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Joint Memorandum

To: Building Inspectors and Heads of Fire Departments

From: Layla D'Emilia, Commissioner, Division of Professional Licensure *Layla R. D'Emilia*
Peter J. Ostroskey, State Fire Marshal, Department of Fire Services *Peter J. Ostroskey*

Date: April 5, 2020

Re: Guidance for Safety Considerations for Temporary Structures and Uses

There are no provisions within the International Building or Fire Codes that have foreseen the circumstances presently facing our communities. In an effort to establish quarantine and distancing protocols recommended by the CDC, many communities have opted to erect temporary tents for shelter and residential sleeping purposes. Other communities have been able to utilize existing buildings for new, unanticipated uses. These temporary use structures and tents are not strictly addressed in the code and the provisions that apply to residential occupancies are not achievable in these temporary situations. The use of tent structures and temporary uses of existing buildings to shelter individuals and support social distancing is necessary to mitigate the impact of COVID-19. Building Inspectors must work closely with local and state building and fire officials to expedite proposal reviews, permitting, and safe occupancy of these tent structures and temporary uses of existing buildings.

780 CMR Requirements (via reference to International Fire Code)

The following are applicable excerpts from 780 CMR and International Fire Code (IFC) to provide guidance for fire and life safety provisions in temporary tent structures. 780 CMR and the reference provisions of the International Fire Code are enforced through the local and state building officials in consultation with the head of the local fire department. These code references are intended to serve as a guideline when discussing proposals in a community.



Tent Location

1. To the extent possible tents should be located at least 20 ft. away from property lines, buildings and other tents. Tents shall be 20 ft. away from internal combustion engines. Support ropes and guy wires are considered part of the tent [780 CMR IFC: 3103.8.2].
2. Tents should be located such that a minimum fire break of 12 ft. is designated between structures. These fire breaks shall not contain guy ropes or other obstructions such as heating apparatus or fuel storage [780 CMR IFC: 3103.8.6].
3. Fire department vehicle access roads shall be provided for temporary tents [780 CMR IFC: 3108.8.1].

Fire Alarm/Carbon Monoxide Detection

In an existing building that is being temporarily repurposed, there may be an opportunity to utilize an existing sprinkler system and fire alarm system for fire protection and alarm notification. If the building is not intended for residential purposes, smoke and carbon monoxide detection should be incorporated into the design. Strict adherence with the building code may not be feasible in temporary residential uses.

In tents used for temporary shelters during a state of emergency, battery operated smoke detection devices and battery operated carbon monoxide detection devices should be sufficient.

In existing buildings and tents used for temporary shelters during a state of emergency, the following are design criteria that can be used by the building official in consultation with the fire chief to determine equivalent means of fire and life safety based upon the type of structure and its use:

1. Devices shall be installed to their manufacturer listing as it applies to spacing and distances from ceilings and walls.
Smoke detection devices are typically designed to cover a radius of 21 ft. (1,385 SF).
2. If required, at least one carbon monoxide detection device shall be located in every sleeping area where there are fossil-fuel fired heating appliances, or where tents are located in close proximity to vehicle parking.
3. In large tents, or tents with compartmentalized areas, that are being used for temporary shelters during a state of emergency consideration should be given to a voice alarm/communication system to provide a means to communicate emergencies other than fire (weather, public announcements, etc.). For purposes of this guidance, a large tent is defined as a tent greater than 10,000 square feet. If an existing building is equipped with a voice alarm/communication system, the pre-recorded messages should be evaluated for their effectiveness in notification for the proposed use and new messages may be programed.
4. Tents larger than 10,000 square feet being used for temporary shelter during a state of emergency, shall have a manual pull station or other manual means of alerting the local fire department to an emergency condition positioned such that occupants and/or staff can quickly activate the alert while moving towards or exiting a tent. The code requires manual pull stations to be located within 5 ft. of an exit for easy reach by an exiting occupant.

Means of Egress

To the extent feasible, means of egress should comply with 780 CMR Chapter 10 as stated in 780 CMR 3113.4. In temporary uses in existing buildings, egress configuration may be close to the code requirements and minimal changes could be effected to increase directional signage and egress path lighting. In temporary tent structures, egress can be designed in the layout of furniture and aisles and positioning of exit “doors”. References to egress provisions for temporary tent structures have been included for additional guidance.

