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NFPA 513 Standard for Motor Freight Terminals 1994 Edition

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Policy Adopted by NFPA Board of Directors on December 3, 1982

The Board of Directors reaffirms that the National Fire Protection Association recognizes that the toxicity of the products of combustion is an important factor in the loss of life from fire. NFPA has dealt with that subject in its technical committee documents for many years.

There is a concern that the growing use of synthetic materials may produce more or additional toxic products of combustion in a fire environment. The Board has, therefore, asked all NFPA technical committees to review the documents for which they are responsible to be sure that the documents respond to this current concern. To assist the committees in meeting this request, the Board has appointed an advisory committee to provide specific guidance to the technical committees on questions relating to assessing the hazards of the products of combustion.

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NFPA 513

Standard for

Motor Freight Terminals

1994 Edition

This edition of NFPA 513, *Standard for Motor Freight Terminals*, was prepared by the Technical Committee on Motor Vehicle and Highway Fire Protection and acted on by the National Fire Protection Association, Inc. at its Fall Meeting held November 15-18, 1993, in Phoenix, AZ. It was issued by the Standards Council on January 14, 1994, with an effective date of February 11, 1994, and supersedes all previous editions.

The 1994 edition of this document has been approved by the American National Standards Institute.

Changes other than editorial are indicated by a vertical rule in the margin of the pages on which they appear. These lines are included as an aid to the user in identifying changes from the previous edition.

Origin and Development of NFPA 513

The first edition of NFPA 513 was prepared by the NFPA Committee on Truck Transportation. It was tentatively adopted in 1958 and adopted by the Association as an official NFPA Standard in 1959. In 1967, the Committee was reorganized as the Committee on Motor Vehicle and Highway Fire Protection.

The 1973 edition was a complete revision and reorganization of the 1971 edition. The 1973 edition was partially revised in 1975, 1978, and 1984. The 1990 edition contained minor changes such as an update of Table 3-1.2, which is extracted from NFPA 30, *Flammable and Combustible Liquids Code*. Very minor changes were incorporated in Chapters 3 and 6 of this 1994 edition.

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This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in the membership may have occurred.

NOTE: Membership on a Committee shall not in and of itself constitute an endorsement of the Association or any document developed by the Committee on which the member serves.

Committee Scope: This Committee shall have primary responsibility for documents on motor vehicle fire prevention and protection measures to reduce loss of life and property damage in the operation and maintenance (repair) of such vehicles (except as specified herein); fire prevention and protection recommendations for motor freight terminals; protection for tunnels, air-right structures, and bridges; and to recommend protection facilities on limited-access highways. Included as motor vehicles are trucks, buses, taxicabs, limousines, and passenger cars; excluded are the design, fire protection, and operational procedures for fire apparatus, mobile homes and travel trailers, tank vehicles of all kinds for handling flammable and combustible liquids and liquefied petroleum gases, and vehicles transporting explosives and other hazardous chemicals. The construction and protection of garages is handled by the NFPA Committee on Garages.

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NOTE: An asterisk (*) following the number or letter designating a paragraph indicates explanatory material on that paragraph in Appendix A.

Information on referenced publications can be found in Chapter 7 and Appendix B.

Chapter 1 General Information

1-1 Application and Scope.

1-1.1 This standard contains requirements for the prevention of loss of life and property damage from fires in motor freight terminals.

1-1.2 This standard applies to freight transfer areas, offices, employee facilities, and to vehicle maintenance and service areas.

1-1.3 This standard applies to motor freight terminals handling freight of various types, including ordinary combustible materials and materials classified as hazardous by the U.S. Department of Transportation Regulations 49 CFR, Parts 100-199.

1-1.3.1 Terminals for truck transportation of explosives shall be in accordance with NFPA 495, *Explosive Materials Code*, and NFPA 498, *Standard for Explosives Motor Vehicle Terminals*.

1-1.3.2 Terminals for bulk shipments of flammable and combustible liquids shall comply with NFPA 30, *Flammable and Combustible Liquids Code*.

1-1.3.3 Terminals for bulk shipments of LP-Gas shall comply with NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

1-1.4 For general storage buildings, see NFPA 231, *Standard for General Storage*.

1-1.5 For fire protection for property-carrying motor vehicles, see NFPA 512, *Standard for Truck Fire Protection*.

1-1.6 Where existing buildings, structures, and installations meet the applicable requirements of the edition of this standard in effect at the time of construction or installation, they shall be permitted to be continued in use, provided they do not constitute a distinct hazard to life or adjoining property.

1-2 Definitions.

Approved. Acceptable to the authority having jurisdiction.

NOTE: The National Fire Protection Association does not approve, inspect, or certify any installations, procedures, equipment, or materials; nor does it approve or evaluate testing laboratories. In determining the acceptability of installations, procedures, equipment, or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure, or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization concerned with product evaluations that is in a position to determine compliance with appropriate standards for the current production of listed items.

Authority Having Jurisdiction. The organization, office, or individual responsible for approving equipment, an installation, or a procedure.

