NFPA No.

10

INSTALLATION OF PORTABLE FIRE EXTINGUISHERS 1973

$1.25

NATIONAL FIRE PROTECTION ASSOCIATION
International
470 Atlantic Avenue, Boston, MA 02210

15M-6-73-FP-SM
Printed in U.S.A.

Official NFPA Definitions

Adopted Jan. 23, 1964: Revised Dec. 9, 1969 and June 26, 1973. Where variances to these definitions are found, efforts to eliminate such conflicts are in process.

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

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Statement on NFPA Procedures

This material has been developed in the interest of safety to life and property under the published procedures of the National Fire Protection Association. These procedures are designed to assure the appointment of technically competent Committees having balanced representation from those vitally interested and active in the areas with which the Committees are concerned. These procedures provide that all Committee recommendations shall be published prior to action on them by the Association itself and that following this publication these recommendations shall be presented for adoption to the Annual Meeting of the Association where anyone in attendance, member or not, may present his views. While these procedures assure the highest degree of care, neither the National Fire Protection Association, its members, nor those participating in its activities accepts any liability resulting from compliance or noncompliance with the provisions given herein, for any restrictions imposed on materials or processes, or for the completeness of the text.

Standard for the Installation of

Portable Fire Extinguishers

NFPA No. 10 — 1973

1973 Edition of No. 10

This Standard was prepared by the NFPA Committee on Portable Fire Extinguishers and this present edition was adopted at the 1973 Annual Meeting of the Association held in St. Louis, Mo., May 14-18.

Special attention is called to a companion publication entitled *Recommended Good Practice for the Maintenance and Use of Portable Fire Extinguishers* (NFPA No. 10A); see 1010 of this Standard for further information. NFPA No. 10L presents a Model Enabling Act for the Sale and Servicing of Portable Fire Extinguishers.

The 1970 edition of this standard was approved by the American National Standards Institute under date of January 19, 1971 and designated ANSI Z112.1. The 1973 edition is being submitted for similar approval. The ANSI designation and date of approval will be printed on the front cover of copies of this edition printed after approval has been received.

Origin and Development of No. 10

In 1918 and 1919 the NFPA Committee on Field Practice (predecessor of the present committee) was active in developing a standard on First Aid Protection. The earliest official NFPA Standard on this subject was adopted in 1921. Revised editions were adopted by the Association in 1926, 1928, 1929, 1930, 1931, 1932, 1936, 1938, 1942, 1945, 1950, 1953, 1955, 1956, 1957, 1958, 1959, 1961, 1962, 1963 and 1972. In 1965 the previous editions were divided in two separate texts, one covering "installation" (this publication) and the second covering "maintenance and use" (designated No. 10A). This publication contains the latest recommendations of the Association and replaces all previous issues.

Committee on Portable Fire Extinguishers

Dewey Yates, *Chairman,*
Assistant Chief, Miami Fire Department, P. O. Box 33-708, Miami, FL 33133

Marshall E. Peterson, *Vice Chairman,*
Rolf Jensen & Associates, 540 W. Frontage Rd., Northfield, IL 60093

C. R. Fredriksen, *Secretary,*
Fredriksen and Son Fire Equipment Co., 760 Thomas Dr., Bensenville, IL 60106
(rep. National Assn. of Fire Equipment Distributors, Inc.)

S. E. Auck, Underwriters' Laboratories, Inc.

R. E. Berry, Edison Electric Institute

Leo Cook, Commerce & Industry Insurance Co.

S. K. Goodwin, Factory Insurance Assn.

Lester Hebenstreit, Compressed Gas Assn., Inc.

L. C. Johns, American Petroleum Institute

Michael Kraus, Fire Equipment Mfrs. Assn.

R. G. Lewis, Fire Equipment Manufacturers' Institute of Canada

C. A. McCorrison, Factory Mutual Engineering Corp.

George B. Needham, Insurance Services Office — New England Region

R. R. Osman, National Safety Council

John Quillman, Insurance Services Office of Illinois

R. J. Wright, Underwriters' Laboratories of Canada

Alternates.

Wm. F. Hudson, National Assn. of Fire Equipment Distributors, Inc. (Alternate to C. R. Fredriksen)

Alfred Krulee, Fire Equipment Mfrs. Assn. (Alternate to Michael Kraus)

Robert E. Lenhard, Compressed Gas Assn., Inc. (Alternate to Lester Hebenstreit)

J. F. McKenna, American Petroleum Institute (Alternate to L. C. Johns)

Timo Silmes, Fire Equipment Manufacturers' Institute of Canada (Alternate to R. G. Lewis)

E. E. Williams, Factory Insurance Assn. (Alternate to S. K. Goodwin)

Don F. Wilson, National Safety Council (Alternate to R. R. Osman)

Contents

NOTICE

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

Standard for the Installation of
Portable Fire Extinguishers

NFPA No. 10 — 1973

Principles of Fire Extinguishment

Many fires are small at origin and may be extinguished by the use of proper portable fire extinguishers. It is strongly recommended that the fire department be notified as soon as a fire is discovered. This alarm should not be delayed awaiting results of application of portable fire extinguishers.

Fire extinguishers can represent an important segment of any overall fire protection program. However, their successful functioning depends upon the following conditions having been met:

1. The extinguisher is properly located and in working order.
2. The extinguisher is of proper type for a fire which may occur.
3. The fire is discovered while still small enough for the extinguisher to be effective.
4. The fire is discovered by a person ready, willing, and able to use the extinguisher.

CHAPTER 1. GENERAL

1000. General Information.

1010. Purpose. This standard is prepared for the use and guidance of persons charged with selecting, purchasing, installing, approving, listing and designing portable fire extinguishing equipment.

NOTE: Two NFPA publications contain essential information about extinguishers. Each is prepared for a specific group of users as indicated below; some users may require both.

NFPA No. 10 — Standard for the Installation of Portable Fire Extinguishers

For persons charged with —

Designing, Listing, Selecting, Purchasing, Installing, Approving — Fire Extinguishers

NFPA No. 10A — Maintenance and Use of Portable Fire Extinguishers

For persons charged with —

Inspecting, Recharging, Maintaining, Testing, Operating — Fire Extinguishers

The Association also publishes a Model Enabling Act for the Sale and Servicing of Portable Fire Extinguishers, designated NFPA No. 10L.

1011. Fixed systems as mentioned in Paragraph 1020 are covered by the following NFPA standards: No. 11 — Foam Extinguishing Systems; No. 11A — High Expansion Foam Systems; No. 12 — Carbon Dioxide Extinguishing Systems; No. 12A — Halon 1301 Systems; No. 12B — Halon 1211 Systems; No. 13 — Installation of Sprinkler Systems; No. 14 — Installation of Standpipe and Hose Systems; No. 15 — Water Spray (Fixed) Systems for Fire Protection; No. 16 — Foam-Water Sprinkler Systems and Foam-Water Spray Systems; No. 17 — Dry Chemical Extinguishing Systems.

1020. Scope. The provisions of this standard apply to the selection, installation, inspection, maintenance and testing of portable extinguishing equipment. They do not apply to permanently installed systems for fire extinguishment, even though portions of such systems may be portable (such as hose and nozzles attached to a fixed supply of extinguishing agent).

