

# MINNESOTA STATE DEPARTMENT OF PUBLIC SAFETY



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## State Fire Marshal Division

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### RESORT INFORMATION SHEET

#### SECTION 1 — INTRODUCTION

This fire safety information sheet is based on the 2007 Minnesota State Fire Code, here after referred to as MSFC (07). It contains a summary of the codes that apply to resort buildings such as lodges, cabins and dormitories, and the use and dispensing of flammable liquids combustible liquids and propane.

##### 1.1 Inspection frequency

Pursuant to Minn. Stat. § 299F.46 and MN Statute § 157, the State Fire Marshal must inspect any resort having a building or portion thereof with 6 or more sleeping rooms and is required to be licensed by the Minnesota Department of Health (MDH).

The MDH does not require licensure of resorts having cabins that are rented out on a seasonal basis or for periods of one month or longer. Such rentals have traditionally been considered in the same category as housing or apartment rentals. Therefore, the State Fire Marshal is not required to inspect such buildings.

##### 1.2 Applicable requirements

Resort buildings constructed before July 10, 2007 are considered existing buildings and are required to meet the minimum requirements specified in MSFC (07) for existing buildings. Buildings constructed on or after July 10, 2007 are considered new buildings and are required to meet the minimum requirements specified in MSFC (07) for new buildings.

Resorts may be required to meet other provisions that are not listed here. This information sheet provides an overview of the major code requirements that apply to resort operations and does not cover every code requirement.

More information is available from the Minnesota State Fire Marshal Division at (651) 201-7200. Email questions to [firecode@state.mn.us](mailto:firecode@state.mn.us) or check our web page at [www.fire.state.mn.us](http://www.fire.state.mn.us) for the latest information on fire in Minnesota.

#### SECTION 2 — OCCUPANCY CLASSIFICATION

Resorts can include a diverse collection of buildings ranging from small cabins, to dormitories, to large lodges that include conference facilities. Evaluation of the applicable code requirements requires that the occupancy in each building be properly classified according to the definitions contained in the MSFC (07). For additional details on the classification of residential occupancies, see the State Fire Marshal Division

information sheet titled, *Residential Classification Information Sheet*. The following definitions are some that are used to determine the occupancy classification of resort buildings:

**Dwelling** is any building, or portion thereof, which is not an apartment house, lodging house or a hotel and which contains one or two “dwelling units” which are, or are intended or designed to be occupied for living purposes.

**Dwelling Unit** a single unit providing complete, independent living facilities for one or more person including permanent provisions for living, sleeping, eating, cooking, and sanitation or a single unit used by one or more person for sleeping and sanitation.

**Hotel** is any building, or portion thereof, containing six (6) or more guest rooms intended or designed to be used, or which are used, rented, or hired out to be occupied, or which are occupied for sleeping purposes by guests.

**Boarding house** is any building, or portion thereof, containing rooms which are used, or are intended to be used for sleeping purposes by guests and where rent is paid in money, goods, labor or otherwise. Owner occupied bedrooms are not included in the total number of guestrooms. Not more than five (5) guest rooms (R-3). More than five (5) guest rooms (R-1).

**Guest Room** is a room or rooms used or intended to be used for sleeping purposes. NOTE: Every 100 square feet of superficial floor area in a dormitory shall be defined as a guestroom.

### 2.1 Cabins (R-3)

- Cabins are usually one or two dwelling units each having separate cooking facilities and designed to be rented out to one group of affiliated persons.
- A building, or portion thereof, containing not more than five (5) guest rooms.

### 2.2 Dormitories

Dormitories are a space in a building, or portion thereof, where group sleeping accommodations are provided in one room, for person not members of the same group.

- Dormitory buildings with less than 500 sq. ft. of sleeping area shall be classified as a Group R-3
- Dormitory buildings exceeding 500 sq. ft. in of sleeping area shall be classified as a Group R-1

### 2.3 Lodges

Lodge buildings may contain a number of occupancies, some of which are not used for sleeping purposes. Typical classifications include:

- Dwelling unit (Group R Division 3) –The owner’s private residence. An owner’s residence would only be inspected if rented out to the public.
- Dormitory – See the definitions above in Section 2.2.
- See boarding house above.
- Hotel (Group R Division 1) –is any portion having 6 or more guestrooms. An owner occupied room will not be considered to be a guestroom for determining size and occupancy classification. NOTE: Rooms occupied by caretakers or staff are considered guestrooms for determining size and occupancy classification.

- Apartment (Group R Division 2) – Three or more dwelling units, with each dwelling unit having separate cooking facilities and designed to be rented out to one group of affiliated persons that are primarily permanent (periods of 30 days or longer) in nature.
- Business/Mercantile (Group B or Group M) – Stores, bait shops, offices, etc.
- Assembly (Group A) – Assembly occupancies include, among others, the use of a building or structure, or a portion thereof, for the gathering together of persons for purposes such as civic, social or religious functions, recreation, food or drink consumption or awaiting transportation. A room or space used for assembly purposes by less than 50 persons and accessory to another occupancy shall be included as a part of that occupancy.

### **SECTION 3 — GENERAL FIRE SAFETY PROVISIONS**

#### **3.1 Occupancy specific inspection**

Resort buildings are inspected to the requirements of the code applicable to the occupancy types present. State Fire Marshal Deputies will inspect each building according to its use or character and apply the MSFC (07) requirements applicable to the specific occupancy classification. Buildings about which there is a question as to how to classify shall be included in the occupancy group that its use or character most closely resembles.

#### **3.2 Fire apparatus access road - New**

For all buildings and facilities constructed on or after April 11, 1983, approved fire apparatus access roads must be provided and maintained [MSFC (07) Section 503.1. See the SFMD information sheet titled, *Fire Department Access Roads Information Sheet*.

#### **3.3 Water supply - New**

For all buildings and facilities constructed on or after March 31, 2003, approved water supplies capable of providing the required water flow for fire protection must be provided [MSFC (07) Section 508.1]. See the SFMD Policy INS-37 titled, *Fire Department Water Supplies*.

#### **3.4 Kitchen cooking equipment – New and Existing**

Commercial cooking equipment that produces grease-laden vapors shall be equipped with a ventilating hood and duct system meeting the requirements of the Mechanical Code [MSFC (07) Section 609.2].

Commercial cooking equipment that produces grease-laden vapors shall be equipped with an approved fire-suppression system [MSFC (07) Section 904.11-new, Section 904.2.1.1-existing.] See Section 9 of this fact sheet for information on fire extinguishers.

#### **3.5 Premises identification – New and Existing**

Approved numbers or addresses shall be placed on all new and existing buildings in such a position as to be plainly visible and legible from the street or road fronting the property. The premises identification numbers shall contrast with their background. In rural areas, the use of fire numbers or 911 address numbers is acceptable [MSFC (07) Section 505.1].

#### **3.6 Storage of combustible materials – New and Existing**

Storage shall be orderly [MSFC (07) Section 315.1].

Fueled equipment (motorcycles, lawnmowers, etc.) shall only be stored, operated or repaired within a building or area of a building constructed for such use. [MSFC (07) Section 313.1].

### **3.7 Combustible Waste Material – New and Existing**

Combustible waste material creating a fire hazard shall not be allowed to accumulate in buildings [MSFC (07) Section 304]

Dumpsters must be outside and at least 5 feet from combustible walls or openings [MSFC (07) Section 304.3.3].

### **3.8 Storage under stairways – New and Existing**

Storage under stairways is not permitted unless the enclosed usable spaces are protected by 1-hour fire-resistive-rated constructions or the fire resistance rating of the stairway enclosure, which ever is greater.

*Exception:*

1. Spaces under stairways serving and contained within a single residential dwelling unit in a Group R-2 or R-3 shall be permitted to be protected on enclosed side with 0.5 inch gypsum board. (New only.)
2. Existing one and two family dwellings. (R-3)  
[MSFC (07) Section 1009.5.3.]

### **3.9 Guardrails – New buildings (constructed after May 31, 2003)**

Unguarded floor openings, open and glazed sides of stairways, landings and ramps and balconies or porches that are more than 30 inches above grade or the floor below shall be protected by guardrails. [MSFC (07) Section 1013.1]

Guard shall form a protective barrier not less than 42 inches high, measured vertically above the leading edge of the tread, adjacent walking surface or adjacent seat board.