NOTE: The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner, since jurisdictions and approval agencies vary, as do their responsibilities. Where public safety is primary, the authority having jurisdiction may be a federal, state, local, or other regional department or individual such as a fire chief; fire marshal; chief of a fire prevention bureau, labor department, or health department; building official; electrical inspector; or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the authority having jurisdiction. In many circumstances, the property owner or his or her designated agent assumes the role of the authority having jurisdiction; at government installations, the commanding officer or departmental official may be the authority having jurisdiction.

Class I Liquid. A liquid having a flash point below 100°F (37.8°C).

Fire Area. A portion of a building that is separated from other portions by construction with sufficient fire resistance to prevent fire of maximum anticipated severity from entering or leaving the area and with standard protection at all openings in the surrounding walls, floor, and ceiling. (*See NFPA 80, Standard for Fire Doors and Fire Windows.*)

Freight Transfer Area (Freight Platform, Freight Dock). The area wherein freight is received, sorted, shipped, and held for distribution.

Hazardous Material. A substance or material that has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and that has been so designated in U.S. Department of Transportation Regulations 49 CFR, Parts 100-199.

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

Office Area. That part of the motor freight terminal used for administrative and general offices.

Parking Area. The lot or areas of the motor freight terminals used to park motor vehicles.

Vehicle Maintenance Area. The area wherein vehicles are repaired.

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.

Chapter 2 Construction and Building Arrangement

2-1* Freight Transfer and Administration Buildings.

2-1.1 If not in separate buildings, freight transfer and office areas shall be cut off from vehicle maintenance and service facilities by walls constructed of noncombustible materials having a fire resistance rating of not less than 2 hours. The requirement shall not apply to small offices, 600 ft^2 (54 m^2) or less, located within the vehicle maintenance area.

2-1.2 Walls required by 2-1.1 shall be parapeted at least 3 ft (0.9 m) above the building roof.

Exception: The parapet shall be permitted to be omitted where the wall fits tightly to the underside of a fire-resistive roof deck constructed of noncombustible materials.

2-1.3 Necessary door and other openings in the walls required by 2-1.1 shall be protected by fire doors having a fire protection rating of not less than $1\frac{1}{2}$ hours, installed in accordance with NFPA 80, *Standard for Fire Doors and Fire Windows*.

2-1.4 Stairways and other vertical shafts shall be enclosed with construction specified in NFPA 220, *Standard on Types of Building Construction*, or sealed off at each floor level with construction having the same fire resistance rating as the floor.

2-1.5* Exits and other life safety features of freight transfer and administration buildings and sections of buildings shall comply with the requirements of Chapters 29 and 27, respectively, of NFPA *101®, Life Safety Code®*.

2-1.6 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.

2-1.7 The floor of any freight transfer area shall be constructed of noncombustible materials without cracks or openings into which trash or other combustible material might fall. This provision shall not prohibit openings for integral freight handling equipment and appurtenances such as slots for the operation of draglines and platform scales. Any open space beneath the floor shall be enclosed with noncombustible material.

2-1.8 Rooms for the storage, charging, and servicing of batteries shall comply with Article 480, NFPA 70, *National Electrical Code®*. "No Smoking" signs shall be posted at the entrance.

2-2* Vehicle Maintenance and Service Buildings.

2-2.1 Service areas that are not located in separate buildings shall be separated from other terminal operations by walls and fire doors in accordance with 2-1.1 through 2-1.3.

2-2.2 Maintenance and service area floors shall be constructed of noncombustible material. Floors shall be graded and equipped with drains so as to minimize the possibility that water or fuel will stand on the floor.

2-2.3 Floor drains shall be provided in areas where vehicles are maintained and serviced. Each floor drain shall be properly trapped and shall discharge through an oil separator to the sewer or outside vented sump.

2-2.4 Pits and subfloor work areas shall be constructed of masonry or concrete, and floors and piers shall be of suitable noncombustible material.

2-2.4.1 Pits shall have adequate exits to prevent trapping of personnel in the event of fire. Steps shall be noncombustible, slip-proof, and constructed with no accessible space underneath.

2-2.4.2 Ventilation and drainage of pits shall be in accordance with Section 5-3.

2-2.5* Exits from vehicle maintenance and service areas shall comply with the requirements of Section 29-2 of NFPA *101, Life Safety Code*.

2-3 Employee Facilities.

2-3.1 Walls and Partitions.

2-3.1.1 Fire resistance ratings of walls or partitions separating the following rooms from surrounding areas shall be as follows:

Employee locker rooms	1 hour
Recreation rooms	1 hour
Sleeping facilities	2 hours

2-3.1.2 Door and other openings in the walls or partitions required by 2-3.1 shall be protected by self-closing fire doors having a fire protection rating of not less than 1 hour, installed in accordance with NFPA 80, *Standard for Fire Doors and Fire Windows*.

Exception: Door and other openings in walls or partitions separating sleeping facilities from surrounding areas shall be protected by self-closing fire doors having a fire protection rating of not less than $1\frac{1}{2}$ hours.

2-3.2 Floors.

