



Department of Commerce

Division of State Fire Marshal

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FIREWORKS - AERIAL DEVICE SALES DISPLAY GUIDE

For Use by Ohio State Fire Marshal Inspectors, Certified Fire Safety Inspectors and Licensed Fireworks Manufacturers/Wholesalers conducting retail sales operations

NOTE: This document is intended for use as a guide to assist state fire marshal fire inspectors, certified fire safety inspectors, and fireworks manufacturers and wholesalers in the placement and display of aerial devices/products in wholesale and retail showrooms in the state of Ohio. This guidance document is not intended to supersede any requirements mandated by any federal, state or local laws or rules, including incorporated reference standards.

This guide lists the primary laws, rules, and incorporated reference standards regulating the storage of aerial devices/products in a retail showroom and covers the packaging (including examples of acceptable and unacceptable packaging), the orientation of the aerial products on display shelving, and placement of physical barriers or breaks on or by such shelving that assists in containment of the displayed aerial devices/products.

Primary Ohio Revised Code and Ohio Administrative Code (Ohio Fire Code, including incorporated reference standards) pertaining to the display of aerial (1.4G) fireworks for sale in a retail showroom:

Ohio Revised Code (R.C.):

- R.C. 3743.18 (A) & (B)(1),(3) and (5): Storage and business operations.
- R.C. 3743.19 Additional requirements for wholesalers.
- R.C. 3743.25 Safety requirements for fireworks showroom structures.

Ohio Administrative Code (OAC)/Ohio Fire Code (OFC):

- OAC 1301:7-7-33, Section 3320 Fire safety requirements in buildings.
 - (T)(1) 3320.1 General.
 - (T)(1)(a) 3320.1.1 denotes the use of National Fire Protection Standard 1123 and 1124 (2006 editions).
- OAC 1301:7-7-33, Section 3322 Fireworks showroom
 - (V)(1)(g) 3322.1.7 Fuses.

Incorporated Reference Standards:

- National Fire Protection Standard 1124 (2006) *Manufacture, Transportation, and Storage of Fireworks Pyrotechnic Devices*.
Chapter 7 – Retail Sales of Consumer Fireworks.

- 7.3.15.2* Height of Sales Displays.
- 7.3.15.2.2 Perimeter Height.
- 7.3.15.3* Flame Breaks.
- 7.3.15.6 Aerial Devices: “Aerial devices shall be packaged and displayed for sale in a manner that will limit travel distance of ejected pyrotechnic components if ignition of the fireworks occurs.”

Packaging of Aerial Devices/Products:

There are 6 different types of packaging methods for aerial devices/products that are acceptable for use in a retail showroom. Other packaging methods of unusual nature or otherwise not specifically described in this guidance document will be evaluated by the State Fire Marshal upon request of the licensee. State Fire Marshal Inspectors, during the course of an inspection, may also require that displays be rearranged in a manner that provides for the greatest amount of safety for the employees and the customers. The various packaging methods are as follows:

- Type 1** - Hard cardboard (shipping containers).
- Type 2** - Cardboard enclosed (display cardboard- no cellophane window or wrapping).
- Type 3** - Cellophane packaging (assortment pack). The concern with this type of packaging is the direction of any of the aerial fireworks devices contained within the package. If one or more of the aerial devices within the package are pointing toward an outside portion of the package that is enclosed only by cellophane, then such packages, to the extent of the aerial devices pointing towards the cellophane, does not qualify as proper containment under Ohio law.
- Type 4** - Packaging material that contains aerial devices that are intended to be shot through the packaging material itself.
- Type 5** - Open-loaded tubes – no packaging or covering.
- Type 6** - Single items – any aerial devices sold individually.

Packaging That Is Acceptable For Display As It Is Shipped:

(Listed here by Type Number from the list in the Packaging of Aerial Devices, above.)

- A. The following list of aerial display devices/products can be displayed in a retail showroom as the devices are originally packaged by the device manufacturer and do not require any special arrangement for safety in display:

- Type #1** - Hard cardboard (shipping containers)
- Type #2** - Cardboard enclosed (display cardboard-no cellophane window or wrapping)
- Type #3** – Cellophane packaging (assortment pack): unless one or more aerial device products are found to be “pointing out,” away from the containment of the original packaging.

