NFPA No.
513
File: 500 Series
Ground Transportation

Standard

for

MOTOR FREIGHT TERMINALS

June
1959

Forty Cents*

NATIONAL FIRE PROTECTION ASSOCIATION
International
60 Batterymarch St., Boston 10, Mass., U.S.A.

3M-6-59 FP

*Discount for quantities

Printed in U.S.A.

National Fire Protection Association

International

Executive Office: 60 Batterymarch St., Boston 10, Mass.

The National Fire Protection Association was organized in 1896 to promote the science and improve the methods of fire protection and prevention, to obtain and circulate information on these subjects and to secure the cooperation of its members in establishing proper safeguards against loss of life and property by fire. Its membership includes two hundred national and regional societies and associations (list on outside back cover) and seventeen thousand individuals, corporations, and organizations. Anyone interested may become a member; membership information is available on request.

This pamphlet is one of a large number of publications on fire safety issued by the Association including periodicals, books, posters and other publications; a complete list is available without charge on request. All NFPA standards adopted by the Association are published in six volumes of the **National Fire Codes** which are re-issued annually and which are available on an annual subscription basis. The standards, prepared by the technical committees of the National Fire Protection Association and adopted in the annual meetings of the Association, are intended to prescribe reasonable measures for minimizing losses of life and property by fire. All interests concerned have opportunity through the Association to participate in the development of the standards and to secure impartial consideration of matters affecting them.

NFPA standards are purely advisory as far as the Association is concerned, but are widely used by law enforcing authorities in addition to their general use as guides to fire safety.

Definitions

The official NFPA definitions of shall, should and approved are:

SHALL is intended to indicate requirements.

SHOULD is intended to indicate recommendations, or that which is advised but not required.

APPROVED refers to approval by the authority having jurisdiction.

Units of measurements used here are U. S. standard. 1 U. S. gallon = 0.83 Imperial gallons = 3.785 liters.

Approved Equipment

The National Fire Protection Association does not "approve" individual items of fire protection equipment, materials or services. The standards are prepared, as far as practicable, in terms of required performance, avoiding specifications of materials, devices or methods so phrased as to preclude obtaining the desired results by other means. The suitability of devices and materials for installation under these standards is indicated by the listings of nationally recognized testing laboratories, whose findings are customarily used as a guide to approval by agencies applying these standards. Underwriters' Laboratories, Inc., Underwriters' Laboratories of Canada and the Factory Mutual Laboratories test devices and materials for use in accordance with the appropriate standards, and publish lists which are available on request.

MOTOR FREIGHT TERMINALS

NFPA No. 513 — 1959

This standard, prepared by the NFPA Committee on Truck Transportation, was adopted by the Association June 1–5, 1959, after preliminary consideration extending over several years, and tentative adoption by the NFPA in 1958.

Standard for

Motor Freight Terminals

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Motor Freight Terminals

Part 1. Introduction

110. The continued growth of the highway transportation industry and particularly that portion which involves the movement of freight has resulted in an increase in the construction of new freight terminals designed to better meet the needs of the motor carrier and to facilitate the handling of freight. Many problems arise in designing these new terminals, for each must be so constructed as to permit expansion in accord with the projected growth of the trucking business. Among the problems which face the architect is that of how best to engineer into the individual buildings and the entire layout the proper protection against fire loss and it is in this area that the Committee on Truck Transportation of the National Fire Protection Association is best qualified to help.

120. The motor freight terminal may consist of simply a small office and a moderate size loading and unloading platform or it may, and does in many cases, consist of an entire area wherein the overall operation of freight, transfer, vehicle repair and service, truck parking and administrative functions of the truck fleet are performed. Large values, made up of the terminal structures, its equipment, cargo and vehicles, exist in these terminals and are exposed to loss by fire. To alleviate the possibility of such loss this Standard presents accepted practices for the construction and operation of motor freight terminals.

130. There are other publications and standards of the National Fire Protection Association which relate to fire prevention and protection problems found in motor freight terminals. Where these are applicable, appropriate reference is made to them and thus they become a part of this Standard.

Part 2. Definitions

210. APPROVED — Signifies acceptance by the authority having jurisdiction of design, equipment, installation, or intended use as required by this Standard. Devices having been tested and accepted for a specific purpose by a nationally recognized testing laboratory may be deemed to be acceptable.