2-3.2.1 Fire resistance ratings of floors separating employee locker rooms, recreation rooms, and sleeping facilities from surrounding areas shall be the same as required for walls or partitions in 2-3.1.

2-3.2.2 Openings in floors between the separated areas shall be enclosed in shafts with enclosing walls or partitions having the same fire resistance ratings as required for the walls or partitions in 2-3.1.

Exception: Ducts for heating, ventilating, and air conditioning shall be installed in accordance with NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems.

2-3.3 Exits and other life safety features of dormitory buildings and dormitory sections of buildings shall comply with the requirements of Chapter 17 of NFPA *101, Life Safety Code*.

Chapter 3 Building Services

3-1 Electricity.

3-1.1 All electrical installations shall be in accordance with the provisions of NFPA 70, *National Electrical Code*.

3-1.2 Table 3-1.2 (Table 5-3.5.3 from NFPA 30, *Flammable and Combustible Liquids Code*) shall be used for determining the extent of the hazardous area where flammable liquids are stored or handled.

Table 3-1.2 Electrical Area Classifications

Location	NEC Class I Division	Extent of Classified Area
Indoor equipment installed where flammable vapor-air mixtures may exist under normal operation	1	Area within 5 ft of any edge of such equipment, extending in all directions.
	2	Area between 5 ft and 8 ft of any edge of such equipment, extending in all directions. Also, area up to 3 ft above floor or grade level within 5 ft to 25 ft horizontally from any edge of such equipment.*
Outdoor equipment of the type where flammable vapor-air mixtures may exist under normal operation	1	Area within 3 ft of any edge of such equipment, extending in all directions.
	2	Area between 3 ft and 8 ft of any edge of such equipment, extending in all directions. Also, area up to 3 ft above floor or grade level within 3 ft to 10 ft horizontally from any edge of such equipment.
Tank—aboveground	1	Area inside dike where dike height is greater than the distance from the tank to the dike for more than 50 percent of the tank circumference.
Shell, ends, or roof and dike area	2	Within 10 ft from shell, ends, or roof of tank. Area inside dikes to level of top of dike.
Vent	1	Within 5 ft of open end of vent, extending in all directions.
	2	Area between 5 ft and 10 ft from open end of vent, extending in all directions.
Floating roof	1	Area above the roof and within the shell.
Underground tank fill opening	1	Any pit, box, or space below grade level, if any part is within a Division 1 or 2 classified area.
	2	Up to 18 in. above grade level, within a horizontal radius of 10 ft from a loose fill connection and within a horizontal radius of 5 ft from a tight fill connection.
Vent—discharging upward	1	Within 3 ft of open end of vent, extending in all directions.
	2	Area between 3 ft and 5 ft of open end of vent, extending in all directions.
Drum and container filling outdoors, or indoors with adequate ventilation	1	Within 3 ft of vent and fill openings, extending in all directions.
	2	Area between 3 ft and 5 ft from vent or fill opening, extending in all directions. Also, up to 18 in. above floor or grade level within a horizontal radius of 10 ft from vent or fill openings.
Pumps, bleeders, withdrawal fittings, meters, and similar devices		
Indoors	2	Within 5 ft of any edge of such devices, extending in all directions. Also up to 3 ft above floor or grade level within 25 ft horizontally from any edge of such devices.
Outdoors	2	Within 3 ft of any edge of such devices, extending in all directions. Also up to 18 in. above grade level within 10 ft horizontally from any edge of such devices.
Pits		
Without mechanical ventilation	1	Entire area within pit if any part is within a Division 1 or 2 classified area.
With adequate mechanical ventilation	2	Entire area within pit if any part is within a Division 1 or 2 classified area.
Containing valves, fittings, or piping, and not within a Division 1 or 2 classified area	2	Entire pit.
Drainage ditches, separators, impounding basins		
Outdoors	2	Area up to 18 in. above ditch, separator, or basin. Also up to 18 in. above grade within 15 ft horizontally from any edge.
Indoors	—	Same as pits.

*The release of Class I liquids may generate vapors to the extent that the entire building, and possibly a zone surrounding it, should be considered a Class I, Division 2 location.

(continued)

Table 3-1.2, cont.

