

STANDARD DETAILS & SPECIFICATIONS	Spec. No.	CFMO – SE1
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	Approved By:	J. Saunders
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SUBJECT: Tents, Canopies And Temporary Membrane Structures		

SCOPE

This Standard applies to a tent or temporary membrane structure having an area in excess of 200 square feet, or any canopy in excess of 400 square feet. Temporary membrane structures, tents, and canopies shall be used for a period of not more than 180 days within a 12-month period on a single premise. In excess of 180 days shall have the approval of the Building Official.

PERMITS AND APPROVALS

A permit is required from the Fire Department to erect and use any tent, canopy or temporary membrane structure within this scope of this Standard.

DEFINITIONS

For the purposes of this standard, certain terms and words are defined as follows:

Canopy: is a temporary structure, enclosure or shelter constructed of fabric or pliable materials supported by any manner, except by air or the contents it protects, and is open without sidewalls or drops on 75 percent or more of the perimeter.

Tent: is any temporary structure, enclosure, or shelter constructed of fabric or pliable material supported by any manner except by air or the contents it protects.

Temporary Membrane Structure: is any air-inflated, air-supported, cable, or frame-covered structure as defined by Building Code Appendix Chapter 31 which is erected for less than 180 days and not otherwise defined as a tent, canopy or awning.

I ACCESS, LOCATION AND PARKING

- A) Access roads shall have an unobstructed width of not less than 20 feet with vertical clearance of 13 feet 6 inches.
- B) Temporary membrane structures, tents and canopies shall not be located within 20 feet of property lines, buildings, other temporary membrane structures, tents and canopies, parked vehicles or internal combustion engines. For the purpose of determining required distances, support ropes and guywires shall be considered as part of the temporary membrane structure, tent or canopy.

Exception: Separation distance between temporary membrane structures, tents, and canopies, not used for cooking, is not required when the aggregate floor area does not exceed 15,000 square feet. The Fire Department may approve tents located in or on permanent buildings provided such use does not constitute an undue hazard.

II STRUCTURAL STABILITY

Temporary membrane structures, tents and canopies and their appurtenances shall be adequately braced and anchored to prevent weather related collapse. Documentation of structural stability shall be furnished to the chief upon request.

III FLAME RETARDANT TREATMENT AND STANDARDS

- A) The sidewalls, drops and tops of temporary membrane structures, tents and canopies shall be composed of flame-resistant material or shall be treated with a flame retardant in an approved manner. Floor coverings, bunting, combustible decorative materials and effects, including sawdust when used on floors or passageways, shall be composed of flame-resistant material or shall be treated with a flame retardant in an approved manner.
- B) The grounds adjacent to or within 30 feet outside of temporary membrane structures, tents and canopies shall be kept free and clear of combustible wastes. Such waste shall be stored in approved containers until removed from the premises.
- C) Temporary membrane structures, tents or canopies shall have a permanently affixed label bearing the following information:
 - 1. Identification of the size and fabric or material type.
 - 2. For flame-resistant materials, provide the necessary information to determine compliance with this standard.
 - 3. For flame-retardant treated materials, provide the date that the temporary structure, tent or canopy and other combustible materials were last treated with an approved flame retardant. The trade name and type of flame retardant utilized and the name of the person and firm that applied the flame retardant shall also be provided.

IV MAXIMUM OCCUPANT LOAD

Maximum occupant load shall be determined by the Fire Department depending upon the use(s) and posted accordingly if required.

V EXITS

- A) Exits shall be spaced at approximately equal intervals around the perimeter of the temporary membrane structure, tent or canopy and shall be located such that all points are 100 feet or less from an exit.
- B) The minimum number of exits shall be provided in accordance with CFC Table 3211-A (see below)
- C) Exit openings from tents shall remain open unless covered by a flame-resistant curtain. Such curtains shall be free sliding on a metal support. The support shall be a minimum of 8 feet above the floor level at the exit. The curtains shall be so arranged that, when open, no part of the curtains obstruct the exit. The curtains shall be of a color, or bear markings that will contrast with the color of the tent.
- D) Exit doors (if provided) shall swing in the direction of exit travel. To avoid hazardous pressure loss from air supported structures, such doors shall be automatic closing against operating pressures. Opening force at the door edge shall be in accordance with the Building Code.