220. EXPLOSIVES AND OTHER DANGEROUS ARTICLES — Include all materials listed as such by Interstate Commerce Commission Regulations governing the transportation of explosives and other dangerous articles.*

230. FREIGHT PLATFORM — The area wherein freight is received, sorted, shipped and held for distribution.

240. GENERAL CARGO — Includes all generally nonhazardous types of material comprising everything except materials classified as dangerous articles or explosives.

250. MOTOR FREIGHT TERMINAL — Area wherein the overall operation of freight transfer, vehicle repair and service, truck parking and administrative functions are performed. The motor freight terminal may also include facilities for repair of crates, cases, barrels or cartons; a storage area for undelivered freight or damaged goods pending settlement of claims; rest rooms or a dormitory for drivers; locker rooms and meal facilities.

260. OFFICE AREA — That part of the motor freight terminal used for administrative and general offices.

270. PARKING AREA — The lot or areas of the building used to park motor vehicles.

280. VEHICLE MAINTENANCE AREA — The area wherein vehicles are repaired.

290. VEHICLE SERVICE AREA — The area wherein vehicles are serviced, including refueling facilities. The area may include a lane in which vehicles are inspected before being dispatched.

Part 3. Location

310. While the location of a new motor freight terminal necessarily is based upon its ability to serve an urban area, the factors affecting fire prevention and fire protection should also be considered. These factors include the probability of damage from exposure to fires from nearby buildings, the adequacy of public and private water supplies for fire protection purposes; and the availability of public fire protection, police protection and watchman patrol services, and central station protective signaling service.

*See **Code of Federal Regulations, Title 49,** Transportation, Parts 71–90. See Appendix for availability.

Part 4. General Building Arrangements

410. Motor freight terminals that come within the scope of this Standard may be built of the various types of construction as defined in NFPA No. 220, Standard Types of Building Construction.*

420. In order to minimize the fire loss potential, consideration should be given to the type of construction, the fire protection provided and the limitation of fire areas. (See also Part 7 of this Standard concerning Fire Protection.)

Note: For limitations on height and area, reference should be made to the National Building Code* as recommended by the National Board of Fire Underwriters.

430. It is recommended that the freight platform floor be of noncombustible construction. If not of solid construction, the floor shall be enclosed to prevent accumulation of trash and other combustible materials underneath the floor.

440. Vehicle Servicing Areas.

441. Areas used for the repairing and servicing of vehicles should be located preferably in detached buildings. Where such servicing areas are not detached they shall be separated from other terminal occupancies by walls and partitions of approved noncombustible material having a fire resistance rating of not less than two hours. Floor and ceiling assemblies when separating such occupancies above or below shall also be of approved noncombustible material having a fire resistance rating of not less than two hours.

442. Openings in walls and partitions having a fire resistance rating of not less than two hours shall be protected by approved self-closing or automatic fire doors suitable for Class B openings.

450. Power operated doors that are installed in the terminals shall be arranged so that they can be operated manually from the floor in case of power failure.

460. Lighting shall be by electricity. The electric wiring for light, power, heat, and signal or control circuits, and electrically operated tools, portable appliances and devices shall be installed and used in accordance with the provisions of NFPA No. 70, the National Electrical Code.*

*See Appendix for availability.

470. All heating equipment shall be of a type approved by the authority having jurisdiction. Improvised furnaces, salamanders or space heaters shall not be used. Heating equipment in areas used for vehicle maintenance and service shall be installed in accordance with the requirements in NFPA No. 88, Standard for Garages.*

Part 5. Vehicle Maintenance and Service Facility

510. The section of the terminal devoted to vehicle repairing, maintenance and servicing shall be constructed according to the applicable local building code, but at least as provided in NFPA No. 88, Standard for Garages.*

Part 6. Exits

610. Adequate exit facilities shall be provided from all areas, including office areas, dormitories, repair shops and maintenance areas, according to NFPA No. 101, The Building Exits Code.*

Part 7. Fire Protection

710. Automatic Sprinklers. A complete system of automatic sprinklers installed in conformity with NFPA No. 13, Standard for the Installation of Sprinkler Systems* is recommended for the entire motor freight terminal.

