



# Construction/Operational Permit Application

## Membrane Structures & Tents



[www.cityofvancouver.us/departments/fire-department](http://www.cityofvancouver.us/departments/fire-department)

International Fire Code as adopted by VMC 16.04 (Washington State Fire Code)

### Permitting Requirements

An **operational permit** is required to operate an air-supported temporary membrane structure, a temporary special event structure or a tent having an area in excess of 400 square feet (37 m<sup>2</sup>).

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 (65 m<sup>2</sup>).
  - b. The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3658 mm) shall not exceed 700 square feet (65 m<sup>2</sup>) total.
  - c. A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be provided.

A **construction permit** is required to erect an air-supported temporary membrane structure, a temporary stage canopy or a tent having an area in excess of 400 square feet (37 m<sup>2</sup>).

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Funeral tents and curtains, or extensions attached thereto, when used for funeral services.
3. Tents and awnings open on all sides, which comply with all of the following:
  - a. Individual tents having a maximum size of 700 square feet (65 m<sup>2</sup>).
  - b. The aggregate area of multiple tents placed side by side without a fire break clearance of not less than 12 feet (3658 mm) shall not exceed 700 square feet (65 m<sup>2</sup>) total.
  - c. A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be maintained.

Requirements regulating tents and membrane structures can be found in WSFC Chapter 31 (WSFC 105.5.49 & 105.6.24).

Permanent membrane structures require building construction permit (not this application form).

### Project Information

Site Address		Owner Name	
Other			

### Applicant Information

Company Name		Address	
Contact Name			

Office Phone		Cellular		Email	
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## Contractor

Company Name		Address	
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Contact Name	
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Office Phone		Cellular		Email	
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Application type:	<input type="checkbox"/> Installation	<input type="checkbox"/> Operational	<input type="checkbox"/> Both Installation and Operational
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## Description of Work


## Electronic Plan Standards

File Naming Standards:  
 Electronic plans and documents shall be named as specified in the City of Vancouver [ePLANS](https://www.cityofvancouver.us/business/permits-licenses-and-inspections/eplans/) system:  
<https://www.cityofvancouver.us/business/permits-licenses-and-inspections/eplans/>

Acceptable File Types:  
 Plans, calculations, specifications and supporting documents shall be uploaded as a PDF file.

Plan Sheet Standards:  
 All plans shall be drawn to scale, as identified in the checklist, and each sheet shall state the scale and show a measurable scale on the page for measurement calibrations.

Document Orientation:  
 All plans must be uploaded in "Landscape" format in the horizontal position with a north indicator. All other documents can be in "Portrait" format.

Stamped:  
 Where documentation contains a code analysis or engineering calculations, such documents shall be stamped by the design professional.



## Minimum Submittal Checklist for Upload to ePLANS

- Completed Fire Installation Permit Application – Membrane Structures & Tents (this document) Check all *Permit Conditions* checkboxes that are applicable to your project
- Supporting documents listed below (See *Document Details* below)
- Site plans and floor plans (see *Plan Details* below)

## Document Details

- Listing documents for all proposed equipment to be used.
- Narrative explaining the processes and use duration of structure or tent.
- Fire protection systems covering the proposed use and design information (e.g. NFPA 13 – OH 2, fixed fire protection system, etc.).
- Narrative explaining the structure material used and associated flame propagation performance.
- The following documents shall be submitted to the fire code official and the building official for review before a permit for temporary special event structure is approved:

1. Construction documents: Construction documents shall be prepared by a registered design professional in accordance with the International Building Code and ANSI E1.21 where applicable. Construction documents shall include:
    - a. A summary sheet showing the building code used, design criteria, loads and support reactions.
    - b. Detailed construction and installation drawings.
    - c. Design calculations.
    - d. Operating limits of the structure explicitly outlined by the registered design professional including environmental conditions and physical forces.
    - e. Effects of additive elements such as video walls, supported scenery, audio equipment, vertical and horizontal coverings.
    - f. Means for adequate stability including specific requirements for guying and cross-bracing, ground anchors or ballast for different ground conditions.
  2. Designation of responsible party: The owner of the temporary special event structure shall designate in writing a person to have responsibility for the temporary special event structure on the site. The designated person shall have sufficient knowledge of the construction documents, manufacturer's recommendations, and operations plan to make judgments regarding the structure's safety and to coordinate with the fire code official.
  3. Operations plan: The operations plan shall reflect manufacturer's operational guidelines, procedures for environmental monitoring and actions to be taken under specified conditions consistent with the construction documents.
- For tents or membrane structures with an occupant load of 50 or more, provide a floorplan indicating details of the means of egress facilities, seating capacity, arrangement of the seating and location and type of heating and electrical equipment. The construction documents shall include an analysis of structural stability.