*Exception:*

In group R-3 and within individual dwelling units in Group R-2, guards whose top rail also service as a handrail shall have a height of not less than 34 inches and not more than 38 inches measured vertically from the leading edge of the stair tread nosing.

Opening limitations: The guards shall have balusters or ornamental patterns such that a 4-inch diameter sphere cannot pass through any opening up to a height of 34 inches. From 34-42 inches, a sphere 8-inch in diameter shall not pass.

### **3.10 Guardrails – Existing buildings (constructed before May 31, 2007)**

Guards shall be provided at the open sides of means of egress that are more than 30 inches above the floor or grade below. [MSFC (07) section 1027.6]

The guards shall form a protective barrier not less than 42 inches high except for the following existing guards:

- (1) Existing guards on the open side of stairs which are permitted to be not less than 30 inches high.
- (2) Existing guards within dwelling units which are permitted to be not less than 36 inches high.
- (3) Existing guards in assembly areas.
- (4) Existing guards on stairs and balconies of buildings designated as historic structures which are permitted to be not less than 24 inches high.

[MSFC (07) Section 1027.6.1]

Opening limitations: Open guards shall have balusters or ornamental patterns such that a 6-inch diameter sphere cannot pass through any opening up to a height of 34 inches except when one of the following conditions exists. (1) Existing open guards may be acceptable if approved by the code official. [MSFC (07) Section 1027.6.1].

### 3.11 Handrails – New

Stairways shall have handrails on each side. Stairway within individual dwelling units may have handrails on only one side. Aisle stairs provided with a center handrail need not be provided with additional handrails. The height should be measured above stair tread nosing, or finish surface of ramp slope, shall be uniform, not less than 34 inches and not more than 38 inches. Handrails with circular cross sections shall have an outside diameter of at least 1 ¼ inches and not greater than 2 inches or shall provide equivalent grasp ability. If the handrail is not circular, it shall have a perimeter dimension of at least 4 inches and not greater than 6 ¼ inches with a maximum cross section dimension of 2.25 inches. The gripping surface of the handrail shall be continuous, without interruption by newel posts or other obstructions [MSFC (07) Section 1012].

### Handrails – Existing

Stairway handrails in existing buildings shall have handrails on at least one side. They shall be located so that all portions of the stairway width required for egress capacity are within 44 inches of a handrail [MSFC (03) Section 1027.13].

### 3.12 Stairways – New

The width of stairways shall not be less than 44 inches. Stairways shall have a minimum headroom clearance of 80 inches measured vertically from a line connecting the edge of the nosing. Stair riser heights shall be 7 inches maximum and 4 inches minimum. Stair tread depths shall be 11 inches minimum. The riser height shall be measured vertically between the leading edges of adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at right angle to the tread's leading edge. All stairways shall be built of materials consistent with the types permitted for the type of construction of the building [MSFC (07) Section 1009].

### Stairways – Existing

Existing stairs in buildings shall be permitted to remain if the rise does not exceed 8 ¼ inches and the run is not less than 9 inches. Existing stairs can be rebuilt. Existing stairs may be acceptable if approved by the code official [MSFC (07) Section 1027.10].

### 3.13 Stairway Identification – New and Existing

Stairway identification signs are required in all enclosed stairways in buildings four or more stories in height [MSFC (07) Section ~~1005.3.2.4~~1020.1.7 new, 1027.22 existing].

### 3.14 Means of Egress Illumination – New and Existing

The means of egress shall be illuminated at all times when the building space served by the means of egress is occupied [MSFC (07) Section 1006.1].  
~~The means of egress in all new and existing buildings shall be illuminated when the building is equipped with two or more means of egress [MSFC (03) Section 1003.2].~~ A back-up power supply also must be provided when the building is equipped with two or more means of egress [MSFC (07) Section ~~1003.2.11.2~~1006.3 and MSBC (03) Section ~~1003.2.11.2~~ new, 1027.10.5

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existing]. ~~The means of egress shall be illuminated at all times when the building space served by the means of egress is occupied [MSFC (03) Section 1003.2.11]~~

### **3.15 Means of Egress Identification – New and Existing**

Exit signs are required for identification of exits in both new and existing buildings. Exit signs shall be located as necessary to clearly indicate the direction of egress travel. An exit sign need not be visible from every point in a building, however, no point shall be more than 100 feet from the nearest visible sign [MSFC (0307) ~~1003.2.10.1011.1~~ new, 1027.3 existing ~~and MSBC (03) Section 1003.2.10.1~~]. Exit signs are not necessary from rooms or spaces that only require one exit.

### **3.16 Staff Training in R-1 occupancies – New and Existing**

Fire drills shall be conducted quarterly for each shift. Fire drills shall be for staff members only [MSFC (073) Section ~~404.2405~~]. For more information on staff fire drills, please review SFMD information sheet titled *R-1 Employee Training and Procedures* information sheet.

### **3.17 Floor Plan Drawings in R-1 occupancies – New and Existing**

A diagram depicting two evacuation routes shall be posted on or immediately adjacent to every required exit door from a sleeping room [MSFC (073) Section 408.8.1].

### **3.18 Furniture Flammability in R-1 occupancies – New and Existing**

Seating furniture sold after January 1, 1992 and intended for use in public assembly areas of hotels containing more than ten articles of seating furniture shall meet applicable flammability requirements as set out by rules adopted under section Minn. Stat. § 299F.844.

## **SECTION 4— NUMBER, TYPE AND ACCESS TO EXITS**

### **4.1 Number and type of exits**

Every room shall have access to at least one exit. This exit usually takes the form of the interior halls, stairs and doors found within the building. Additional exits are usually required as follows.

### **4.2 Emergency escapes from sleeping rooms**

When required, emergency escapes (second means of egress) shall be installed and maintained in Group R occupancies as specified in MSFC (07) Section 1026.1. Emergency escapes shall be installed in sleeping rooms and basements used for sleeping. The second means of escape may be through an adjacent non-lockable space, independent of and remote from the primary exit. [MSFC (07) Section 1026.1]

Any one of the following six options will satisfy the requirement for an emergency escape from a room. [MSFC (07) Section 1026.1]

1. An escape window is not required if the room has a door that leads directly to the exterior of the building.
2. Escape windows installed prior to April 11, 1983 and having a clear opening not less than 20 inches in width, 24 inches in height and 5.0 square feet in area with a finished sill height not more than 48 inches above the floor may be allowed to continue.
3. An escape window is not required if the building is protected through-out by an approved, automatic sprinkler system.

4. Escape windows need not be installed from rooms of existing buildings having two separate means of escape, provided that the means of escape are independent and remote from each other and they pass through one adjacent non-lockable room or area.
5. Existing escape windows at single-story resort buildings installed prior to October 3, 1975 and having a clear opening not less than 20 inches in width, 20 inches in height, and 4.5 square feet in area with a finished sill height not more than 36 inches above the floor may be allowed to continue.
6. Escape windows are not required in group R hotels or motels constructed prior to April 11, 1983.

#### **4.3 Approved egress windows**

When used as a second means of egress, windows shall comply with the following minimum size requirements:

##### For escape windows installed prior to April 11, 1983:

- A minimum of 20 inches in width
- A minimum of 24 inches in height
- A minimum of 720 square inches (5.0 square feet) of clear opening
- A maximum of 48 inches from the floor to the sill opening

##### For escape windows installed above or below the level of exit discharge on or after April 11, 1983:

- A minimum of 20 inches in width
- A minimum of 24 inches in height
- A minimum of 820 square inches (5.7 square feet) of clear opening
- A maximum of 44 inches from the floor to the sill opening

##### For grade or ground floor escape windows:

- A minimum of 20 inches in width
- A minimum of 24 inches in height
- A minimum of 720 square inches (5.0 square feet) of clear opening
- A maximum of 44 inches from the floor to the sill opening

Approved egress/escape windows shall include the following: [MSFC (07) Section 1026.1]

- Double hung windows
- Sliding windows
- Casement windows

Easily removable sashes in existing buildings may be considered acceptable if demonstrated to be openable by the occupant or resident in approximately 30 seconds or less.

The sashes and/or hardware of the above windows, along with their storm/screens shall be easily removable and provide the clear opening requirements based on the date of construction for the building. Sashes that tip out only and can not be removed from the frame and awning style windows do not meet this requirement.

