



## **OREGON FIRE CODE**

### **Interpretations and Technical Advisories**

A collaborative service by local and state fire professionals, along with our stakeholders and customers, to provide consistent and concise application of Oregon's fire prevention and life safety regulations.

**Date:** June 11, 2008

**Ruling:** Technical Advisory No. 08-01

**Subject:** Statewide Guidelines for Fairs, Trade Shows, Carnivals or Common Venue Events

**Code Reference:** 2007 Oregon Fire Code

**Purpose:** Through a collaborated effort with the Oregon Fire Service this document is designed to assist fire agencies, fair and event centers, event planners, vendors, concessionaires, and other parties planning for and conducting fairs, trade shows, carnivals, or common venue events.

**Goal:** The goal of this document is to provide a consistent approach for application and use of the most common fair and event fire code applications. Ultimately the Fire Code official (FCO) approves all mentioned events. It is the intent to provide consistent application, however, the FCO may have reason for more stringent standards.

### **Section 1 – GENERAL REQUIREMENTS**

**1.1 Purpose.** The purpose of the general requirement section is to target fire code requirements of a general nature. For more specific regulations please refer to Sections 2 through 10.

**1.2 Permits.** An Operational Permit may be required by the Fire Code Official. Permit fees and code compliance conditions are requirements prior to issuance of a permit. Contact the local fire authority regarding specific permits, conditions, and fees.

**1.3 Smoking.** There shall be **NO SMOKING** inside buildings, livestock areas, barns, tents, canopies, or exhibit booths.

- 1) **NO SMOKING** signs shall be conspicuously located to meet the intent of this guideline.

- 2) Designated smoking areas are allowed and shall have non-combustible floor coverings and suitable non-combustible ashtrays. All smoking areas shall be approved by the Fire Code Official.

**1.4 Open flame:** Candles, torches, and other open flame devices used for decorative, ceremonial, or demonstrative purposes shall comply with the following:

- 1) Decorative flaming devices that use Class 1 or 2 liquids or LP gas are strictly prohibited.
- 2) Candles and open flame devices are strictly prohibited in areas of assembly  
**Exception:** With approval of the Fire Code Official.
- 3) Open flames shall not be utilized in areas where flammable items such as tablecloths, displays, and merchandise are present.  
**Exception:** When flame is enclosed and where the opening on top does not pose an ignition hazard.
- 4) Candles and open flame devices are prohibited in areas where people stand, or in an aisle or exit.
- 5) All candle use shall meet the following conditions:
  - 5.1 Candles shall have a non-combustible base that will self upright after it is tilted 45 degrees, or be self extinguishing.
  - 5.2 Candelabras shall be secured and supported to prevent overturning.
  - 5.3 Lit handheld candles shall not be passed from one person to another.
- 6) Torches and handheld flaming devices shall be approved by the Fire Code Official.
- 7) See Section 4 titled Cooking for application of open flaming devices for cooking.

**1.5 Decorative materials.** All fabric or material used for decoration shall be fire resistive, or treated with an approved fire retardant. If treated, documentation or product used, when it was treated, and how it was treated are required. Tablecloths, merchandise, and displays are not considered decorations. Decorative wood less than ¼ inch shall be flame retardant.

**1.6 Fire extinguishers.** Fire extinguishers are required on site for every 75 feet of travel distance. The Fire Code Official may require fire extinguishers for every booth or exhibit, or may apply the travel distance application to meet the intent of the guideline. Fire extinguishers shall comply with the following:

- 1) The minimum size fire extinguisher shall be a **2A:10BC** for general use.
- 2) Fire extinguisher application for cooking will be found in Section 4 titled Cooking.
- 3) All employees in the concession stand/booth shall be familiar with the use and location of the fire extinguisher.
- 4) All fire extinguishers shall be tagged as being serviced within the past 12 months.
- 5) Fire extinguishers shall be made readily visible and accessible.

