

CHAPTER 41 PYROPHORIC MATERIALS

SECTION FC 4101 GENERAL

4101.1 Scope. This chapter shall govern the manufacture, storage, handling and use of pyrophoric materials.

4101.2 Permits. Permits shall be required as set forth in FC105.6.

4101.3 General. Pyrophoric materials shall be manufactured, stored, handled and used in accordance with this chapter. Pyrophoric materials that are compressed gases shall additionally comply with the requirements of FC Chapter 30.

4101.4 Prohibitions. It shall be unlawful to:

1. Manufacture, store, handle and/or use detonable pyrophoric materials, except as specifically authorized in compliance with the requirements of FC Chapter 33.
2. Compress any pyrophoric material that is a gas.

4101.5 Supervision. The handling and use of pyrophoric materials in quantities requiring a permit shall be under the personal supervision of a certificate of fitness holder. The storage of pyrophoric materials in quantities requiring a permit shall be under the general supervision of a certificate of fitness holder.

SECTION FC 4102 DEFINITIONS

4102.1 Definition. The following term shall, for the purposes of this chapter and as used elsewhere in this code, have the meaning shown herein.

PYROPHORIC MATERIAL. A material with an autoignition temperature in air, at or below a temperature of 130°F (54°C).

SECTION FC 4103 GENERAL REQUIREMENTS

4103.1 Quantities not exceeding the maximum allowable quantity per control area. The storage, handling and use of pyrophoric materials in amounts not exceeding the maximum allowable quantity per control area indicated in FC2703.1 shall be in accordance with FC 2701, 2703, 4101, 4103 and 4106.

4103.1.1 Emergency shutoff. Compressed gas systems conveying pyrophoric gases shall be provided with approved manual or automatic emergency shutoff valves that can be activated at each point of use and each source.

4103.1.1.1 Shutoff at source. An manual or automatic fail-safe emergency shutoff valve shall be installed on supply piping at the container or other source of supply. The shutoff valve shall be operated by a remotely located manually activated shutdown control located not less than 15 feet (4572 mm) from the source of supply. Manual or automatic container valves on the containers supplying the pyrophoric material may serve as the emergency shutoff valve when the containers are the sole source of supply and are not manifolded.

4103.1.1.2 Shutoff at point of use. A manual or automatic emergency shutoff valve shall be installed on the supply piping at the point of use or at a point where the equipment using the gas is connected to the supply system.

4103.2 Quantities exceeding the maximum allowable quantity per control area. The storage, handling and use of pyrophoric materials in amounts exceeding the maximum allowable quantity per control area indicated in FC2703.1 shall be in accordance with FC Chapter 27 and this chapter.

SECTION FC 4104 STORAGE

4104.1 Indoor storage. Indoor storage of pyrophoric materials in amounts exceeding the maximum allowable quantity per control area indicated in FC Table 2703.1.1(1), shall be in accordance with FC 2701, 2703, 2704 and this chapter. The storage of silane gas and gas mixtures with a silane gas concentration of 1.37 percent or more by volume, shall be in accordance with CGA G-13.

4104.1.1 Liquid-tight floor. In addition to the requirements of FC2704.12, floors of storage areas containing pyrophoric liquids shall be of liquid-tight construction.

4104.1.2 Pyrophoric solids and liquids. Storage of pyrophoric solids and liquids shall be limited to a maximum area of 100 square feet (9.3 m²) per pile. Storage shall not exceed 5 feet (1524 mm) in height. Individual containers shall not be stacked. Aisles between storage piles shall be a minimum of 10 feet (3048 mm) in width. Individual tanks or containers shall not exceed 500 gallons (1893 L) in capacity.

4104.1.3 Pyrophoric gases. Storage of pyrophoric gases shall be in detached buildings where required by FC2703.8.2.

4104.1.4 Separation from incompatible materials. In addition to the requirements of FC2703.9.8, indoor storage of pyrophoric materials shall be isolated from incompatible hazardous materials by 1-hour fire barriers with openings protected in accordance with the construction codes, including the Building Code.