See the attached diagrams for additional description of acceptable egress windows and a worksheet for determining compliance with the requirements of the MSFC (07).

**4.4 Egress window opening height**

Egress windows with openings up to 52 inches off of the floor may meet the height requirement by securing a step, platform or bed to the wall directly underneath the window. This step, platform or unmovable bed shall be no more than 44 inches below the opening and must be strong enough to support the weight of the person. The minimum acceptable width shall be the same as the window opening. The minimum acceptable depth away from the wall shall be 18 inches. [MSFC (07) Section 1026.1]

**4.5 For mobile homes and other special situations**

For unique situations, please see the State Fire Marshal Division policy INS-26 titled, *Egress Windows (Emergency Escapes)* for information on how to treat situations that do not fit the conditions outlined here. See this policy too for information on the use of window wells for egress windows below grade.

**4.6 Sliding glass doors**

May be accepted as qualifying exit doors provided that the doors are maintained operational at all times. [MSFC (07) Section 1008.1.2].

**4.7 Access to sleeping areas**

No sleeping area is permitted to be accessible by only a ladder or folding stairs.

**4.8 A second exit is required from residential areas with an occupant load of 10 or more**

Some resort buildings will also require a second exit from floors containing residential areas with an occupant load of 10 or more. Such a second exit is in addition to any requirements for emergency escapes and usually takes the form of a second door or stairway off the corridor.

**Table 1019.2 – Buildings with One Exit**

Occupancy	Minimum Height of Building Above Grade Plane	Maximum Occupants (or Dwelling Units) Per Floor and Travel Distance
A, B, F, M, U	1 Story	49 occupants and 75 feet travel distance
H-2, H-3	1 Story	3 occupants and 25 feet travel distance
H-4, H-5, I, R-1&4, E	1 Story	10 occupants and 75 feet travel distance
S	1 Story	29 occupants and 100 feet travel distance
B, F, M, S	2 Stories	30 occupants and 75 feet travel distance
R-2	2 Stories	4 dwelling units and 50 feet travel distance

To decide if a second exit is required, it is first necessary to determine the occupant load of each floor. Two different ways are used to establish the occupant load, with the larger number being used:

1. Calculate the occupant load on each floor based on the occupant load in square feet of area per person from Table 1019.2. To do this, determine the total area of each floor (gross square feet). Divide the gross square feet by the occupant load factor to arrive at the number of occupants on the floor. Round up to the next whole number (a calculated value of 5.4 equals an occupant load of 6 people). Thus, a dwelling with a gross floor area of 3,000 square feet has an occupant load of 10 people.
2. Determine the actual number of persons on a floor. This is usually done based on the number of beds or bedrooms on each level. For example, a guestroom in a lodging house with a double bed is usually assumed to have an occupant load of 2. If there are 5 such bedrooms on a floor, the actual occupant load of the floor is 10. Caretakers and owners are included in the numbers of persons occupying a floor.

The larger of the two numbers determined above is the occupant load of the floor. If the occupant load for a floor is 10 persons or greater, a second exit may be required [MSFC (07) Section 1019.1]. A second exit need not be provided from the ground floor when the occupant load is less than 10 persons. [MSFC (07) Section 1019.2 (3)]

#### **4.9 Exiting from nonresidential areas**

Assembly, business and mercantile occupancies require more detailed information to determine exiting. See table 1019.2 above and consult with the State Fire Marshal Division for more information and assistance in evaluating egress requirements.

#### **4.10 Access to doors and windows**

Exit doors from individual dwelling units may be provided with a night latch, dead bolt or security chain provided that such devices are openable from the inside without the use of a key or tool and mounted at a height not to exceed 48 inches above the finished floor.

All locking devices shall be of an approved type. Double keyed dead bolts must be replaced with locks that do not require a key to open from the inside [MSFC (03) Section 1003.3.1.8].

*Exception:*

Minnesota Statute 16B.61 allows double-keyed deadbolt locks on single family dwellings.

### **SECTION 6—FIRE RESISTIVE CONSTRUCTION AND INTERIOR FINISH**

#### **6.1 OCCUPANCY SEPARATION – NEW**

All occupancy separations shall be in accordance with the MSBC. In general, the occupancy separations between an R-1 and A, B, E, I, R-2, R-3, R-4, S-2 and M occupancies is two (2) hours. Between and R-1 and U occupancy is 1 hour [MSBC (07~~3~~) Table 302.3.3]. [Research IBC #](#)

*Exception:*

Except for Group H and I-2 areas, where the building is equipped throughout with an approved automatic sprinkler system, the fire-resistance ratings in Table 302.3.3 [Research IBC #](#) shall be reduced by one-hour but to not less than 1 hour and to not less than that required for floor

construction according to the type of construction.

### **Occupancy Separations - Existing**

All occupancy separations in existing buildings shall be in accordance with MSFC (073) Section 705. In general, the occupancy separations between an R-1 and A, B, M, S and U occupancies is one (1) hour. All other occupancy separations shall be in accordance with the MSBC (073). There are numerous exceptions – read carefully in MSFC (073) Section 705.2.3.

Group R occupancies and the exits there from shall be separated from Group A, B, M, S, and U occupancies by at least one (1) hour fire-resistive construction [MSFC (073) Section 705.2.3, as amended]. Group R occupancies shall be separated from all other occupancies in accordance with the MSBC (073) Table 302.3.3.

#### *Exceptions:*

1. In buildings protected throughout by an approved automatic sprinkler system, one (1) hour occupancy separations need not be provided.
2. An occupancy separation need not be provided between Group A and Group R Occupancies if the building is provided with a fire alarm system having automatic smoke detection throughout the Group A occupancy.
3. Fire rated opening protection need not be provided between Group A and Group R Occupancies when such openings are designed to resist the passage of smoke and the openings are protected by an approved automatic sprinkler system.
4. Any occupancy separation need not be provided where two or more occupancies occur in the same building or structure and are so intermingled that separations are impracticable provided that the exit provisions and protection requirements for the more restrictive occupancy are provided.
5. Any occupancy separation need not be provided between a Group R-3 occupancy with sleeping accommodations for ten or fewer person and Group B or M Occupancies which are accessory if interconnected smoke detectors are provided. At least one smoke detector shall be located in the Group B or Group M occupancy and additional detectors may be needed in accordance with manufacturer's instructions. Smoke detectors in the sleeping areas shall be located as specified in Section 907.2.10 and shall be audible in all sleeping areas [MSFC (073) Section 705.2.3]

When accessory uses are part of a larger major use, the following need not be separated [MSFC (073) Section 705.2.3]

- Assembly rooms having a floor area of not over 750 square feet. For further information, please review the State Fire Marshal Division Policy Ins-33 on Breakfast and Meeting Rooms in R-1 Occupancies.
- Administrative and clerical offices and similar rooms that do not exceed 25 percent of the floor area of the major use.
- Gift shops, administrative offices and similar rooms in R-1 occupancies not exceeding 10 percent of the floor area of the major use.
- The kitchen serving the dining area of which it is a part.

### **6.2 Fire-Resistive Corridor Construction**

The requirements for fire-resistive corridor construction vary depending on the occupancy classification and date of construction.

### **Requirements for Group R-1 (Hotel/Motel) – New Construction**

Corridors serving an occupant load of ten or more shall have protection for the walls, floor and ceiling meeting the requirements for one-hour fire resistive construction as specified in MSBC (073) and MSFC (073) Table ~~1004.3.2+1017.1~~. Doors opening into the corridor shall have 20-minute fire resistance and be self-closing or automatic-closing by detection of smoke.

### **Requirements for (Group R Division 1) Hotel Occupancies – Existing**

Corridors serving an occupant load of ten or more shall have protection as follows:

Corridors serving an occupant load of 10 or more shall have walls and ceilings of not less than one-hour fire resistive construction as required by the MSBC. Existing walls surfaced with wood lath and plaster in good condition or 1/2 inch gypsum wallboard or openings with fixed wired glass set in steel frames when approved. Door openings into such corridors shall be protected by 20-minute fire assemblies or solid wood doors not less than 1 3/4 inches thick. Where the existing frame will not accommodate the 1 3/4 inch thick door, a 1 3/8 inch thick solid bonded wood core door or equivalent insulated steel door shall be permitted. Doors shall be self-closing or automatic-closing by smoke detection. Transoms and openings other than doors from corridors to rooms shall comply with the MSBC or shall be covered with a minimum of 3/4 inch plywood or 1/2 inch gypsum wallboard or equivalent material on the room side. Corridor protection is not required when the building is protected with an approved automatic sprinkler system throughout [MSFC (073) Section 102740.17.1].

