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# EXPLOSIVES MOTOR VEHICLE TERMINALS 1982



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## **Standard for Explosives Motor Vehicle Terminals**

**NFPA 498-1982**

### **1982 Edition of NFPA 498**

This edition of NFPA 498, *Standard for Explosives Motor Vehicle Terminals*, was prepared by the Technical Committee on Explosives, released by the Correlating Committee on Chemicals and Explosives, and acted on by the National Fire Protection Association, Inc. on May 19, 1982 at its Annual Meeting in San Francisco, California. It was issued by the Standards Council on June 8, 1982 with an effective date of June 28, 1982, and supersedes all previous editions.

The 1976 edition of this standard was approved by the American National Standards Institute as an American National Standard. This edition has also been submitted for similar approval.

### **Origin and Development of NFPA 498**

This standard was developed by the Technical Committee on Explosives to address the special requirements of motor vehicle terminals specifically designed to handle cargoes of explosive materials. It was tentatively adopted at the 1969 NFPA Annual Meeting and officially adopted at the 1970 NFPA Annual Meeting.

Several amendments were adopted at the 1976 NFPA Annual Meeting.

This edition of NFPA 498 incorporates minor technical and editorial amendments over the 1976 edition.

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## **Standard for Explosives Motor Vehicle Terminals**

**NFPA 498-1982**

NOTICE: 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 Appendix B.

### **Foreword**

Explosives motor vehicle terminals provide interchange and parking facilities for vehicles transporting explosives. Some explosives motor vehicle terminals may also provide temporary storage facilities for less-than-truckload quantities of explosives. This standard is designed to prevent the occurrence of fire in or the spread of fire into such facilities, since an explosion in the terminal presents a distinct threat to the surrounding areas.

These terminals are a necessary part of the over-the-road transportation of explosives, since territorial restrictions on motor carrier operations often make it necessary for a load of explosives to be hauled by more than one carrier. These terminals not only provide the facilities noted above, but may also provide vehicle maintenance and driver rest services.

Motor vehicles using explosives motor vehicle terminals operate under the Motor Carrier Safety Regulations of the US Department of Transportation. These vehicles are primarily engaged in transporting explosives and ammunition on government bills of lading, although carriers of commercial explosives may also require such facilities.

Properly operated explosives motor vehicle terminals provide a safe and controlled environment for parking vehicles carrying explosives. The overall result is improved highway safety.

## Chapter 1 General

### 1-1 Scope.

**1-1.1** This standard applies to the design and operating features of explosives motor vehicle terminals related to fire prevention and fire protection, and to the prevention of explosions.

**1-1.2** This standard does not apply to motor freight terminals for vehicles handling general freight. (*See NFPA 513, Standard for Motor Freight Terminals.*)

**1-1.3** The requirements of NFPA 513, *Standard for Motor Freight Terminals*, apply to explosives motor vehicle terminals where they are applicable and are not covered by this standard.

**1-2 Purpose.** This standard is intended to provide reasonable requirements for the prevention of fires within and the spread of fire into explosives motor vehicle terminals.

**1-3 Definitions.** For the purpose of this standard, the following terms shall have the meanings given below:

**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 or 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 which is in a position to determine compliance with appropriate standards for the current production of listed items.

**Authority Having Jurisdiction.** The "authority having jurisdiction" is 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, 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 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."

**Explosives Interchange Lot.** The specific area of an explosives motor vehicle terminal in which motor vehicles loaded with explosives are parked.

**Explosives Less-Than-Truckload Lot.** A designated area of an explosives motor vehicle terminal where less-than-truckload lots of explosives may be held for transfer from one vehicle to another for continuance in transportation.

**Explosives Motor Vehicle Terminal.** A designated area where motor vehicles transporting explosives may be parked, pending further movement in transportation. Such a terminal may consist of interchange lots, less-than-truckload lots, maintenance shops, driver rest facilities, or any combination of these facilities.

**Labeled.** Equipment or materials to which has been attached a label, symbol or other identifying mark of an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

**Listed.** Equipment or materials included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

**NOTE:** The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

**Motor Vehicle.** Any self-propelled vehicle, truck, tractor, semi-trailer, or truck-trailer combination used for the transportation of freight over public highways.

