



SOUTH METRO FIRE RESCUE

Fire Marshal's Office

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RE: Ballast Requirements for Tents and Other Membrane Structures

Colorado is both a beautiful and colorful attraction to host outdoor activities year around. These events typically provide a temporary place for attendees to shelter from some of the outdoor environments. For this reason, South Metro Fire Rescue (SMFR) is deeply committed to ensuring that all temporary structures erected in our jurisdiction are installed, maintained, and operated in the safest manner. Our intent is to protect lives, property and, liability exposure to installing vendors.



Water barrels for ballasting a tent or canopy which exceeds 400sqft. are required to meet all requirements while operating in SMFR's jurisdiction. Water barrels/drums do not provide enough capacity to safely ballast temporary structures exceeding 400sqft. The weight of a water barrel does not translate directly to holding force. The anchoring line is commonly secured to the top of the barrel which is a failure point.

Requirements

SMFR does not allow the use of water barrels as a ballasting option for any tent structures exceeding 400sqft. **unless:**

- The water barrel is manufactured as one vessel (no multiple pieces, no sealed tops)
- AND**
- An analysis is performed by a licensed engineer.
 - Note: analysis shall be provided with the plan review submittal and provided to the inspector on site.

Other ballasting materials are allowed per the following:

- Approved concrete blocks, sandbags, or weight plates, which are designed by the manufacturer for the specified tent size and type.
- Concrete blocks **not** designed by the manufacturer, requires an analysis prepared by a licensed engineer.
 - Note: analysis shall be provided with the plan review submittal and provided to the inspector on site.



What is NOT allowed for structures greater than 400sqft.:

- Cinder Blocks
- Water Jugs
- Buckets of any kind
- Gym Style Weights
- Rocks
- Bricks
- Bags of sand or sand tubes **not** designed by the manufacture

Engineering Analysis and Review Required

Tent or Canopy Size:	Ballast Type:	Engineering Required
Up to and including 20' X 20'	Manufactures Specifications	No
Larger than 20' X 20'	As outlined above	As outlined above
Truss Temporary Structures	As specified by licensed engineer	Yes