### **6.3 Incidental (hazardous) Use Areas – New and Existing**

Incidental use areas, including but not limited to, shops, laboratories containing hazardous materials, storage rooms exceeding 100 square feet in size and rooms containing boilers or central heating plants in Group R-1 facilities shall be separated from the rest of the building by not less than a one-hour occupancy separation. When approved by the fire chief, existing wood lath and plaster in good conditions or 1/2 inch gypsum wallboard may be acceptable where one-hour occupancy separations are required.

*Exception:* A separation need not be provided in Group R occupancies if the hazardous area is protected with automatic sprinklers and the doors to such areas are solid-core wood doors or insulated steel doors. Doors shall be self-closing or automatic-closing by smoke detection [MSFC (073) Section 705.3.2.1].

### **6.4 Vertical Openings – New Construction:**

Must comply with the requirements of the MSBC [MSFC (073) Section 701.1]. Basically, all floor levels must be fire separated.

### **Vertical Openings – Existing:**

Interior vertical shafts including but not limited to, stairways, elevator hoist ways, service and utility shafts, that connect two or more stories of a building shall be enclosed or protected as specified in MSFC (~~0307~~) Table 704.1. Basically, 2 stories may be open, 3 to 5 stories must be one-hour fire separated or have sprinkler protection throughout and over 5 stories must have one-hour fire separation.

### **6.5 Maintenance of Fire-Resistive Construction – New and Existing**

Other fire-resistive construction, including occupancy separations, area separation walls, exterior walls due to location on property, fire-resistive requirements based on type of construction, draft-stop partitions and roof coverings may be required in some occupancies. When required, they

shall be maintained as specified in the MSFC (073) and MSBC (073) and shall be properly repaired, restored or replaced when damaged, altered, breached, penetrated, removed or improperly installed [MSFC (073) Section 703.1].

#### **6.6 Interior Finish – New Construction:**

Must meet the requirements of the MSBC [MSFC (073) Section 801.1.1]

#### **Interior Finish – Existing:**

Vertical exits and exit passageways in Group R-1 occupancies, in a fully sprinkled building are required to meet a Class B flame spread rating. Vertical exits in non-sprinkled buildings are required to meet a Class A flame spread rating in accordance with MSFC (073) Table 8036.3. Interior finish on walls and ceilings shall be Class A, B or C (I, II or III) in other spaces [MSFC (073) Section 806-3803.1]. For complete details, see MSFC (073) Table 8036.3.

## **SECTION 7 — FIRE ALARM AND DETECTION SYSTEMS**

### **7.1 Alarm Requirements for Hotel (Group R-1) Occupancies – New**

A fire alarm system shall be installed as follows [MSFC (073) Section 907.2.8]:

#### *Exceptions:*

1. A fire alarm system is not required in buildings not over two stories in height where all individual rooms and contiguous attic and crawl spaces are separated from each other and public or common areas by at least one-hour fire partitions and each guest room has a direct exit to a public way, exit court or yard.
2. Buildings containing 5 or fewer guest rooms shall be allowed to be equipped with approved, multiple-station smoke detectors installed as required for Group R-3 Occupancies. Installation shall be in accordance with Section 907.2.10.

#### **7.1.1 Initiation**

Initiation of the fire alarm system shall be by automatic means. Approved fire detectors shall be provided in boiler and furnace rooms, shops, laundry rooms, mechanical and electrical rooms, trash-collection rooms, storage rooms, gift shops, locker rooms and similar areas. Automatic smoke detectors shall be provided in all common areas and interior corridors serving as required means of egress.

#### *Exception:*

System fire and smoke detectors are not required when an approved automatic fire-extinguishing system is installed throughout the building and manual activation is provided at a constantly attended location.

#### **7.1.2 Notification**

Activation of the fire alarm system or automatic sprinkler system shall initiate a general evacuation signal.

#### **7.1.3 Guest Room Detectors**

Guest room smoke detectors are required as listed in MSFC Section 907.2.10 but shall not be connected to a fire alarm system unless for annunciation only. Detectors shall receive their primary power from the building wiring and shall be equipped with battery backup unless connected to an emergency generator. Guest room detectors are required in the sleeping room

and in rooms in the path of egress from the sleeping room. When two or more detectors are required, they shall be interconnected [MSFC (~~0307~~) Section 907.2.10.~~32~~]

## **7.2 Alarm Requirements for Hotels (Group R-1) Occupancies – Existing**

A fire alarm system shall be installed in R-1 occupancies 3 or more stories in height or with 20 or more guest rooms. [MSFC (073) Section 907.3.4]:

### *Exception:*

A fire alarm system is not required in buildings that do not have interior corridors serving guest rooms and where each guest room has an exit opening directly to an exterior exit access that leads directly to the exits.

### **7.2.1 Initiation**

Initiation of the fire alarm system shall be by automatic means. Approved automatic fire detectors shall be provided in boiler and furnace rooms, shops, laundry rooms, mechanical and electrical rooms, trash-collection rooms, storage rooms, gift shops, locker rooms and similar areas. Automatic smoke detectors shall be provided in all common areas and interior corridors serving as a required means of egress.

### *Exception:*

System fire and smoke detectors are not required when an approved automatic fire extinguishing system is installed throughout the building and manual activation is provided at a constantly attended location.

### **7.2.2 Notification**

Activation of the fire alarm system or automatic sprinkler system shall initiate a general evacuation signal.

### **7.2.3 Guest Room Detectors**

Guest room smoke detectors are required as listed in MSFC (073) Section 907.2.10 but shall not be connected to a fire alarm system unless for annunciation only. Smoke alarms are allowed to be solely battery operated. Guest room detectors are required in the sleeping room and in rooms in the path of egress travel from the sleeping room [MSFC (073) Section 907.2.10.1.12].

## **7.4 Visual Signaling Devices**

Guest rooms for persons with hearing impairments shall be provided with visible and audible alarm indicating appliances, activated by both the in-room smoke detector and the building fire alarm system [NFPA 72 (1999 Edition) Chapter 8].

## **7.5 Alarm requirements for dwelling units (Group R Division 3) occupancies**

### **7.5.1 Location**

#### In homes built prior to July 10, 2007.

Smoke detectors shall be installed in hallways or areas giving access to each separate sleeping area. Where sleeping rooms are on an upper level only, the detector shall be placed at the center of the ceiling directly above the stairway. Smoke detectors shall also be installed in the basement of dwelling units having a stairway that opens from the basement into the dwelling unit [MSFC (07) Section 907.3.6].

#### In homes built on or after July 10, 2007.

A smoke detector shall be installed in each sleeping room and at a point centrally located in the corridor or area giving access to each separate sleeping area. When the dwelling unit has more than one story and in dwellings with a basement, a detector shall be installed on each story and in the basement. In dwelling units where a story or basement is split into two or more levels, the smoke detector shall be installed on the upper level, except that when the lower level contains a sleeping area a detector shall be installed on each level. When sleeping rooms are on an upper level, the detector shall be placed at the ceiling of the upper level in close proximity to the stairway. [MSFC (07) Section 907.2.10.1.2] Detectors shall sound an alarm readily audible in all sleeping areas of the dwelling unit in which they are located. This usually requires interconnecting of the smoke detectors. [MSFC (07) Section 907.2.10.3.]

### **7.5.2 Power supply**

#### In homes constructed prior to August 1, 1989.

Smoke detectors may be battery powered only [MSFC (07) Section 907.3.2.3. Exception]. When new bedrooms are created after May 31, 2007, the detector in the new bedroom shall receive its primary power supply from a centralized power source and be equipped with a battery backup. [MSFC (07) Section 907.2.10.2].

#### In homes constructed on or after August 1, 1989 and before June 29, 1998.

Smoke detectors shall receive their primary power supply from a centralized power source [Minn. Stat. § 299F.362, Subd. 3a]. Wiring shall be permanent and without a disconnecting switch other than those required for over current protection. When new bedrooms are created after May 31, 2007, the detector in the new bedroom shall receive its primary power supply from a centralized power source and be equipped with a battery backup. [MSFC (07) Section 907.2.10.2].