720. Protective Signalling Systems. Where an automatic sprinkler system is installed it is recommended that sprinkler system water flow and supervisory signal service be provided through a central station system, auxiliary alarm system or remote station system. Where there is no automatic sprinkler installation it is recommended that the terminal be equipped throughout with an approved automatic fire detection and alarm system connected to a central station system, auxiliary alarm system or remote station system. These protective signaling systems should be installed, supervised and maintained in conformity with the provisions of NFPA No. 71, Standard for the Installation, Maintenance, and Use of Central Station Protective Signaling Systems* or NFPA No. 72, Standard for the Installation, Maintenance and Use of Proprietary, Auxiliary, Remote Station and Local Protective Signaling Systems.*

*See Appendix for availability.

730. Watchman Service. It is recommended that watchman service be provided to make regular rounds of the terminal at all times when it is not in operation. The watchman service should conform to the provisions of NFPA Standards Nos. 71 and 72.* The watchman should be familiar with the information in NFPA No. 601, The Watchman.*

740. Standpipe System. It is recommended that standpipe and hose systems be installed in all areas having 6,000 square feet or more of floor area. Where a standpipe and hose system is installed, it should be installed in compliance with NFPA No. 14, Standard for the Installation of Standpipe and Hose Systems.*

750. Fire Extinguishers. Portable fire extinguishers shall be provided throughout all areas of the motor freight terminal according to NFPA No. 10, Standard for the Installation, Maintenance and Use of Portable Fire Extinguishers* and in accordance with the occupancy of the various portions of the terminal. Attention is called to the necessity for using a non-freezing type of portable fire extinguisher in all areas which are subject to freezing temperatures.

760. Fire Alarm. A city fire alarm box should be installed on the premises if there is a municipal fire alarm system. If a fire alarm box cannot be installed on the premises, notices should be posted giving the location of the nearest box. Where there is no municipal fire alarm system, notices should be posted at telephones giving instructions for sending a fire alarm.

Part 8. Recommended Good Operating Practices

810. Responsibility of Management.

811. Consideration shall be given by the management to the hazards of the various materials which are handled. Protective equipment and storage arrangements will vary with the combustibility of the material and the building construction. The management must be alert to any unusual hazards which may occur with the receipt of hazardous materials. The care, cleanliness and maintenance exercised by management will determine to

*See Appendix for availability.

a large extent the relative fire safety of the property. Special attention shall be given to requirements of the authority having jurisdiction for the safe handling of explosives and other dangerous articles.

812. Waste paper and trash shall be removed from the motor freight terminal at least daily, and preferably just before closing time. Smoking shall be prohibited in hazardous areas such as on the freight platform, and in grease pits, in fueling areas and in spray painting areas. It may be desirable to create designated smoking areas provided they are adequately cut off from hazardous areas and are acceptable to local authorities. "No Smoking" signs shall be posted in prohibited areas so as to be readily apparent to visitors and working personnel.

813. Freight awaiting transfer shall be stacked neatly with adequate aisles so that all portions of the freight handling areas are readily accessible at all times. Combustible materials should be stacked in small lots in order to minimize the size of a fire should ignition occur. Dangerous articles and flammable liquids shall be segregated from general cargo and be handled in accordance with ICC requirements.†

820. Storage and Dispensing of Flammable Liquids and Gases.

821. Motor fuels shall not be dispensed within any building into trucks (other than industrial trucks — see Paragraph 841.c.). Fuel dispensing shall be from approved systems.

822. The storage and handling of flammable liquids shall be in compliance with the provisions of NFPA No. 30, Flammable Liquids Code.* The storage and handling of liquefied petroleum gases shall be in compliance with the provisions of NFPA No. 58, Standard for the Storage and Handling of Liquefied Petroleum Gases.*

†See **Code of Federal Regulations, Title 49,** Transportation, Parts 71–90. See Appendix for availability.

*See Appendix for availability.

830. Repair and Maintenance Areas.

831. Cleaning of parts should be done with a nonflammable solvent except that a flammable solvent with a flash point above 100 degrees F. may be used for this purpose provided adequate ventilation is supplied and no sources of ignition are present in the cleaning area.

832. Spray finishing operations using flammable materials shall be conducted in accordance with NFPA No. 33, Standard for Spray Finishing Using Flammable Materials.* The spraying area shall be separated from all other areas by walls and partitions of approved noncombustible material having a fire resistance rating of not less than two hours. Floor and ceiling assemblies when separating the spraying operations from other terminal occupancies above or below shall also be of approved noncombustible material having a fire resistance rating of not less than two hours. Incidental touch-up using a small sized spray gun (not over one pint capacity) may be permitted in service areas where adequate ventilation is provided, suitable fire extinguishers are at hand, and if located at least twenty feet horizontally from all open flame devices or spark producing electrical equipment or appliances.