**1.7 Exiting and aisles.** Exiting and aisles shall comply with the following :

- 1) Each concession stand/booth shall have **a minimum of one exit** leading directly out of the area without exiting through another concession stand/booth, display, or enclosed area.
- 2) Aisles and exits shall be kept clear and free of obstructions. Easels, signs, displays, tables, and other objects shall not encroach into aisles and exit paths, or exit doors.
- 3) Exit doors shall not be covered with drapes or similar impeding their visibility. Facility or building exits, stairs, corridors, and vestibules shall not be used for any purpose except for egress.
- 4) Exit doors shall function with a single action and shall not be able to lock patrons in an area or facility.
- 5) Aisles and exits shall be illuminated at dusk and night.
- 6) Exit signs are required when two exits are provided or when the occupant load exceeds 50.
- 7) Aisles and exit access from concession stands/booths and low occupant load areas require a minimum of 36 inches of width and 80 inches in height. Aisles between concession stands/booths and display items shall be no less than 44 inches in width.
- 8) Major aisles and walkways are established based on occupant load and range from 8 feet of unobstructed width for small venue events and 10 feet of unobstructed width for large venue events. Travel distance to an exit door shall not exceed 200 feet.

- Exceptions:**
- 1) 250 feet in a sprinkled building.
  - 2) 400 feet in open air seating.

**1.8 Occupant load.** The occupant load shall be assigned by the Fire Code Official in accordance with the anticipated use. The Fire Code Official may require the posting of occupant loads in areas of assembly.

**1.9 Seating – tables and chairs.** The placement of tables and chairs shall comply with the following:

- 1) **Aisles and exit access.** The common path of egress travel shall not exceed 30 feet from any seat in the exit access.
- 2) **Chair rows.** The minimum aisle access width between the front of one row of chairs and the back of the next row shall be 12 inches for rows of up to 14 chairs, and that distance increases if there are more than 14 chairs per continuous row. The minimum clear width of 12 inches between rows shall be increased by 0.3 inches for every additional seat beyond 14 seats, but the minimum clear width is not required to exceed 22 inches.  
Aisles between rows of chairs shall be a minimum of 48 inches.
- 3) **Bonding.** When greater than 200 seats are assembled in one area the seats shall either be fastened to the floor or fastened together (bonded) in groups of not less than three.
- 4) **Tables.** Square banquet tables shall be spaced a minimum of 31 inches apart when seating on one side and 50 inches apart when seating on both sides. Round banquet tables shall be spaced no less than 6 feet from table edge to table edge.

**1.10 Waste – Trash.** Combustible waste material shall not accumulate and a waste collection and removal plan shall be established. Waste receptacles/containers shall comply with the following:

- 1) Adequate non-combustible waste receptacles shall be onsite and distributed strategically.
- 2) Combustible waste receptacle, i.e. commercially made cardboard receptacle, maybe used with the approval of the Fire Code Official.
- 3) Waste receptacles shall not be placed near an exit, in an exit path, under an open stairway, or near any heat source.
- 4) Waste containers exceeding 55 gallons (57 L) shall maintain a distance of 5 feet from any tent, membrane or combustible structure.

**1.11 Generators:** Generators shall comply with the following:

- 1) All fueling shall not be conducted with the generator running.
- 2) Shall be protected from the general public by a physical means.
- 3) Shall not be operated inside a structure or enclosed tent/canopy.
- 4) Shall not be placed near an exit or in an exit path.
- 5) Shall be a minimum of 20 feet from a tent, membrane structure, or combustible structures
- 6) A minimum of a **2A:10 BC** fire extinguisher shall be within 20 feet of all generators.

**1.12 Fire alarm systems.** When installed, fire alarm systems shall comply with the following:

- 1) Be serviced annually and have proof of service upon request by the Fire Code Official.
- 2) Fire alarm panels shall be made readily accessible and clearly marked if not placed in an obvious location.
- 3) Displays, decorations or other items shall not obstruct audible and visual (warning) notification devices.

**1.13 Fire sprinklers.** When installed, all fire sprinklers systems shall comply with the following:

- 1) Be serviced annually and have proof of service upon request of the Fire Code Official.
- 2) The location of the fire sprinkler control valves shall be clearly marked.
- 3) Maintain storage a minimum of 18 inches of clearance below the sprinkler head.
- 4) No items shall be hung or suspended from a fire sprinkler system.