1030. The various types of fire extinguishers are not all equally effective on all kinds of fires. Therefore, consideration shall be given to the class of fire which may occur and the nature of the processes or contents within a building.

1040. The requirements given herein are minimum. Portable extinguishers are intended as a first line of defense to cope with fires of limited size. They are needed even though the property is equipped with automatic sprinklers, standpipe and hose, or other fixed protection equipment (see Paragraphs 3291, 4010, 4110, 4111).

1050. The method of operation of an extinguisher shall be indicated prominently on the extinguisher and shall face outward.

1051. An instruction manual shall be provided with each extinguisher giving condensed instructions and cautions necessary to the installation, operation, inspection, and maintenance. The manual may be specific to the extinguisher involved or it may cover many types. The manual shall refer to *Installation of Portable Fire Extinguishers*, NFPA No. 10 and to *Maintenance and Use of Portable Fire Extinguishers*, NFPA No. 10A, as sources of detailed instructions.

1060. The fire protection requirements of this standard are general in nature and are not intended to abrogate the specific requirements of other NFPA standards for specific situations or specific occupancies.

1100. General Requirements.

1110. Portable extinguishers shall be maintained in a fully charged and operable condition, and kept in their designated places at all times when they are not being used.

***1120.** Extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. They shall be located along normal paths of travel, including exits from an area.

1121. Extinguishers shall not be obstructed or obscured from view. In large rooms, and in certain locations where visual obstruction cannot be completely avoided, means shall be provided to indicate the location.

1122. In situations where extinguishers must be temporarily provided, a good practice is to provide portable stands, consisting of a horizontal bar on uprights with feet, on which the extinguishers may be hung.

1130. Extinguishers shall be installed on the hangers or in the brackets supplied, mounted in cabinets, or set on shelves unless the extinguishers are of the wheeled type.

1131. Extinguishers having a gross weight not exceeding 40 pounds shall be installed so that the top of the extinguisher is not more than 5 feet above the floor. Extinguishers having a gross weight greater than 40 pounds (except wheeled types) shall be so installed that the top of the extinguisher is not more than 3½ feet above the floor. Where they may be used by women, consideration shall be given to mounting the extinguishers at a lower height. In no case shall the clearance between the bottom of the extinguisher and the floor be less than 4 inches.

1132. Extinguishers mounted in cabinets or wall recesses or set on shelves shall be placed in a manner such that the extinguisher operating instructions face outward. The location of such extinguishers shall be marked conspicuously (see Paragraph 1121).

1133. Extinguishers installed under conditions where they are subject to severe vibration shall be installed in brackets specifically designed to cope with this vibration.

1140. Extinguishers shall be suitable for use within a temperature range of at least plus 40 to plus 120 degrees Fahrenheit.

1141. When extinguishers are installed in locations subjected to temperatures outside this range, they shall be of a type approved or listed for the temperature to which they will be exposed, or placed in an enclosure capable of maintaining the temperature within the plus 40 to plus 120 degrees Fahrenheit (see Section 3200 for other conditions influencing the selection of extinguishers).

CHAPTER 2. CLASSIFICATION OF FIRES AND RATING OF PORTABLE FIRE EXTINGUISHERS

2000. General.

2010. The basic types of fires are Classes A, B, C, and D as defined in the following paragraphs.

2011. CLASS A fires are fires in ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics.

2012. CLASS B fires are fires in flammable liquids, gases, and greases.

2013. CLASS C fires are fires which involve energized electrical equipment where the electrical nonconductivity of the extinguishing media is of importance. (When electrical equipment is de-energized, extinguishers for Class A or B fires may be used safely.)

2014. CLASS D fires are fires in combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium.

2015. Certain combustible metals and reactive chemicals require special extinguishing agents or techniques. If there is doubt, applicable NFPA standards should be consulted or reference made to NFPA No. 49 — Hazardous Chemicals Data, or NFPA No. 325M — Fire-Hazard Properties of Flammable Liquids, Gases, and Volatile Solids.

2100. Classification and Ratings of Fire Extinguishers.

2110. Portable fire extinguishers are classified for use on certain classes of fires and rated for relative extinguishing effectiveness at a temperature of plus 70 degrees Fahrenheit by nationally recognized testing laboratories. This is based upon the preceding classification of fires and the fire-extinguishment potentials as determined by fire tests.

2111. The classification and rating system described in this standard is that used by Underwriters' Laboratories, Inc., and Underwriters' Laboratories of Canada and is based on extinguishing preplanned fires of determined size and description as follows:

CLASS A RATING — Wood and excelsior

CLASS B RATING — Two-inch depth n-heptane fires in square plans

CLASS C RATING — No fire test. Agent must be a nonconductor of electricity.

CLASS D RATING — Special tests on specific combustible metal fires.

2120. The classification consists of a LETTER which indicates the Class of fire on which an extinguisher has been found to be effective, preceded by a rating NUMERAL (Class A and B only) which indicates the relative extinguishing effectiveness.

2121. Currently Underwriters' Laboratories, Inc., and Underwriters' Laboratories of Canada classify extinguishers for use on Class A fires with the following ratings: 1-A, 2-A, 3-A, 4-A, 6-A, 10-A, 20-A, 25-A, 30-A, and 40-A. Effective June 1, 1969, extinguishers classified for use on Class B fires have the following ratings: 1-B, 2-B, 5-B, 10-B, 20-B, 30-B, 40-B, 60-B, 80-B, 120-B, 160-B, 240-B, 320-B, 480-B, and 640-B. Ratings from 1-B, to 20-B, inclusive, are based on indoor flammable liquid fire tests; ratings at or above 30-B are based on outdoor flammable liquid fire tests.

2122. Ratings of 4-B, 6-B, 8-B, 12-B, and 16-B previously used to classify individual extinguishers for use on Class B fires, were not used for new extinguishers after June 1, 1969. Existing extinguishers having these ratings are acceptable if they have been properly inspected and maintained in accordance with NFPA No. 10 and 10A.

2123. For Class B fires it must be recognized that the amount of fire which can be extinguished by a particular extinguisher is related to the degree of training and experience of the operator.

2124. Fire extinguishers classified for use on Class C fires, no NUMERAL is used since Class C fires are essentially either Class A or B fires involving energized electrical wiring and equipment. The size of the different suitable extinguishers installed should be commensurate with the size and extent of the Class A and/or Class B components of the electrical hazard or containing equipment being protected (see Paragraph 4510).

2125. For extinguishers classified for use on Class D fires, no NUMERAL is used. The relative effectiveness of these extinguishers for use on specific combustible metal fires is detailed on the extinguisher nameplate.

2126. Extinguishers which are effective on more than one Class of fire have multiple LETTER and NUMERAL-LETTER classifications and ratings.

2127. The classification and rating is found on the label of Underwriters' Laboratories, Inc. and Underwriters' Laboratories of Canada, which is affixed to the extinguisher.

EXAMPLE: An extinguisher is rated and classified 4-A; 20-B:C. This indicates the following:

1. It should extinguish approximately twice as much Class A fire as a 2-A (2½-gallon water) rated extinguisher.
2. It should extinguish approximately twenty times as much Class B fire as a 1-B rated extinguisher.
3. It is suitable for use on energized electrical equipment.