#### In homes constructed on or after June 29, 1998.

Smoke detectors shall receive their primary power from the building wiring when such wiring is served from a commercial source and shall be equipped with a battery backup. Wiring shall be permanent and without disconnecting switch other than those required for over current protection [MSFC (07) Section 907.2.10.2]. When new bedrooms are created, the detector in the new bedroom shall receive its primary power from the building wiring when such wiring is served from a commercial source and shall be equipped with a battery backup.

UL (Underwriters Laboratories) or FM (Factory Mutual) listed and approved fire-alarm systems both hardwired and wireless are also acceptable. Detectors with a battery shall emit a signal when the battery is low.

### **7.6 General Installation Requirements for ALL Detectors**

Detector location and spacing shall be as follows, in addition to the manufacturer's instructions [NFPA 72 (1999 Edition) Chapter 8]:

- a. Smoke detectors in rooms with ceiling slopes greater than 1-foot rise per 8 feet horizontally shall be located at the high side of the room.
- b. A smoke detector installed in a stairwell shall be so located as to ensure that smoke rising in the stairwell cannot be prevented from reaching the detector by an intervening door or obstruction.
- c. A smoke detector installed to detect a fire in the basement shall be located in close proximity to the stairway leading to the floor above.

- d. Smoke detectors shall be mounted on the ceiling at least 4 inches from a wall or on a wall with the top of the detector not less than 4 inches, or more than 12 inches, below the ceiling.
- e. Smoke detectors shall not be located within kitchens, garages, or in other spaces where temperatures can fall below 32 °F, or exceed 100 °F.
- f. Smoke detectors shall not be located within 3 feet of supply registers of a forced air heating or cooling system and doors to a kitchen or bathroom with tub or shower

UL or FM (Factory Mutual) listed and approved fire-alarm systems both hardwired and wireless are also acceptable. Detectors with a battery shall emit a signal when the battery is low.

#### **7.7 Alarm requirements for business (B) and mercantile (M) occupancies**

Automatic alarm systems are only required for business and mercantile occupancies in limited situations covered in MSFC (07) Sections 907.2.2. Other sections of this information sheet may allow the installation of an alarm system, as a trade-off for other requirements of the MSFC (07).

#### **7.8 Alarm requirements for assembly (A) occupancies**

Assembly spaces with occupant loads of 300 or more require an automatic fire alarm system unless the building is protected throughout with an approved automatic fire extinguishing system [MSFC (07) Section 907.2.1].

### **SECTION 8– FIRE SPRINKLER AND STANDPIPE SYSTEMS.**

#### **8.1 Automatic Sprinkler Systems – New**

An automatic sprinkler system is required in all buildings with an R-1 occupancy unless the building is under three stories in height and each guest room has a door opening directly to the outside [MSFC (07~~3~~) Section 903.2.7].

#### **8.2 Automatic Sprinkler Systems – Existing**

1. An automatic sprinkler system is required in existing R-1 basements when used for guest rooms and the basement exceeds 2,500 square feet in size and there is not provided at least 20 square feet of opening entirely above the adjoining ground level in each 50 lineal feet of exterior wall on at least one side of the building. Openings shall have a minimum dimension of 30 inches. If any portion of the basement is located more than 75 feet from a required opening, the basement shall be sprinkled throughout.
2. Existing rubbish and linen chutes shall be protected with automatic sprinkler protection.

#### **8.3 Standpipe Systems – New**

Class III standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet ~~(9144 mm)~~ above the lowest level of fire department vehicle access, or where the floor level of the lowest story is located more than 30 feet ~~(9144 mm)~~ below the highest level of fire department vehicle access [MSFC (07~~3~~) Section 905.3.1].

##### *Exceptions:*

1. Class I standpipes are allowed in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet above the lowest level of fire department vehicle access.

3. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.
4. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.

~~In buildings exceeding 10,000 square feet in area per story, Class I automatic wet or manual wet standpipes shall be provided where any portions of the buildings interior area is more than 200 feet of travel, vertically or horizontally, from the nearest point of fire department vehicle access. [MSFC (03) Section 905.3.2]~~

*Exception:*

- ~~1. Buildings equipped throughout with automatic sprinkler systems installed in accordance with Section 903.3.1.1.~~
- ~~2. Group A-4, A-5, F-2, R-2, S-2, or U occupancies.~~
- ~~3. Automatic dry and semiautomatic dry standpipes are allowed as provided for in NFPA 14.~~

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#### 8.4 Standpipe Systems – Existing

Standpipe systems complying with MSFC (073) Section 905 are required in existing buildings which have occupied floors located more than 50 feet above below the lowest level of fire department access. The standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department access [MSFC (073) Section 905.11].

### SECTION 9 — FIRE EXTINGUISHERS

#### 9.1 Extinguisher Size and Location – New and Existing

At least one portable fire extinguisher having a rating of 2A 10BC, or larger, shall be available within 75' of all occupied spaces in lodging buildings with 6 or more guest rooms, buildings with 3 or more condominium units, congregate lodging buildings and places of assembly. Fire extinguishers are not required in individual R-3 occupancy cabins. Travel to another floor to obtain the extinguisher is not acceptable. Thus a minimum of one fire extinguisher is required on each level [MSFC (073) Section 906.1].

In kitchens containing commercial cooking equipment that produces grease-laden vapors, portable fire extinguishers shall be provided within 30-foot (9144 mm) travel distance of commercial type cooking equipment. Cooking equipment involving vegetable oil or animal oils and fats shall be protected by a Class K rated portable extinguisher [MSFC (073) Section 904.11.5]. A placard shall be conspicuously placed near the Class K extinguisher that states that the fire protection system shall be activated prior to using the fire extinguisher. If the commercial cooking equipment does not produce grease-laden vapors, at least one portable fire extinguisher having a rating of 2A 10BC, or larger, shall be provided [MSFC (073) Sections 906.1 and NFPA 10]-(1998 Edition)-.

#### 9.2 Installation and Maintenance – New and Existing

Extinguishers shall be installed, mounted, inspected, tested and maintained according to NFPA Standard 10 (1998 Edition) Chapter 4.

A quick check for all fire extinguishers is necessary on a monthly basis. Minimal knowledge is necessary to perform this inspection [NFPA Standard 10 ~~(1998 Edition)~~, Section 4-1.2].

Extinguishers shall receive maintenance at least yearly. Maintenance, servicing and recharging shall be performed by trained persons having available the appropriate servicing manuals, the proper type of tools, recharge materials, lubricants, and manufacturer's recommended replacement parts [NFPA Standard 10 ~~(1998 Edition)~~, Section 4-1.4].

## SECTION 10 — HEATING AND ELECTRICAL EQUIPMENT

### 10.1 Heating Appliances – New and Existing

All heating equipment shall be listed by a nationally recognized testing agency [MSFC (073) Section 603.5].

~~*Exception:*~~

~~Existing unlisted heating appliances may be accepted provided they are of substantial construction, are properly maintained and do not constitute a distinct hazard [MSFC (03) Section 603.5].~~

Heating appliances shall be installed and maintained with proper clearance from combustibles [MSFC (073) Section 603.5.2].

Stoves and combustion heaters shall be so located as to not block escape in case of fire arising from malfunctioning of the stove or heater.

Because unvented fuel-fired heating appliances were permitted in residential occupancies by previous editions of the state fire and mechanical codes, existing installations (installed prior to September 20, 2004) are allowed to remain as long as they are in proper working order and are not located in, or take their combustion air from, bedrooms, closets, or bathrooms.

Installations of non-vented fuel fired heaters after September 20, 2004 are prohibited by both the fire and mechanical codes. All fuel-fired heaters must be vented to the exterior.

Furnaces, water heaters, and other heating equipment shall be installed in accordance with their listing, the MSBC (073), Mechanical Code and the Electrical Code. All heating appliances installed in garages shall be at least 18 inches above the floor.

Wood burning appliances shall only be connected to a chimney flue serving an appliance burning other fuels when listed for such use [MSFC (073) Section 603.6].