Exception: Storage in approved hazardous materials storage cabinets constructed in accordance with FC2703.8.7.

4104.2 Outdoor storage. Outdoor storage of pyrophoric materials in amounts exceeding the maximum allowable quantity per control area indicated in FC Table 2703.1.1(3) shall be in accordance with FC 2701, 2703, 2704 and this chapter. The storage of silane gas, and gas mixtures with a silane gas concentration of 1.37 percent or more by volume, shall be in accordance with CGA G-13.

4104.2.1 Distance from storage to exposures. The separation of pyrophoric solids, liquids and gases from buildings, lot lines, public streets, private roads or means of egress shall be in accordance with the following:

1. Solids and liquids. Two times the separation required by FC Chapter 34 for Class IB flammable liquids.
2. Gases. The location and maximum amount of pyrophoric gas per storage area shall be in accordance with FC Table 4104.2.1.

**FC TABLE 4104.2.1
PYROPHORIC GASES—DISTANCE FROM STORAGE TO EXPOSURES^a**

MAXIMUM AMOUNT PER STORAGE AREA (cubic feet)	MINIMUM DISTANCE BETWEEN STORAGE AREAS (feet)	MINIMUM DISTANCE TO LOT LINES (feet)	MINIMUM DISTANCE TO PUBLIC STREETS AND PRIVATE ROADS (feet)	MINIMUM DISTANCE TO BUILDINGS ON THE SAME PROPERTY		
				Nonrated construction or openings within 25 feet	Two-hour construction and no openings within 25 feet	Four-hour construction and no openings within 25 feet
250	5	25	5	5	0	0
2,500	10	50	10	10	5	0
7,500	20	100	20	20	10	0

For SI: 1 foot = 304.8 mm, 1 cubic foot = 0.02832 m³.

a. The minimum required distances shall be reduced to 5 feet when protective structures having a minimum fire resistance of 2 hours interrupt the line of sight between the container and the exposure. The protective structure shall be at least 5 feet from the exposure. The configuration of the protective structure shall allow natural ventilation to prevent the accumulation of hazardous gas concentrations.

4104.2.2 Fire protection. When overhead construction is provided for sheltering outdoor storage areas of pyrophoric materials, the storage areas shall be protected throughout by a fire extinguishing system.

SECTION FC 4105 HANDLING AND USE

4105.1 General. Pyrophoric materials in amounts exceeding the maximum allowable quantity per control area indicated in FC Table 2703.1.1(1) or 2703.1.1(3) shall be handled and used in accordance with FC 2701, 2703, 2705 and this chapter.

4105.2 Fire protection. When overhead construction is provided for sheltering of outdoor use areas of pyrophoric materials, the use areas shall be protected throughout by a fire extinguishing system.

4105.3 Silane gas. The handling and use of silane gas, and gas mixtures with a silane gas concentration of 1.37 percent or more by volume, shall be in accordance with CGA G-13.

SECTION FC 4106 MANUFACTURING RESTRICTIONS

4106.1 Pyrophoric materials classified as a Class IV material. Pyrophoric materials classified as a Class IV material as defined in Section 42-272 of the Zoning Resolution may be utilized in manufacturing processes or other production in manufacturing districts only when authorized by a special permit pursuant to Section 42-276 of the Zoning Resolution.

4106.1.1 Manufacture of pyrophoric materials classified as a Class IV material. It shall be unlawful to manufacture pyrophoric materials classified as a Class IV material as defined in Section 42-272 of the Zoning Resolution.

4106.1.2 Storage of pyrophoric materials classified as a Class IV material. It shall be unlawful to store pyrophoric materials classified as a Class IV material as defined in Section 42-272 of the Zoning Resolution, except accessory storage authorized by a special permit pursuant to Section 42-276 of the Zoning Resolution.