Location	NEC Class I Division	Extent of Classified Area
Tank vehicle and tank car* loading through open dome	1	Within 3 ft of edge of dome, extending in all directions.
	2	Area between 3 ft and 15 ft from edge of dome, extending in all directions.
Loading through bottom connections with atmospheric venting	1	Within 3 ft of point of venting to atmosphere, extending in all directions.
	2	Area between 3 ft and 15 ft from point of venting to atmosphere, extending in all directions. Also up to 18 in. above grade within a horizontal radius of 10 ft from point of loading connection.
Office and rest rooms	Ordinary	If there is any opening to these rooms within the extent of an indoor classified area, the room shall be classified the same as if the wall, curb, or partition did not exist.
Loading through closed dome with atmospheric venting	1	Within 3 ft of open end of vent, extending in all directions.
	2	Area between 3 ft and 15 ft of open end of vent, extending in all directions. Also within 3 ft of edge of dome, extending in all directions.
Loading through closed dome with vapor control	2	Within 3 ft of point of connection of both fill and vapor lines, extending in all directions.
Bottom loading with vapor control Any bottom unloading	2	Within 3 ft of point of connections, extending in all directions. Also up to 18 in. above grade within a horizontal radius of 10 ft from point of connections.
Storage and repair garage for tank vehicles	1	All pits or spaces below floor level.
	2	Area up to 18 in. above floor or grade level for entire storage or repair garage.
Garages for other than tank vehicles	Ordinary	If there is any opening to these rooms within the extent of an outdoor classified area, the entire room shall be classified the same as the area classification at the point of the opening.
Outdoor drum storage	Ordinary	
Indoor warehousing where there is no flammable liquid transfer	Ordinary	If there is any opening to these rooms within the extent of an indoor classified area, the room shall be classified the same as if the wall, curb, or partition did not exist.
Piers and wharves		See Figure 5-3.5.6 in NFPA 30, *Flammable and Combustible Liquids Code*.

*When classifying extent of area, consideration shall be given to the fact that tank cars or tank vehicles may be spotted at varying points. Therefore, the extremities of the loading or unloading positions shall be used.

3-2 Heating.

3-2.1 Heating equipment shall be installed to conform with the following standards of the National Fire Protection Association, as applicable: NFPA 90A, *Standard for Installation of Air Conditioning and Ventilating Systems*; NFPA 31, *Standard for the Installation of Oil-Burning Equipment*; NFPA 54, *National Fuel Gas Code*; NFPA 82, *Standard on Incinerators, Waste and Linen Handling Systems and Equipment*; NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*.

3-2.2 All heating equipment shall be of an approved type designed for the purpose. The use of makeshift or improvised heaters shall be prohibited.

3-2.3 Fuels used shall be of the type and quality specified by the manufacturer of the heating appliance.

3-2.4 Heating equipment shall be permitted to be installed in a special room separated from an area classified as Class I, Division 1 or 2, by walls having a fire-resistive rating of at least 1 hour and without any openings in the wall into the classified area within 8 ft (2.4 m) of the floor. This room shall not be used for combustible storage, and all air for combustion purposes shall come from outside the building. In classifying the areas, Table 3-1.2 shall be used. The area classifications are defined in Article 500 of NFPA 70, *National Electrical Code*.

3-2.5 Heating equipment using gas or oil fuel shall be permitted to be installed in maintenance service areas in which there is no dispensing or transferring of Class I liquids, provided that the bottom of the combustion chamber is at least 18 in. (457 mm) above the floor and the heating equipment is protected from physical damage.

3-2.6 Gas or oil-heating equipment approved for use in garages shall be permitted to be installed in the maintenance and service areas where Class I liquids are dispensed, provided the equipment is installed at least 8 ft (2.4 m) above the floor.

3-2.7 Electrical heating equipment shall be installed in accordance with the provisions of NFPA 70, *National Electrical Code*.

3-3 Ventilation.

3-3.1 Vehicle Maintenance and Repair Areas. All vehicle maintenance and repair areas, when in operation, shall be continuously ventilated by a ventilating system having positive means for exhausting indoor air at a rate of not less than ¾ cu ft (0.0212 m^3) of air per minute for each sq ft (m^2) of floor area. Exhaust duct openings for required ventilation shall be located so as to remove effectively vapor accumulations at floor level from all parts of the repair area. An approved means shall be provided for introducing an equal amount of outdoor air.

3-3.2 Mechanical ventilating systems shall be installed in accordance with NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*. When blower and exhaust systems are installed for vapor removal, the system shall be installed in accordance with NFPA 91, *Standard for Exhaust Systems for Air Conveying of Materials*.

Chapter 4 Freight Handling Operation

4-1 Freight Transfer.

4-1.1 Aisles shall be provided to keep all portions of the freight handling areas readily accessible for fire fighting and to minimize the spread of fire.

4-1.2* Hazardous materials shall be handled in accordance with the U.S. Department of Transportation Regulations 49 CFR, Parts 100-199.

4-1.3* Combustible contents shall not be piled in contact with columns that are not of fire-resistive construction.

4-1.4 In sprinklered buildings, at least 18-in. (457-mm) clearance between sprinkler deflectors and the top of storage shall be maintained. In nonsprinklered buildings, at least 36-in. (914-mm) clearance shall be maintained between the top of the storage and the underside of the roof or ceiling in order to allow sufficient space for effective use of hose streams.

4-1.5* Clearance shall be maintained between heat-producing appliances and combustible stock in accordance with NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*. Adequate clearance shall be maintained between incandescent lamps and combustible stock.

4-1.6 A clearance of 24 in. (610 mm) shall be maintained around the path of travel of fire doors.

Exception: If a barricade is provided, no clearance shall be required.

4-1.7 Commodities shall not be stored within 36 in. (914 mm) of a fire door opening.

4-2 Mechanical Handling Equipment.

4-2.1 Power-operated industrial trucks shall be of a type designated in Chapter 1 of NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Maintenance, and Operation*, in accordance with the hazards of the location in which they are used.

