NFPA

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FARM STORAGE OF FLAMMABLE & COMBUSTIBLE LIQUIDS 1977

NATIONAL FIRE PROTECTION ASSOCIATION
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The Committee responsible for this document will render official interpretations of the literal text and of the intent of the Committee when the text was adopted.

A request for an Official Interpretation shall be directed to the Chairman of the Committee concerned, at the National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210, supplying five identical copies of a statement in which shall appear specific references to a single problem, and identifying the portion of the document (article, section, paragraph, etc.) for which the interpretation is requested. Such a request shall be on the business stationery of the requester and shall be duly signed. A request involving an actual field situation shall so state and all parties involved shall be named.

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See Official NFPA Definitions at the back of this pamphlet.

Standard for the
Storage of Flammable and Combustible Liquids on Farms and Isolated Construction Projects

NFPA 395 — 1977

The 1977 edition of this standard supersedes the 1972 and all previous editions.

This standard was prepared by the Sectional Committee on General Storage of Flammable Liquids, approved by the Flammable Liquids Correlating Committee, and adopted at the Fall Meeting of the National Fire Protection Association in November 1977 in Atlanta, GA.

The amendments in this edition of this standard are indicated by vertical rules in the margin.

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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.

Standard for the

Storage of Flammable and Combustible Liquids on Farms and Isolated Construction Projects

NFPA 395 — 1977

1-1 Scope.

1-1.1 This standard applies to the storage on farms or in rural areas of flammable and combustible liquids having a flash point below 200°F (as defined in the *Flammable and Combustible Liquids Code*, NFPA 30). It is also applicable to the storage of flammable and combustible liquids at rural construction and rural earth-moving projects, including gravel pits and borrow pits, where it is customary to obtain fuels in bulk and dispense or transfer them under control of the owner or contractor and where isolation from other structures and temporary use make it unnecessary, in the opinion of the authority having jurisdiction, to require compliance with the more rigid standards of NFPA 30.

1-1.2 This standard does not apply to (a) the storage, handling and use of fuel oil tanks and containers connected with oil burning equipment as covered in the *Standard for the Installation of Oil Burning Equipment*, NFPA 31 (ANSI Z95.1); (b) storage of 25 gallons or less of flammable and combustible liquids in containers not exceeding 5 gallons capacity each.

1-2 Types of Approved Storage.

1-2.1 Storage of flammable and combustible liquids in rural areas for private use shall be permitted in any of the following:

(a) In aboveground or underground tanks or in containers in accordance with NFPA No. 30;

(b) In containers of 60 gallons or less capacity each in accordance with 1-3 of this standard;

(c) In tanks of 61 to 1,100 gallons capacity each in accordance with 1-4 of this standard.

1-2.2 Storage areas shall be kept free of weeds and extraneous combustible material. Open flames and smoking shall not be permitted in flammable or combustible liquids storage areas.

1-3 Individual Containers of 60 Gallons or Less Capacity Each.

1-3.1 Storage shall be in metal DOT or other approved containers of 60 gallons or less capacity each. Discharge devices requiring pressure on the container are prohibited. Pumping devices or faucets used for dispensing flammable and combustible liquids shall be well maintained to prevent leakage. Individual containers shall not be interconnected and shall be kept closed when not in use.

1-3.2 Containers as provided in this section storing Class I flammable liquids shall be stored outside at least 10 feet from any building or may be stored inside a building used exclusively for the storage of flammable and combustible liquids and located at least 10 feet from any other building. Buildings used for the storage of Class I flammable liquids shall be provided with cross ventilation with at least 2 vents of 64 square inches of area each placed at floor level.

1-4 Tanks of 61 to 1,100 Gallons Capacity Each.

1-4.1 Flammable and combustible liquids in aboveground tanks of 61 to 1,100 gallons capacity shall be stored outside buildings in tanks of single-compartment design constructed in accordance with accepted engineering practice. Joints shall be riveted and caulked, riveted and welded, or welded. Tank heads over 6 feet in diameter shall be dished, stayed, braced or reinforced. Tanks shall meet the following:

Capacity Gallons	Minimum Thickness of Steel Mfrs. Std. Gage No.
61 to 560	14
561 to 1,100	12

1-4.1.1 A fill opening shall be provided and shall be equipped with a closure designed so that it may be locked.

1-4.1.2 A vent having a free opening of at least 1¼-inches diameter shall be provided to relieve such vacuum or pressure as will develop in normal operation or from exposure to fire. For tanks exceeding 275 gallons capacity, see *Flammable and Combustible Liquids Code*, NFPA 30, "Emergency Relief Venting for Fire Exposure for Aboveground Tanks," for additional information relative to required capacity of emergency relief venting for fire exposure.[1]

[1]Based upon limiting internal tank pressure to 120 percent of 2.5 psig using an orifice coefficient of 0.8 and an environmental factor of 0.6. The environmental factor of 0.6 recognizes the limited time a small tank is subjected to fire exposure and some loss of fuel by absorption into the soil. The above factors may be used when calculating the vent size for tanks larger than 275 gallons.

Vents shall be arranged to discharge in such a way as to prevent localized overheating of, or flame impingement on, any part of the tank in the event vapors from such vents are ignited.

1-4.1.3 Tanks as provided in this section shall be kept outside and at least 40 feet from any building, and shall be so located or such additional distance from buildings shall be provided, as will insure that any vehicle, equipment, or container being filled directly from such tank will be at least 40 feet from any building.

1-4.1.4 Tanks as provided in this section may be either tanks with top openings only or tanks elevated for gravity discharge.

