (see paragraph (A)(1) of this rule) shall require in addition to the above: chart, schematic or scale showing capacities of all combinations in their

operating position, and caution and restrictions of operation of all alternate or combinations of alternate configurations.

(1) Mechanical ratings.

(a) Platform height.

Platform height shall be measured at its maximum elevation from the floor of the platform to the ground.

(b) Capacity.

The load, in calculating the capacity rating, shall be the platform load and supplemental loads which may be affixed directly to the boom. The capacity rating shall be designated with boom or booms extended to the maximum horizontal reach attainable throughout full rotation of its pedestal. Capacities of the equipment in other positions must be specified separately.

(c) Reach.

Reach shall be measured from the center line of pedestal (rotation) to outer edge (rail) of the platform.

(2) Electrical ratings.

(a) Required statement.

The operating instruction plate(s) shall state whether the aerial device is insulated or noninsulated. A label (minimum one-fourth-inch letters) shall be placed at each operating control station.

(b) Rated line voltage.

In the case of insulated units, the operating instruction plate(s) shall clearly state the rate line voltage for which the aerial device is designed.

(C) Design.

(1) Structural factor of safety.

The basic structural elements of the aerial device which support the platform shall be designed such that the yield point of the materials used for any such elements shall not be exceeded with three times the rated load(s) on the aerial device. The same structural factor of safety shall apply to the platform.

(2) Controls.

Articulating boom and extensible platforms, specifically designed as personnel carriers, shall have both platform (upper) and lower controls. Upper controls shall be in or beside the platform within easy reach of the operator. Lower controls shall provide for overriding the upper controls. All controls shall be guarded or shall be of such type that they cannot be accidentally actuated. They shall be plainly marked as to their function.

(3) System protection.

Where the elevation of the boom or operation of the outriggers is accomplished by means of a hydraulic cylinder assembly, a pneumatic system or an electrically operated system, pilot operated check valves or

other appropriate "fail safe" devices shall be provided to prevent free fall of the boom or collapse of the outriggers in the event of power failure.

(4) Platform rail and toeboard.

Each platform shall be provided with a guardrail no more than forty-five inches and no less than thirty-nine inches above the floor of the platform, an intermediate rail, and a toeboard, or its equivalent, around the periphery.

(5) Bursting factor of safety.

All critical components of hydraulic or pneumatic systems shall withstand a pressure of no less than four times the normal operating pressure of the system. Critical components are those in which a failure would result in a free fall or free rotation of the boom. All noncritical components shall have a bursting safety factor of two.

(6) Insulated boom and platform specifications.

(a) The insulated boom and platform shall be constructed of an insulating material which will meet the test requirements specified and shall be of dielectric material which will not absorb moisture (fiberglass or equivalent). All components bridging the insulated portions of the boom structure shall have an equivalent electrical insulating value.

(b) Test electrodes.

Test electrodes shall be permanently located on the inside and outside surfaces of the insulated portion of the boom. Insulated units under sixty-nine kilovolts do not require permanent test electrodes. These electrodes shall be two to six inches from the metal portion of the lower end of the insulated upper boom. All hydraulic and air lines bridging the insulated portion of the boom shall have metallic couplings adjacent to the test electrodes. Couplings shall be insulated from the metal portion of the boom and electrically connected to the test electrodes.

(c) When insulated booms and platforms are not used in proximity to electrical conductors, the requirements of paragraphs (C)(6)(a) and (C)(6)(b) of this rule do not apply.

(D) Testing.

(1) Employees shall not be required to use aerial devices that have not been tested to withstand a static load of one and one-half the rated capacity through its entire range of motion.

(2) Employees shall not be required to use insulated boom aerial devices or basket liners near energized conductors or equipment unless such devices or liners will withstand approved electrical tests.

(3) Any equipment specified in this paragraph must be subjected to the same tests as prescribed in paragraphs (D)(1) and (D)(2) of this rule after any modification.

(E) Transfer to or from aerial basket.

Employees of the electric utility and telecommunications industries and their contractors and subcontractors shall not be required to transfer from an aerial basket to any object or structure, or from any object or structure to an aerial basket, while the aerial basket is elevated above the ground. This does not apply to operations where the aerial basket is extended over a flat surface and where the hazard of falling has been eliminated.

(F) Flasher lights.

Vehicles upon which elevating or rotating work platform are mounted shall be provided with flasher lights.

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