4-2.2 Industrial trucks, powered either by liquid or gaseous fuels, or by electricity, shall be inspected and maintained in accordance with Chapters 4 and 5 of NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Maintenance, and Operation*.

4-3 Motor Vehicles at Docks.

4-3.1* Parking of vehicles in terminals shall be in compliance with applicable local, state, and federal regulations.

4-3.2 Accessibility to terminals and vehicle parking areas for fire fighting purposes shall be provided at all times. Vehicles shall be parked so that they will not block fire department access.

4-3.3 There shall be an emergency plan in effect for the removal of vehicles from the dock to a safe area to minimize fire exposure and loss and to ensure improved accessibility for the fire fighting equipment.

Chapter 5 Vehicle Maintenance and Service

5-1 General. Major maintenance and servicing of motor vehicles shall not be performed on floors below grade level. This requirement shall not prohibit the use of pits.

5-2 Spray Painting and Undercoating. Spray painting, drying, and undercoating of motor vehicles shall conform to NFPA 33, *Standard for Spray Application Using Flammable and Combustible Materials*, and NFPA 86, *Standard for Ovens and Furnaces*.

5-3* Inspection and Repair Pits.

5-3.1 Use of approved portable lights shall be minimized by installation of fixed lighting fixtures of the approved types in all pits in accordance with Article 511 of NFPA 70, *National Electrical Code*.

Exception: If gasoline is dispensed, Article 514 of NFPA 70, National Electrical Code, shall apply.

5-3.2 Drainage from inspection or repair pits shall not enter a storm or sanitary sewer system, unless it has passed through a separator to prevent flammable and combustible liquids from entering the sewer.

5-3.3 Smoking in pits shall be prohibited.

5-3.4 A scheduled maintenance program for the collection and removal of oil separators and traps shall be initiated to prevent flammable and combustible liquids from entering the sewer.

5-4 Repair of Fuel Tanks.

5-4.1 Repair work on fuel tanks of vehicles shall be in accordance with NFPA 327, *Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers Without Entry*, and NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*.

5-4.2 Fuel drained from vehicle tanks and not discarded shall be stored in approved safety cans or returned to standard underground storage tanks.

5-5 Cleaning of Parts. Cleaning of parts shall be performed with nonflammable solvent.

Exception: A combustible liquid with a flash point at or above 100°F (37.8°C) (closed cup) shall be permitted to be used for this purpose, provided adequate ventilation is supplied and no sources of ignition are present in the cleaning area.

5-6 Welding and Open Flame Operations.

5-6.1 All operations involving open flame or electric arcs, including fusion gas and electric welding, shall be restricted to the designated repair area. This provision includes, but is not limited to, fuel tank and radiator repairs. Responsibility for cutting and welding, and related fire prevention precautions, shall be in accordance with the requirements of NFPA 51B, *Standard for Fire Prevention in Use of Cutting and Welding Processes.*

5-6.2 Welding equipment shall conform to Article 630 of NFPA 70, *National Electrical Code*, and the welding operations shall conform to NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes.*

5-7 Storage and Handling of Flammable and Combustible Liquids. The storage and handling of flammable and combustible liquids shall be in accordance with NFPA 30, *Flammable and Combustible Liquids Code.* The storage and handling of liquefied petroleum gas shall be in compliance with NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases.*

5-8 Fueling of Vehicles.

5-8.1* Gasoline dispensing units shall be of an approved type and shall be at least 20 ft (6 m) horizontally from any activity involving fixed sources of ignition.

5-8.2 Approved dispensing units shall be permitted to be located inside buildings upon specific approval of the authority having jurisdiction. The dispensing area shall be separated from other areas in a manner approved by the authority having jurisdiction. The dispensing area shall be provided with an approved mechanical or gravity ventilation system.

5-8.3 Class I liquids shall be transferred from tanks by means of fixed pumps designed and equipped to allow control of the flow and prevent leakage or accidental discharge.

5-8.4 The dispensing unit and its piping, except those units attached to containers, shall be mounted on a concrete island or protected against collision damage by suitable means. If located indoors, the dispenser also shall be mounted on a concrete island or shall be protected against collision damage by suitable means and shall be located in a position where it cannot be struck by an out-of-control vehicle that is descending a ramp or other slope.

5-8.5 If Class I liquids are dispensed by a person other than the attendant, the hose nozzle valve shall be a listed automatic-closing type without a hold-open latch.

5-8.6 One or more clearly identified and easily accessible switches or circuit breakers shall be provided at a location remote from dispensing devices, including remote pumping systems, to shut off the power to all dispensing devices in the event of an emergency. Controls shall not be more than 100 ft (30 m) from dispensers.

5-8.7 Operating instructions and "No Smoking" signs shall be conspicuously posted in the dispensing area.