1. Means of egress components shall be sized in accordance with 780 CMR: 1005.3 based on the occupant load of the structure. Typically, this is 0.2 in/occupant along corridors and through doorways in unsprinklered buildings and/or buildings without a voice alarm/communication system.
2. All temporary use structures shall have not less than two means of egress located a distance apart not less than $\frac{1}{2}$ the maximum overall diagonal dimension of the structure. [780 CMR 1007.1.1]
 - o Where feasible, exits shall be distributed at approximately equal intervals around the perimeter of temporary tents.
3. The minimum number of means of egress provided shall be based on occupant load as follows:

**TABLE 1006.3.1
MINIMUM NUMBER OF EXITS OR
ACCESS TO EXITS PER STORY**

OCCUPANT LOAD PER STORY	MINIMUM NUMBER OF EXITS OR ACCESS TO EXITS FROM STORY
1-500	2
501-1,000	3
More than 1,000	4

4. Clearly defined aisles and/or corridors shall be provided for egress. In the absence of physical barriers defining egress aisles and/or corridors, luminous egress path markings in compliance with the requirements of 780 CMR: 1025 should be provided, where feasible.
5. Adequately lit aisles and/or corridors shall be provided for egress. Egress aisles/corridors shall be provided with illumination levels of not less than 1 foot-candle at the walking surface at all times. [780 CMR: 1008.2.1]
 - o As an alternative for consideration during sleeping hours for situations where the required illumination level in the means of egress will disrupt occupant sleep, lighting may be dimmed in conjunction with the use of luminous egress path marking of the exit aisles in compliance with 780 CMR: 1025, provided that the required egress illumination will automatically turn on upon activation of the fire alarm system in the structure.
6. Means of egress aisles/corridors shall be not less than 36 inches in clear width where there are less than 50 occupants [780 CMR: 1020.2]
 - o If feasible, egress aisles shall be sized not less than 72 inches in temporary tents to accommodate a quicker egress time.

7. Means of egress doors shall be a minimum of 32” on clear width in temporary use structures. [780 CMR 1010.1.1]
 - Where feasible, exit flaps in tents shall be not less than 44 inches in clear width to account for difficulty in fully opening the exit flap and to permit quicker egress.
8. Exit doors in temporary use structures or exit flaps in tents shall be readily distinguishable, from the walls/wall flaps around them. [780 CMR 1010.1]
 - Distinguishing exit doors and tent flaps can be accomplished by using a contrasting color or photoluminescent markings.
9. Exit access travel distance shall not exceed 100 ft. [780 CMR: 3103.4] This section is specifically used to address temporary use structures and supersedes the egress access travel distance in 780 CMR Chapter 10.
10. Exit signage where required, shall be provided at all exit points from the temporary use structure or temporary tent, readily visible from all directions, and shall be located such that no point in the egress path is more than 100 feet from an exit sign. [780 CMR: 1013.1]
11. Where required, floor-level exit signage shall be provided in addition to the ceiling-level exit signage provided. [780 CMR:1013.2] This is an additional provision to aid in egress and may be accomplished with photoluminescent exit signs.
12. Exit signage shall be illuminated. [780 CMR: 1013.3]
 - If not feasible, exit signage in temporary tents shall comply with UL 924 for internal illumination or externally illuminated by luminaries supplied by two separated circuits.

527 CMR 1.00 Comprehensive Fire Safety Code

Similar to the 780 CMR and the International Building and Fire Codes, 527 CMR 1.00 and 2015 NFPA 1 does not address the current situation facing our communities. When buildings are temporarily repurposed or temporary tents are erected in a community, the following provisions may apply for temporary heating, fuel storage, cooking, and furnishing of these tents. 527 CMR 1.00 is enforceable by the head of the local fire department. Since many of the building and fire code provisions will determine the layout and functionality of these temporary uses in structures and temporary tents, it is critical to work with the local and state building officials to ensure as many foreseeable items can be incorporated into the overall design and implementation of the building or tent.

Fuel storage (LPG)

1. Fuel storage within buildings must be limited in accordance with 780 CMR and 527 CMR 1.00: Table 60.4.2.1.1.3. Outdoor storage areas must comply with 527 CMR 1.00: Chapter 60 and Chapter 66 or 69 as applicable.
2. LPG fuel storage requires a permit from the local fire department for amounts exceeding 42 lbs. (10 gallons). Storage must comply with 527 CMR 1.00: Chapter 69. [527 CMR 1.00: 69.3.12.6]

Temporary (LPG) heating

1. LPG cylinders shall only be used for emergency heating purposes when: permanent heat is out of service, heat is necessary to prevent damage to the building or contents,

cylinders and heaters comply with, are used and transported in accordance with 527 CMR 1.00: 69.3.10.2 and 69.10.3, temporary heating equipment is not left unattended, and air for combustion and ventilation is provided in accordance with NFPA 54. [527 CMR 1.00: 69.10.7.1]

