



TOWN OF WOODBURY
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Tents and other membrane structures

Different membrane structures, two story, larger occupant loads, and different uses are addressed in another area of the Building Code. If any of these situations, or other questions please call.

3103.5 Tents and other membrane structures

All temporary tents and membrane structures shall comply with this section.

3103.5.1 Permit required

Tents and membrane structures having an area more than 400 square feet shall not be erected, operated or maintained for any purpose without obtaining a permit from the building official.

Exceptions:

- 1.) Tents used exclusively for recreational camping purposes.
- 2.) Tents open on all sides which comply with all of the following:
 - a.) Individual tents having a maximum size of 700 square feet
 - b.) The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet, not exceeding 700 square feet total.
 - c.) A minimum clearance of 12 feet to all other structures and tents.
- 3.) Tents 900 square feet and smaller in total area when occupied by fewer than 50 persons, which have no heating appliances, no installed electrical service and are erected for fewer than 72 hours.

3103.5.2 Place of assembly

For the purposes of this section, a place of assembly shall include a circus, carnival, tent show, theater, skating rink, dance hall or other place of assembly in or under which persons gather for any purpose.

3103.5.3 Construction documents

A detailed site and floor plan for tents or membrane structures with an occupant load of 50 or more shall be provided with each application for approval. The tent or membrane structure floor plan shall indicate details of the means of egress facilities, seating capacity, arrangement of the seating and location and type of heating and electrical equipment.

3103.5.4 Location and parking

The location and parking for temporary tents and membrane structures shall be in accordance with this section.

3103.5.4.1 Location

Tents or membrane structures shall not be located within 20 feet of lot lines, buildings, other tents or membrane structures, parked vehicles or internal combustion engines. For the purpose of determining required distances, support ropes and guy wires shall be considered as part of the temporary membrane structure or tents.

Exceptions:

1. Separation distance between membrane structures and tents not used for cooking is not required when the aggregate floor area does not exceed 15,000 square feet.
2. Membrane structures or tents need not be separated from buildings when all of the following conditions are met:
 - a.) The aggregate floor area of the membrane structure or tent shall not exceed 10,000 square feet.
 - b.) The aggregate floor area of the building and membrane structure or tent shall not exceed the allowable floor area including increases as indicated in this code.
 - c.) Required means of egress are provided for both the building and membrane structure or tent including travel distances.

3103.5.5 Location of structures in excess of 15,000 square feet in area

Membrane structures having an area of 15,000 square feet or more shall be located not less than 50 feet from any other tent or structure as measured from the sidewall of the tent or membrane structure unless joined together by a corridor.

3103.5.6 Connecting corridors

Tents or membrane structures are allowed to be joined together by means of corridors. Exit doors shall be provided at each end of such corridor. On each side of such corridor and approximately opposite each other, there shall be provided openings not less than 12 feet wide.

3103.5.7 Fire break

An unobstructed fire break passageway or fire road not less than 12 feet wide and free from guy ropes or other obstructions shall be maintained on all sides of all tents and membrane structures unless otherwise approved by the building official.

3103.5.8 Membrane material

The membrane material for all tents and membrane structures shall be of: approved non-combustible material as set forth in Section 703.5; flame-resistant material as determined in accordance with NFPA 701 and the manufacturer's test protocol; or material treated in an approved manner to render the material flame-resistant.

3103.5.8.1 Label

Tents and membrane structures shall have a permanently affixed label which shall identify the size of the structure and the fabric or material type.

3103.5.8.2 Certification

An affidavit or affirmation shall be submitted to the building official and a copy retained on the premises on which the tent or membrane structure is located. The affidavit or affirmation shall attest to the following information relative to the flame resistance of the fabric:

1. Names and addresses of the owners of the tent, canopy or membrane structure.
2. Date the fabric was last treated with flame-resistant solution.
3. Trade name or kind of chemical used in the treatment.
4. Name of person or firm treating the material.
5. Name of testing agency and test standard by which the fabric was tested.

3103.5.9 Anchorage required

Tents or membrane structures and their appurtenances shall be adequately roped, braced and anchored to withstand the elements of weather and prevent against collapsing. Documentation of structural stability shall be furnished to the building official upon request.

3103.5.9.1 Tents and membrane structures exceeding one story

Tents and membrane structures exceeding one story shall be designed and constructed to comply with Chapter 16.