5-8.8 The storage and handling of flammable and combustible liquids shall be in accordance with NFPA 30, *Flammable and Combustible Liquids Code.*

5-8.9 Facilities for filling LP-Gas fuel tanks shall be located outside of any terminal building. For requirements for LP-Gas fueling, see NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases.*

Chapter 6 Fire Protection

6-1* Automatic Sprinklers. Where automatic sprinklers are provided, they shall be installed in accordance with NFPA 13, *Standard for the Installation of Sprinkler Systems.*

6-2 Portable Fire Extinguishers. Portable fire extinguishers shall be installed, inspected, maintained, and used in accordance with NFPA 10, *Standard for Portable Fire Extinguishers.*

6-3 Standpipes. Where standpipe and hose systems are provided, they shall conform to NFPA 14, *Standard for the Installation of Standpipe and Hose Systems.*

6-4* Alarm Service. Where alarm service is provided, it shall be installed and maintained in accordance with NFPA 72, *National Fire Alarm Code.*

6-5 Outside Protection.

6-5.1* The fire fighting needs of the terminal buildings and the requirements for fighting fires that might involve loaded and unloaded vehicles shall be considered when determining water supply and hydrant requirements.

6-5.2 Where private underground supply mains and hydrants are necessary, they shall be installed in accordance with NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances.*

Chapter 7 Referenced Publications

7-1 The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

7-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 10, *Standard for Portable Fire Extinguishers*, 1990 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 1994 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems*, 1993 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances*, 1992 edition.

NFPA 30, *Flammable and Combustible Liquids Code*, 1993 edition.

NFPA 31, *Standard for the Installation of Oil-Burning Equipment*, 1992 edition.

NFPA 33, *Standard for Spray Application Using Flammable and Combustible Materials*, 1989 edition.

NFPA 51, *Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes*, 1992 edition.

NFPA 51B, *Standard for Fire Prevention in Use of Cutting and Welding Processes*, 1994 edition.

NFPA 54, *National Fuel Gas Code*, 1992 edition.

NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*, 1992 edition.

NFPA 70, *National Electrical Code*, 1993 edition.

NFPA 72, *National Fire Alarm Code*, 1993 edition.

NFPA 80, *Standard for Fire Doors and Fire Windows*, 1992 edition.

NFPA 82, *Standard on Incinerators, Waste and Linen Handling Systems and Equipment*, 1994 edition.

NFPA 86, *Standard for Ovens and Furnaces*, 1990 edition.

NFPA 90A, *Standard for the Installation of Air Conditioning and Ventilating Systems*, 1993 edition.

NFPA 91, *Standard for Exhaust Systems for Air Conveying of Materials*, 1992 edition.

NFPA *101, Life Safety Code*, 1994 edition.

NFPA 211, *Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances*, 1992 edition.

NFPA 220, *Standard on Types of Building Construction*, 1992 edition.

NFPA 327, *Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers Without Entry*, 1993 edition.

NFPA 495, *Explosive Materials Code*, 1992 edition.

NFPA 498, *Standard for Explosives Motor Vehicle Terminals*, 1992 edition.

NFPA 505, *Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Maintenance, and Operation*, 1992 edition.

7-1.2 Other Publication.

7-1.2.1 U.S. Department of Transportation Regulations, 400 7th Street, SW, Washington, DC 20590.

49 CFR, Parts 100-199, as amended.

Appendix A Explanatory Material

This Appendix is not a part of the requirements of this NFPA document, but is included for informational purposes only.

A-2-1 Freight transfer and administration buildings should be of fire-resistive or noncombustible construction as defined in NFPA 220, *Standard on Types of Building Construction*. Consideration should be given to limitation of undivided fire areas in freight transfer facilities.

Factors to be considered when determining maximum sizes of undivided fire areas are (a) type of fire protection provided, (b) mechanical conveying equipment such as dragline operations, and (c) surveillance of goods to prevent possible theft.

A-2-1.5 The referenced sections of NFPA *101, Life Safety Code*, include requirements for types and capacity of exits, travel distances to exits, access to exits, exit lighting and signs, protection of vertical openings, interior finish, alarms, and air-conditioning equipment.

A-2-2 Areas used for repairing and servicing vehicles should be located in separate buildings from the freight transfer building. These buildings should be of fire-resistive or noncombustible construction.

A-2-2.5 Chapter 29 of NFPA *101, Life Safety Code*, includes requirements for types and capacity of exits, travel distances to exits, access to exits, exit lighting and signs, protection of vertical openings, interior finish, and alarms.

A-4-1.2 Certain commodities have characteristics that cause them to be classified as hazardous materials. These commodities are subject to special regulations governing packaging, storage, and transportation. Failure to abide by these requirements increases the danger of explosion, fire, the release of noxious or toxic fumes, damage to other freight, or other dangerous conditions. Section 177.848 of the *Code of Federal Regulations, Loading and Storage Guide*, sets forth those combinations of hazardous materials that should not be loaded or stored together, or with certain other types of freight, in the same vehicle. The *Loading and Storage Guide* does not prohibit the presence of these combinations of commodities in the same motor freight terminal so long as they are not stored adjacent to each other.

A-4-1.3 This requirement is necessary to permit water to wet columns during fire suppression operations to guard against column failure.

A-4-1.5 Surface temperature of lamps is discussed in the NFPA *Fire Protection Handbook*, 17th edition, pages 2-34.