- E) The required width of exits, aisles and passageways shall be maintained at all times to a public way.
- F) Guywires, guyropes and other support members shall not cross exit paths at a height of less than 8 feet.
- G) The surface of exit paths shall be maintained in an approved manner.

**MINIMUM NUMBER OF EXITS AND EXIT WIDTHS FOR
TEMPORARY MEMBRANE STRUCTURES, TENTS AND CANOPIES***
(CFC Table No. 3211-A)

Occupant Load	Minimum Number Of Exits	Minimum width of each exit (inches)	
		Tent or Canopy	Membrane Structure
10 to 199	2	72	36
200 to 499	3	72	72
500 to 999	4	96	72
1,000 to 1,999	5	120	96
2,000 to 2,999	6	120	96
Over 3,000	7	120	96

* The total exit width in inches shall not be less than the total occupant load served by the exits multiplied by 0.2. Such widths shall be divided approximately equally among the separate exits.

VI EXIT ILLUMINATION

- A) Exits shall be illuminated with light having an intensity of not less than 1 footcandle at floor level while the structure is occupied. Fixtures required for exit illumination shall be supplied from a separate circuit or source of power when occupant load exceeds more than 300.
- B) Exit signs shall be installed at required exits and where otherwise necessary to clearly indicate the direction of egress when the exit serves an occupant load of 50 or more.
- C) Exit signs in temporary membrane structures, tents and canopies with occupant loads of more than 100 persons shall be of an approved self-luminous type or shall be internally or externally illuminated by fixtures supplied in the following manner:
 1. Two separate circuits, one of which shall be separate from all other circuits, for occupant loads of 300 or less.
 2. Two separate sources of power, one of which shall be an approved emergency system, shall be provided when the occupant load exceeds 300.
 3. Emergency systems shall be supplied from storage batteries or on-site generator set, and the system shall be installed in accordance with the Electrical Code.

VII SEATING ARRANGEMENTS AND AISLE SPACING

- A) **Seating:** Seating arrangements and aisle spacing shall be as approved by the Fire Department.
- B) **Aisle width without fixed seats:** The minimum clear aisle width shall be 36 inches where seats, tables counters, furnishings, displays, and similar fixtures or equipment are placed on one side of the aisle only and 44 inches when such fixtures or equipment are placed on both sides of the aisle.
- C) **Aisle termination:** Aisles shall terminate at a cross aisle, foyer, doorway or vomitory. Aisles shall not have a dead end greater than 20 feet in length.
- D) **Seat spacing:** When seating rows have 14 or less seats, the minimum clear width between rows shall not be less than 12 inches measured from the back of one seat to the nearest projection of the seat behind. The clear width shall be increased as follows:
 - 1. For rows of seating served by aisles or doorways at both ends, there shall be no more than 100 seats per row. A minimum clear width of 12 inches between rows shall be increased by 0.3 inch for every additional seat beyond 14, but the minimum clear width need not exceed 22 inches.
 - 2. For rows of seating served by an aisle or a doorway at one end only, the minimum clear width of 12 inches between rows shall be increased by 0.6 inch for every additional seat beyond seven, but the minimum clear width need not exceed 22 inches. In addition, the distance to the point where the occupant has a choice of two directions of travel to an exit shall not exceed 30 feet from the point where the occupant is seated.
- E) **Bonding of chairs:** Loose seats, folding chairs or similar seating facilities that are not fixed to the floor shall be bonded together in groups of three or more when there are more than 300 seats. The bonding of chairs is not required when tables are provided for dining or similar purposes.

VIII SMOKING AND OPEN FLAME

Smoking and open flame shall NOT be permitted in any temporary membrane structure, tent or canopy or in any adjacent areas where hay, straw, or any other combustible materials are stored or used.