### 10.2 Emergency and Standby Power Systems – New and Existing

Emergency and standby power systems shall be provided for fire alarm systems per NFPA 72 ~~(1999 Edition)~~, smoke control systems, exit signs, means of egress illumination, accessible means of egress, elevators, horizontal sliding doors, high-rise buildings and others [MSFC (073) Section 604].

### **10.3 Electrical Services – New and Existing**

Electrical hazards shall be corrected according to MSFC (07~~3~~) Section 605.1 and the Electrical Code.

Multiplug adapters, such as multiplug extension cords, cube adapters, strip plugs and other devices shall comply with the MSFC (03~~07~~) and the Electrical Code [MSFC (03) Section 605.4].

Receptacles and outlets serviced by extension cord-type wiring are prohibited [MSFC (07~~3~~) Section 605.5].

Power taps are permitted when polarized or grounded and protected with listed over current protection [MSFC (07~~3~~) Section 605.4.1].

Extension cords shall not be used as a substitute for permanent wiring [MSFC (07~~3~~) Section 605.5].

Provide physical protection for all plugs and outlets located behind beds. [MSFC (07~~3~~) Section 605.1].

## **SECTION 11 — FLAMMABLE AND COMBUSTIBLE LIQUID DISPENSING**

The dispensing of flammable and combustible liquids at resorts shall comply with the applicable MSFC (07) requirements. To determine the applicable requirements, it is first necessary to decide if the dispensing is considered “public” or “private” according to the definitions given below.

### **11.1.1 Public dispensing**

Public dispensing is defined as the dispensing of flammable and/or combustible liquids at resorts for guests and/or the public when the storage of flammable and/or combustible liquids involves the following:

1. Any resort having a single aboveground tank with a capacity exceeding 560 gallons, or
2. Any resort having two or more tanks with an aggregate capacity exceeding 1,120 gallons.

The following provisions shall apply for public dispensing (tank size meeting #1 or #2 above): New or existing tanks meeting the above requirements shall conform to the provisions of MSFC (03) Chapter 2210, marine motor fuel-dispensing facilities.

Public dispensing operations that involve the filling of fuel tanks on watercraft at resorts shall be considered marine motor vehicle fuel-dispensing stations and shall comply with MSFC (07) Chapter 22, Sections 2201 - 2205 and 2210. The provisions of this section shall apply for dispensers located out on the dock and those located on shore with a hose or piping and nozzle capable of being run out onto the dock.

#### **11.1.1.2. Supervision**

Marine service stations shall have an attendant or supervisor who is fully aware of the operation, mechanics and hazards inherent with fueling of boats on duty whenever the station is open for business. The attendant’s primary function is to supervise, control and observe the dispensing of flammable and combustible liquids.

### **11.1.1.3 Dispensing at Marinas**

A marina shall be defined as a facility serving watercraft having enclosed compartments for human occupancy (i.e. living, sleeping, cooking, eating, etc.) such as houseboats.

### **11.1.2 Private dispensing**

Private dispensing is defined as the dispensing of flammable and/or combustible liquids at resorts for guests and/or the public when the storage of flammable and/or combustible liquids involves the following:

1. Any resort having a single aboveground tank with a capacity of 560 gallons or less, or
2. Any resort having two or more tanks with an aggregate capacity of 1,120 gallons or less.

New or existing tanks meeting the definition of private dispensing shall conform to the requirements for storage and dispensing of flammable and combustible liquids on farms and construction sites as covered in MSFC (03) Section 3406.2, except as modified through 1.2.1 to 1.2.15 of this section. Resort installations that do not meet the definition of private dispensing are considered public dispensing and shall meet the requirements above in Section 1.1 to 1.1.3 for public dispensing.

**11.1.2.1 Combustibles and open flames near tanks.** Storage areas shall be kept free from weeds and extraneous combustible material. Open flames and smoking are prohibited in flammable or combustible liquid storage areas. [MSFC (07) Section 3406.2.1]

**11.1.2.2 Protection from vehicles.** Guard posts or other approved means shall be provided to protect tanks, piping, valves or fittings subject to vehicular damage. [MSFC (07) Section 3403.6.4]

**11.1.2.3 Existing fuel oil type tanks.** Storage of gasoline in existing "fuel oil type" tanks shall be permitted.

**11.1.2.4. Approved containers.** Only approved containers and portable tanks shall be used. [MSFC (07) Section 3404.3.1.1]

**11.1.2.5 Markings of tanks and containers.** Tanks and containers for the storage of liquids above ground shall be conspicuously marked with the words: **FLAMMABLE-KEEP FIRE AND FLAME AWAY.** [MSFC (07) Section 3406.2.2]

**11.1.2.6 Container for storage and use.** Pumping devices or approved self-closing faucets used for dispensing liquids shall not leak and shall be well maintained. [MSFC (07) Section 3406.2.3]

**11.1.2.7 Fill-opening security.** Fill openings shall be equipped with a locking closure device. Fill openings shall be separate from the vent openings. [MSFC (07) Section 3406.2.4.1]

**11.1.2.8 Normal venting.** Normal vents for tanks shall terminate not less than 12 feet above the adjacent ground level. The vapors shall be discharged upward so that they will not be trapped by overhanging eaves or other obstructions and shall be at least 5 feet from building openings. [MSFC (07) 3406.2.7.3]

**11.1.2.9 Emergency venting.** Emergency vents shall be arranged to discharge in a manner which prevents localized overheating of flame impingements on any part of the tank in the event that vapors from such vent are ignited. [MSFC (07) Section 3404.2.7.4].

**11.1.2.10 Location.** Tanks are required to be kept outside and at least 50 feet from buildings and combustible storage, except as modified by the following [MSFC (07) Section 3406.2.4.3]:

1. Tanks are allowed to be no closer than 20 feet from buildings not used for lodging such as garages, boathouses, fish cleaning houses and bait shacks.
2. Two-hour protected tanks installed no closer than 5 feet from buildings not used for lodging.
3. Tanks shall be permitted to be no closer the five (5) feet of any building not being slept in if the tank is separated by a fire wall having not less then a 2-hour fire resistance rating. This wall shall be an unpierced wall extending not less than 30 inches above and to the sides of the storage tank and dispensers or from the roof eaves of the building (which ever is lower) to the ground and extended past the tank and pump by at least 30 inches.

**1.2.11 Tanks with top openings only.** Tanks with top openings shall be mounted as follows:

1. On well-constructed metal legs connected to shoes or runners designed so that the tank is stabilized and the entire tank and its supports can be moved as a unit; or
2. For stationary tanks, on a stable base of timbers or blocks approximately 6 inches in height which prevents the tank from contacting the ground.  
[MSFC (07) Section 3406.2.5.1]

**1.2.12 Pumps and fittings.** Tanks with top openings only shall be equipped with a tightly and permanently attached, approved pumping device having an approved hose of sufficient length for filling equipment or containers to be served from the tank. Either the pump or the hose shall be equipped with a padlock to its hanger to prevent tampering. An effective antisiphoning device shall be included in the ump discharge unless a self-closing nozzle is provided. Siphons or internal pressure discharge shall not be used. [MSFC (07) Section 3406.2.5.1.1]

**1.2.13 Tanks with gravity discharge.** Tanks with a connection in the bottom or the end for gravity-dispensing liquids shall be mounted and equipped as follows:

1. Supports to elevate the tank for gravity discharge shall be designed to carry all required loads and provide stability.
2. Bottom or end openings for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat-activated releasing device. Where this valve cannot be operated manually, it shall be supple-mounted by a second manually operated valve. The gravity discharge outlet shall be provided with an approved hose equipped with q self-closing valve at the discharge end of a type that can be padlocked to its hanger.  
[MSFC (07) Section 3406.2.5.2.]

**1.2.14 Spill control, drainage control and diking.** Spill control, drainage control and diking are to be provided as required by MSFC (07) Section 3404.2.10, except as modified below:

1. Double walled tanks are considered to meet the requirements.
2. If the individual inspector has determined that a particular tank installation does not constitute a distinct hazard to other tanks, waterways, structures or adjoining property tanks, spill control, drainage control and diking according to MSFC (07) Section 3404.2.10 need not be provided. If the inspector determines that a particular tank installation does not constitute a distinct hazard as set forth above, this shall be documented in writing on the inspection report.  
[MSFC (07) Section 3406.2.6.]