Cooking Equipment

1. Temporary cooking appliances such as grills or hibachis must not be located under an overhang or within 10 ft. of a structure unless a sprinkler system is installed in accordance with 780 CMR. [527 CMR 1.00: 10.10.6.3.6]
2. Cooking equipment producing grease-laden vapors must be provided with an exhaust system. Type I hoods are designed for grease-laden vapors which includes cooking animal products such as meat, and other oils. [527 CMR 1.00: 50.2.1.1]
3. Cooking equipment used in fixed, mobile, or temporary concessions such as trucks, tents, or any form of roofed enclosure shall comply with NFPA 96. [527 CMR 1.00: 50.2.1.9]
4. During a public emergency, gas commercial food service appliances meeting the requirements of 527 CMR 1.00: 69.3.10.8.4 shall be permitted to be temporarily used inside affected buildings. [527 CMR 1.00: 69.3.10.7.2] This applies to gas cylinders used as a temporary source of fuel for commercial cooking equipment within restaurants and attended commercial food catering operations.

Mattresses in Institutional, Hotels, and Dormitory Occupancies

1. Mattresses must be tested in accordance with 16 CFR 1632 (similar to 16 CFR 1633) and have a char length not exceeding 2 inches. [527 CMR 1.00: 12.6.3.2]
2. Mattresses located in unsprinklered buildings (or tents) must be tested in accordance with ASTM E 1590 (similar to CAL 129) and have a peak rate of heat release rate less than 100 kW and total heat release rate during the first 10 minutes of testing not to exceed 25 MJ. [527 CMR 1.00: 12.6.3.4]

Emergency Action Plans

Emergency action plans (EAPs) shall be provided for health-care, ambulatory health care, residential occupancies, and where required by the AHJ in other locations as required by the *Massachusetts Comprehensive Fire Safety Code* [527 CMR 1.00: 10.8]. This plan not only identifies potential emergency events but also guides training for staff and first responders as to the most efficient and effective response to such emergencies. Emergency action plans shall be submitted to the AHJ and revised, updated, and resubmitted to accommodate any changes.

1. **Procedures for reporting emergencies.** Emergencies can range from a fire incident, weather alert, entry by unauthorized personnel, or a wide range of possibilities. The communication system within the building or tent should be able to accommodate a range of messaging. The best means to accomplish this would be through a voice/alarm communication system. In a temporary use structure or tent, this may be achieved through the fire alarm system or through a public announcement system. To reduce a delay in information, pre-recorded messages aligned with NFPA communication standards, should be available for broadcast. This emergency action plan element also includes reporting of emergencies to the local fire, police, and medical services. If the

temporary use structure or tent is equipped with a monitored fire alarm system, the activation of a pull station may transmit a signal to the local dispatch or central supervising station.

- 2. Occupant and staff response to emergencies.** Staff shall be trained in their response to an emergency. Especially for temporary use structures and tents, staff will be unfamiliar with the layout and organization of egress. It is critical that signage is provided to assist in egress movement and that staff have drilled to know where exits are and their emergency response assignments to expedite actions in the event of an emergency. It is recommended that training is conducted in the form of a drill for the identified emergency situations prior to occupancy.
- 3. Evacuation relocation and shelter-in-place procedures appropriate to the building, occupancy, emergencies, and hazards.** If a temporary tent is erected in response to a permanent structure's inability to house occupants, it is critical to identify evacuation routes and procedures in the event of an emergency. These evacuation routes should be designed not to interfere with fire department operations in the event of a fire. If critical equipment and personnel need to be relocated, the secondary location must be provided with adequate space and utilities for the relocation.
- 4. Design and conduct of fire drills.** While it may be impractical to conduct drills during the occupancy of a temporary use structure or tent, regular training must be provided for staff. If personnel is brought on-board after the initial training and drills are conducted prior to occupancy, there should be a training procedure for new staff. Depending on the duration and arrangement of the temporary use structure or tent, training may need to be refreshed at pre-determined periods.
- 5. Appropriateness of the use of elevators.** If existing buildings are repurposed for a temporary use and elevators will be a necessary component in the safe egress of patients or persons with mobility restrictions, its use during a fire event or other emergency must be determined and discussed with the local fire department.
- 6. Type and coverage of building fire protection systems.** If a temporary use structure will be used for sleeping purposes and the original use of the building was not intended for that purpose, an evaluation of the existing fire protection systems such as smoke and carbon monoxide detection is necessary. If these critical detection devices are not already installed throughout designated sleeping areas, measures should be made to install temporary devices. An installation permit may be required by 780 CMR and the local building official should be notified.

If you have a temporary use structure, or temporary tent, proposed within your jurisdiction in response to COVID-19 and have questions or concerns, please do not hesitate to contact the district state building inspector or the Office of Public Safety and Inspection 617-826-5236 or the Code Compliance and Enforcement Unit at (978) 567-3375 (business hours), (508) 820-2000 (MEMA Dispatch after hours).