*2200. Extinguishers Listed Prior to 1955.

2210. Extinguishers listed in accordance with rating procedures given in the 1955 and earlier editions of this standard are assigned minimum equivalent ratings, as shown in Appendix A of this standard. (See Sections 4600 and A-2200 and Table A-2200.)

CHAPTER 3. SELECTION OF EXTINGUISHERS

*3000. General Recommendations.

See Section A-3000 and Table A-3000, Appendix A.

3010. The selection of extinguishers for a given situation will depend upon the character of the fires anticipated, the construction and occupancy of the individual property, the vehicle or hazard to be protected, ambient-temperature conditions, and other factors. In making this selection, Chapter 2 is to be used in determining the classification of the fire and the rating or relative fire extinguishing effectiveness of the extinguishers. The number of extinguishers required is determined by using Chapter 4 (see also Table A3000 in the Appendix, and NFPA No. 10A, Maintenance and Use of Portable Extinguishers).

NOTE: Consideration should be given to the replacement of inverting types of extinguishers with types that are easier to use.

3020. It should be borne in mind that some extinguishers will be suitable for only one class of hazard or condition while others are suitable for more than one.

3100. Selection By Hazard.

3101. Extinguishers shall be selected for the specific class or classes of hazards to be protected in accordance with the following paragraphs.

3110. Extinguishers for protecting Class A hazards shall be selected from among the following: foam, loaded stream, multipurpose dry chemical and water types.

NOTE: Certain smaller extinguishers which are charged with multipurpose dry chemical are rated on Class B and Class C fires, but have insufficient effectiveness to earn the minimum 1-A rating even though they have value in extinguishing smaller Class A fires. They shall not be used to meet the requirements of Paragraph 4110.

3120. Extinguishers for protection of Class B hazards shall be selected from the following: bromotrifluoromethane, bromochlorodifluoromethane, carbon dioxide, dry chemical types, foam and loaded stream.

NOTE 1: Certain sizes of loaded-stream extinguishers are not classified for use on these types of fires.

NOTE 2: Extinguishers with ratings less than 1-B shall not be considered in determining suitability (see Paragraph 4110).

3130. Extinguishers for protection of Class C hazards shall be selected from the following: bromotrifluoromethane, bromochlorodifluoromethane, carbon dioxide, and dry chemical types.

NOTE: Carbon dioxide extinguishers equipped with metal horns are not considered safe for use on fires in energized electrical equipment and, therefore, are not classified for use on Class C hazards.

***3140.** Extinguishers and extinguishing agents for the protection of Class D hazards shall be of types approved for use on the specific combustible-metal hazard. (See Paragraph A-3140, Appendix A).

3141. Chemical reaction between burning metals and many extinguishing agents (including water) may range from explosive to inconsequential, depending in part on the type, form, and quantity of metal involved. In general, the hazards from a metal fire are significantly increased when such extinguishing agents are applied.

NOTE: The advantages and limitation of a wide variety of commercially available metal fire extinguishing agents are discussed in Section 15, Chapter VI of the NFPA Fire Protection Handbook (13th Edition).

3142. The agents and extinguishers discussed in this section are of specialized types and their use often involves special techniques peculiar to a particular combustible metal. A given agent will not necessarily control or extinguish all metal fires. Some agents are valuable in working with several metals; others are useful in combating only one type of metal fire. The authorities having jurisdiction should be consulted in each case to determine the desired protection for the particular hazard involved.

3143. Reference should be made to the manufacturer's recommendations for use and special technique for extinguishing fires in various combustible metals. (See NFPA No. 10A — Maintenance and Use of Portable Fire Extinguishers.)

3150. The selection of extinguishers for other types of hazards may require special extinguishers, extinguishing agents, or techniques (see Paragraph 2015).

3200. Other Conditions of Selection.

3210. Temperature — In the selection of an extinguisher, the ambient temperature to which it will be exposed shall be considered (see Paragraphs 1140 and 1141 and C-1222 in Appendix C).

3220. Gross Weight. In the selection of an extinguisher, the physical ability of the user shall be contemplated. For example, when

the probable user of the extinguisher is a woman, the lightest weight extinguisher consistent with the needs of the hazard should be selected. When the hazard exceeds the capability of a hand portable extinguisher, wheeled extinguishers (see Paragraph 3250) or fixed systems (see Paragraph 1011) should be considered.

3230. Corrosion — In some extinguisher installations, there exists a possibility of exposing the extinguisher to a corrosive atmosphere. When this is the case, consideration should be given to providing the extinguishers so exposed with proper protection or providing extinguishers which have been found suitable for use in these conditions.

3240. Agent Reaction — The possibility of adverse reactions, contamination, or other effects of an extinguishing agent on manufacturing processes and/or equipment should be considered in the selection of an extinguisher.

3250. Wheeled Units — When wheeled extinguishers are used, consideration should be given to the mobility of the extinguisher within the area in which it will be used. For outdoor locations, the use of proper rubber-tired or wide-rimmed wheel designs should be considered according to the terrain. For indoor locations, the size of doorways and passages should be large enough to permit ready passage of the extinguisher.

3260. Vibration — When extinguishers are located on vehicles or in areas where they are subjected to vibration, consideration should be given to the use of special brackets designed to cope with the effects of vibration.

3270. Wind and Draft — If the hazard is subject to winds or draft, the use of extinguishers and agents having sufficient range to overcome these conditions should be considered.

3280. Miscellaneous — Many other factors should be considered in the selection of an extinguisher, such as inspecting, recharging, maintaining, testing, and operating (see NFPA No. 10A).

3290. Other NFPA standards covering specific situations make special recommendations covering the selection of portable extinguishers (see Paragraph 1060).

3291. In warehouse occupancies, extinguishers shall be provided based on the nature of the hazard and the occupancy conditions. The type, size, number, and placement shall be as determined by NFPA standards No. 231, No. 231B and No. 231C.

3300. Health and Safety Considerations.

3301. In the selection of an extinguisher, consideration shall be given to health and safety hazards involved in its maintenance and use, as described in the following paragraphs.

3302. Prominent caution labels on the extinguisher, warning signs at entry points to confined spaces, provision for remote application, extra-long-range extinguisher nozzles, special ventilation, provision of breathing apparatus and other personal protective equipment, and adequate training of personnel are among measures which should be considered to minimize the effects of these hazards. (See NFPA No. 10A.)

3310. Bromotrifluoromethane (Halon 1301) and bromochlorodifluoromethane (Halon 1211) extinguishers contain extinguishing agents whose vapor has a low toxicity. However, their decomposition products can be hazardous. When using these extinguishers in unventilated places, such as small rooms, closets, motor vehicles, or other confined spaces, operators and others should avoid breathing the gases produced by thermal decomposition of the agent.

3320. Carbon dioxide extinguishers contain an extinguishing agent which will not support life when used in sufficient concentration to extinguish a fire. The use of this type of extinguisher in an unventilated space can dilute the oxygen supply. Prolonged occupancy of such spaces can result in loss of consciousness due to oxygen deficiency.

3330. Extinguishers not rated for Class C hazards (water types, loaded stream, foam, and including carbon dioxide with metal horns) present a shock hazard if used on fires involving energized electrical equipment.

