

MINNESOTA STATE DEPARTMENT OF PUBLIC SAFETY



State Fire Marshal Division

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SPECIAL AMUSEMENT BUILDINGS HAUNTED HOUSES, MAZES AND OTHER SIMILAR OCCUPANCIES

SECTION 1 - INTRODUCTION

This fire safety information sheet is based on the 2007 Minnesota State Fire Code (MSFC). The requirements outlined in this information sheet apply only to Special Amusement Buildings as defined below:

SPECIAL AMUSEMENT BUILDING. A building that is temporary, permanent or mobile that contains a device or system that conveys passengers or provides a walkway along, around or over a course in any direction as a form of amusement arranged so that the egress path is not readily apparent due to visual or audio distractions or an intentionally confounded egress path, or is not readily available because of the mode of conveyance through the building or structure.

Special amusement buildings are required to meet other code provisions that are not listed in this publication. In most cases, special amusement buildings will be considered assembly, Group A occupancies according to the Minnesota State Fire Code. Additional information on assembly occupancies can be reviewed in the State Fire Marshal Division *Assembly Occupancy Information Sheet*.

This information sheet provides an overview of the major code requirements that apply in this type of occupancy and does not attempt to cover every situation. References to the applicable code sections are found in brackets, [].

More information is available from the Minnesota State Fire Marshal Division at www.fire.state.mn.us. Questions can be e-mailed to our office to firecode@state.mn.us.

SECTION 2 – FIRE CODE REQUIREMENTS

2.1 Fire protection

2.1.1 Automatic sprinklers

Special amusement buildings shall be equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where the special amusement building is temporary, the sprinkler water supply shall be of an approved temporary means.

Exception: Automatic sprinklers are not required where the total floor area of a temporary special amusement building is less than 1,000 square feet (93 m²) and the travel distance from any point to an exit is less than 50 feet (15 240 mm).

2.2.1 Automatic fire alarm systems

Special amusement buildings shall be provided with an approved smoke detection system. In areas where ambient conditions prohibit the installation of smoke detection, alternative forms of detection shall be permitted.

Alcohol &
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Any activation of a single fire detector, automatic sprinkler system or fire detection device shall immediately sound an alarm at the building at a constantly attended location from which emergency action can be initiated.

2.3.1 System response

The activation of two or more smoke detectors, a single smoke detector with alarm verification, the automatic sprinkler system or other detection device shall automatically:

1. Cause illumination of the means of egress with light of not less than 1 foot-candle (11 lux) at the walking surface level;
 2. Stop any conflicting or confusing sounds and visual distractions; and
 3. Activate an approved directional exit marking that will become apparent in an emergency.
- Such system response shall also include activation of a prerecorded message, clearly audible throughout the special amusement building, instructing patrons to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound which is distinctive from other sounds used during normal operation.

The wiring to the auxiliary devices and equipment used to accomplish the above fire safety functions shall be monitored for integrity in accordance with NFPA 72 [2002 Edition].

2.4.1 Emergency voice/alarm communication system

An emergency voice/alarm communication system, which is also allowed to serve as a public address system, shall be installed in accordance with NFPA 72 and be audible throughout the entire special amusement building.

2.5.1 Portable Fire Extinguishers

Approved portable fire extinguishers are required in all assembly occupancies. However, if a building is equipped throughout with an approved automatic sprinkler system, fire extinguishers are only necessary in the special hazard areas of the building (boiler/furnace rooms, mechanical/electrical rooms, trash-collection rooms, kitchens, etc.). The extinguishers must be appropriately spaced so one does not have to travel more than 75 feet to access the extinguisher.

2.2 Interior Finish located in special amusement buildings

Interior finish on walls and ceilings shall be Class A, B, or C (Class I, II, or III) as required by Table 803.3 [MSFC (07) Section 803.3].

Table 803.3 Interior Wall and Ceiling Finish Requirements for Assembly Occupancies

Group	Vertical exits and exit passageways	<u>Sprinklered</u>		Vertical exits and exit passageways	<u>Unsprinklered</u>	
		Exit access corridors and other exitways	Rooms and enclosed spaces		Exit access corridors and other exitways	Rooms and enclosed spaces
A-1 & A-2	B	B	C	A	A	B
A-3, A-4 & A-5	B	B	C	A	A	C

2.2.1 Decorative materials, hangings and other materials

In Group A occupancies, curtains, drapes, hangings and other decorative materials suspended from any wall or ceiling, where the suspended materials exceed 20 percent of any one particular

wall or ceiling surface, shall meet the flame propagation performance criteria of NFPA 701 in accordance with Section 807.2 or shall be noncombustible.

