



Bloomington Fire Department  
PO Box 100  
Bloomington IN 47402

### Tent Application

Applicant Date:

Name:

Address: City: State: Zip:

Phone #: Email:

Location of Tent installation:

Purpose of Tent:

Date of Install: Proposed removal date:

Has a temporary structure been on this site within the last 12 months? Yes [ ] No [ ]

If yes how long was it in place?

#### Submittal Check List:

Detailed Site Plan including:

- Tent location on property
- Location of permanent structures
- Adjacent vegetation
- Access to Parking
- Fire Breaks

Floor Plan:

- Seating capacity and layout
- Required exits, Egress illumination, aisle and exit signs
- Electrical equipment
- Locations and types of appliances and/or equipment
  
- Manufactures Specifications and Installation instructions.
- Flame Propagation performance treatment.

Occupant Load:

Emergency contact: **(this is the individual responsible for evacuation for a weather event)**

Name: Phone#  
Address: City State Zip:



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**Tent Application**

Installer Information: (if different from Applicant)

Company Name:

Phone:

Address:

City

State

Zip

Individual Name on site:

Position:

Type of Structure:    Tent [ ]    Canopy [ ]    Other [ ]

Anchorage:    Structure:    Pole [ ]    Frame [ ]

                  Type:    Stake [ ]    Ballast [ ]

Wind threshold at which tent will be evacuated (may not be greater than 25 mph for unstaked tents or 30 mph for staked tents without engineered plans:

*Upon scheduling of the final inspection, I hereby acknowledge that the construction activity associated with this permit has been completed and to the best of my knowledge, information and belief such activity has been performed in conformance with the Indiana Fire Code applicable to such construction.*

I AFFIRM UNDER PENALTIES OF PEJURY, THAT THE FOREGOING REPRESENTATIONS ARE TRUE.

Applicant's signature:

Date:

Contractor's signature:

Date:

(Office use only)

Application Received by:

Date:

Fire Prevention Bureau

Bloomington Fire Department

812-332-9763



# Tent Anchoring Recommendations

## Staking/Anchoring:

- The ability of the tent to withstand wind loading and other weather related events is paramount to the safety of all individuals utilizing the tent space and to protect adjacent property. In the absence of engineered specifications and manufacturer’s installation instructions, the following information will serve as a guideline for the tent anchoring requirements. These anchoring requirements have been thoroughly tested by Advanced Textiles Association (ATA), formerly IFAI.
- Install all tents in accordance with the manufacturer’s instructions. (Preferred method)
- Use the staking /anchoring charts provided by the tent manufacturer. (Preferred method)
- Provide the location of stakes and/or ballasts for anchoring on the site plan. Also provide the distance of the stakes and/or ballast from the tent support poles as determined by the manufacturer.
- Staking refers to the use of steel stakes/pins at least 1 inch in diameter.  
Note: Be aware of the soil conditions in the area where staking is to occur. Soil type and condition of the soil (wet/dry) will factor into the holding capacity of the stakes. Larger diameter stakes will result in increased holding capacity. Drive stakes/pins straight down as opposed to driving them in at an angle.
- Ballast refers to using concrete and water weight of various configurations.  
Note: Typical 50-55 gallon plastic water barrels are not recommended for ballast due to being top-heavy and they are prone to sliding on any surface. In addition, a typical 5 gallon bucket filled with concrete (approx. 100 lbs ea. when filled to the top) is not recommended. They are not consistent with volume or weight and are easily displaced.
- As a point of reference:
  - Standard concrete weighs 150 lbs per cubic foot.
  - A gallon of water weighs 8.33 to 8.34 lbs. on average at 62<sup>o</sup>-70<sup>o</sup> F.

Stake Sizing Table

Stake size	Average holding force- driven “full” depth
5/8” x 18”	200 lbs
5/8” x 24”	500 lbs
1” x 36”	1150 lbs
1” X 42”	1450 lbs
	<u>Note:</u> “Full” depth is considered to be within 1”-2” above grade.
Stake size	Average holding force- driven “½” depth
5/8” x 18”	135 lbs
5/8” x 24”	275 lbs
1” x 36”	400 lbs
1” x 42”	700 lbs

Typical Ballast Weights (examples)

Lego Style Concrete Block	2 ft. wide x 3ft. long x 24 inches high	1800 lbs
Cylindrical Concrete Block	24 inches diameter x 21 inches high	1000 lbs
Cylindrical Concrete Block	18 inches diameter x 18 inches high	500 lbs
Jersey Barrier (concrete)	36 inches high x 10 ft. long	4000 lbs.
Jersey Barrier (water)	36 inches high x 60 inches long	683 lbs. (filled)
Giffy Tent Barrels (water)	75 gallon	660 lbs. (filled)

How to calculate number of stakes and/or how much ballast weight is needed:

- Multiply the square feet of the tent by 22.5 pounds per square foot (psf).
- For tent installations, it has been determined that 15 psf and a 1.5 safety factor is sufficient for most applications. (This equates to 22.5 psf)

Examples: (using 1 inch diameter by 36 inch long steel stakes/pins or 1000 lb. concrete ballast)

- 20' x 20' tent – 400 sq. ft.: 9000 lbs. = (9) stakes or (9) 1000 lb. (ea). concrete ballast.
- 30' x 60' tent- 1800 sq. ft.: 40,500 lbs. = (41) stakes or (41) 1000 lb. (ea). concrete ballast.
- 40' x 80' tent- 3200 sq. ft.: 72,000 lbs. = (71) stakes or (71) 1000lb. (ea). concrete ballast.
- 60' x 90' tent- 5400 sq. ft.: 121,500 lbs. = (122) stakes or (122) 1000 lb. (ea). concrete ballast.

Other items to consider:

- Age and maximum capacity (strength) of the ropes and/or straps to be used for anchoring purposes.
- Attach all ropes/straps as close to the ground as possible.

# TENTS AND OTHER MEMBRANE STRUCTURES

## ANCHORAGE DOCUMENTATION

Documentation that tents and other membrane structures are roped, braced and anchored to withstand the weather and prevent collapse is required for every tent or membrane structure erected.

Specifically:

***Section 3103.9 Indiana Fire Code 2014 ed.***

***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 fire code official on request.

If no documentation is available, the installer shall sign the following statement and leave it with a responsible person associated with the event who will present the information to the fire code official upon request. If there is more than one installer for these items, each installer shall provide the required documentation or execute the following statement.

The purpose of this form is to eliminate return trips by the installer to the location of the tent or membrane structure to provide the required documentation or to verify the installation methods.

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I, \_\_\_\_\_ (name), installer for the tents and membrane structures at the \_\_\_\_\_ (event), do affirm that the installation is adequate to meet the requirements of the Indiana Fire Code as stated above.

\_\_\_\_\_  
*Installer (Printed name)*

\_\_\_\_\_  
*Event Coordinator (Printed name)*

\_\_\_\_\_  
*Installer (Signature)*

\_\_\_\_\_  
*Event Coordinator (Signature)*

\_\_\_\_\_  
*Date*