IX FLAMMABLE OR COMBUSTIBLE LIQUIDS & LIQUEFIED PETROLEUM GAS

- A) Flammable-liquid-fueled equipment shall not be used in temporary membrane structures, tents or canopies.
- B) Flammable and combustible liquids shall be stored outside in an approved manner not less than 50 feet from temporary membrane structures, tents or canopies.

- C) Liquefied petroleum gas (LPG) shall be located outside and a minimum of 10 feet from the temporary membrane structure or tent for containers up to 500 gallons water capacity. Larger containers shall be located in accordance with the Fire Code. Stored fuel shall be located a minimum of 50 feet away as approved by the Fire Department. Safety release valves shall be pointed away from temporary membrane structures, tents or canopies.
- D) Refueling of internal combustion engines shall be performed in an approved location not less than 20 feet from temporary membrane structures, tents or canopies.

X HOUSEKEEPING

- A) Combustible vegetation shall be removed from the area occupied by a temporary membrane structure, tent or canopy and from areas within 30 feet of such structures.
- B) Hay, straw, trash and similar combustible materials shall not be stored inside or within 30 feet of a temporary membrane structure, tent or canopy being used for cooking or public assembly. (Exception: Hay, straw and similar combustibles treated with a flame retardant in an approved manner.)

XI HEATING AND COOKING EQUIPMENT

- A) Cooking equipment is permitted only inside tents used exclusively for the cooking of food. No other uses such as public assembly, sales, displays, etc. are permitted. (Exception: The warming of food, cooking demonstrations or similar activities where the equipment and operations involved do not present an ignition hazard as approved by the Fire Department.)
- B) Cooking equipment used in cooking tents shall be vented to the outside air by approved means. Where vents or flues are used, all portions of the tent or canopy shall be no less than 12 inches from the flue or vent. Solid fuel burning equipment shall be equipped with a spark arrestor having openings not exceeding 1/4 inch wire mesh.
- C) Tents where cooking is performed shall be separated from other temporary membrane structures, tents and canopies by a minimum of 20 feet.
- D) Outdoor cooking that produces sparks or grease-laden vapors shall not be performed within 20 feet of a non-cooking temporary membrane structure, tent or canopy. All other cooking equipment shall be located a minimum of 10 feet from a temporary membrane structures, tents and canopies.
- E) Only comfort type heating equipment is permitted. All fuel-fired comfort heating equipment shall be located on the exterior of the temporary membrane structure or tent a minimum of 10 feet away. Heated air shall be ducted from the equipment to the temporary membrane structure or tent.
- F) Heating and cooking equipment shall not be located within 10 feet of exits, exit pathways, the tent and canopy fabric, or other combustible materials.

- G) All cooking and heating equipment, tanks, piping, hoses, fittings, valves tubing and other related components shall be approved and in accordance with the Mechanical Code.

XII PORTABLE FIRE EXTINGUISHERS & OTHER FIRE PROTECTION APPLIANCES

Portable fire extinguishers shall be provided in every temporary membrane structure, tent or canopy. Extinguishers shall be located adjacent to exits (or as approved the Fire Department) and mounted above the floor on a post or other fixed object such that the top of the unit does not exceed 5 feet in height. Minimum fire extinguisher coverage shall be provided as follows:

- A) 200 to 500 square feet of floor area; one 2A:10B:C
- B) 501 to 1,000 square feet of floor area; two 2A:10B:C
- C) Each additional 2,000 square feet of floor area or fraction thereof; one 2A:10B:C
- D) At least one 40B:C type fire extinguisher shall be provided for each kitchen, mess hall, power generator or transformer, and at locations where flammable or combustible liquids are used, stored, or dispensed.

Other fire appliances shall be maintained at the site as may be required by the Fire Department.

XIII STANDBY PERSONNEL

Qualified persons necessary to safeguard the premises shall be provided as required and approved by the Fire Department.