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Fire Safety for Outdoor Dining in Tents and Membrane Structures

As the weather turns colder and social distancing mandates remain in place to help prevent the spread of COVID-19, many service industry partners who previously utilized outdoor areas to allow patrons to spread out are now looking for ways to provide greater distance and warmth to their outdoor patrons. To accommodate such, many local fire jurisdictions are beginning to see tents and membrane structures – called ‘igloo domes’ or ‘bubbles’ – popping up at many venues. These structures come in a variety of forms, usually house from two to 10 people (but can accommodate many more) and contain seating and/or dining furniture. Some structures have heating and lighting sources within the structures while others utilize outside lighting and heating sources.

Regardless, however, these structures are tents or membrane structures and fall under the purview of the Ohio Fire Code (O.F.C.). In order to ensure the safety of the public and staff that will be utilizing them, basic fire safety precautions must be taken, and all tents or membrane structures utilized for outdoor dining must be reviewed on a case-by-case basis to ensure their compliance with applicable O.F.C. safety precautions.

Generally, tents and membrane structures are governed by O.F.C. Rule 31 (Ohio Administrative Code section 1301:7-7-31). Specific required fire safety features will depend on the exact size and set up of each structure and/or the configuration of multiple structures. However, the following O.F.C. requirements should be considered by businesses and local fire code officials¹ to ensure all applicable safety protocols are in place:

OFC Applicability and Permits

- Although not every O.F.C. requirement will apply to every tent/membrane structure, the O.F.C. does apply to all (temporary and permanent) tents and membrane structures and all applicable O.F.C. provisions must be complied with.

¹ The Ohio Building Code (O.B.C.) Chapter 31 also applies. See Ohio Board of Building Standards (Board) BBS Memo #391 which can be downloaded here: [BBS Memo 391](#). *Permanent* tents and membrane structures, regardless of location or size, require an approval from the building official having jurisdiction.

Temporary ground-installed tents when a single tent exceeds 400 square feet or if the aggregate area of multiple tents spaced 12 feet, or less, apart exceeds 400 square feet, require an approval from the building official having jurisdiction.

Temporary (less than 180 days) tents and membrane structures installed on the roof of a building, regardless of size, also require an approval from the building official having jurisdiction.

O.B.C. §§ 102.8 and 3103 require that *temporary* structures meet the structural, fire safety, means of egress, accessibility, light, ventilation, and sanitary requirements of the rules of the Board and the fire code. Contact the Board with questions regarding the application of the O.B.C.

- This is true regardless of the size of the tent/membrane structure and regardless of whether or not a permit is required.
- The O.F.C. requires permits for all temporary tents and membrane structures more than 400 sq. ft. in area.
 - A tent or membrane structure is considered 'temporary' if it is constructed for a period of 180 days or less.
 - Temporary tents and membrane structures under 400 sq. ft. in area do not require a permit.

NOTE: Not all local jurisdictions have a permitting program. In such jurisdictions, a permit would not be required. However, the O.F.C. would still apply to such structures and all applicable O.F.C. requirements would still have to be complied with.

NOTE: Some local jurisdictions have permitting programs that are more stringent than O.F.C. requirements and may require a permit for all tents and membrane structures regardless of size.

Fire apparatus access

- Fire apparatus access roads are required and must be maintained.

Location

- Separation distances may be required depending on placement of tents and membrane structures in relation to buildings and/or other tents or membrane structures and depending on equipment used therein.
- Adequate emergency exit access from the restaurant or business that was in place prior to the placement of the outside tents or membrane structures must be maintained.

Anchorage

- All tents and membrane structures must be adequately roped, braced and anchored to withstand prevalent weather conditions.

Egress and aisleways

NOTE: Many items in this section may not apply to smaller igloo or bubble structures but would apply to larger structures and tents.

- Egress must be such that points from within the tent or membrane structure are 100 feet or less from an exit and exits must be placed at approximately equal intervals around the perimeter of the structure.
- The number of exits that are required in a tent or membrane structure is set by rule and depends on the occupant load.

NOTE: Although provisions in the OFC do address occupant load, current Ohio Department of Health (ODH) orders issued in response to COVID-19 may decrease acceptable occupant loads. Such decreased occupant loads would be enforceable by ODH officials.

- Exits must be clearly marked.
- Egress pathways must remain clear and unobstructed at all times (including from electrical cords, ropes, guy wires and anchors).
- Aisleways must be provided from seating areas and must remain unobstructed.
- Aisles must have a minimum width of no less than 44 inches.

Label

- All tents and membrane structures must have a permanently affixed label bearing the tent or membrane structure size and fabric or material type.
- In addition to affixed labels, owners of tents and membrane structures should have documentation demonstrating compliance with National Fire Protection Association (NFPA) 701 ASTM E84 testing requirements.

Combustible materials

- Any tent or membrane structure that contains an assembly occupancy cannot have combustible materials such as hay, straw, shavings or similar material.

Smoking

- Smoking is not permitted in tents or membrane structures.
- Approved 'no smoking' signs must be posted.

Open flames

- Open flames are not permitted inside any tent or membrane structure open to the public unless approved by the fire code official.
- Open flames are also not permitted within 20 feet of any tent or membrane structure open to the public unless approved by the fire code official.
 - For this purpose, the term "open flames" includes candles and/or any device emitting a flame, fire or heat. It also includes any flammable or combustible liquids, gas, charcoal or other cooking device.

Fire protection

- Fire extinguishers are required.
- Fire protection equipment, including fire hose lines, water supplies and other auxiliary fire equipment must be maintained at the site as required by the fire code official.

Generators

- Generators and other internal combustion power sources must be separated from tents or membrane structures by at least 20 feet.
- Generators and other internal combustion power sources must also be isolated from contact with the public by fencing, enclosure or other approved means.

Heating, cooking and flammable liquids

- Portable outdoor gas-fired heating appliances are prohibited in tents and membrane structures.
- Electrical heating sources must comply with NFPA 70.
- Outdoor cooking that produces sparks or grease-laden vapors cannot be performed within 20 feet of a tent or membrane structure.
- LP-gas equipment must comply with O.F.C. Rule 61 and the International Fuel Gas Code and must be separated from tents and membrane structures by specified distances depending on the size of the container. Minimum separation distances are:
 - No less than 10 feet for containers with a capacity of 500 gallons or less;
 - No less than 25 feet for containers with a capacity of more than 500 gallons.
- Flammable liquid fueled equipment cannot be used inside tents or membrane structures.

Electrical wiring

- Electrical wiring must comply with NFPA 70.