Livermore-Pleasanton Fire Department

3560 Nevada Street
Pleasanton, CA 94566
Phone: 925-454-2361 FAX: 925-454-2367

Fire Extinguisher Guidelines

The Fire Code specifies the type, size and number of fire extinguishers that facilities are required to have. This guideline describes the basic requirements contained in the Fire Code.

Fire Extinguisher Types and Sizes

Fires are divided into four categories in order to determine what type of chemical (dry chemical, carbon dioxide, etc.) will safely extinguish the fire.

Class A Fires	Fires involving ordinary combustibles (wood, cloth, paper, rubber, and many plastics.)
Class B Fires	Fires involving flammable liquids, oils, greases, tars, oil-based paints, lacquers, and flammable gases.
Class C Fires	Fires involving energized electrical equipment
Class D Fires	Fires involving combustible metals (magnesium, titanium, sodium, etc.)
Class K Fires	Fires involving combustible cooking media (fats, oils, etc.)

Fire extinguishers are rated as to which class of fires for which they are appropriate. Fire extinguishers are also rated with respect to the fires they will control. The larger the number given, the larger fire they will control. For example, a 4A-rated extinguisher will control a larger fire than will a 2A-rated extinguisher. Size ratings are not provided for class C fires since this rating simply refers to the fact that the extinguishing chemical will not conduct electricity. The following sections of this guideline are directions for determining what size extinguisher is needed in various situations.

Basic Fire Extinguisher Selection, Numbers and Location

1) For each area, determine the hazard classification using the definitions below.

   Light (low) Hazard: Light hazard occupancies are locations where the total amount of Class A combustible materials, including furnishings, decorations, and contents, is of minor quantity. This may include some buildings or rooms occupied as offices, classrooms, churches, assembly halls, guestroom areas of hotels/motels, etc. This classification anticipates that the majority of content items are either noncombustible or so arranged that a fire is not likely to spread rapidly. Small amounts of Class B flammables used for

duplicating machines, art departments, etc. are included in this classification provided that they are kept in closed containers and safely stored.

Ordinary (light) Hazard: Ordinary hazard occupancies are locations where the total amount of Class A combustibles and Class B flammables are present in greater amounts than expected under light (low) hazard occupancies. These occupancies could consist of dining area, mercantile shops and allied storage, light manufacturing, research operations, auto showrooms, parking garages, workshop or support service area of light (low) hazard occupancies, and warehouses containing Class I or Class II commodities as defined in NFPA 231, Standard for General Storage (Class I and Class II commodities include noncombustible products on wooden or certain plastic pallets, in ordinary cardboard cartons or in paper wrappings, or in slatted wooden crates, solid wooden boxes, multiple-thickness paperboard cartons with or without pallets. The products are allowed to contain a limited amount of plastics.)

Extra (High) Hazard: Extra hazard occupancies are locations where the total amount of Class A combustibles and Class B flammables present, in storage, production use, and/or finished product is over and above those expected and classed as ordinary (light) hazards. These occupancies could consist of woodworking, vehicle repair, aircraft and boat servicing, cooking area, individual product display showrooms, product convention center displays, and storage and manufacturing processes such as painting, dipping, coating, including flammable liquid handling. Also included is warehousing or in-process storage of other than Class I and Class II commodities (i.e. plastics as a part of product or package)

2) Using Table 1 below determine what size and type of fire extinguisher you need, how many you need and the maximum allowed travel distance to a fire extinguisher.

   Note: a small, higher hazard operation (such as a spray booth) located in a larger area can be provided with an extinguisher specifically for that operation while the rest of the fire extinguishers in the area are rated for the overall hazard of the area. An example is provided on the last page of this document. Please also note that this chart addresses general situations, not special hazards. Special situations are addressed in 4) below.