A-4-3.1 In case of fire, there is a potential for mutual exposure between the terminals and vehicles parked adjacent to them. Consistent with operating conditions and security requirements, consideration should be given to minimizing the potential exposure by not parking vehicles at the dock longer than necessary. Priority should be given to the loading, unloading, and dispatching of vehicles transporting hazardous materials so that such cargoes will not be in the terminal longer than necessary.

A-5-3 Pits used to service gasoline-fueled vehicles should be provided with individual ventilating systems capable of providing 4 cu ft (0.1132 m^3) of air per minute per sq ft (m^2) of floor area. Such pits should have the floor pitched 1 in. (25.4 mm) for each 10 ft (3.05 m), and the exhaust air opening should terminate in an air opening that is perpendicular to the floor with the bottom of the opening extending to the floor at the lowest end of the pit.

A-5-8.1 In fuel dispensing, consideration should be given to the vapor recovery requirements of the U.S. Environmental Protection Agency.

A-6.1 Consideration should be given to sprinkler protection for:

(a) Freight transfer buildings and vehicle maintenance and service buildings.

(b) Truck loading areas. An open head deluge system or a closed head dry pipe or nonfreeze-solution wet system

should be provided in colder regions to protect against the mutual fire exposure that can exist between terminals and vehicles parked adjacent to them. See Chapter 3, "System Requirements," of NFPA 13, *Standard for the Installation of Sprinkler Systems*.

A-6-4 Freight transfer facilities should be provided with one of the following types of alarm service: (a) central station supervision of sprinkler system water-flow, (b) central station supervision of automatic fire detection system, or (c) central station supervision of guard service. Details for the installation, maintenance, and use of guard, fire alarm, and sprinkler supervisory systems are found in NFPA 72, *National Fire Alarm Code*. Information on the selection and training of persons to perform guard services is found in NFPA 601, *Standard on Guard Service in Fire Loss Prevention*.

A-6-5.1 Where an adequate water supply for fire hydrants and sprinkler protection cannot be made available from public water mains, the following NFPA standards should be consulted: NFPA 20, *Standard for the Installation of Centrifugal Fire Pumps*, and NFPA 22, *Standard for Water Tanks for Private Fire Protection*.

Appendix B Referenced Publications

B-1 The following documents or portions thereof are referenced within this standard for informational purposes only and thus are not considered part of the requirements of this document. The edition indicated for each reference is the current edition as of the date of the NFPA issuance of this document.

B-1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 13, *Standard for the Installation of Sprinkler Systems*, 1994 edition.

NFPA 20, *Standard for the Installation of Centrifugal Fire Pumps*, 1993 edition.

NFPA 22, *Standard for Water Tanks for Private Fire Protection*, 1993 edition.

NFPA 72, *National Fire Alarm Code*, 1993 edition.

NFPA 80, *Standard for Fire Doors and Fire Windows*, 1992 edition.

NFPA *101*, *Life Safety Code*, 1994 edition.

NFPA 220, *Standard on Types of Building Construction*, 1992 edition.

NFPA 231, *Standard for General Storage*, 1990 edition.

NFPA 512, *Standard for Truck Fire Protection*, 1994 edition.

NFPA 601, *Standard on Guard Service in Fire Loss Prevention*, 1992 edition.

Fire Protection Handbook, 1993, 17th edition.

B-1.2 Other Publications.

B-1.2.1 U.S. Department of Transportation Publication. U.S. Department of Transportation, 400 7th Street, SW, Washington, DC 20590.

Code of Federal Regulations, 49 CFR, Parts 100-199.

B-1.2.2 U.S. Environmental Protection Agency Publication. U.S. Environmental Protection Agency, Waterside Mall, 401 M Street, SW, Washington, DC 20460.

Code of Federal Regulations, 40 CFR, Section 50.

Index

The NFPA Codes and Standards Development Process

Since 1896, one of the primary purposes of the NFPA has been to develop and update the standards covering all areas of fire safety.

Calls for Proposals
The code adoption process takes place twice each year and begins with a call for proposals from the public to amend existing codes and standards or to develop the content of new fire safety documents.

Report on Proposals
Upon receipt of public proposals, the technical committee members meet to review, consider, and act on the proposals. The public proposals – together with the committee action on each proposal and committee-generated proposals – are published in the NFPA's Report on Proposals (ROP). The ROP is then subject to public review and comment.

Report on Comments
These public comments are considered and acted upon by the appropriate technical committees. All public comments – together with the committee action on each comment – are published as the Committee's supplementary report in the NFPA's Report on Comments (ROC).

The committee's report and supplementary report are then presented for adoption and open debate at either of NFPA's semi-annual meetings held throughout the United States and Canada.

Association Action
The Association meeting may, subject to review and issuance by the NFPA Standards Council, (a) adopt a report as published, (b) adopt a report as amended, contingent upon subsequent approval by the committee, (c) return a report to committee for further study, and (d) return a portion of a report to committee.

Standards Council Action
The Standards Council will make a judgement on whether or not to issue an NFPA document based upon the entire record before the Council, including the vote taken at the Association meeting on the technical committee's report.

