



**Manchester Fire Department
Eighth Utilities District
Fire Marshal's Office**

18 Main Street, Manchester, CT 06042
(860)643-6209 – Fax (860)646-8162



Guide for Tents and Other Membrane Structures Effective: 2/17

Referenced Codes and Standards:

- 2016 Connecticut Fire Safety Code (International Fire Code 2012 w/Connecticut Amendments) Chapter 31

Definitions

Air Inflated Structure – A structure that uses air-pressurized membrane beams, arches or other elements to enclose space. Occupants of such a structure do not occupy the pressurized areas used to support the structure.

Air Supported Structure – A structure wherein the shape of the structure is attained by air pressure, and occupants of the structure are within the elevated pressure area. Air supported structures are of two basic types: Double Skin and Single Skin.

Membrane Structure – An air-inflated, air-supported, cable or frame covered structure as defined by the IBC and not otherwise defined as a tent.

Tent – A structure, enclosure or shelter, with or without sidewalls or drops, constructed of fabric or pliable material supported by any manner except by air or the contents that it protects.

Permits and Approvals

Tents and membrane structures having an area in excess of 400 square feet shall not be erected, operated or maintained for any purpose without obtaining approval from the Fire Marshal's Office

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Tents open on all sides which comply with all of the following:
 - 2.1 Individual tents having a maximum size of 700 square feet
 - 2.2 The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet, not exceeding 700 square feet total.
 - 2.3 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.

Temporary tents, air supported, air inflated or tensioned membrane structures shall not be erected for more than 180 days out of any consecutive 365 day period.

A Plan Review Application including a site plan and egress plan shall be submitted to this office no less than 30 days prior to expected setup date. The site diagram shall show all lot lines, streets, alleys, building, fire suppression equipment, vehicle parking and other fixed objects on site. The plan shall also show all aisles, doors, table, displays and other fixtures inside the tent. This is in addition to, and separate from, any submissions to the Building Department, Zoning, or Health Department.

Membrane structures that are erected on buildings, balconies, decks or other structures shall be regulated as permanent membrane structures in accordance with Section 3102 of the International Building Code.



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Tent Material

Prior to approval of a building permit, the owner or agent shall supply to the Fire Marshal's Office a certificate executed by an approved testing laboratory certifying that the tents and all appurtenances are composed of material meeting the flame propagation performance criteria of NFPA 701.

Membrane structures or tents shall have a permanently affixed label bearing the identification of size and fabric or material type. This label shall match the flame propagation certificate submitted by the owner or agent.

Fire Department Access

Fire Department Access Roads and Fire Lanes shall be provided as required by the Fire Marshal.

No aspect of a tent or area of tents shall be greater than 150 feet from an access road.

Egress

Means of egress from Tents and Membrane structures will be subject to the provisions of section 3103.12 and Table 3103.12.2 and approved by the Fire Marshal.

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.

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

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.

Tent Location

No part of the tent or membrane structures shall be located within 20 feet of lot lines, buildings, other tents or membrane structures, parked vehicles or internal combustion engines. This includes support ropes and guy wires. Tents exceeding 15,000 square feet shall be located not less than 50 feet from any other tent or structure.

An unobstructed fire break passageway or fire road not less than 12 feet wide and free from any obstruction shall be maintained on all sides of tents.

Tents or membrane structure 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 Fire Marshal upon request.



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Electrical

Electrical wiring and equipment shall be in accordance with NFPA 70 National Electrical Code.

Extension cords shall be approved type with heavy duty three wires and three prong plug. Lightweight, household, 2 wire extension cords shall not be allowed. Multiple outlet power strips in good condition and provided with an internal circuit breaker/reset switch are allowed.

Prohibited Items

The following items are not permitted inside tents or portable membrane structures. Their protection and separation distances require Fire Marshal approval:

- Combustible materials such as hay, straw or sawdust is prohibited in or within 20 feet of tents.
- Smoking is prohibited in or within 20 feet of tents. Approved "No Smoking" signs shall be posted and approved by the Fire Marshal.
- Spark producing cooking shall have a minimum separation distance of 20 feet.
- Fireworks shall have a minimum separation distance of 100 feet.
- LP Gas (Propane) shall have a minimum separation distance of 10 feet.
- Generators shall be separated a minimum of 20 feet and shall be isolated from public contact.
- Combustible vegetation shall be removed within 30 feet of structure.
- Trash containers within a tent shall be metal or noncombustible.
- Sleeping or residing inside a tent or membrane structure is prohibited.
- Open flame or other devices emitting flame, fire, or heat or any flammable or combustible liquids, gas, charcoal or other cooking device or any other unapproved devices shall not be permitted inside or located within 20 feet of the tent or membrane structure unless approved by the Fire Marshal.

Cooking

- Heating and cooking equipment shall be installed as specified by manufacturer and applicable codes.
- Gas, liquid and solid fuel burning equipment shall be vented to code, equipped with approved spark arresters. Vents or flues shall be not less than 12 inches from any portion of the tent.
- Cooking and heating equipment shall not be located within 10 feet of exits or combustible material.
- Cooking tents with sidewalls or drops where cooking is performed shall be separated from other tents by a minimum of 20 feet.
- Outdoor cooking that produces sparks or grease laden vapors shall not be performed within 20 feet of a tent or membrane structure.
- LP Gas (Propane) containers shall be located outside tents and all safety release valves shall be pointed away from the tent or membrane structure.
- LP Gas (Propane) containers, piping, valves and fittings located outside the tent shall be adequately protected to prevent tampering, damage by vehicle or other hazards and shall be in a location approved by the Fire Marshal's Office.



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Motor Vehicle Display

- Liquid and gas fueled vehicles used for display within tents or membrane structures shall have batteries disconnected and fuel tanks limited to one quarter of the tank or 5 gallons, whichever is less. Fuel tank openings shall be locked and sealed.
- Compressed Natural Gas or Liquefied petroleum gas powered vehicles shall have their shutoff valve on the outlets closed and the engine operated until it stops. The hot lead of the battery shall be disconnected.