**1.14 Fire hydrants – fire department connections.** Fire hydrants and fire department connections shall be maintained without obstructions including posts, fences, vehicles, growth, trash, storage or other obstacles which would hinder locating or use. ORS 811.550(16) prohibits parking within 10 feet of a fire hydrant.

**1.15 Vehicles, boats and RV displays.** Any requested variation of this section for inside venue vehicle displays or demonstrations shall be approved by the Fire Code Official. Vehicle, boat and RV displays shall comply with the following:

- 1) Fuel tanks shall be no more than a ¼ full or contain more than 5 gallons of fuel.
- 2) Fuel caps shall be locked or sealed (duct tape).
- 3) All LP gas tanks shall be emptied.
- 4) Fueling or de-fueling shall not be done inside a building or tent.
- 5) Batteries shall be disconnected and cable ends taped.

**Exception:** Electric hybrid vehicles.

**1.16 Stages.** All stages and platform performance areas shall be noted on the site plan and approved by the Fire Code Official.

**1.17 Site plans.** When required by the Fire Code Official, a site plan shall be submitted for review and approval. A site plan shall include the following:

- 1) Fire department access roads and radiuses (fire lanes).
- 2) Parking plan.
- 3) Property lines.
- 4) Fire protection features such as fire hydrants, fire department connections, standpipes, and other firefighting water supplies.
- 5) Fire alarm panel location and alarm coverage.
- 6) Physical structures.
- 7) Stages and platforms.
- 8) Temporary structures (tents, canopies, booths, mobile units).
- 9) Fences, cages and barriers.
- 10) Aisles, exits and egress points.
- 11) Exit signs and egress lighting.
- 12) Seating and table configurations.
- 13) Vehicle layout (for vehicle display)
- 14) Fire extinguisher size and placement.
- 15) Location of LP and/or compressed gas cylinders.
- 16) Location of dumpsters and waste receptacles.
- 17) Designated “Smoking Areas”.
- 18) Address plan for naming, numbering, or lettering buildings, structures, or large area tents.

## **Section 2 – FIRE DEPARTMENT ACCESS**

**2.1 Access.** When required, fire department access and fire lanes are to be established and maintained throughout the event as follows. Fire apparatus access roads (fire lanes) shall be approved by the Fire Code Official.

- 1) Fire lanes shall be a minimum of 20 feet. Minimum width may be decreased for fire lanes identified for one-way circulating flow.

- 2) The Fire Code Official may require additional width for aerial apparatus.
- 3) Fire lanes shall be constructed of all weather driving surfaces capable of supporting a minimum of 60,000 pounds. Verify weight requirements with the local Fire Code Official.
- 4) All turning radius shall have a minimum inside radius of 28 feet and an outside radius of 48 feet.
- 5) Any dead end fire access road or fire lane exceeding 150 feet shall have an approved fire department turn around.
- 6) A minimum vertical clearance of 13 feet, 6 inches is required.
- 7) It is the responsibility of the property management or promoter to assure access at all times.
- 8) Where key boxes are present or required, keys shall be current for the locks in place.

### **Section 3 – TENTS, CANOPIES AND MEMBRANE STRUCTURES**

#### **3.1 Definitions.**

**Tent.** A tent is a structure, enclosure, or shelter made of fabric or pliable material supported by any manner other than air.

**Canopy.** A canopy differs from a tent in that 75 % of its sidewalls space is open. Enclosing a canopies sidewall creates a tent.

**Membrane structure.** A membrane structure is an air-inflated, air-supported, cable or frame-covered structure and not otherwise defined a tent or canopy.

**3.2 Flame resistance.** The sidewalls, awnings, drops, and tops of booths, membrane structures, tents, and canopies shall be composed of flame resistant material or shall be treated with an approved flame retardant. The use of, non-treated tarpaulins is prohibited during the hours the event is open to the public. All tents and canopies shall have a permanently affixed label indicating the type of tent, size, fabric, or material type, a manufacturer's certificate, or a fabric sample.