- B. The following list of aerial display devices/products **cannot** be displayed (not acceptable) without the aerial devices/products being arranged or displayed in manner that incorporates approved flame barriers/breaks, shelving or containment in some manner:

Type 4 - Packaging material that contains aerial devices that are intended to be shot through the packaging material itself.

Type 5 - Open-loaded tubes – no packaging or covering.

Type 6 - Single items – any aerial devices sold individually.

Orientation of Aerial Devices/Products for Display in a Retail Showroom:

This section is intended to assist state fire marshal fire inspectors, certified fire safety inspectors, and fireworks manufacturers and wholesalers in orienting aerial device/product displays within a retail showroom. Such fireworks must be displayed in a code compliant manner that promotes a safe environment for the employees and customers. This guidance describes how to achieve the minimum safety standards while acknowledging the important retail display characteristics of the aerial devices/products.

Type # 1 Packaging. Due to the manner in which these aerial devices/products are packaged, the originating shipping containers provide the minimum required safeguards – if the packages are positioned correctly per the instructions provided on the shipping/cardboard container. (Example: The cardboard shipping container indicates on the instructions to display the box “THIS SIDE UP.”)

Type #2 Packaging. Type #2 packaging provides the same characteristics as Type #1. If such packages are displayed in accordance with the instructions provided on the package, they will meet the minimum safety requirements.

Type #3 Packaging. Type #3 packaging is often identified as an “assortment pack.” These packages use cellophane as a part of or as all of the packaging for the fireworks to be sold. To use a Type #3 package in a retail showroom, such packages must be oriented as follows:

- a) For packages with all aerial devices contained within the package pointing in the same direction, such packages must be placed so that no aerial devices/products are pointing toward any customers as any such customers approach the package;
- b) If one or more aerial devices are pointing “out” of the packages toward the customer as they observe the container, then the entire box needs to be placed in the upward position for display or otherwise positioned so that no aerial devices/products point towards the customer.

Type # 4 Packaging. Type #4 aerial devices/products are intended to be “shot through” the package wrapping that such fireworks are placed in by the manufacturer. These devices must be displayed under the bulkhead of a perimeter wall or under the “shelving units” (barriers) at either an 8 feet or 12 feet height on the perimeter wall of the retail

showroom. No storage is allowed above the 12 feet height on a perimeter wall. If displayed on the interior display floor, the fireworks must be contained in a gondola shelving fixture that does not exceed 6 feet in height.

Type # 5 Packaging. Type #5 packaging includes “open-ended tubes” that are single or multiple-shot devices having no package covering over the discharge location from the package. These packages are to be oriented either in the “upward direction” with a physical barrier/break, or shelving present as described under Type #4 above or, if displayed sideways on a shelf, vertical physical breaks or barriers must be affixed to the shelving.

Type # 6 Packaging. Type #6 aerial devices/products must be oriented in the same manner as the Type # 5 devices/products described above. The direction and physical breaks/barriers, and use of vertical breaks/barriers are the same.

Placement of Physical Breaks or Barriers:

Horizontal physical breaks/barriers or shelves are for use on perimeter walls of a retail showroom that does not have any “overhead bulkheads” built into the facility’s structure (over the aerial device/product display shelving) or does not have an 8 foot (maximum) ceiling height:

- a) At the 8 foot height, a horizontal break/barrier or shelf unit can be installed to cover an area no more than 4 feet out from the perimeter wall. (The 4 foot maximum break/barrier/shelf width is the maximum allowable measurement so that automatic fire sprinkler system protection is not impeded or obstructed.)
- b) If aerial devices/products are to be displayed above the 8 foot height in a retail showroom, another physical break/barrier or shelving unit at the 12 foot maximum height limit must also be installed. Similar to the previous section, the physical breaks/barriers or shelving unit’s maximum allowable width cannot go beyond 4 feet from the adjacent wall. This will ensure that any automatic fire sprinkler system protection is not impeded or obstructed.
- c) Interior floor displays (not along an exterior wall of a retail showroom) of aerial devices/products cannot be displayed above the 6 foot height limitation established in NFPA Standard 1124 (2006) 7.3.15.2.

“Open” top floor displays: Displays of aerial device/product displays arranged in open-top boxes or containers are not permissible. (Example: aerial devices on display in trash containers or open-top boxes.) Such devices/products must be displayed under a shelf unit or overhead bulkhead.