**1.2.15 Portable fire extinguishers.** Portable fire extinguishers with a minimum rating of 20-BC and complying with MSFC (07) Section 906 shall be provided no closer than 20 feet but within 100 feet of the dispensing area. [MSFC (07) Section 3406.2.7.]

**Minnesota Pollution Control Agency.** MPCA rules supersede those of the MSFC. All questions about private above ground dispensing should also be directed to the MPCA regional office.

**Plan Review.** Above ground storage tanks installed at resorts for private dispensing according to this section **do not** require a plan review by the SFMD. However, local fire officials are still required to be notified of any installations within their jurisdiction and may require plan review documents be submitted to them before installation.

## SECTION 11 — LP GAS

The currently adopted edition of National Fire Protection Standard 58, LP-gas code, is used for the storage, handling, transportation, and use of liquefied petroleum gas. NFPA 58 also applies for the design, construction, installation, operation and maintenance of all equipment pertinent to systems for such uses.

A brief summary of the requirements from NFPA 58 will be provided here. Consult the MSFC (07) and NFPA 58 for complete requirements.

### 11.1 Installation of containers

Containers installed outside of buildings, whether portable or permanently installed, shall be separated as follows from the nearest important building or line of adjoining property that may be built upon [NFPA 58 Section 3-2.2.2]:

For aboveground containers having a water capacity of less than 125 gallons, no separation is necessary. DOT containers require installation so that the discharge from the pressure relief device is at least 3 feet horizontally away from building openings below the level of discharge and at least 5 feet in any direction from exterior sources of ignition, and openings for appliances. ASME containers require installation so that the discharge from the pressure relief device is at least 5 feet horizontally away from building openings below the level of discharge and at least 10 feet in any direction from exterior sources of ignition, and openings for appliances.

For aboveground containers having a water capacity of 125 gallons to 500 gallons, a minimum 10 foot separation is necessary to nearest important building or line of adjoining property that may be built upon.

For aboveground containers having a water capacity of 501 gallons to 2000 gallons, a minimum 25 foot separation is necessary to nearest important building or line of adjoining property that may be built upon. This distance may be reduced to not less than 10 feet for a single container of 1,200 gallons water capacity or less provided such container is at least 25 feet from any other LP-Gas container of more than 125 gallons water capacity.

Combustible materials shall be kept greater than 10 feet from any container [NFPA 58 Section 3-2.2.6 (b)].

A minimum 20 foot separation is required between LP-Gas containers and aboveground tanks storing flammable or combustible liquids [NFPA 58 (Section 3-2.2.6 (e))]. This provision does not apply when LP-Gas containers of 125 gallons water capacity, or less, are installed adjacent to fuel oil supply tanks with a capacity of no more than 660 gallons.

No part of an aboveground LP-Gas container shall be located in the area 6-feet horizontally from a vertical plane beneath overhead power lines that are over 600 volts [NFPA 58 Section 3-2.2.6 (j)].

DOT cylinders shall be set upon a firm foundation or otherwise secured in an upright position.

Aboveground containers shall be adequately protected against vehicle damage [NFPA 58 Section 3.2.15.7].

Aboveground containers shall be kept properly painted.

### **11.2 Regulators**

Regulators shall be securely attached to the container, a supporting standard or building wall (flexible connectors are acceptable) [NFPA 58 (Section 3-2.12)]. Regulators shall also be provided with weather protection [NFPA 58 Section 3.2.12].

### **11.3 Piping**

Aboveground piping shall be well supported and protected against physical damage [NFPA 58 Standard 3.2.15.7].

### **11.4 Shut-off valves for multiple building installations**

Where multiple buildings are served by a common gas supply system, manual gas shut-off valves must be installed outside each building [MSFC (07) Section 603.1].

### **11.5 Containers awaiting use or resale**

Storage of containers awaiting use or resale with a total quantity of gas stored of 720 lbs or less need not be separated from the nearest building and line of adjoining property line which may be built upon [NFPA 58 Section 5.4.1.3]. Larger quantities of LP-Gas stored require separation according to NFPA 58 (Section 5.4.1.3).

Containers awaiting use or resale shall be stored within a fenced enclosure or in a lockable metal

locker or rack that prevents tampering with the valves and pilferage of the cylinders [NFPA 58 Section 5.4.2.1].

**12.1 Recreational fires.**

**12 Additional Information:**

Open burning is covered by the Department of Natural Resources in Minn. Stat. § 88.17 and Minn. Stat. § 88.171. Contact the DNR for additional information.

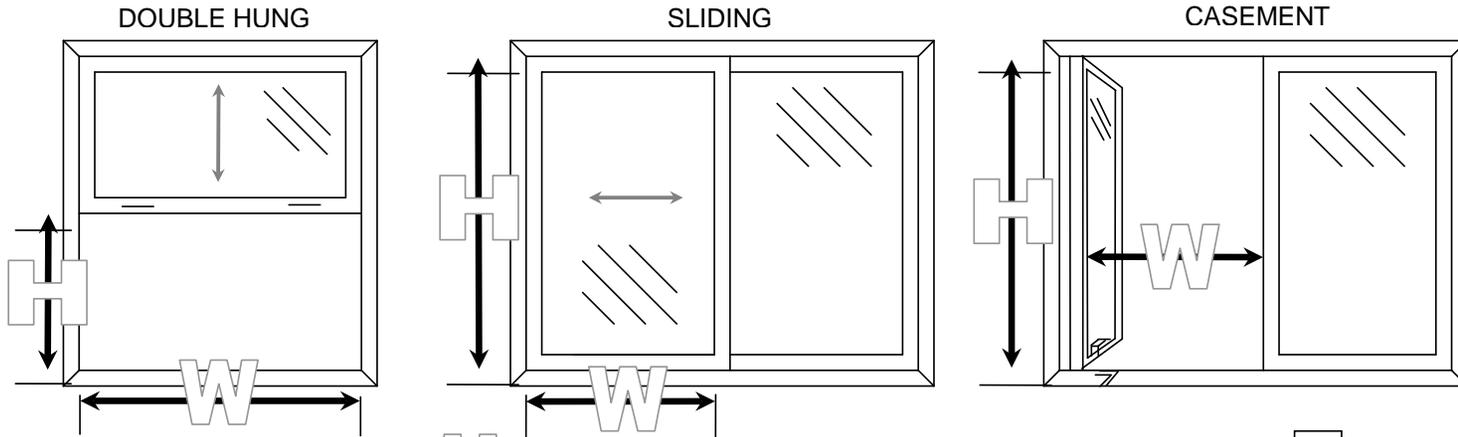
For additional information on recreational fires please review the State Fire Marshal Division Information Sheet titled, *Recreational Fires*.

**12.2 Abandonment of Tanks.**

See MSFM information sheet titled: Removal or Abandonment Information Sheet.

# Egress Window Worksheet for Windows Installed Before April 11, 1983

## 1) Check Window Height and Width



Is the clear openable height, **H** at least 24 inches?

Yes  No

Is the clear openable width, **W** at least 20 inches?

Yes  No

## 2) Check Window Opening Area (fill in the three blanks)

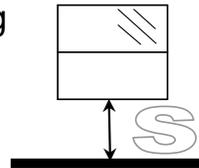
$$\begin{array}{c}
 \text{H} \quad \underline{\hspace{2cm}} \\
 \text{Openable height (inches)}
 \end{array}
 \times
 \begin{array}{c}
 \text{W} \quad \underline{\hspace{2cm}} \\
 \text{Openable width (inches)}
 \end{array}
 =
 \begin{array}{c}
 \text{A} \quad \underline{\hspace{2cm}} \\
 \text{Openable area (square inches)}
 \end{array}$$

Is the clear openable area, **A** at least 720 square inches?

Yes  No

## 3) Check the distance from the floor to the bottom of opening

Is the distance, **S** from the floor to the finished sill (bottom of opening) 48 inches or less?