3340. Dry chemical extinguishers, when used in a small unventilated area, can greatly reduce visibility. Dry chemical, discharged in an area, may also clog filters in air-cleaning systems.

3350. Most fires produce toxic decomposition products of combustion and some materials may produce highly toxic gases. Fires may also consume available oxygen or produce dangerously high exposure to convected or radiated heat. All of these may affect the degree to which a fire can be safely approached with extinguishers. (See Underwriters' Laboratories, Inc. Bulletin of Research No. 53 — July, 1963.*)

*Survey of Available Information on the Toxicity of the Combustion and Thermal Decomposition Products of Certain Building Materials under Fire Conditions.

CHAPTER 4. DISTRIBUTION OF PORTABLE FIRE EXTINGUISHERS

4000. General Recommendations.

4010. The number of fire extinguishers needed to protect a property shall be determined as outlined herein, considering the area and arrangement of the building occupancy conditions, the severity of the hazard, the anticipated classes of fire, other protective systems or devices, and the distances to be traveled to reach extinguishers. In addition, anticipated rate of fire spread, the intensity and rate of heat development, the smoke contributed by the burning materials, and the accessibility of a fire to close approach with portable extinguishers should be considered. Wheeled extinguishers have additional agent and range and should be considered for areas where the additional protection is needed. Portable extinguishers offer the occupant a means to assist in evacuation of a building or occupancy. They are useful to knock down the fire if it occurs in the evacuation route. Whenever possible the individual property should be surveyed for actual protection requirements.

4011. Most buildings have Class A fire hazards. In any occupancy, there may be a predominant hazard with "special hazard" areas requiring supplemental protection. For example, a hospital will generally have need for Class A extinguishers covering patients' rooms, corridors, offices, etc., but will need Class B extinguishers in laboratories, kitchens and where flammable anesthetics are stored or handled, and Class C extinguishers in electrical switch gear or generator rooms.

4020. Fire extinguishers shall be provided for the protection of both the building structure, if combustible, and the occupancy hazards contained therein.

4021. Required building protection shall be provided by fire extinguishers suitable for Class A fires.

4022. Occupancy hazard protection shall be provided by fire extinguishers suitable for such Class A, B, C, or D fire potentials as may be present.

4023. Extinguishers provided for building protection may be considered also for the protection of occupancies having a Class A fire potential.

4024. Combustible buildings having an occupancy hazard subject to Class B, and/or Class C fires, shall have a standard complement of Class A fire extinguishers for building protection, plus

additional Class B and/or Class C extinguishers. Where fire extinguishers have more than one letter classification (such as 2-A:20-B:C), they may be considered to satisfy the requirements of each letter class.

4030. Rooms or areas shall be graded generally as light hazard, ordinary hazard, or extra hazard. Limited areas of greater or lesser hazard shall be protected as required.

4031. LIGHT HAZARD — Where the amount of combustibles or flammable liquids present is such that fires of small size may be expected. These may include offices, schoolrooms, churches, assembly halls, telephone exchanges, etc.

4032. ORDINARY HAZARDS — Where the amount of combustibles or flammable liquids present is such that fires of moderate size may be expected. These may include mercantile storage and display, auto showrooms, parking garages, light manufacturing, warehouses not classified as extra hazard, school shop areas, etc.

4033. EXTRA HAZARDS — Where the amount of combustibles on flammable liquids present is such that fires of severe magnitude may be expected. These may include woodworking, auto repair, aircraft servicing, warehouses with high-piled (over 15 feet in solid piles, over 12 feet in piles that contain horizontal channels) combustibles, and processes such as flammable liquid handling, painting, dipping, etc.

4100. Fire Extinguisher Size and Placement for Class A Hazards.

4110. Minimal sizes of fire extinguishers for the listed grades of hazard shall be provided on the basis of Table 4110, except as modified by Paragraph 4111. Extinguishers shall be located so that the maximum travel distances shall not exceed those specified in Table 4110, except as modified by Paragraph 4111.

4111. Up to one-half of the complement of extinguishers as specified in Table 4110 may be replaced by uniformly spaced small hose stations for use by the occupants of the building. When hose stations are so provided they shall conform to the Standard for the *Installation of Standpipe and Hose Systems*, NFPA No. 14. The placement of hose stations shall be in such a manner that they do not replace more than every other extinguisher.

4120. The protection requirements specified in Table 4110 may be fulfilled by several extinguishers of lower ratings for ordinary or extra-hazard occupancies, subject to approval by the authority

having jurisdiction. Consideration should be given to the number of persons available to operate the extinguishers, the degree of training provided, and the possibility of use by women.

Table 4110

Basic Minimum Extinguisher Rating for Area Specified	Maximum Travel Distances to Extinguishers	Areas to be Protected per Extinguisher		
		Light Hazard Occupancy	Ordinary Hazard Occupancy	Extra Hazard Occupancy
1A	75 ft.	3000 sq. ft.	Not permitted except as specified in Par. 4120	Not permitted except as specified in Par. 4120
2A	75 ft.	6000 sq. ft.	3000 sq. ft.	Not permitted except as specified in Par. 4120
3A	75 ft.	9000 sq. ft.	4500 sq. ft.	3000 sq. ft.
4A	75 ft.	11250 sq. ft.	6000 sq. ft.	4000 sq. ft.
6A	75 ft.	11250 sq. ft.	9000 sq. ft.	6000 sq. ft.
10A	75 ft.	11250 sq. ft.*	11250 sq. ft.*	9000 sq. ft.
20A	75 ft.	11250 sq. ft.*	11250 sq. ft.*	11250 sq. ft.*
40A	75 ft.	11250 sq. ft.*	11250 sq. ft.*	11250 sq. ft.*

*11250 sq. ft. is considered a practical limit.

4130. Where the floor area of a building is less than that specified in Table 4110, at least one extinguisher of the minimum size recommended shall be provided.

4140. The protection requirements may be fulfilled with extinguishers of higher rating provided the travel distance to such larger extinguishers shall not exceed 75 feet.

4200. Fire Extinguisher Size and Placement for Class B Fires Other Than for Fires in Flammable Liquids of Appreciable Depth.

4210. Minimal sizes of fire extinguishers for the listed grades of hazard shall be provided on the basis of Table 4210. Extinguishers shall be located so that the maximum travel distances shall not exceed those specified in Table 4210.

4211. Two or more extinguishers of lower rating, except for foam extinguishers, shall not be used to fulfill the protection requirements of Table 4210. Up to three foam extinguishers may be used to fulfill these requirements.

Table 4210

(For Extinguishers labeled prior to June 1, 1969)

Type of Hazard	Basic Minimum Extinguisher Rating	Maximum Travel Distance to Extinguishers
Light	4B	50 ft.
Ordinary	8B	50 ft.
Extra	12B	50 ft.

(For Extinguishers labeled after June 1, 1969)

Type of Hazard	Basic Minimum Extinguisher Rating	Maximum Travel Distance to Extinguishers
Light	5B	30 ft.
	10B	50 ft.
Ordinary	10B	30 ft.
	20B	50 ft.
Extra	20B	30 ft.
	40B	50 ft.