3103.5.10 Temporary air-supported and air-inflated membrane structures

In addition to other applicable requirements of Section 3103.5, temporary air-supported and air-inflated membrane structures shall be in accordance with Sections 3103.10.1 to 3103.10.4, inclusive.

3103.5.10.1 Door operation

In high winds greater than 50 miles per hour or in snow conditions, the use of doors in air-supported structures shall be controlled to avoid excessive air loss. Doors shall not be left open under any condition.

3103.5.10.2 Fabric envelope design and construction

Air-supported and air-inflated structures shall have the design and construction of the fabric envelope and the method of anchoring in accordance with Architecture Fabric Institute ASI 77.

3103.5.10.2.1 Inflation pressure

Operating pressure in air-supported and air-inflated structures shall be maintained at the design pressure specified by the manufacturer to assure stability and to avoid excessive distortion during high wind or snow loads.

3103.5.10.3 Blowers

An air-supported structure used as a place of assembly shall be furnished with not less than two blowers, each of which has adequate capacity to maintain full inflation pressure with normal leakage. The design of the blower shall be so as to provide integral limiting pressure at the design pressure specified by the manufacturer.

3103.5.10.4 Auxiliary power

Places of assembly for more than 200 occupants shall be furnished with either a fully automatic auxiliary engine-generator set capable of powering one blower continuously for 4 hours, or a supplementary blower powered by an internal combustion engine that shall be automatic in operation.

3103.5.11 Seating arrangements

Seating in tents and membrane structures shall be in accordance with Chapter 10.

3103.5.12 Means of egress

Means of egress for temporary tents and membrane structures shall be in accordance with Sections 3103.12.1 to 3103.12.8, inclusive.

3103.5.12.1 Distribution

Exits shall be spaced at approximately equal intervals around the perimeter of the tent or membrane structure and shall be located such that all points are 100 feet or less from an exit.

3103.5.12.2 Number

Tents, or membrane structures or a usable portion thereof, shall have at least one exit and not less than the number of exits required by Table 3103.12.2. The total width of means of egress in inches shall not be less than the total occupant load served by a means of egress multiplied by 0.2 inches per person.

TABLE 3103.12.2

MINIMUM NUMBER OF MEANS OF EGRESS AND MEANS OF EGRESS WIDTHS FROM TEMPORARY MEMBRANE STRUCTURES AND TENTS

Occupant load	Minimum Number of Means of Egress	Minimum Width of Each Means of Egress	
		Tents	Membrane Structures
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 ^a	7	120	96

- a. When the occupant load exceeds 3,000, the total width of means of egress (in inches) shall not be less than the total occupant load multiplied by 0.2 inches per person.

3103.5.12.3 Exit openings from tents

Exit openings from tents shall remain open unless covered by a flame-resistant curtain. The curtain shall comply with the following requirements:

1. Curtains shall be free sliding on a metal support. The support shall be a minimum of 80 inches above the floor level at the exit. The curtains shall be arranged so that, when open, no part of the curtain obstructs the exit.
2. Curtains shall be of a color, or colors, that contrasts with the color of the tent.

3103.5.12.4 Doors

Exit doors shall swing in the direction of exit travel. To avoid hazardous air and pressure loss in air-supported membrane structures, such doors shall be automatic closing against operating pressures. Opening force at the door edge shall not exceed 15 pounds.

3103.5.12.5 Aisle

The width of aisles without fixed seating shall be in accordance with the following:

1. In areas serving employees only, the minimum width shall be 24 inches or not less than the width required by the number of employees served.
2. In public areas, smooth-surfaced, unobstructed aisles having a minimum width of not less than 44 inches shall be provided from seating areas, and aisles shall be progressively increased in width to provide, at all points, not less than 1 foot of aisle width for each 50 persons served by such aisle at that point.

3103.5.12.6 Exit signs

Exits shall be clearly marked. Exit signs shall be installed at required exit doorways and where otherwise necessary to indicate clearly the direction of egress when the exit serves an occupant load of 50 or more.

3103.5.12.6.1 Exit sign illumination

Exit signs shall be either listed and labeled in accordance with UL 924 as the internally illuminated type and used in accordance with the listing or shall be externally illuminated by luminaires supplied in the following manner:

1. Two separate circuits, one of which shall be separated from all other circuits, or occupant loads of 300 or less; or
2. Two separate sources of power, one of which shall be an approved emergency system, shall be provided when the occupant load exceeds 300. Emergency systems shall be supplied from storage batteries or from the on-site generator set, and the system shall be installed in accordance with NFPA 70. The emergency system provided shall have a minimum duration of 90 minutes when operated at full design demand.

