

SAFETY TIPS

STORAGE OF AEROSOL PRODUCTS

The storage of aerosol products is referenced in the National Fire Code – Alberta Edition (NFC(AE)) under Part 3, Indoor and Outdoor Storage.

There are three types of classifications for aerosol products:

- Level 1 aerosols – are less hazardous than Level 2 or Level 3 aerosols. Examples include shaving cream, spray starch, window cleaners, alkaline oven cleaners, rug shampoos, some air fresheners, and some insecticides.
- Level 2 aerosols – are water-miscible flammable base aerosol products. Examples include deodorants (except for oil-based antiperspirants), hair sprays, antiseptics, anesthetics, some furniture polishes, and windshield de-icers.
- Level 3 aerosols – are the most hazardous classification of aerosols. Examples include some automotive products such as engine and carburetor cleaners, undercoats, and lubricants; some wood polishes, paints, and lacquers; some insecticides; and oil-based antiperspirants.

Storage requirements are specific to the classification of the aerosol. Level 1 aerosols can be stored in an area of 250 m² with a maximum storage height of 4.5 m. Quantities above 4.5 m require the building to be sprinklered. Level 2 and 3 aerosols up to a maximum amount of 1000 kg. (approximately one pallet load of packaged aerosols) are allowed to be stored in an unsprinklered building without any extra protection requirements. In a sprinklered building, 10,000 kg of Level 2 and 3 aerosols may be stored without any extra protection requirements. Beyond these amounts, the products are to be stored in dedicated areas with specific requirements based on the amount of product stored. The height of storage for Level 2 or 3 aerosols not in dedicated storage areas shall not be greater than:

- 1.75 m where products are in solid piles or on pallets or,
- 6.1 m where products are on racks.

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The sprinkler system required in areas for increased storage must be designed and installed according to the National Building Code – 2019 Alberta Edition (NBC(AE)) and NFPA 13 “Installation of Sprinkler Systems” with additional sprinkler protection provided in conformance with NFPA 30B, “Manufacture and Storage of Aerosol Products.” If the sprinkler system does not conform to the specified requirements, then the storage of Level 2 or 3 products shall conform to the storage maximums of an unsprinklered building.

For increased storage capacities of Level 2 or Level 3 aerosols, there are two types of dedicated storage areas: Type “A” and Type “B” Dedicated Areas.

Type “A” Dedicated Area must meet the following requirements:

- separated from the remainder of the building by a chain link fence, not lighter than 2.9 mm steel wire woven into a 50 mm diamond mesh or,
- a non-combustible partition that is capable of withstanding the impact of rocketing cans that extends to the underside of the roof deck or to the ceiling which must also be capable of withstanding the impact of rocketing cans.

Type “B” Dedicated Area shall be separated from the remainder of the building by partitions:

- having not less than a 1 h fire-resistance rating,
- capable of withstanding the impact of rocketing cans, and
- extending to the underside of the roof or to a ceiling of construction equivalent to the partitions.

In mercantile occupancies (store) aerosol products can be displayed without specific storage limits or additional fire protection provided they have been removed from their combustible cartons or cartons have been display-cut so that only the bottom and the lowest 50mm of the side panels is retained. The storage of packaged aerosols must meet the requirements detailed in this document.

When the building is sprinklered in conformance with NFPA 13 and NFPA 30B as required by the NBC(AE) and the storage of Level 2 or Level 3 aerosol products is in either a Type A or Type B Dedicated Area the height of storage shall not be greater than:

- 6.1 m where products are in solid piles or on pallets, or
- the height limit determined by the design capacity of the sprinkler system where products are on racks.

Regardless of the area for storage, aisles separating racks, shelves, or piles of Level 2 or 3 aerosol products must be a minimum of 2.4 m wide.

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In buildings or areas where Level 2 or 3 aerosols are stored a fire safety plan is required and shall include:

- the product classifications for each part of the building where products of different classification are stored,
- the method of storage, including aisle widths for rack storage,
- the maximum permitted height of storage for the building or part of the building, if different,
- the maximum permitted size of individual storage areas,
- in sprinklered buildings, the sprinkler system design criteria, inside and outside hose allowances, and results of the benchmark sprinkler system main drain and water flow tests,
- the storage method and maximum height of storage shall be posted in the storage area, and the signs shall have:
 - o a minimum dimension of 200 mm, and
 - o letters not less than 25 mm high
- the identification of the location and maximum quantity of product that is being stored.

There is no requirement to store aerosol products in a cabinet meeting ULC/ORD-C1275, "Storage Cabinets for Flammable Liquid Containers." as per Part 4 of the NFC(AE). However, good housekeeping practices or the Occupational Health and Safety (OH&S) practices of your department may require you to store aerosol products within an approved cabinet. Consult with your OH&S department for any recommended housekeeping practices that support your organizations health and safety culture.

NOTE: Please contact the local fire department regarding any questions regarding this Safety Tip Brochure.