**Shall.** Indicates a mandatory requirement.

**Should.** Indicates a recommendation or that which is advised but not required.

## Chapter 2 Explosives Interchange Lots

### 2-1 General.

2-1.1 All explosives interchange lots shall be located in a relatively isolated area.

2-1.2\* The interchange lots shall be separated by at least 100 ft (30.5 m) from other facilities within the explosives motor vehicle terminal, such as buildings, other structures, parking lots, fuel and power facilities.

2-1.3 Weeds, underbrush, vegetation or other combustible materials shall be cleared for a distance of 25 ft (7.6 m) from the lot.

2-1.4 The lot shall be protected from unauthorized persons or trespassers by use of warning signs, gates, fences, and intermittent patrols.

2-1.5 The watch personnel making intermittent patrols shall be familiar with the information in NFPA 601A, *Standard for Guard Operations in Fire Loss Prevention*.

2-1.5.1 The watch personnel making intermittent patrols shall have been made aware of the class of explosive material in each vehicle and of its inherent dangers, and shall have been instructed in the measures and procedures to be followed in order to protect the public from these dangers.

2-1.5.2 A motor vehicle in good operating condition and capable of moving the trailers loaded with explosives shall be kept at the terminal at all times. The watch or patrol personnel shall be familiar with the motor vehicle and shall be trained and shall be supplied with the necessary means and authority to use the motor vehicle to move any vehicles loaded with explosives when required. The motor vehicle shall not be parked within 25 ft (7.6 m) of any vehicle containing explosives.

2-1.6 Fire protection equipment capable of handling incipient fires shall be provided at each interchange lot. Portable fire extinguishers having a minimum rating of 4-A:30-B:C shall be placed at a readily accessible location. Water lines with hoses connected may be installed in addition to the portable extinguishers.

2-1.7\* More than one lot within the terminal shall be provided when a large number of vehicles are to be parked.

**2-1.8\*** If the terrain between any two lots does not provide natural barricades and there is limited space in which to provide substantial separation between the lots, artificial barricades shall be erected. Barricades shall be of such height that a straight line from the top of any vehicle containing explosives in one lot to the top of any vehicle containing explosives in another lot will pass through such intervening natural or artificial barricade.

## **2-2 Vehicle Parking.**

**2-2.1** Before any vehicle is admitted to an explosives interchange lot, a thorough inspection shall be made of the entire unit. As a minimum, inspection shall comply with the US Department of Transportation equipment interchange rules which include, but are not limited to, a check for hot tires, hot wheel bearings, hot brakes, fuel leakage, oil leakage, accumulations of oil or grease, the electrical system, and any apparent physical damage to the vehicle which could cause or contribute to a fire. Any defects shall be corrected before the vehicle is placed on the lot.

**2-2.2** After a loaded motor vehicle is properly positioned on the explosives interchange lot, the tractor shall be disconnected immediately and removed from the lot.

**2-2.3** Where possible, motor vehicles loaded with commercial explosives shall be parked on separate lots from those containing military explosives.

**2-2.4** Spacing of not less than 5 ft (1.5 m) shall be maintained between parked vehicles, side by side, or back to back. Parking shall be maintained so as not to require the moving of one vehicle in order to move another vehicle.

**2-2.5** A self-propelled vehicle loaded with explosives may be parked on an explosives interchange lot if it is parked at least 25 ft (7.6 m) from any other vehicles containing explosives, and is in a position where it can be easily removed in case of an emergency.

**2-2.6\*** No vehicles transporting other hazardous materials shall be parked on an explosives interchange lot unless the materials being transported are compatible with explosives.

**2-2.7** No explosives shall be transferred from one vehicle to another on an explosives interchange lot except in a case of necessity or emergency.

**2-2.8** The vehicles on the lot shall be maintained in the same condition as is required for highway transportation, including placarding.

### **2-3 Control of Ignition Sources.**

**2-3.1** Except for minor repairs, no repair work shall be performed on any vehicle parked on the lot. Any repair work involving cutting, welding, operation of the vehicle engine or electrical repairs shall be performed after the cargo has been removed and the vehicle to be repaired has been removed from the lot.

