

STATE OF NEW JERSEY
DEPARTMENT OF LABOR AND INDUSTRY

J. L. BROWN, ACTING COMMISSIONER



RULES AND REGULATIONS

GOVERNING

SHORT-RISE HYDRAULIC MATERIAL HANDLING LIFTS

New Jersey State Library

Division of Labor
Bureau of Engineering and Safety
C. GEORGE KRUEGER, Deputy Director

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1. DEFINITIONS

- 1.1 Commissioner: Commissioner of Labor and Industry or his authorized representatives.
- 1.2 Approved: approved by the Commissioner.
- 1.3 Material handling lift: a raising and lowering device which operated through a travel of less than one story in height, but not more than twelve feet in any case and is used for the transfer of material or equipment only.
- 1.4 Rise: distance between point of lowest travel to point of highest travel of lift.

2. SCOPE

- 2.1 These rules and regulations apply to both new and existing installations.
- 2.2 In the case of existing installations, not previously approved, the commissioner may grant exceptions to these rules and regulations when in his opinions, safety in operations is nevertheless provided.

3. APPROVALS

- 3.1 Before any material handling lift is installed, plans and specifications in triplicate, accompanied by application for plan approval in duplicate and examining fee must be filed. Plans and specifications must be signed and sealed by a licensed professional engineer and be approved before the work of installation of the lift commences.
- 3.2 Upon completion of the installation, the lift shall not be used until the installation has been inspected and written approval of same has been granted by the Commissioner.

4. CAPACITY

- 4.1 The lifting capacity of the lift should not be less than fifty (50) pounds per square foot uniformly distributed over the gross platform area.
- 4.2 A legible capacity sign stating the approved capacity of the lift shall be conspicuously posted either on the lift or immediately adjacent to it and the posted capacity shall not be exceeded at any time.

5. PLATFORM

- 5.1 The platform of the lift shall be of wood or steel and the uppermost surface shall be tight, except in such special cases where tracks or special platforms are necessary because of operating requirements.
- 5.2 The platform supports shall be rolled or annealed cast steel sections with an ultimate strength of 65,000 lbs. per square inch.
- 5.3 The platform support shall be bolted, rivetted or welded in an approved manner.
- 5.4 The loading edge of the lift platform shall not deflect more than one-half ($\frac{1}{2}$) inch at any edge point, when one-half of the capacity load is statically applied as a concentrated load within twelve (12) inches of edge.

6. UNDER-PLATFORM PROTECTION

- 6.1 When the lift rise does not exceed 5'0", and the platform is not otherwise protected on any side by enclosures, a bevelled plate shall be fastened to the outside of the platform on all unprotected sides; the bevelled plate shall be made of No. 11 gauge steel at least 3" long; braced in an approved manner, installed flush with the side of the platform and slant inward to form an angle of 30 degrees with the side of the platform, provided that metal or wood sheathing or skirt shall be installed as in section 6.2 if the lift is used for machine feeding or its operation is automatic.
- 6.2 When the lift rise exceeds 4'6", and an approved lower landing gate is not provided, a metal or wood sheathing, or skirt shall be provided to the underside of the platform in an approved manner and to

protect exposed vertical openings when the lift is at full rise; countersunk screws or bolts must be used to provide a smooth surface; the sheathing shall be either No. 14 gauge metal, $\frac{1}{2}$ in. plywood or $\frac{1}{2}$ in. dressed lumber, installed flush with the side of the platform; all skirts must be braced in an approved manner. Modification of the smooth surface may be permitted in special cases where collapsible skirts are required.

7. PLATFORM ENCLOSURES

- 7.1 When the lift rise exceeds 4'6", all sides of the platform not used for loading or unloading shall be protected by two-rail $1\frac{1}{2}$ " I. C. piping, wire mesh, metal or wood, the height of which shall not be less than 3'6" in any case.

8. LIFT ENCLOSURES

- 8.1 In the event that under-platform protection cannot be provided as specified herein, the lift shall be protected on all exposed sides by an enclosure of wood or metal.

9. LANDING GATE

- 9.1 When the lift rise exceeds 4'6" an automatic landing gate or a landing gate with electric contact shall be installed at the upper landing.

10. HYDRAULIC JACK

- 10.1 Hydraulic plungers must be machined smooth over their entire length and the wall thickness shall never be less than .300" in thickness.
- 10.2 The steel outer cylinder shall never be less than .250" in thickness.
- 10.3 The stop plate with a minimum safety factor of 5 shall be provided at the bottom of the plunger so as to positively prevent the plunger ever leaving its casing during operation.
- 10.4 No cast iron or other brittle material shall be permitted in the packing gland or other flanges at the head of the outer cylinder.
- 10.5 The outer cylinder shall be provided with a means of bleeding entrapped air from the system other than through the packing gland.
- 10.6 All plunger and cylinder assemblies shall be factory tested at no less than two and a half times field working pressure and shall be so labeled.

11. THE HYDRAULIC MACHINE

- 11.1 For electric operation, hydraulic overload protection shall be provided by means of an approved relief valve that will prevent operation of the elevating device when it is loaded to 110 per cent of rated capacity.
- 11.2 For electric operation, electric overload protection shall be provided by means of a Thermal cutout or other suitable device.
- 11.3 When the machine is operated by air, an approved hydraulic fluid shall be provided for smooth operation and positive action.
- 11.4 Pressure tanks for hydraulic operation shall conform to the standards of unfixed pressure vessels promulgated by the Bureau of Boiler Inspection of the Department of Labor and Industry and be labeled in an approved manner. Pressure tanks shall be so located and supported that inspection may be made of the entire exterior.
- 11.5 The maximum operating pressure of the hydraulic system shall not exceed 350 lbs. per square inch.

12. LIFT CONTROL

- 12.1 Any device used for controlling the travel of the lift in either direction shall be of either continuous pressure or deadman type and be so constructed that upon release, the lift platform shall stop within a travel distance of not more than two inches.
- 12.2 The lift control shall be so located that the operator has a full and complete view of the lift at all times and the area in which the lift is operating shall be effectively lighted at all times.
- 12.3 Where full automatic control of the lift is interlocked with the operation of a machine or device an emergency set of up, down and stop buttons must be provided in the manner aforesaid.