



## STANDARD 521 FIREWORKS

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**Supersedes:** VCFPD Standard 14.9.3

### CHAPTER 1 – ADMINISTRATION

**1.1 Purpose.** This standard is prepared to provide clarification of permitting requirements and establish a minimum level of mandatory controls to provide public safety in accordance with California Code of Regulations, Title 19 and the Ventura County Fire Code.

**1.2 Scope.** This standard shall apply to all public display of fireworks within the jurisdiction of the Ventura County Fire Protection District.

**1.3 Responsibility.** All individuals conducting a public display of fireworks within the jurisdiction of the Ventura County Fire Protection District shall comply with all applicable codes and this standard.

### CHAPTER 2 – DEFINITIONS

**2.1 General.** The following words and terms shall, for the purposes of this standard and permit requirements of the VCFC, have the meanings shown herein.

**2.2 Double-row Rack Cluster.** Two rows of racks arranged in a side-by-side parallel configuration.

**2.3 Multi-gang Rack Cluster.** Three or more rows of racks arranged in a side-by-side configuration.

**2.4 Single-row Rack Cluster.** One row of racks arranged in an end-to-end configuration.

**2.5 Ventura County Fire Code (VCFC).** The current adopted VCFPD Ordinance consisting of the current adopted edition of the California Fire Code; portions of the current adopted edition of the International Fire Code; and the VCFPD amendments thereto.

## CHAPTER 3 – GENERAL REQUIREMENTS

**3.1 General.** The following requirements are in addition to the requirements contained within the California Code of Regulations (CCR), Title 19 and the 2022 California Fire Code (CFC), Chapter 56.

**3.2 Application.** A complete application shall be submitted to the Fire District no less than ten (10) business days prior to the date of the proposed fireworks display. The submittal shall include all required documents, approval from the local planning department, and a site security plan developed by the site representative.

**3.3 Fallout Zone.** The required fallout zones distances shall be in accordance with Table 3.3 below. The fallout zone perimeter shall be in place and enforced prior to loading mortars.

**Table 3.3 Fallout Zone Size**

Shell Size	Minimum Fallout Zone Required
Up to 2-inches	70-feet per inch of shell
Greater than 2-inches	100-feet per inch of shell*

\* When mortars are contained within sand-filled troughs or other approved configurations, the required fallout zone may be reduced to 70-feet per inch of shell.

**3.4 Display Site Set-Up.** Mortar tube and rack construction shall comply with CCR Title 19, and the additional requirements contained in this standard. Multi-gang and single-row rack clusters shall be set-up in accordance with CCR Title 19 and Fire District requirements in Sections 3.4.1 and 3.4.2 of this standard. The pyrotechnic crew and Fire District personnel shall limit their exposure within the established fallout zone during loading and firing of mortars.

**3.4.1 Multi-gang rack clusters.** Multi-gang rack clusters shall meet the following:

1. A minimum 10-foot separation shall be provided between other single-row racks, double-row racks, multi-gang rack clusters, cakes, and devices.
2. A minimum 3-inch separation shall be provided between all mortar racks within multi-gang rack clusters. This is to provide for the same practical effect as spacer blocks within each individual rack and reduce the increased exposure of adjacent mortars.
3. A minimum nominal 1-inch x 4-inch single board shall be placed at the top and bottom of multi-gang rack clusters for side bracing when attaching multiple individual pre-built racks. A minimum of four (4) fasteners per board shall be used to attach the side braces.
4. All chained shells shall be covered with foil.
5. The maximum number of mortars per multi-gang rack clusters is specified in Table 3.4.1.

**Table 3.4.1 Maximum Number of Mortars per Multi-gang Rack Cluster**

<b>Mortar Size</b>	<b>Maximum Number of Mortars</b>
Up to 3-inch	100 per cluster
Greater than 3-inch and up to 5-inch	30 per cluster
Greater than 5-inch	Not allowed

**3.4.2 Single-row and double-row rack clusters.** Single-row and double-row rack clusters shall meet the following:

1. A minimum of 5-foot separation shall be required between other racks, cakes, and devices.
2. A minimum 3-inch parallel separation shall be provided between all mortar racks within double-row clusters.
3. Intermediate perpendicular bottom bracing shall be provided between each rack.
4. A maximum of 100 mortars shall be allowed per single-row or double-row rack cluster.

**3.4.3 Devices.**

1. Multi-break aerial shell devices (double bubbles/peanuts) shall only be fired from mortars buried in sand-filled troughs or other approved configuration. Multi-break shells shall not be chain-fused.
2. Cakes shall have a minimum 3-foot separation between other cakes and be staked and/or braced.
3. Shells up to 6-inches in diameter may be chain-fused, not to exceed a maximum of 10 shells.
4. Shells larger than 6-inches shall not be chain-fused together.

**3.4.4 Firing.** All shows shall be electronically fired. Hand-fired shows are not permitted. Pyrotechnic crew and fire personnel not essential to the firing operation shall limit their exposure and remain outside the fallout zone during firing operations.

**3.4.5 Weather conditions.** Wind speed and rain may have an impact on the public display site and fallout zone. The pyrotechnic crew and Fire District personnel should monitor weather conditions that may affect the safe firing of the display.

**3.4.5.1** The following are suggested wind thresholds and actions to be considered:

1. 6-10 mph and gusts not to exceed 15 mph – Monitor wind patterns, speed, direction, exposures, and impact to the viewing audience.

2. 10-15 mph and gusts not to exceed 20 mph – Adjustments to the distances to exposures and viewing audience should be made.
3. Over 15 mph or gusts exceeding 25 mph – A revised site survey shall be conducted to determine if adequate fallout distances can still be maintained. Identify if there are any mitigating measures that may be implemented. If the fallout distances are not acceptable and/or mitigating measures cannot be implemented, the public display shall be cancelled.

**3.4.5.2** If significant rainfall is expected, provisions shall be made to ensure pyrotechnic equipment and devices are kept dry. The pyrotechnic crew, Fire District personnel, and site representative shall closely monitor the amount of rainfall. If there is excessive rainfall and mitigating measures cannot be implemented, the public display shall be cancelled.