**3.3 Location and separation.** Tents and canopies shall be located and separated as follows:

- 1) Tents and canopies shall maintain a distance of no less than 20 feet from structures, right-of-ways or property lines. (Location of the tent or canopy in relation to other tents, canopies, buildings or property lines is dependant upon the aggregate square footage and the use. For the purpose of determining required distances, support ropes and guy wires are considered part of the tent, canopy, or membrane structure).
- 2) Tents or canopies shall have a minimum of a 12 foot fire break on all sides, unless multiple tents or canopies are arranged or set side by side.
- 3) Tents and canopies **used for cooking** that exceed 400 square feet require 20 feet of separation from other tents or canopies; this includes the aggregate area of multiple canopies placed side by side.

- 4) Tents and canopies **not used for cooking**, the separation distance of 20 feet is not required when the aggregate floor area does not exceed 15,000 square feet.
- 5) When multiple tents or canopies are arranged or set side by side, the aggregate length shall not exceed the required 150 feet for fire department access without a 20 foot fire break.
- 6) A distance of 20 feet is required between cooking tents and canopies, and non-cooking tents, canopies, booths, or other structures.
- 7) All cooking or heating appliances used in tents shall be a minimum of 10 feet from the exits or any combustible materials.
- 8) Tents or canopies are not allowed inside a structure unless approved by the Fire Code Official.
- 9) Sleeping is prohibited in any tent unless approved by the Fire Code Official.

**3.4 Exits.** The Fire Code Official shall approve occupant loads and exit locations. Exits shall be as follows:

- 1) The maximum distance to an exit shall be no more than 100 feet.
- 2) Exits are determined by the occupants load.
  - 2.1 Up to 10 occupants, one exit of at least 72 inches wide.
  - 2.2 10-199 occupants, two exits, each 72 inches wide.
  - 2.3 200-499 occupants, three exits, each 96 inches wide.
  - 2.4 For other membrane structures or occupant loads over 499, contact the Fire Code Official.
- 3) Exit signs are required in tents requiring two or more exits.
- 4) Exit signs shall have letters no less than 12 inches and be lit by a power source when occupied.
- 5) All guy wires, guy ropes, and other support members shall not cross an exit way at a height of less than 8 feet.

**3.5 Combustible materials.** Hay, straw, and similar combustible materials shall not be stored inside or within 30 feet of a tent or canopy being used for cooking or public assembly. When hay, straw, or baled materials are utilized they shall be made fire retardant and approved by the Fire Code Official.

## **Section 4 – COOKING**

**4.1 General.** Cooking includes the use of open flame cooking tops, fryers, skillets, WOKS, microwaves, ovens, barbeques, warming trays using open flames, and other specialty cookware. Cooking equipment shall be installed and utilized in accordance to manufacturer's listings.

**4.2 Exits.** All food concession stands/booths shall have **at least one exit** for employee use that is a minimum 10 feet from cooking equipment, and approved by the Fire Code Official.

**4.3 Location.** Portable food vendors in tents or canopies shall not be located within 20 feet of amusement rides or devices. Outdoor cooking that produces sparks or grease laden vapors shall not be performed within 20 feet of a tent or canopy.

**4.4 Extinguishers and covers.** Each vendor booth where cooking is being conducted, indoors or outdoors, shall provide the following:

- 1) A readily accessible **4A-40B:C** rated fire extinguisher. Additional fire extinguishers of the same type and rating may be required to ensure that no employee will have to travel more than 30 feet to obtain a fire extinguisher.
- 2) A portable fire extinguisher having a **“K” rating** is required in any food concession stand/booth indoors or outdoors where cooking appliances produce grease or smoke laden vapors.
- 3) When deep fat frying with a liquid depth of more than ¼ inch, a metal lid (or hard lid made from fire resistive material) that covers the entire cooking area shall be readily available.