4220. The protection requirements may be fulfilled with extinguishers of higher ratings provided the travel distance to such larger extinguishers shall not exceed 50 feet.

4300. Fire Extinguisher Size and Placement for Class B Fires in Flammable Liquids of Appreciable Depth.

4310. For flammable liquid hazards of appreciable depth (greater than $\frac{1}{4}$ inch) such as in dip or quench tanks, Class B fire extinguishers shall be provided on the basis of one numerical unit of Class B extinguishing potential per square foot of flammable liquid surface of the largest tank hazard within the area.

4311. For dip tanks containing flammable or combustible liquids exceeding 150 gallons liquid capacity or having a liquid surface exceeding 4 square feet, see NFPA No. 34 — 1971, Dip Tanks, for requirements of automatic extinguishing facilities.

4312. Two or more extinguishers of lower ratings, except for foam extinguishers, shall not be used in lieu of the extinguisher required for the largest tank. Up to three foam extinguishers may be used to fulfill these requirements.

4313. When protection is sought for flammable liquid in appreciable depth and when the liquid surface area is in excess of 20 square feet (except for dip tanks as covered in Paragraph 4311), the protection requirements shall be based on an evaluation of the extent of the hazard and engineering judgment applied. Consideration shall be given to installing fixed protection systems and wheeled extinguishers. Portable extinguisher protection for such hazards should be generally restricted to plants having trained fire brigades.

4314. Where approved automatic fire protection devices or systems have been installed for a flammable liquid hazard, additional portable Class B fire extinguishers, as required in Paragraph 4310, may be waived. Where so waived, Class B extinguishers shall be provided as covered in Paragraph 4210 to protect areas in the vicinity of such protected hazards.

4320. Travel distances should be given consideration with reference to special hazards and the availability of the extinguisher for such protection. Scattered or widely separated hazards shall be individually protected if the specified travel distances in Paragraphs 4210 and 4220 are exceeded. Likewise, extinguishers in the proximity of a hazard shall be carefully located so as to be accessible in the presence of a fire without undue danger to the operator.

4400. Class B Fire Extinguishers for Pressurized Flammable Liquids and Pressurized Gas Fires.

4410. Fires of this nature are considered to be a special hazard. Some extinguishers containing wetting agents or carbon dioxide which are classified for Class B fires are relatively ineffective on this hazard due to stream and agent characteristics. Selection of extinguishers for this type of hazard shall be made on the basis of recommendations by manufacturers of this specialized equipment. The system used to rate extinguishers on Class B fires (flammable liquids in depth) is not applicable to these types of hazards. It has been determined that special nozzle design and rates of agent application are required to cope with such hazards. Caution: It is

undesirable to attempt to extinguish this type of fire unless there is reasonable assurance that the source of fuel can be promptly shut off.

4500. Fire Extinguisher Size and Placement for Class C Hazards.

4510. Extinguishers with Class C ratings shall be required where energized electrical equipment may be encountered which would require a nonconducting extinguishing media. This will include fire either directly involving or surrounding electrical equipment. Since the fire itself is a Class A or Class B hazard the extinguishers are sized and located on the basis of the anticipated Class A or B hazard.

NOTE: Whenever possible electrical equipment should be de-energized before attacking a Class C fire.

4600. Distribution of Extinguishers Listed Prior to 1955.

4610. To determine the area of coverage applicable to fire extinguishers rated under procedures given in the 1955 and earlier editions of this standard, the approximate present minimum equivalent ratings should be used as given in Table A-2200 of Appendix A.

CHAPTER 5. INSPECTION, MAINTENANCE, AND HYDROSTATIC TESTS

5000. This chapter is concerned with the rules governing inspection, maintenance, and testing of extinguishers; proper maintenance being of prime importance in insuring operation at the time of a fire. The owner or occupant of a property in which extinguishers are located shall be responsible for such inspection, maintenance, and testing.

5001. For details of conducting needed inspections, proper maintenance operations, and required tests, see NFPA No. 10A — Maintenance and Use of Portable Fire Extinguishers.

5100 Inspection.

5110. Extinguishers shall be inspected monthly, or at more frequent intervals when circumstances require.

5111. Inspection is a "quick check" (not requiring record keeping) that an extinguisher is available and will operate. It is intended to give reasonable assurance that the extinguisher is fully charged and operable. This is done by seeing that it is in its designated place, that it has not been actuated or tampered with, and that there is no obvious or physical damage or condition to prevent operation.

5120. Any extinguishers showing defects shall be given a complete maintenance check.

5200. Maintenance.

5210. Extinguishers shall be maintained at regular intervals, not more than one year apart, or when specifically indicated by an inspection.

5211. Maintenance is a "thorough check" of the extinguisher. It is intended to give maximum assurance that an extinguisher will operate effectively and safely. It includes a thorough examination and any necessary repair, recharging or replacement. It will normally reveal the need for specific testing of an extinguisher.

5220. Stored pressure dry chemical extinguishers (except nonrefillable factory-sealed disposable containers) that require a 12-year hydrostatic test shall be emptied and subjected to the prescribed

complete maintenance procedures every 6 years. Periodical recharging or hydrotesting of such extinguishers meets the requirements of this paragraph.

5230. On properties where extinguishers are maintained by the occupant, a supply of recharging materials should be kept on hand. These materials shall be those furnished by the manufacturer of the extinguisher which is to be recharged, i.e., recharges of one manufacturer shall not be used in extinguishers manufactured by another company.

NOTE 1: Certain recharging materials deteriorate with age, exposure to excessive temperature, and/or moisture. Thus, the storage of such recharging materials for long periods of time should be avoided.

NOTE 2: It is important that only those recharge materials specified on the extinguisher nameplate be used. The use of other recharging materials may impair the efficiency, cause malfunction, or result in rupture of the extinguisher that could cause injury to the operator.

5231. Extinguishers removed from the premises to be recharged shall be replaced by spare extinguishers during the period they are gone.

5232. Pails or drums of powder-extinguishing agents for scoop or shovel application to metal fires shall be kept full at all times. Particular care should be taken to keep the powder dry.

NOTE: Damp and wet extinguishing powder will not be free flowing and, if it contains sufficient moisture, can result in hazardous reaction if applied to a metal fire.

5240. Each extinguisher shall have a tag securely attached to show the maintenance or recharge date and the initials or signature of the person who performs this service.

NOTE: Under special circumstances or where local requirements are in effect, additional information may be desirable or required on record tags.

5300. Hydrostatic Tests.

5310. The methods of conducting hydrostatic tests are described in NFPA No. 10A — Maintenance and Use of Portable Fire Extinguishers.

5311. IF, AT ANY TIME, AN EXTINGUISHER SHOWS EVIDENCE OF CORROSION OR MECHANICAL INJURY, IT SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST, OR REPLACED.

5312. For evaluating the condition of extinguisher cylinders made to DOT* specifications, see the Standard for Visual Inspection of Compressed Gas Cylinders (CGA C-6), published by the Compressed Gas Association, 500 Fifth Avenue, New York, New York 10036.

5320. At intervals not exceeding those specified in the following paragraphs, extinguishers shall be hydrostatically tested. The first hydrostatic retest may be conducted between the fifth and sixth years for those with a designated test interval of five years.