**2-3.2** Smoking, matches, open flames, spark-producing devices, and firearms shall be prohibited inside or within 50 ft (15.3 m) of the lot.

**2-4 Security Against Trespassers.** When any vehicle transporting explosives is parked on a lot, at least one employee shall be assigned to patrol the lot at frequent and irregular intervals.

*Exception: Patrolling is not required if the lot is enclosed by a security fence, the gates are locked, and the area surrounding the lot is posted with warning signs.*

**2-5 Employee Training.** The operator of the terminal shall maintain an active safety training program in emergency procedures for all employees stationed at the terminal. Written emergency instructions shall be posted and readily accessible to all employees.

## Chapter 3 Less-Than-Truckload Explosives Lots

### 3-1 General.

**3-1.1** A temporary storage facility conforming to the construction requirements for Type 1 magazines, as described in NFPA 495, *Code for the Manufacture, Transportation, Storage and Use of Explosive Materials*, may be provided in the terminal area. If blasting caps or other initiators are to be temporarily stored at the same time as other explosives, then two temporary storage facilities shall be required, one for blasting caps or other initiators and the second for the other explosives.

**3-1.2** The magazine facilities shall be located a minimum of 50 ft (15.3 m) from structures on the adjoining property or from any facility that could create a fire hazard.

**3-1.3** An area at the loading dock may be designated for the temporary storage of explosives in a trailer, provided it is not in proximity to a fire hazard, such as an area where smoking is permitted, or where combustible or flammable materials are present.

### 3-2 Operations.

**3-2.1** Explosives brought into the terminal to await shipment shall be immediately placed in the temporary storage facility until such time as the explosives are loaded on the over-the-road motor vehicle.

**3-2.2** Explosives delivered to the terminal by a connecting carrier may be retained in the trailer at a designated section of the loading dock, or the trailer may be parked in an isolated area of the terminal, or the explosives may be placed in the temporary storage facility.

**3-2.3** The vehicles on the lot shall be maintained in the same condition as is required for highway transportation including placarding.

**3-2.4** Explosives shall not be retained on the lot, either in a trailer or temporary storage facility, for a period longer than necessary, but in no case for more than 72 hours, unless the explosives are stored in a temporary storage facility located away from inhabited buildings, passenger railways, and public highways and from other temporary storage facilities so as to comply with the American Table of Distances for Storage of Explosives. (See NFPA 495, *Appendix B*.)

**3-2.5** Smoking, matches, open flames, spark-producing devices, and firearms shall be prohibited inside of and within 50 ft (15.3 m) of the temporary storage facility or trailer containing explosives.

**3-2.6** Temporary storage facilities shall be appropriately marked so that the terminal employees are aware of the location of the magazines.

**3-2.7** Portable fire extinguishers, having a capacity of 4-A:30-B:C, shall be placed at each temporary storage facility and shall be readily available for immediate use.

**3-2.8** No explosives shall remain on the lot either in trailers or temporary storage facilities unless authorized terminal personnel are in the vicinity or unless the temporary storage facilities are located away from inhabited buildings, passenger railways, and public highways and from other temporary storage facilities so as to comply with the American Table of Distances for Storage of Explosives. (*See NFPA 495, Appendix B.*)

**3-2.9** The operator of the explosives motor vehicle terminal shall maintain an active safety training program in emergency procedures for all employees stationed at the terminal. Written emergency instructions shall be posted and readily accessible to all employees.

## Appendix A

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

**A-2-1.2** When flood light illumination is provided, overhead power lines should not be erected within the perimeter of the lot.

**A-2-1.7** The lots should be separated as far as practicable to reduce the concentration of explosives in any single area of the terminal.

**A-2-1.8** "Natural barricade" means natural features of the ground, such as hills, or timber of sufficient density that one lot cannot be seen from the other when the trees are bare of leaves. "Artificial barricade" means an artificial mound or revetted wall of earth of a minimum thickness of 3 ft (1.0 m).

**A-2-2.6** In case of an emergency, where vehicles loaded with other hazardous materials are brought to an explosives interchange lot, such vehicles should be parked at a location on the lot well separated from the explosives-laden vehicles.