**4.5 Ventilation.** Any cooking device that is **indoors, in a trailer, or in a combustible booth** and creates grease-laden vapors shall be provided with an approved hood and extinguishing system, or be the type with a self-closing lid or other form of self-extinguishment approved by the Fire Code Official.

All hood ventilating systems are required to be installed in accordance with the Oregon Mechanical Specialty Code and be cleaned prior to the start of the event and as often as needed to prevent the build-up of grease during the event.

## **Section 5 – HEATING**

**5.1 Heating equipment.** Heating equipment includes electric or fuel burning appliances, portable or permanent heating devices, and heating devices which have open elements, open flames, or concealed elements. Heating equipment shall be as follows:

- 1) All chimney pipes and venting appliances shall be protected to prevent burn injury and shall be maintained no less than 12 inches from combustible material or structures so as not to create a fire hazard.
- 2) Heating equipment shall be installed in accordance with the Oregon Electrical Specialty Code or the Oregon Mechanical Specialty Code and utilized per its listing.
- 3) Clearance from the appliance(s) to other combustibles shall be in accordance with the manufacturer’s installation instructions. If no manufacture details are available clearance requirements shall be maintained at no less than 36 inches.
- 4) Portable space heaters that produce open or exposed flames are prohibited from use in tents, canopies, booths, or similar settings. The Fire Code Official may waive this requirement on a case-by-case basis.
- 5) Patio/umbrella type heaters (gas or electric) are allowed for outside venues as long as they maintain clearance from combustibles per listing and are secured to prevent tipping. The Fire Code Official may allow these heaters in open air indoor environments on a case-by-case basis.



## **Section 6 – LPG-COMPRESSED FLAMMABLE GAS-FUELS.**

**6.1 Fuels.** This section addresses propane, butane, natural gas, acetylene, and other compressed flammable gases.

**6.2 Location.** The storage and use of the above fuels shall be as follows:

- 1) The storage and use of liquefied petroleum gas (LPG) is prohibited inside all buildings, portable concessions, or tents.
- 2) All LPG tanks shall be located on the exterior of buildings, booths, portable concessions, or tents.  
**Exception:** LPG tanks not exceeding 5 gallons are permitted inside open air canopies. Canopy sidewalls or other barriers that allow LPG vapors to pool and collect are not permitted when LPG tanks are used inside the canopy area.
- 3) LPG tanks shall be a minimum of 10 feet from combustible vegetation and trash containers.
- 4) LPG tanks shall be located so they are not in contact with direct flame, high heat situations, or sparks. A clearance of no less than 20 feet is required between potential ignition sources and LPG tanks. The use of propane is prohibited in any basement environment.

## **Section 7 – ELECTRICAL**

**7.1 General.** All electrical equipment shall comply with the following:

- 1) All electrical equipment shall be listed or labeled and used in accordance with the listing or labeling instructions from the manufacturer.
- 2) Electrical wiring, devices, appliances and other equipment shall be ONLY used if in good working condition. Modified or damaged equipment shall NOT be used.
- 3) Open junction boxes and open-wiring splices shall be PROHIBITED. Approved covers shall be provided for all switch and electrical outlet boxes.
- 4) Outdoor public spaces or potentially wet environments shall have Ground Fault Circuit Interrupters (GFCI) installed in permanent wiring circuits. When NO GFCI are installed on permanent wiring circuits, removable GFCI cords or GFCI power tapes shall be used.
- 5) A minimum working space of 30 inches wide and 36 inches deep and 78 inches high shall be provided in front of all electrical equipment (electrical panels). NO storage of any material shall be located within the working space.

**7.2 Appliances and lighting.** Appliances and lighting shall comply with the following:

- 1) Household listed appliances shall NOT be used for commercial purposes.
- 2) Clamp type lights and appliances shall be made secure.

**7.3 Extension cords – use.** Extension cord use shall comply with the following:

- 1) Extension cords shall NOT be a substitute for permanent wiring.
- 2) Extension cords shall be used ONLY with portable appliances.
- 3) Extension cords shall be plugged directly into an approved receptacle and shall serve only ONE portable appliance.