3103.5.12.7 Means of egress illumination

Means of egress 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 means of egress illumination shall be supplied from a separate circuit or source of power.

3103.5.12.8 Maintenance of means of egress

The required width of exits, aisles and passageways shall be maintained at all times to a public way. Guy wires, guy ropes and other support members shall not cross a means of egress at a height of not less than 8 feet. The surface of the means of egress shall be maintained in an approved manner.

3103.5.13 Spot lighting

Spot or effect lighting shall only be by electricity, and all combustible construction located within 6 feet of such equipment shall be protected with approved noncombustible insulation not less than 9 1/4 inches thick.

3103.5.14 Heating and cooking equipment

Heating and cooking equipment shall be in accordance with Section 3104.15 of the 2018 Connecticut State Fire Safety Code.

2015-IFC

Section 3104.15.1 Installation – Heating and cooking equipment tanks, piping, hoses, fittings, valves, tubing and other related components shall be installed as specified in the International Mechanical Code and the International Fuel Gas Code and shall be approved by the fire code official.

Section 3104.15.2 Venting – Gas, liquid and solid fuel burning equipment designed to be vented to the outside air as specified in the International Fuel Gas Code and the International Mechanical Code. Such vents shall be equipped with approved spark arrestors where required. Where vents or flues are used, all portions of the tent or membrane structure shall be not less than 12 inches from the flue or vent.

Section 3104.15.3 Location – Heating and cooking equipment shall not be located within 10 feet of exits or combustible materials.

Section 3104.15.4 Operation – Operations such as warming foods, cooking demonstrations and similar operations that use solid flammables, butane or other similar devices that do not pose an ignition hazard, shall be approved.

Section 3104.15.5 Cooking Tents – Heating and cooking equipment

3103.5.15 LP-gas

The storage, handling and use of LP-gas and LP-gas equipment shall be in accordance with Section 3104.16 of the 2018 Connecticut State Fire Safety Code.

2015-IFC

Section 3104.16 – The storage, handling and use of LP gas and LP gas equipment shall be in accordance with sections 3104.16.1 through 3104.16.3.

3104.16.1 General – LP gas equipment such as tanks, piping, hoses, fittings, valves, tubing and other related components shall be approved and in accordance with Chapter 61 and with the International Fuel Gas Code.

3104.16.2 Location of containers – LP gas containers shall be located outside. Safety release valves shall be pointed away from the tent or membrane structure.

3104.16.2.1 Containers 500 gallons or less – Portable LP gas containers with a capacity of 500 gallons or less shall have a minimum separation between the container and structure not less than 10 feet.

3104.16.2.2 Containers more than 500 gallons - Portable LP gas containers with a capacity of more than 500 gallons shall have a minimum separation between the container and structures not less than 25 feet.

3104.16.3 Protection and Security – Portable LP gas containers, piping, valves and fittings that are located outside and are being used to fuel equipment inside a tent or membrane structure shall be adequately protected to prevent tampering, damage by vehicles or other hazards and shall be located in an approved location. Portable LP gas containers shall be securely fastened in place to prevent unauthorized movement.

3103.5.16 Flammable and combustible liquids

The use of flammable-fuel-fired equipment shall be in accordance with Section 3104.17 of the 2018 Connecticut State Fire Safety Code.

2015-IFC

Section 3104.17 – The storage of flammable and combustible liquids and the use of flammable-liquid-fueled equipment shall be accordance with Sections 3104.17.1 through 3104.17.3

3104.17.1 USE - Flammable-liquid-fueled equipment shall not be used in tents or membrane structures.

3104.17.2 Flammable and combustible liquid storage - flammable and combustible liquids shall be stored outside in an approved manner not less than 50 feet from tents or membrane structures. Storage shall be in accordance with Chapter 57.

3104.17.3 Refueling – Refueling shall be performed in an approved location not less than 20 feet from tents or membrane structures.

3103.5.17 Separation of generators

Generators and other internal combustion power sources shall be separated from tents or membrane structures by a minimum of 20 feet and shall be isolated from contact with the public by fencing, enclosure or other approved means.