5321. **Hydrostatic Test Interval for Extinguishers.**

Extinguisher Type	Test Interval, Year
Soda-Acid	5
Cartridge-Operated Water and/or Antifreeze	5
Storage-Pressure Water and/or Antifreeze	5
Wetting Agent	5
Foam	5
Loaded Stream	5
Dry Chemical Extinguishers with Stainless Steel Shells or Soldered-Brass Shells	5
Carbon Dioxide Extinguishers	5
Dry Chemical Extinguishers with Brazed-Brass Shells, Mild-Steel Shells, or Aluminum Shells	12
Bromotrifluoromethane — Halon 1301	12
Bromochlorodifluoromethane — Halon 1211	12
Dry Powder Extinguishers for Metal Fires	12

NOTE: Cylinders under jurisdiction of the U. S. Department of Transportation (formerly Interstate Commerce Commission) or the Board of Transport Commissioners of Canada may require hydrostatic testing at more frequent periods.

5322. Nitrogen cylinders (or other cylinders used for inert-gas storage), such as found on wheeled extinguishers, shall be tested at a 10-year interval.

5323. On those extinguishers which are equipped with a shutoff nozzle at the outlet end of the hose, a hydrostatic test shall be performed on the hose with its couplings (but without the discharge nozzle) at the test interval specified for the unit on which the hose is installed.

*DOT stands for the U. S. Department of Transportation.

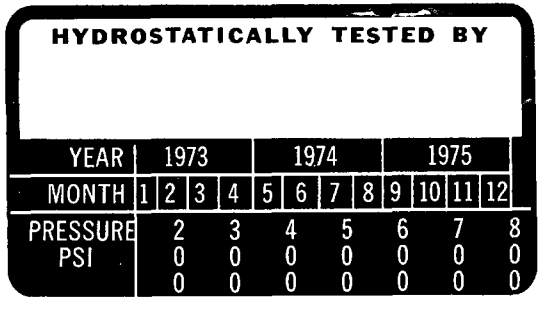
5324. The test pressure for dry chemical and dry powder hose assemblies requiring a hydrostatic test shall be at a test pressure of 300 psi for a one minute period. Carbon dioxide hose assemblies requiring a hydrostatic test shall be at a test pressure of 1,250 psi for a one minute period.

5325. Hydrostatic tests are not required on fire pails, pump-type water and/or antifreeze extinguishers, and factory-sealed disposable (nonrefillable) containers. If such an extinguisher or water pail shows evidence of corrosion or mechanical injury, it may be unsafe or unsuitable for further use and shall be replaced with a new unit.

5326. Except for those items covered in Paragraph 5329 the hydrostatic test information shall be recorded on a suitable metallic label or equally durable material that shall be affixed by a heatless process to those shells of the extinguishers which have satisfactorily passed a hydrostatic test. These labels shall be self-destructive when removal from extinguisher shell is attempted. The label shall include the following information: the month and year the hydrostatic test was performed; the test pressure used; and the name or initials of the person or agency performing the test.

5327. A perforation, such as by a hand punch, shall be made to indicate the month and year the hydrotest was performed. Figure A serves as a guide as to the design of a hydrotest label.

Figure A.



5328. The extinguisher shall be retested at the original factory test pressure as stated on the nameplate and in accordance with the U.S. Department of Transportation (formerly the Interstate Commerce Commission) or Canadian Transport Commission regulations as applicable.

5329. Carbon dioxide extinguisher cylinders, nitrogen cylinders, and other cylinders or cartridges constructed and marked in accordance with a specific design specification of the U.S. Department of Transportation (formerly Interstate Commerce Commission) or the Canadian Transport Commission (formerly Board of Transport Commissioners of Canada) and used for the storage of inert compressed gases shall be hydrostatically tested and marked in accordance with the requirements of the U.S. Department of Transportation or the Canadian Transport Commission.

5330. Extinguisher shells, cartridges, or cylinders which show leakage or permanent distortion in excess of specified limits, or which rupture, shall be removed from service and destroyed.

APPENDIX A

A-1120. If extinguishers intended for different classes of fires are grouped, their intended use should be marked conspicuously to aid in the choice of the proper extinguisher at the time of a fire. The tendency is for an untrained person in an emergency to reach for the closest extinguisher. If this extinguisher is of the wrong type, he may well endanger himself and the property he is endeavoring to protect. Wherever possible, it is preferable to have only those extinguishers available that can be safely used on any type of fire in the immediate vicinity.

A-2200. The method of classifying extinguishers used in the 1955 and earlier editions of NFPA No. 10 differs from the method presently used. Columns 3 and 4 of Table A-2200 enable approximate evaluation of older extinguishers in terms of the present method of classification.

NOTE: A further revision of the method of classifying extinguishers rated for Class B fires was adopted in 1969. See Paragraph 2122 herein.

(a). Under the present method of classification it is possible for units of the same size to have different classifications. For example, 15-pound carbon dioxide extinguishers may have a classification of from 2-B:C to 10-B:C according to the fire extinguishing potential of the individual units as determined by Underwriters' Laboratories, Inc. and Underwriters' Laboratories of Canada. Therefore, an exact conversion from the old method to the new method of classification is not practical.

(b). **Whenever fire extinguishers are found with the present classification on the label, Table A-2200 should not be used.** The classification is usable directly in the application of Chapter 4, Distribution of Units, of this standard.

(c). Whenever fire extinguishers are found with the old classification on the label, use this table for approximate conversion and use the resulting classification value in applying Chapter 4 of this standard. For example, a 15-pound carbon dioxide extinguisher has the classification "B-1, C-1" on the label. From this table, it is found that the approximate classification under the present method is "4-B, C" and this is used in applying the requirements of Chapter 4.

Table A-2200

Conversion of Extinguisher Classification

Extinguishing Agent	Extinguisher Type and Size	Pre-1955 UL Classification	Approximate Present Classification
Chemical Solution (Soda-Acid)	1¼, 1½ gallon	A-2	1-A
	2½ gallon	A-1	2-A
	17 gallon	A	10-A
	33 gallon	A	20-A
Water	1½, 1¾ gallon (pump or pressure)	A-2	1-A
	2½ gallon (pump or pressure)	A-1	2-A
	4 gallon (pump or pressure)	A-1	3-A
	5 gallon (pump or pressure)	A-1	4-A
	17 gallon (pressure)	A	10-A
	33 gallon (pressure)	A	20-A
	5 12-quart or 6 10-quart water-filled pails; 55-gallon water-filled drum with 3 fire pails; 25- to 55-gallon water-filled bucket tank with 5 or 6 fire pails	A-1	2-A
Loaded Stream	1 gallon	A-2, B-4	1-A
	1¾ and 2½ gallon	A-1, B-2	2-A, ½-B†
	33 gallon	A	20-A

†NOTE: Portable fire extinguishers with fractional ratings are not considered as meeting the requirements of this standard.