Voting Procedures
Voting at an NFPA Annual or Fall Meeting is restricted to members of record for 180 days prior to the opening of the first general session of the meeting, except that individuals who join the Association at an Annual or Fall Meeting are entitled to vote at the next Fall or Annual Meeting.

"Members" are defined by Article 3.2 of the Bylaws as individuals, firms, corporations, trade or professional associations, institutes, fire departments, fire brigades, and other public or private agencies desiring to advance the purposes of the Association. Each member shall have one vote in the affairs of the Association. Under Article 4.5 of the Bylaws, the vote of such a member shall be cast by that member individually or by an employee designated in writing by the member of record who has registered for the meeting. Such a designated person shall not be eligible to represent more than one voting privilege on each issue, nor cast more than one vote on each issue.

Any member who wishes to designate an employee to cast that member's vote at an Association meeting in place of that member must provide that employee with written authorization to represent the member at the meeting. The authorization must be on company letterhead signed by the member of record, with the membership number indicated, and the authorization must be recorded with the President of NFPA or his designee before the start of the opening general session of the Meeting. That employee, irrespective of his or her own personal membership status, shall be privileged to cast only one vote on each issue before the Association.

Sequence of Events Leading to Publication of an NFPA Committee Document

Call for proposals to amend existing document or for recommendations on new document.

▼

Committee meets to act on proposals, to develop its own proposals, and to prepare its report.

▼

Committee votes on proposals by letter ballot. If two-thirds approve, report goes forward. Lacking two-thirds approval, report returns to committee.

▼

Report is published for public review and comment. (Report on Proposals - ROP)

▼

Committee meets to act on each public comment received.

▼

Committee votes on comments by letter ballot. If two-thirds approve, supplementary report goes forward. Lacking two-thirds approval, supplementary report returns to committee.

▼

Supplementary report is published for public review. (Report on Comments - ROC).

▼

NFPA membership meets (Annual or Fall Meeting) and acts on committee report (ROP and ROC).

▼

Committee votes on any amendments to report approved at NFPA Annual or Fall Meeting.

▼

Complaints to Standards Council on Association action must be filed within 20 days of the NFPA Annual or Fall Meeting.

▼

Standards Council decides, based on all evidence, whether or not to issue standard or to take other action, including hearing any complaints.

▼

Appeals to Board of Directors on Standards Council action must be filed within 20 days of Council action.

FORM FOR PROPOSALS ON NFPA TECHNICAL COMMITTEE DOCUMENTS

Mail to: Secretary, Standards Council
National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101
Fax No. 617-770-3500

Note: All proposals must be received by 5:00 p.m. EST/EDST on the published proposal-closing date.

If you need further information on the standards-making process, please contact the Standards Administration Department at 617-984-7249.

Date 9/18/93 **Name** John B. Smith **Tel. No.** 617-555-1212

Company _____

Street Address 9 Seattle St., Seattle, WA 02255

Please Indicate Organization Represented (if any) Fire Marshals Assn. of North America

1. a) NFPA Document Title National Fire Alarm Code **NFPA No. & Year** NFPA 72, 1993 ed.

b) Section/Paragraph 1-5.8.1 (Exception No.1)

FOR OFFICE USE ONLY
Log # _____
Date Rec'd _____

2. Proposal recommends: (Check one)
- ❑ **new text**
- ❑ **revised text**
- ☒ **deleted text**

3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

Delete exception.

4. Statement of Problem and Substantiation for Proposal: (Note: State the problem that will be resolved by your recommendation; give the specific reason for your proposal including copies of tests, research papers, fire experience, etc. If more than 200 words, it may be abstracted for publication.)

A properly installed and maintained system should be free of ground faults. The occurrence of one or more ground faults should be required to cause a "trouble" signal because it indicates a condition that could contribute to future malfunction of the system. Ground fault protection has been widely available on these systems for years and its cost is negligible. Requiring it on all systems will promote better installations, maintenance and reliability.

5. ☒ This Proposal is original material. (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge. is not copied from another source.)

❑ **This Proposal is not original material; its source (if known) is as follows:** _____

Note 1: Type or print legibly in black ink.
Note 2: If supplementary material (photographs. diagrams, reports, etc.) is included, you may be required to submit sufficient copies for all members and alternates of the technical committee.

I hereby grant NFPA the non-exclusive, royalty-free rights, including non-exclusive, royalty-free rights in copyright, in this proposal and I understand that I acquire no rights in any publication of NFPA in which this proposal in this or another similar analogous form is used.

John B. Smith
Signature (Required)

PLEASE USE SEPARATE FORM FOR EACH PROPOSAL

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Date _____ **Name** _____ **Tel. No.** _____

Company _____

Street Address _____

Please Indicate Organization Represented (if any) _____

1. a) NFPA Document Title _____ **NFPA No. & Year** _____

b) Section/Paragraph _____

2. Proposal Recommends: (Check one)
- ❑ **new text**
- ❑ **revised text**
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3. Proposal (include proposed new or revised wording, or identification of wording to be deleted):

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