

**5205.0580 HAND-POWERED PLATFORM PASSENGER TYPE MANLIFTS.**

Subpart 1. **Requirement.** Hand-powered platform passenger type manlifts shall conform to the following requirements.

Subp. 2. **Sill clearance.** The clearance between the platform and the landing shall be not more than 1-1/2 inches nor less than three-fourths inch.

Subp. 3. **Guarding of access openings.** Access openings shall be guarded by semiautomatic vertical sliding gates or by self-closing swing gates. Such gates shall be equipped with a top crossmember not less than 42 inches above the floor, a bottom crossmember not more than one-half inch above the floor, and with at least one intermediate crossmember. The gates shall be placed within four inches horizontally from the landing sill.

Subp. 4. **Shaftway enclosures.** All unused sides of the shaftway shall be enclosed to a height of at least eight feet above the floor.

Subp. 5. **Ladders.** A fixed ladder shall be installed in the shaftway accessible from the manlift at any point within its travel to provide a means of exit from the elevator hatchway.

Subp. 6. **Car sides.** The car shall be enclosed to a height of at least 42 inches on all sides not used for entrances.

Subp. 7. **Car construction.** Car frames and platforms shall be of metal or sound seasoned wood designed with a safety factor of not less than four for metal construction and six for wood construction based on the rated load uniformly distributed. Connections between frame members of the car frame and platform shall be riveted, bolted, or welded.

Glass shall not be used on any part of the frame or enclosure.

Subp. 8. **Counterbalancing of cars.** Cars counterbalancing each other shall not be permitted.

Subp. 9. **Car safety device.** All cars shall be provided with a car safety device attached to the top or bottom of each car frame capable of stopping and sustaining the car and its rated load. The car safety device is not required to be operated by a speed governor and may be of the instantaneous type operated as a result of the breaking or slackening of the suspension members.

Subp. 10. **Compensating cable.** Where the travel exceeds 40 feet, compensating cables or chains properly guided shall be provided.

Subp. 11. **Load capacity.** The rated load capacity shall not exceed 300 pounds. Only one person shall be permitted to ride elevator at a time. The movement of freight or materials on elevator is prohibited.

Subp. 12. **Load tests.** A rated load test and a test of the car safety device with rated load in the car shall be made on each new or relocated installation before it is placed in service.

Subp. 13. **Guide rails.** Cars and counterweights shall be provided with steel guide rails or straight grained seasoned wood free from knots, shakes, dry rot, or other imperfections.

Subp. 14. **Guide rail fastenings.** Guide rails shall be securely fastened with throughbolts or clips of such strength, design, and spacing that:

A. the guide rails and their fastenings shall not deflect more than one-quarter inch under normal operation;

B. the guide rails and their fastenings shall withstand the application of the safety when stopping the car with rated load under free-fall conditions;

C. car and counterweight guide rails shall rest on suitable supports and extend at the top of the hoistway sufficiently to prevent the guide shoes from running off the guide rails in the case of the car on counterweight traveling beyond the terminal landings.

Subp. 15. **Car counterweights.** When counterweight sections are used, they shall be secured by at least two tie rods passing through holes in each section. The rods shall have lock nuts at each end secured by cotter pins.

Subp. 16. **Factors of safety.** The factor of safety, based on static loads, to be used in the design of driving machines and sheaves shall not be less than eight for wrought iron or rod steel and ten for cast iron or other materials.

Subp. 17. **Car brake.** Each car shall be equipped with a manual dead-man type brake which operates in either direction of travel and is capable of stopping and holding the car with its rated load at any point in its limit of travel.

Subp. 18. **Overhead beams.** Overhead beams and their supports shall be designed to withstand the static load plus twice the suspended load without deflection exceeding the stress of the materials used.

Subp. 19. **Machine access.** Adequate and permanent means of access shall be provided to all equipment for maintenance and inspection.

Subp. 20. **Power driving mechanism.** Power driving mechanisms shall not be attached to or made part of any hand powered elevator.

Subp. 21. **Suspension cables.** Suspension means shall consist of not less than two wire ropes of not less than one-half inch diameter each.

Subp. 22. **Sheaves.** All hoisting and counterweight sheaves shall have a diameter of at least 40 times the diameter of the cable passing over them.

Subp. 23. **Cable fastenings.** Car and counterweight cable ends, except such fastenings as are required for compensating cables or chains, shall be fastened by passing through tapered and babbitted sockets with the same requirements of those for power elevators or secured by approved clamp or special fastening devices conforming to the following:

- A. clamps shall not be of the U-bolt type;
- B. both members of the clamps shall be provided with seats conforming with the lay of the rope;
- C. clamps shall be drop forgings; and
- D. ropes shall be passed around metal thimbles.

Subp. 24. **Operating rope.** The operating rope may pass through the car crossheads if a guard to prevent entry of the hand is provided.

Subp. 25. **Car locking devices.** A separate locking device, independent of the manual brake, that will hold the car and its rated load at each landing shall be provided. This device may be either manual or automatic.

Subp. 26. **Counterweight guarding.** The counterweight shall be fully enclosed for the full length of its travel, except for an inspection section at the lower limit of travel. The inspection section shall be large enough only to inspect the fastenings and be covered with a screen or mesh which will reject a two-inch ball.

Subp. 27. **Shaftway illumination.** Shaftway illumination shall be adequate to enable the operator to have full view of all obstructions and hazards which might possibly cause injury.

Subp. 28. **Bumper springs.** Bumper springs shall be provided either on the top of the car or on the bottom of the sheave supports and shall be of sufficient strength to absorb the impact of the car and its load.

Subp. 29. **Car counterbalance weights.** If weights are to be used to properly counterbalance car, a suitable box or container shall be mounted firmly in the elevator car to contain such weights while in use.

Subp. 30. **Car gate.** A car gate or guardrail 42 inches from car floor capable of withstanding a lateral pressure of 250 pounds without causing structural failure shall be provided.

Subp. 31. **Pit buffers.** Spring buffers of such a design and construction as to absorb the energy of the car with a capacity load shall be provided at the lowest limit of travel.

**Statutory Authority:** *MS s 182.655*

**Published Electronically:** *June 11, 2008*