833. Lighting shall be by electricity. The electric wiring for light, power, heat and signal or control circuits, and electrically operated tools, portable appliances and devices, shall be installed and used in accordance with the provisions of NFPA No. 70, National Electrical Code.* Where truck pits are used forced ventilation shall be provided for the pit. The pit shall be provided with a stairway at both ends for rapid escape of personnel working in the pit. Steps shall be noncombustible and slip-proof, and constructed with no space underneath.

834. Self-closing metal waste cans of approved type shall be provided for oily rags and waste. Waste oils should be drained directly into a below ground tank or placed in other approved outdoor container for salvage or removal. Where lubricating oils or flammable anti-freeze solutions are dispensed from drums, approved drum pumps shall be used.

835. Welding operations involving open flame or electric arcs shall be restricted to the repair area, and shall be conducted in accordance with NFPA No. 51, Standard for Welding and

*See Appendix for availability.

Cutting* and with the applicable portions of NFPA No. 70, the National Electrical Code* and NFPA No. 88, Standard on Garages.*

840. Industrial Trucks.

841. Industrial trucks shall be of an approved type and shall be operated in accordance with the following requirements, and NFPA No. 505, Standard for the Use, Maintenance and Operation of Industrial Trucks*:

a. Lighting of adequate intensity should be provided in operating areas.

b. Operators or authorized personnel shall return trucks for refueling to locations designated for that purpose. Vehicles that run out of fuel elsewhere shall be towed to a designated safe area for refueling.

c. Safe outdoor locations for refueling are preferable to those indoors. NFPA No. 30, the Flammable Liquids Code,* outlines recommendations for arranging safe indoor fueling facilities. Liquefied petroleum gas-powered trucks shall be refueled only as provided in NFPA No. 58, Standard for the Storage and Handling of Liquefied Petroleum Gases.*

d. Engines shall be stopped before refueling.

e. Reasonable care shall be exercised to prevent the spillage of fuel. Spilled fuel shall be dissipated before an attempt is made to start the engine.

f. Metal contact shall be maintained between the side of the fill opening of the tank and the refueling can or hose nozzle to prevent the accumulation of a hazardous charge of static electricity.

g. Exchange of removable liquefied petroleum gas truck fuel containers and storage of extra containers shall be done only in accordance with NFPA No. 58, Standard for Storage and Handling of Liquefied Petroleum Gases.*

h. Industrial trucks should be equipped with a fire extinguisher approved for use on Class B and C fires, maintained in operable condition and located where it will be accessible at all times. See NFPA No. 10, Standard for the Installation, Maintenance and Use of Portable Fire Extinguishers.*

*See Appendix for availability.

850. Fire Fighting by Employees. Employees should be trained in the actions to take in case of fire. It is important that notification be given to the municipal fire department immediately upon the discovery of a fire. Employees should be trained in handling of fire extinguishers and hose lines in order to keep a fire under control until the arrival of the municipal fire department. NFPA No. 27, Standard for the Organization, Training and Equipment of Private Fire Brigades,* should be followed where the size of the terminal and number of employees justifies such an organization.

APPENDIX, REFERENCES

The following standards are mentioned in the foregoing text specifically or deal with related subjects and are useful for reference. These standards will be generally found available for distribution from the same sources that distribute the Standard for Motor Freight Terminals. The number designations are those used by the National Fire Protection Association, the National Board of Fire Underwriters and the Canadian Underwriters Association. The abbreviations after the titles indicate the publication sources. Where two or more sources are indicated, the texts are identical from each source, except for cover and introductory matter.

NFPA — Published by the National Fire Protection Association in pamphlet form and available from them at 60 Batterymarch Street, Boston.

NBFU — Published by the National Board of Fire Underwriters in pamphlet form and available from them at 85 John Street, New York; 222 West Adams Street, Chicago; or Merchants' Exchange Bldg., San Francisco.

CUA — Published by the Canadian Underwriters Association in pamphlet form and available from them at 460 St. John St., Montreal, Quebec.

NFC I, II, III, IV, V or VI — Published by the National Fire Protection Association in the National Fire Codes volume indicated. These codes, republished annually, are available from

*See Appendix for availability.