TABLE 1

Hazard Level	Minimum Fire Extinguisher Rating	Maximum Travel Distance to a Fire Extinguisher	Maximum Square Footage
Light hazard	2A10B:C	75 feet	Maximum coverage of 3,000 square feet per unit of A (thus a 2A extinguisher can cover 6000 sq. ft)
Ordinary Hazard with moderate amounts of Class A combustibles and only minimal amounts of flammable/combustible liquids and gases. Examples: Mervyns, fabric stores, McWhorters	2A10B:C	75 feet	Maximum coverage of 1,500 square feet per unit of A (thus a 2A extinguisher can cover 3,000 sq. ft.)
Ordinary hazard with moderate amounts of flammable/combustible liquids and gases. Examples: Parking garages, small laboratories, and hardware stores	**Option 1** 2A10B:C ------- **Option 2** 2A20B:C	30 feet ------- 50 feet	Maximum coverage of 1,500 square feet per unit of A (thus a 2A extinguisher can cover 3,000 sq. ft.) -------- Maximum coverage of 1,500 square feet per unit of A (thus a 2A extinguisher can cover 3,000 sq. ft.
Extra hazard - all types	**Option 1*** 4A40B:C ----- **Option 2** 4A80B:C *4A40B:C may be hard to locate new – larger size ok	30 feet ----- 50 feet	Maximum coverage of 1,000 square feet per unit of A (thus a 4A extinguisher can cover 4,000 sq. ft.) ------- Maximum coverage of 1,000 square feet per unit of A (thus a 4A extinguisher can cover 4,000 sq. ft.)
Commercial kitchens	2A1B: C; K Recommend using through-out the restaurant	30 feet	Maximum coverage of 1,000 square feet per unit of A (thus a 4A extinguisher can cover 4,000 sq. ft.)

3) Locate the fire extinguishers throughout the facility to satisfy the number of extinguishers needed based on square footage and the maximum travel distance. In general, fire extinguishers should be located near exit doors and in exit paths so that employees do not have to go deeper into a building to get a fire extinguisher, thus compromising their ability to exit should that be necessary. Fire extinguisher must be mounted on the wall or a post or placed on shelves. The bottom of the extinguisher must be between 4 and 48 inches off the ground.

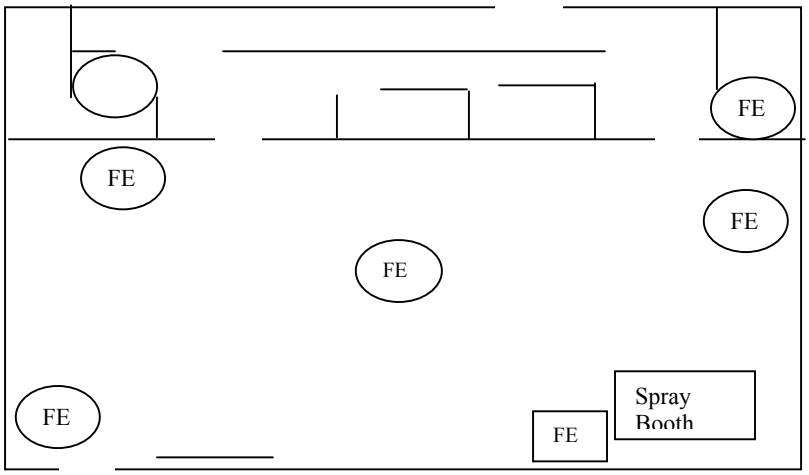
4) The above information and the following are general guidelines. Special situations exist for which additional guidance is needed. For example, open tanks of flammable liquids, high piled storage of combustible materials, large scale spraying of flammable liquids, etc. For situations such as these, contact the Livermore-Pleasanton Fire Department at 925-454-2362 for assistance.

Example:

7,000 sq. ft. office

- light hazard
- 2A10B:C minimum size
- Maximum travel distance = 75 feet
- Number of extinguishers needed = 2

  3,000 sq. ft. per unit A = 6,000 sq. ft. Per 2A extinguisher
  Max 6,000 sq. ft. per extinguisher =7,000 sq. ft./6,000 sq. ft. = >1.1 extinguisher
  Round up, so 2 extinguishers needed



Key

FE = 2A10BC

FE = 4A40BC

14,000 sq. ft. warehouse/light manufacturing area

Storage all under 12' high
Small spray booth is the only use of flammable liquids. Minor amounts only

Booth

- Extra hazard
- 4A40 BC minimum size
- Maximum travel distance = 30 feet
- Coverage for the booth only

General warehouse/manufacturing area

- Ordinary hazard with minimal amounts of flammable liquids
- 2A10B:C minimum size
- Maximum travel distance = 75 feet
- Number of extinguishers needed = 5

  1,500 sq. ft. per unit A = 3,000 sq. ft. per 2A extinguisher
  Max 3,000 sq. ft. per extinguisher =14,000 sq. ft. / 3,000 st. = > 4.16 extinguisher
  Round up, so 5 extinguishers needed

Note that the spray booth extinguisher (4A40BC) can be used to satisfy the requirement for one of the 2A10B:C extinguishers as long as the travel distances are satisfied. Thus, there would be 4 @ 2A10B:C and 1 @ 4A40B:C.