**Exception:** Approved multi-plug extension cords.

**7.4 Extension cords – location.** Extension cords shall NOT be affixed to structures, extended through walls, ceilings or floors, under doors or floor coverings nor shall such cords be subject to environmental damage or physical impact. Physical protection is required in public areas with foot traffic.

**7.5 Ampacity – Conductor sizes.** The ampacity and conductor size of an extension cord shall comply with the following:

- 1) The ampacity of the extension cords shall NOT be less than the rated capacity of the portable appliance supplied by the cord. The minimum required rating is 15 amps.
- 2) Extension cords shall be a minimum of a 14 gauge, three conductor size with polarized or grounded plug and receptacle.

**7.6 Relocatable power taps (power taps).** Power taps shall comply with the following:

- 1) Multi-plug adaptors, such as cube adaptors shall be approved and listed. Adapters without visible listings or markings will NOT be allowed. Multi-plug adapters must be plugged directly into an electrical receptacle.
- 2) Power taps (fused power strips) shall be listed with overcurrent protection (circuit breaker) integrated into the tap.
- 3) Power tap cords and receptacles shall be polarized or grounded type.
- 4) Power taps shall be directly connected to a permanently installed receptacle. Power taps CANNOT be connected to each other creating a chain of power taps.

**7.7 Temporary wiring (other than extension cords).** Temporary wiring shall comply with the following:

- 1) All temporary wiring requires an electrical permit.
- 2) Temporary wiring for electrical power and lighting installations is allowed for a period NOT to exceed 90 days.
- 3) Temporary wiring attached to a structure shall be attached in an approved manner per the State Electrical Code.

## **Section 8 – FIREWORKS.**

**8.1** The storage and retail sales of fireworks shall comply with the following:

- 1) Sales of fireworks requires a permit from the State Fire Marshal. Local permits and regulations may also apply.
- 2) Permits shall be posted.
- 3) Fireworks stands, booths, or tents shall be 10 feet from combustible structures, 15 feet from right of way or property lines, 20 feet from any source of ignition, and 50 feet from fuel dispensing.
- 4) Displays, boxes, or product must not block exits or aisles.
- 5) Tents, canopies, side-curtains, and floor covering shall be fire retardant.
- 6) No smoking, open flames, or lighting of fireworks allowed within 100 feet of fireworks tents, stands, or booths.
- 7) No Smoking signs shall be conspicuously installed to meet the 100 foot requirement.
- 8) Heaters that have exposed electrical elements or open flames are strictly prohibited.
- 9) A minimum of one **2A rated** water type fire extinguisher or equivalent shall be provided. Large tents may require additional extinguishers.

## **Section 9 – FENCED EVENTS – BEER GARDENS AND CONCERTS.**

### **9.1** Fenced events shall comply with the following:

- 1) Fenced areas with an occupant load of more than 50 people require at least two exits. Additional exits maybe required depending on the occupant load.
- 2) Exits shall not be chained or locked and easily opened from the inside fenced area.
- 3) Exits shall be marked with an exit sign.
- 4) Egress and emergency lighting maybe required at night or after sunset.
- 5) Exit doors/gates shall swing in the direction of egress travel.

## **Section 10 – LIVESTOCK BARNES AND ARENAS.**

### **10.1** Barns and arenas shall comply with the following:

- 1) Livestock areas are not to be used as sleeping quarters, unless approved by the local Fire Code Official.
- 2) Parking of motorized vehicles, camp trailers, and campers inside livestock/barn areas shall be prohibited.
- 3) Exit doors and egress shall be maintained at all times; i.e. movement of animals.
- 4) Portable heaters are prohibited in livestock buildings where hay, straw, or combustible products are present.
- 5) Heat lamps for newborn animals must be secured and protected in an approved manner.
- 6) Quantities of straw, hay, or similar combustible products shall be limited to a one-day supply.
- 7) Electric shears, blowers, fans, and vacuums shall be polarized and grounded, in good condition, and shall be only used per listing (i.e. wet areas, dusty areas).

**Other References:** NFPA 10