## Plan Details

The following is a list of information required on all plan submittals for review of a membrane structure and tents permit. The plan shall be drawn to 1/8" = 1'-0" minimum scale. The applicant is required to submit all applicable information so an accurate and timely review may be done:

### General:

- Site plan to include a north arrow, a measurable scale for calibration purposes, membrane structure or tent location(s), fire hydrants, emergency access lanes and doors, vehicle gates and parking, points of assembly/accountability for evacuees, and sprinkler riser (if applicable).
- Interior plans showing all access points, means of egress, door swing direction, aisles, exit sign locations and illumination, and membrane structure or tent label.
- Portable fire extinguisher locations per WSFC Section 906.
- Classified electrical areas (e.g. Class I, Division 1, or Class II, Division 1, hazardous locations in accordance with NFPA 70). Method of electrical grounding as required by NFPA 70 both for equipment and Class I and II liquid containers. Electrical wiring and equipment in spray flammable vapor areas shall be of an explosion-proof type approved for use in such hazardous locations.
- Heating and cooking equipment
- Areas of open flames and sparks, hot surfaces, or other ignition sources.
- Venting locations (if applicable)
- 'NO SMOKING or VAPING' sign locations.
- Flammable and combustible liquid storage locations (if applicable)

## Permit Conditions

The following is a list of WSFC requirements related to membrane structures and tent operations. Use this form to confirm that all applicable requirements are met. Non-applicable requirements can be left blank.

### Temporary Tents and Membrane Structures:

- Temporary tents, air-supported, air-inflated, or tensioned membrane structures shall not be erected for a period of more than 180 days within a 12-month period on a single premises.
- The entire tent, air-supported, air-inflated, or tensioned membrane structure system shall be inspected at regular intervals, but not less than two times per permit use period, by the permittee, owner, or agent to determine that the installation is maintained in accordance with permit requirements.

Exception:

1. Permit use periods of less than 30 days.
- Tents or membrane structures shall not be located within 20 feet (6096 mm) 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 tent.

Exceptions:

1. Separation distance between membrane structures and tents not used for cooking is not required where the aggregate floor area does not exceed 15,000 square feet (1394 m<sup>2</sup>).
  2. Membrane structures or tents need not be separated from buildings where 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 (929 m<sup>2</sup>).
    - 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 the International Building Code.
    - c. Required means of egress are provided for both the building and the membrane structure or tent including travel distances.
    - d. Fire apparatus access roads are provided in accordance with WSFC Section 503.
- Membrane structures having an area of 15,000 square feet (1394 m<sup>2</sup>) 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.
  - 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 fire code official.
  - Tents and membrane structures exceeding one story or with an occupant capacity greater than 1,000 persons shall be designed and constructed to comply with Sections 1606 through 1609 of the International Building Code.
  - 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.
  - Tents or membrane structures or a usable portion thereof shall have not less than 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 be not 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 (inches)	
		Tent	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 <sup>a</sup>	7	120	96

For SI: 1 inch = 25.4 mm.

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

- Exits shall be clearly marked. Exit signs shall be installed at required exit doorways and where otherwise necessary to clearly indicate the direction of egress where the exit serves an occupant load of 50 or more.
- 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 either of the following manners:
  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 where 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.
- Means of egress shall be illuminated with light having an intensity of not less than 1 foot-candle (11 lux) 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.
- 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 less than 8 feet (2438 mm). The surface of means of egress shall be maintained in an approved manner.

**Temporary and Permanent Tents and Membrane Structures:**

- Before a permit is granted, the owner or agent shall file with the fire code official a certificate provided by the product manufacturer to verify that the materials have been tested and certified by an approved testing laboratory. The certificate shall indicate that the floor coverings, tents, membrane structures and their appurtenances, which include sidewalls, drops and tarpaulins, are composed of materials meeting the flame propagation performance of Test Method 2 of NFPA 701. Additionally, it shall indicate that the bunting and combustible decorative materials and effects are composed of material meeting the flame propagation performance criteria of Test Method 1 or Test Method 2 of NFPA 701, as applicable. Alternatively, the materials shall be treated with a flame retardant in an approved manner and meet the flame propagation performance criteria of the applicable test method of NFPA 701. The certificate shall indicate compliance with the testing requirements of NFPA 701, Chapter 16. The flame propagation performance criteria shall be effective for the period specified by the permit.
- Membrane structures or tents shall have a permanently affixed label bearing the following information:
  1. The identification of size and fabric or material.
  2. The names and addresses of the manufacturers of the tent or air-supported structure.
  3. A statement that the fabric or material meets the requirements of WSFC Section 3104.2.
  4. If treated, the date the fabric or material was last treated with flame-retardant solution, the trade name or kind of chemical used in treatment, name of person or firm treating the fabric or material, and name of testing agency and test standard by which the fabric or material was tested.