Table A2200 — Conversion of Extinguisher Classification (Con't)

Extinguishing Agent	Extinguisher Type and Size	Pre-1955 UL Classification	Approximate Present Classification
Foam	1¼ and 1½ gallon	A-2, B-2	1-A, 2-B
	2½ gallon	A-1, B-1	2-A, 4-B
	5 gallon	A-1, B-1	4-A, 6-B
	10 gallon	A, B	6-A, 8-B
	17 gallon	A, B	10-A, 10-B
	33 gallon	A, B	20-A, 20-B
Carbon Dioxide	6 or less pounds of carbon dioxide	B-2, C-2	1-B, C
	7½ pounds of carbon dioxide	B-2, C-1	2-B, C
	10 to 12 pounds of carbon dioxide	B-2, C-1	4-B, C
	15 to 20 pounds of carbon dioxide	B-1, C-1	4-B, C
	25 and 26 pounds of carbon dioxide	B-1, C-1	6-B, C
	50 pounds of carbon dioxide	B-1, C-1	10-B, C
	75 pounds of carbon dioxide	B-1, C-1	12-B, C
	100 pounds of carbon dioxide	B, C	12-B, C
Dry Chemical	4 to 6¼ pounds of dry chemical	B-2, C-2	4-B, C
	7½ pounds of dry chemical	B-2, C-1	6-B, C
	10 to 15 pounds of dry chemical	B-1, C-1	8-B, C
	20 pounds of dry chemical	B-1, C-1	16-B, C
	30 pounds of dry chemical	B-1, C-1	20-B, C
	75 to 350 pounds of dry chemical	B, C	40-B, C
Wetting Agent	10 gallons	A, B	6-A
	20 gallons	A, B	12-A
	50 gallons	A, B	30-A

NOTES: Carbon dioxide extinguishers with metallic horns will not carry any "C" classification.

Vaporizing liquid extinguishers (carbon tetrachloride or chlorobromomethane base) are not recognized in this standard and reference to them has thus been deleted from this Table as compared to earlier editions.

See also Paragraph 2122 herein. Ratings of 4-B, 6-B, 8-B, 12-B, and 16-B were eliminated June 1, 1969.

A-3000. The following appendix material (Table A-3000) summarizes the characteristics of extinguishers and may be used as an aid in selecting extinguishers in accordance with Chapter 3. **The ratings given are those which were in effect at the time this standard was prepared. Current listings should be consulted for up-to-date ratings.**

Table A-3000 — Characteristics of Extinguishers

Extinguishing Agent	Method of Operation	Capacity	Horizontal Range of Stream	Approximate Time of Discharge	Hydrostatic Test Interval	Protection Required Below 40°F	UL or ULC Classifications*
Water	Stored Pressure	2½ gal.	30-40 ft.	1 min.	5 yr.	Yes	2-A
Water	Pump	1½ gal.	30-40 ft.	45 sec.	—	Yes	1-A
	Pump	2½ gal.	30-40 ft.	1 min.	—	Yes	2-A
	Pump	4 gal.	30-40 ft.	2 min.	—	Yes	3-A
	Pump	5 gal.	30-40 ft.	2-3 min.	—	Yes	4-A
Water (Antifreeze Calcium Chloride)	Cartridge & Stored Pressure	1¼, 1½ gal.	30-40 ft.	30 sec.	5 yr.	No	1-A
	Cartridge & Stored Pressure	2½ gal.	30-40 ft.	1 min.	5 yr.	No	2-A
	Cartridge & Stored Pressure	33 gal. (wheeled)	50 ft.	3 min.	5 yr.	No	20-A
Water (Wetting Agent)	Cartridge & Stored Pressure	25 gal. (wheeled)	35 ft.	1½ min.	5 yr.	Yes	10-A
	Cartridge & Stored Pressure	45 gal. (wheeled)	35 ft.	2 min.	5 yr.	Yes	25-A
Water (Soda Acid)	Chemically generated expellent	1¼, 1½ gal.	30-40 ft.	30 sec.	5 yr.	Yes	1-A
	Chemically generated expellent	2½ gal.	30-40 ft.	1 min.	5 yr.	Yes	2-A
	Chemically generated expellent	17 gal. (wheeled)	50 ft.	3 min.	5 yr.	Yes	10-A
	Chemically generated expellent	33 gal. (wheeled)	50 ft.	3 min.	5 yr.	Yes	20-A
Loaded Stream	Stored Pressure	2½ gal.	30-40 ft.	1 min.	5 yr.	No	2 to 3-A and 1-B
	Cartridge and Stored Pressure	33 gal. (wheeled)	50 ft.	3 min.	5 yr.	No	20-A

Table A-3000 — Characteristics of Extinguishers (Continued)

Extinguishing Agent	Method of Operation	Capacity	Horizontal Range of Stream	Approximate Time of Discharge	Hydrostatic Test Interval	Protection Required Below 40°F	UL or ULC Classifications*
Foam	Pressurized	approx. 1 lb.	5-10 ft.	30 sec.	—	Yes	1-B
Foam	Chemically generated expellent	1¼, 1½ gal.	30-40 ft.	40 sec.	5 yr.	Yes	1-A; 2-B
	Chemically generated expellent	2½ gal.	30-40 ft.	1½ min.	5 yr.	Yes	2-A:4-B to 2-A:6-B
	Chemically generated expellent	5 gal.	30-40 ft.	2 min.	5 yr.	Yes	4-A:6-B
	Chemically generated expellent	17 gal. (wheeled)	50 ft.	3 min.	5 yr.	Yes	10-A:10-B to 10-A:12-B
	Chemically generated expellent	33 gal. (wheeled)	50 ft.	3 min.	5 yr.	Yes	20-A:20-B to 20-A:40-B
Carbon Dioxide **	Self Expellent	2½ to 5 lb.	3-8 ft.	8 to 30 sec.	5 yr.	No	1 to 5-B:C
		10 to 15 lb.	3-8 ft.	8 to 30 sec.	5 yr.	No	2 to 10-B:C
		20 lb.	3-8 ft.	10 to 30 sec.	5 yr.	No	10-B:C
		50 to 100 lb. (wheeled)	3-10 ft.	10 to 30 sec.	5 yr.	No	10 to 40-B:C
Dry Chemical (Sodium Bicarbonate)††	Stored Pressure	1 lb.	5-8 ft.	8 to 10 sec.	5 or 12 yrs.	No	1-B:C
	Stored Pressure	1½ to 2½ lb.	5-8 ft.	8 to 12 sec.	5 or 12 yrs.	No	2 to 5-B:C
	Cartridge and Stored Pressure	2¾ to 5 lb.	5-20 ft.	8 to 20 sec.	5 or 12 yrs.	No	5 to 10-B:C
	Cartridge and Stored Pressure	10 to 30 lb.	5-20 ft.	10 to 25 sec.	5 or 12 yrs.	No	10 to 60-B:C
	Nitrogen cylinder or Stored Pressure	75 to 350 lb. (wheeled)	15 to 45 ft.	20 to 105 sec.	5 or 12 yrs.	No	40 to 240-B:C

Table A-3000 — Characteristics of Extinguishers (Continued)