2.2.2 Foam plastics used as interior finish

Foam plastic materials shall not be used as interior wall and ceiling finish unless specifically allowed by the Minnesota State Fire Code.

Foam plastic materials shall not be used as interior trim unless specifically allowed under these conditions.

2.2.2.1 Combustibility characteristics

Foam plastic materials shall be allowed on the basis of fire tests that substantiate their combustibility characteristics for the use intended under actual fire conditions, as indicated in Section 2603.9 of the *International Building Code*. This section shall apply both to exposed foam plastics and to foam plastics used in conjunction with a textile or vinyl facing or cover.

2.2.2.2 Thermal barrier

Foam plastic material shall be allowed if it is separated from the interior of the building by a thermal barrier in accordance with Section 2603.4 of the *International Building Code*.

2.2.2.3 Trim. Foam plastic shall be allowed for trim not in excess of 10 percent of the wall or ceiling area, provided such trim is not less than 20 pounds per cubic foot (320kg/m³) in density; is limited to 0.5 inch (12.7 mm) in thickness and 8 inches (203 mm) in width, and exhibits a flame spread index not exceeding 75 when tested in accordance with ASTM E 84. The smoke-developed index shall not be limited.

2.2.3 Foam plastics used for decorative materials, stage scenery or exhibits

Exposed foam plastic materials and unprotected materials containing foam plastic used for decorative purposes, or stage scenery or exhibit booths shall have a maximum heat release rate of 100kW when tested in accordance with UL 1975.

Exceptions:

1. Individual foam plastic items or items containing foam plastic where the foam plastic does not exceed 1 pound (0.45 kg) in weight.
2. Cellular or foam plastic shall be allowed for trim not in excess of 10 percent of the wall or ceiling area, provided it is not less than 20 pounds per cubic foot (320 kg/m³) in density; is limited to 0.5 inch (12.7 mm) in thickness and 8 inches (204 mm) in width; and complies with the requirements for Class B interior wall and ceiling finish, except that the smoke-developed index shall not be limited.

2.3 Exiting Provisions

MSFC (07) Section 1015.1 requires a minimum of two exits when the occupant load for the space exceeds 49 people. For information on how to determine occupant load please refer to section 3 of the Assembly Occupancy Information Sheet. When two exits are required, the exit doors shall be placed a distance apart equal to not less than one-half of the length of the maximum overall diagonal dimension of the building or area to be served measured in a straight line between exit doors. When a building is protected throughout by an approved automatic sprinkler system, the separation distance between the exit doors may be reduced to not less than one-third of the length of the maximum overall diagonal dimension of the area served.

2.3.1 Exit doors

Exit doors shall be side-hinged swinging doors [MSFC Section 1008.1.2].

2.3.2 Door swing and opening force

Exit doors shall swing in the direction of egress travel when serving an occupant load of 50 or more persons [MSFC (07) Section 1008.1.2]. For information on how to determine occupant load please refer to section 3.

Exit doors shall open when subjected to a 30-pound force. The door shall open to a full-open position.

2.3.3 Locks, latches, bolts, and other locking mechanisms

Exit doors shall be openable from the inside without the use of a key, special knowledge or effort. Exit doors shall NOT be locked, chained, bolted, barred, latched or otherwise rendered unusable.

Exception: In Group A occupancies having an occupant load of 300 or less, and in all churches, key-locking hardware is permitted on the main exit only when the main exit consists of a single door or pair of doors if there is a readily visible sign on or adjacent to the door stating "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS". The sign shall be in letters not less than 1 inch high on a contrasting background. When unlocked, the single door or pair of doors must be free swinging without operation of a latching device. The use of this exception may be revoked by the fire chief or building official for due cause.

2.3.4 Panic hardware

Panic hardware shall be required on exit doors when the occupant load is 50 or more. Panic hardware would not be necessary on the main exit door of Group A occupancies serving an occupant load of 300 or less when using the exception in section 2.4. However, panic hardware would still be required on all other exit doors from the building when the occupant load is 50 or more.

2.3.5 Exit signs

Where any assembly occupancy has two or more required exits, the means of egress must be provided with illuminated signs that readily identify the location of the exits and indicate the path of travel to the exits. The signs must be illuminated with letters reading "EXIT". The illumination may be internal or external to the sign. The signs should be visible from all directions in the exit route. In cases where the signs are not visible to the occupants because of turns in the corridor or for other reasons, additional illuminated signs must be provided indicating the direction of egress to an exit. Exit signs located in corridors must be located so that, where required, the nearest one is within 100 feet of the sign's viewing distance.