1-4.2 Tanks with Top Openings Only. Tanks constructed and located as provided above may be designed with all openings in the top of the tank and in such event shall be mounted and equipped as follows:

(a) Stationary tanks shall be mounted on timbers or blocks approximately 6 inches in height so as to protect the bottom of the tank from corrosion from contact with the ground and when so placed, be in a stable position; or movable tanks may be equipped with attached metal legs resting on shoes or runners designed so that the tank is supported in a stable position and so that the entire tank and its supports may be moved as a unit.

(b) Tanks shall be equipped with a tightly and permanently attached approved pumping device having an approved hose of sufficient length for filling vehicles, equipment or containers to be served from the tank. Either the pump or the hose shall be equipped with a padlock to its hanger to prevent tampering. An effective antisiphoning device shall be included in the pump discharge unless a self-closing nozzle is provided. Siphons or internal pressure discharge devices are prohibited.

1-4.3 Tanks Elevated for Gravity Discharge. Tanks constructed and located as provided above may be designed with a connection in the bottom or the end of the tank for gravity dispensing of flammable and combustible liquids and shall be mounted and equipped as follows:

(a) Supports to elevate the tank for gravity discharge shall be of adequate strength and design to provide stability. Supports may be of steel or of wood.

(b) Alternately, the tank may be placed on a pile of earth or near the edge of a cut bank to provide the necessary elevation and shall be supported on timbers or blocks for stability and to prevent corrosion by contact with the ground.

(c) Bottom opening for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat actuated releasing device. If this valve cannot be operated manually, it shall be supplemented by a second valve which can be. The gravity discharge outlet shall be provided with an approved hose equipped with a self-closing valve at the discharge end, of a type than can be padlocked to its hanger to prevent tampering.

1-5 Marking of Tanks and Containers. Tanks and containers for the storage of flammable and combustible liquids aboveground shall be conspicuously marked with the name of the product which they contain and "FLAMMABLE — KEEP FIRE AND FLAME AWAY." Tanks of 61 to 1,100 gallons capacity shall bear the additional marking "KEEP 40 FEET FROM BUILDINGS."

NOTE: Clearance of 40 feet from buildings should also apply to other combustible structures, haystacks, etc.

Official NFPA Definitions

APPROVED: means "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 nationally recognized testing laboratories, inspection agencies, or other organizations concerned with product evaluations which are in a position to determine compliance with appropriate standards for the current production of listed items, and the satisfactory performance of such equipment or materials in actual usage.

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 standards 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 delegated agent assumes the role of the "authority having jurisdiction"; at government installations, the commanding officer or departmental official may be the "authority having jurisdiction."

LABELED: Equipment or materials to which has been attached a label, symbol or other identifying mark of a nationally recognized testing laboratory, inspection agency, or other organization concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling is indicated compliance with nationally recognized standards or tests to determine suitable usage in a specified manner.

LISTED: Equipment or materials included in a list published by a nationally recognized testing laboratory, inspection agency, or other organization 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 nationally recognized 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 testing laboratory, inspection agency or other 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.

SHALL: is intended to indicate requirements.

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

Notes and footnotes are informatory only and are not mandatory.

NATIONAL FIRE PROTECTION ASSOCIATION

470 Atlantic Avenue, Boston, MA 02210

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 and the public in establishing proper safeguards against loss of life and property by fire. The Association is an international, charitable, technical and educational organization. Its membership includes over one hundred and fifty national and regional societies and associations and over thirty-two thousand individuals, corporations, and organizations. Anyone interested may become a member.

This pamphlet and the pamphlets listed below contain the recommendations of the Association which constitute "safeguards against loss of life and property from fire." They were developed and processed by the Association under regulations intended to assure procedural fairness and that all concerned interests have had an opportunity to participate.

Bibliography of NFPA Standards

1 Fire Prevention Code
3M Health Care Emerg. Preparedness
9 Training Reports, Records
10 Portable Extinguishers
10L Model Enabling Act
11 Foam Ext. Systems
11A High Expansion Foam Syst.
11B Synthetic Foam, Combined Agent
12 Carbon Dioxide Systems
12A Halon 1301 Systems
12B Halon 1211 Systems
13 Sprinkler Systems
13A Sprinkler Maintenance
13D Sprinkler Sys., Dwellings
13E Sprinklered Prop., F.D. Operations at
14 Standpipe, Hose Systems
15 Water Spray Fixed Syst.
16 Foam-Water Systems
17 Dry Chem. Ext. Systems
18 Wetting Agents
19B Respiratory Prot. Equip.
194 Hose Connection Threads
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197 Initial Fire Attack
198 Fire Hose, Care of
20 Centrifugal Fire Pumps
21 Steam Fire Pumps
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291 Fire Hydrants
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30 Flam. Liquids Code
31 Oil Burning Equipment
32 Drycleaning Plants
321 Class. Flam. Liquids
325M Prop. Flam. Liquids
327 Cleaning Small Tanks
328 Manholes, Sewers, Flam. Liquids and Gases in
329 Underground Leakage, Flam. Liquid Tanks
33 Spray Application
34 Dip Tanks
35 Mfg. Organic Coatings
36 Solvent Extraction
37 Combustion Engines
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386 Portable Shipping Tanks
393 Gasoline Blow Torches
395 Farm Stg. Flam. Liquids
40 Motion Picture Film
40E Pyroxylin Plastic
43A Liquid, Solid Oxidizing Materials
43C Gaseous Oxidizing Materials
43D Pesticides in Port. Containers
44A Fireworks, Mfg. Trans. Stge.
45 Labs Using Chemicals
46 Timber, Outdoor Storage
46A Wood Chips, Storage
46B Outdoor Storage of Logs
47 Lumber Storage Yards
48 Magnesium
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