Extinguishing Agent	Method of Operation	Capacity	Horizontal Range of Stream	Approximate Time of Discharge	Hydrostatic Test Interval	Protection Required Below 40°F	UL or ULC Classifications*
Dry Chemical (Potassium Bicarbonate)††	Stored Pressure	1 to 2 lb.	5-8 ft.	8 to 10 sec.	5 yrs.	No	1 to 5-B:C
	Stored Pressure	2¼ to 5 lb.	5-12 ft.	8 to 10 sec.	5 or 12 yrs.	No	5 to 10-B:C
	Cartridge or Stored Pressure	5½ to 10 lbs.	5-20 ft.	8 to 25 sec.	5 or 12 yrs.	No	10 to 40-B:C
	Cartridge or Stored Pressure	16 to 30 lbs.	15-45 ft.	8 to 25 sec.	5 or 12 yrs.	No	40 to 80-B:C
	Nitrogen cylinder or Stored Pressure	125 to 300 lbs. (wheeled)	15-45 ft.	30 to 60 sec.	5 or 12 yrs.	No	80 to 320-B:C
Dry Chemical (Potassium chloride)††	Stored Pressure	2 to 2½ lbs.	5-8 ft.	8 to 10 sec.	5 or 12 yrs.	No	5 to 10-B:C
	Cartridge or Stored Pressure	5 to 10 lbs.	5-20 ft.	8 to 25 sec.	5 or 12 yrs.	No	20 to 40-B:C
	Cartridge or Stored Pressure	19½ to 30 lbs.	15-45 ft.	8 to 25 sec.	5 or 12 yrs.	No	60 to 80-B:C
	Nitrogen cylinder or Stored Pressure	50 to 160 lbs. (wheeled)	15-45 ft.	30 to 60 sec.	5 or 12 yrs.	No	120 to 160-B:C
Dry Chemical (Ammonium phosphate)††	Stored Pressure †	1 to 5 lbs.	5-12 ft.	8 to 10 sec.	5 or 12 yrs.	No	2 to 10-B:C
Dry Chemical (Ammonium phosphate)††	Stored Pressure or Cartridge	4 to 8½ lbs.	5-12 ft.	8 to 12 sec.	5 or 12 yrs.	No	1 to 2-A and 10 to 30-B:C
	Stored Pressure or Cartridge	9 to 17 lbs.	5-20 ft.	10 to 25 sec.	5 or 12 yrs.	No	2 to 4-A and 10 to 40B:C
	Stored Pressure or Cartridge	17 to 30 lbs.	5-20 ft.	10 to 25 sec.	5 or 12 yrs.		3 to 10-A and 30 to 60-B:C
	Nitrogen Cylinder or Stored Pressure	50 to 300 lbs. (wheeled)	15-45 ft.	30 to 60 sec.	5 or 12 yrs.		20 to 40-A and 60 to 240-B:C

Table A-3000 — Characteristics of Extinguishers (Continued)

Extinguishing Agent	Method of Operation	Capacity	Horizontal Range of Stream	Approximate Time of Discharge	Hydrostatic Test Interval	Protection Required Below 40°F	UL or ULC Classifications*
Dry Chemical (Foam Compatible)††	Cartridge and Stored Pressure	4¾ to 9 lbs.	5-20 ft.	8 to 10 sec.	5 or 12 yrs.	No	10 to 20-B:C
	Cartridge and Stored Pressure	9 to 27 lbs.	5-20 ft.	10 to 25 sec.	5 or 12 yrs.	No	20 to 30-B:C
	Cartridge and Stored Pressure	18 to 30 lbs.	5-20 ft.	10 to 25 sec.	5 or 12 yrs.	No	40 to 60-B:C
	Nitrogen cylinder and Stored Pressure	150 to 350 lbs. (wheeled)	15-45 ft.	20 to 150 sec.	5 or 12 yrs.	No	80 to 240-B:C
Dry Chemical (Foam Compatible) (Potassium Chloride)††	Cartridge and Stored Pressure	2½ to 5 lbs.	5-12 ft.	8 to 10 sec.	5 or 12 yrs.	No	10 to 20-B:C
	Cartridge and Stored Pressure	9½ to 20 lbs.	5-20 ft.	8 to 25 sec.	5 or 12 yrs.	No	40 to 60-B:C
	Cartridge and Stored Pressure	19½ to 30 lbs.	5-20 ft.	10 to 25 sec.	5 or 12 yrs.	No	60 to 80-B:C
	Nitrogen cylinder and Stored Pressure	50 lbs. (wheeled)	15-45 ft.	30 sec.	5 or 12 yrs.	No	120-B:C
Dry Chemical (Foam Compatible) (Potassium Bicarbonate Urea based)††	Stored Pressure	5 to 11 lbs.	11-22 ft.	13 to 18 secs.	12 yrs.	No	40 to 80 B:C
	Stored Pressure	17 to 19 lbs.	15-30 ft.	26 to 30 secs.	12 yrs.	No	120 B:C
		175 lbs. (wheeled)	70 ft.	62 secs.	12 yrs.	No	480 B:C
Bromotrifluoromethane	Self Expellent	2½ lbs.	4-6 ft.	8 to 10 sec.	12 yrs.	No	2-B:C
Bromochlorodifluoromethane	Stored Pressure	2 to 4 lbs.	8-12 ft.	8 to 12 secs.	12 yrs.	No	2 to 5 B:C
		9 lbs.	9-15 ft.	8 to 15 secs.	12 yrs.	No	10 B:C

See notes to Table A-3000, p. 32.

***UL and ULC ratings checked as of September 1, 1971. Readers concerned with subsequent ratings should review the pertinent "Lists" and "Supplements" issued by these Laboratories: (Write Underwriters' Laboratories, Inc., 207 East Ohio St., Chicago, Illinois, 60611, or Underwriters' Laboratories of Canada, 7 Crouse Road, Scarborough, Ont., Canada).**

****Carbon-Dioxide extinguishers with metallic horns do not carry a "C" classification.**

†Some small extinguishers containing ammonium phosphate dry chemical do not carry an "A" classification.

††Certain pressurized types have special requirements for hydrotesting to comply with regulations of the U.S. Department of Transportation.

Vaporizing liquid extinguishers (Carbon tetrachloride or chlorobromomethane base) are not recognized in this standard and reference to them has thus been deleted from this Table as compared to earlier editions.

See also Paragraph 2122 herein. Ratings of 4-B, 6-B, 8-B, 12-B, and 16-B were eliminated June 1, 1969.

A-3130. The use of dry chemical extinguishers on wet energized electrical equipment (such as rain-soaked utility poles, high voltage switch gear, and transformers) may aggravate electrical leakage problems. The dry chemical in combination with moisture provides an electrical path which can reduce the effectiveness of insulation protection. The removal of all traces of dry chemical from such equipment after extinguishment is recommended.

A-3140. Fire of high intensity may occur in certain metals. Ignition is generally the result of frictional heating, exposure to moisture, or exposure from a fire in other combustible materials. The greatest hazard exists when these metals are in the molten state or in finely divided forms of dust, turnings, or shavings.

NOTE: The properties of a wide variety of combustible metals and the agents available for extinguishing fires in these metals are discussed in Section 15, Chapter VI of the NFPA Fire Protection Handbook (13th Edition).

APPENDIX B

Recommended Markings to Indicate Extinguisher Suitability

The following recommendations are given as a guide in marking extinguishers, and/or extinguisher locations, to indicate the suitability of the extinguisher for a particular class of fire (see Paragraph 2100).

Markings should be applied by decalcomanias, painting or similar methods having at least equivalent legibility and durability.