Every exit sign and directional sign located in the exit route is required to have a color contrast vivid enough to make the signs readily visible, even when not illuminated. Letters must be at least 6 inches high and their stroke not less than 3/4-inch wide. The sizing of the letters is predicated on the readability of the wording from a distance of 100 feet. While red letters are common for exit signs, sometimes green on black is used in auditorium areas with low lighting levels, such as theaters, because that color combination tends not to distract the audience's attention. It is more important that the exit sign be readily visible with respect to the background.

2.3.6 Emergency Lighting

The means of egress in assembly occupancies shall be equipped with approved emergency lighting when required to have two or more exits. The power supply for means of egress illumination shall normally be provided by the premise's electrical supply. In the event of power supply failure, an emergency electrical system shall automatically illuminate the following areas:

1. Exit access corridors, passageways and aisles in rooms and spaces which require two or more means of egress.
2. Exit access corridors and exit stairways located in buildings required to have two or more exits.

3. Exterior egress components at other than the level of exit discharge until exit discharge is accomplished for buildings required to have two or more exits.
4. Interior exit discharge elements, as permitted in MSFC Section 1023, in buildings required to have two or more exits.
5. The portion of the exterior exit discharge immediately adjacent to exit discharge doorways in buildings required to have two or more exits.

The emergency power system shall provide power for a duration of not less than 90 minutes for new buildings and 30 minutes for existing buildings and shall consist of storage batteries, unit equipment or an on-site generator.

2.3.7 Occupant load

Occupant load for special amusement buildings shall be determined in accordance with the Minnesota State Fire Code (MSFC) and its use. For more information on occupant load please refer to the State Fire Marshal Division Information Sheet titled, *Assembly Occupancies*.

2.4 Electrical hazards/safety

Electrical hazards shall be corrected according to MSFC (07) Section 605.1.

2.4.1 Multi-plug adapters

Multi-plug adapters, such as multi-plug extension cords, cube adapters, strip plugs and other devices shall comply with the MSFC (07) and the Electrical Code [MSFC (07) Section 605.4].

2.4.2 Extension cords

Extension cords and flexible cords shall not be used as a substitute for permanent wiring [MSFC (07) Section 605.5]. Receptacles and outlets serviced by extension cord-type wiring are prohibited [MSFC (07) Section 605.5.1]

2.4.3 Power strips

Power taps are permitted when polarized or grounded and protected with listed over current protection [MSFC (07) Section 605.4.1].

2.5 Special requirements

2.5.1 Combustible Waste Material

Combustible waste material creating a fire hazard shall not be allowed to accumulate in buildings [MSFC (07) Section 304.1].

2.5.2 Candles and other open flame decorative devices

Open-flame devices are permitted to be used in Group A occupancies when done in accordance with the provisions of the MSFC (07). For additional information on this subject please review our information sheet titled *Candles and Decorative Open Flame Devices*.

2.5.3 Miscellaneous combustible materials storage

Storage of combustible materials shall be orderly. Storage shall be separated from heaters or other ignition sources in an approved manner such that ignition cannot occur [MSFC (07) Section 315.2].

2.5.4 Ceiling clearance

Storage shall be maintained 2 feet or more below the ceiling in nonsprinklered areas of buildings or a minimum of 18 inches (457 mm) below sprinkler head deflectors in sprinklered areas of buildings [MSFC (07) Section 315.2.1].

2.5.5 Means of egress

Combustible materials shall not be stored in the means of egress [MSFC (07) Section 315.2.2].

2.5.6 Fire safety and evacuation plans

An approved fire safety and evacuation plan shall be in place for all special amusement occupancies

Floor plans shall include:

- Exits
- Primary evacuation routes
- Secondary evacuation routes
- Manual fire alarm boxes
- Portable fire extinguishers

2.5.7 Fire and evacuation drill frequency

Employees of the assembly occupancy shall conduct regular fire drills at least quarterly.

Documentation including the date of the drill, time of the drill and total evacuation time shall be kept on-hand.

2.6 Heating appliances

All heating appliances and related equipment including, but not limited to, furnaces, water heaters, ovens, deep-fat fryers, stoves, grills, woks, broilers and steam kettles shall be installed in accordance with the manufacturer's listing, the MSBC (07), the State Mechanical Code and the State Electrical Code.

2.7 Alternative materials or methods

The fire official is authorized under MSFC Section 104.9 to accept alternative materials or methods where compliance with the requirements listed above are impractical or not possible. The alternatives shall provide protection that is equal to or in addition to the MSFC regulations. The fire official is not permitted to reduce the fire code requirements without providing an alternative that meets or exceeds the minimum requirements of the Minnesota State Fire Code.