5. If untreated, a statement that no treatment was applied when the fabric or material met the requirements of WSFC Section 3104.2.

**Temporary Special Event Structures:**

- Temporary special event structures erected in accordance with ANSI E1.21 shall not be erected for a period of more than six consecutive weeks.
- The inspecting agency or individual shall furnish an inspection report to the fire code official. The inspection report shall indicate that the temporary special event structure was inspected and was or was not installed in accordance with the approved construction documents. Discrepancies shall be brought to the immediate attention of the installer for correction. Where any discrepancy is not corrected, it shall be brought to the attention of the fire code official and the designated responsible party.
- Temporary special event structure shall be located a distance from property lines and buildings to accommodate distances indicated in the construction drawings for guy wires, cross-bracing, ground anchors or ballast. Location shall not interfere with egress from a building or encroach on fire apparatus access roads.

**Outdoor Assembly Events:**

- Where required by the fire code official, the event operator or agent shall designate one qualified individual to continuously monitor local weather reports, forecasts, and conditions. Said person shall be responsible for initiating weather-related event mitigation activities, ordering the suspension or cancellation of the outdoor assembly event, and issuing the evacuation signal in accordance with the approved public safety plan.
- Where events involve a gathering of more than 1,000 people, trained crowd managers shall be provided in accordance with WSFC 403.11.3.
- Cooking appliances or devices that produce sparks or grease-laden vapors or flying embers (firebrands) shall not be used within 20 feet (6096 mm) of a tent or temporary structure.

Exceptions:

1. Designated cooking tents not occupied by the public when approved by the fire code official.
  2. Tents or structures where cooking appliances are protected with an automatic fire-extinguishing system in accordance with WSFC 904.13.
- Cooking equipment using combustible oils or solids shall meet the following:
    1. A noncombustible lid shall be immediately available. The lid shall be of sufficient size to cover the cooking well completely.
    2. The equipment shall be placed on a noncombustible surface.
    3. An approved portable fire extinguisher for protection from cooking grease fires shall be provided at a location approved by the fire code official.
  - Outdoor assembly events with concession stands or booths using electrical equipment and temporary wiring for electrical power or lighting shall comply with the applicable provisions of NFPA 70.
  - Generators shall be installed not less than 10 feet from combustible materials and shall be isolated from the public by physical guard, fence, or enclosure installed not less than 3 feet away from the internal combustion power source.

**Operational Requirements:**

- 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 structures while open to the public unless approved by the fire code official.
- 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 (235 mm) thick.
- There shall be a clearance of not less than 3 feet between the fabric envelope and all contents located inside membrane structures.

- Heating or cooking equipment, tanks, piping, hoses, fittings, valves, tubing, and other related components shall be installed as specified in the International Fuel Gas Code and the International Mechanical Code and shall be approved by the Vancouver Fire Department.
- Gas, liquid, and solid fuel-burning equipment designed to be vented shall 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 arresters where required. Where vents or flues are used, all portions of the tent or membrane structure shall be not less than 12 inches (305 mm) from the flue or vent.
- Cooking and heating equipment shall not be located within 10 feet (3048 mm) of exits or combustible materials.
- Tents with sidewalls or drops where cooking is performed shall be separated from other tents or membrane structures by not less than 20 feet.
- LP-gas equipment such as containers, tanks, piping, hoses, fittings, valves, tubing, and other related components shall be approved and in accordance with WSFC Chapter 61 and with the International Fuel Gas Code.
- 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 WSFC Chapter 57.
- Generators and other internal combustion power sources shall be separated from tents or membrane structures by not less than 20 feet and shall be isolated from contact with the public by fencing, enclosure, or other approved means.

**NOTE:** *This is not intended to be an all-inclusive list. The WSFC requirements listed are intended to ensure that we have adequate information to begin a review of the application. Additional information may be required.*

**I understand that all applicable codes apply and that other regulatory codes may also apply. Errors and/or omissions on the plans and corrections from field inspections are the responsibility of the owner/contractor. All work is subject to compliance with City of Vancouver ordinances and laws of the State of Washington.**

APPLICANT NAME: \_\_\_\_\_ APPLICATION DATE: \_\_\_\_\_

APPLICANT SIGNATURE: \_\_\_\_\_