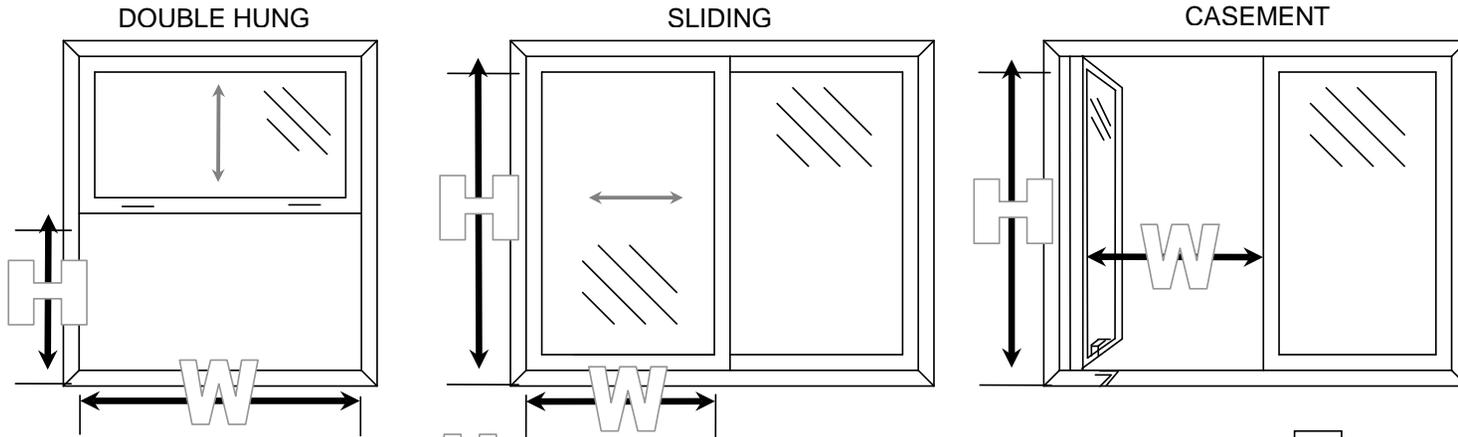


Yes  No

If you answered yes to all questions then the window should comply with the 2007 Minnesota State Fire Code.  
 For assistance: Minnesota State Fire Marshal Division (651) 201-7200; TTY: (651) 282-6555; firecode@state.mn.us

# Egress Window Worksheet for Ground Floor Windows Installed On or After March 31, 2003

## 1) Check Window Height and Width



Is the clear openable height, **H** at least 24 inches?

Yes  No

Is the clear openable width, **W** at least 20 inches?

Yes  No

## 2) Check Window Opening Area (fill in the three blanks)

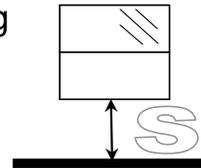
$$\begin{array}{c} \text{H} \\ \text{Openable height (inches)} \end{array} \quad \times \quad \begin{array}{c} \text{W} \\ \text{Openable width (inches)} \end{array} = \begin{array}{c} \text{A} \\ \text{Openable area (square inches)} \end{array}$$

Is the clear openable area, **A** at least 720 square inches?

Yes  No

## 3) Check the distance from the floor to the bottom of opening

Is the distance, **S** from the floor to the finished sill (bottom of opening) 44 inches or less?

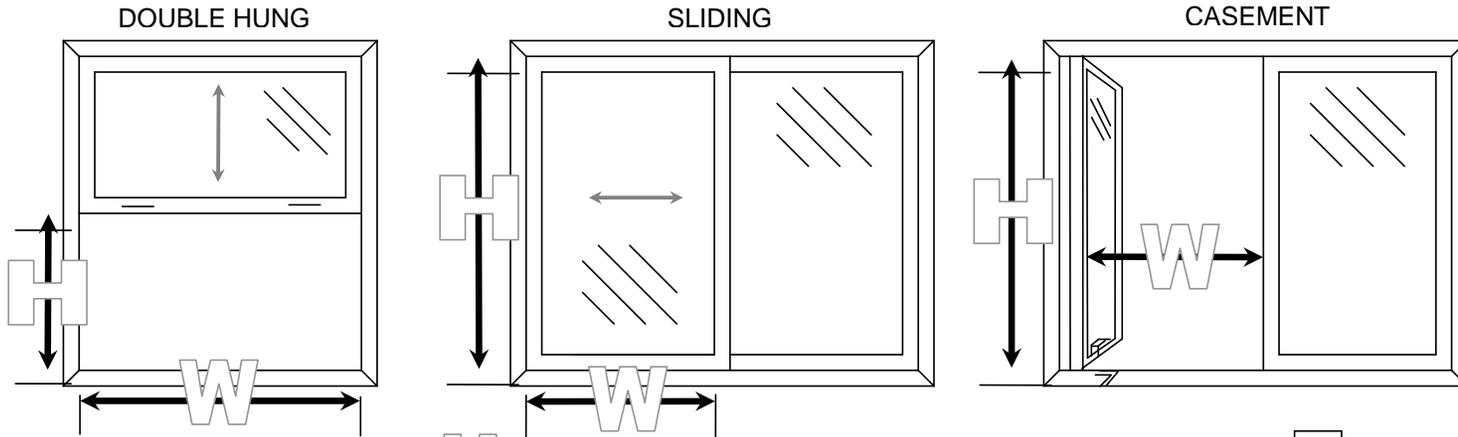


Yes  No

If you answered yes to all questions then the window should comply with the 2007 Minnesota State Fire Code.  
 For assistance: Minnesota State Fire Marshal Division (651) 201-7200; TTY: (651) 282-6555; firecode@state.mn.us

**Egress Window Worksheet for Windows Installed Above or Below Grade On or After April 11, 1983**

**1) Check Window Height and Width**



Is the clear openable height, **H** at least 24 inches?

Yes  No

Is the clear openable width, **W** at least 20 inches?

Yes  No

**2) Check Window Opening Area (fill in the three blanks)**

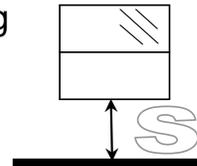
$$\begin{matrix} \text{H} \\ \text{Openable height (inches)} \end{matrix}
 \quad \times \quad
 \begin{matrix} \text{W} \\ \text{Openable width (inches)} \end{matrix}
 \quad = \quad
 \begin{matrix} \text{A} \\ \text{Openable area (square inches)} \end{matrix}$$

Is the clear openable area, **A** at least 820 square inches?

Yes  No

**3) Check the distance from the floor to the bottom of opening**

Is the distance, **S** from the floor to the finished sill (bottom of opening) 44 inches or less?

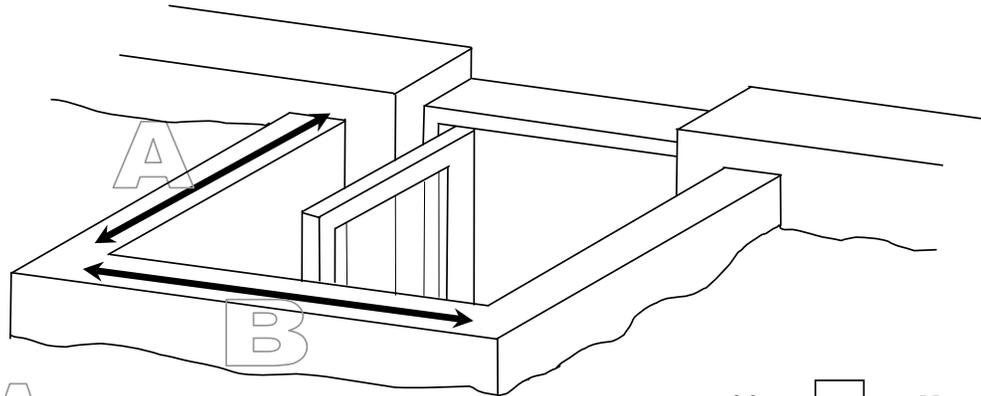


Yes  No

If you answered yes to all questions then the window should comply with the 2007 Minnesota State Fire Code.  
 For assistance: Minnesota State Fire Marshal Division (651) 201-7200; TTY: (651) 282-6555; firecode@state.mn.us

# Window Well Worksheet

## 1) Check Window Well Dimensions



Is the clear horizontal distance, **A** at least 36 inches?      Yes     No

Is the clear horizontal distance, **B** at least 36 inches?      Yes     No

## 2) Check Window Well Opening Area (fill in the three blanks)

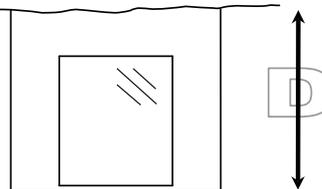
**A** \_\_\_\_\_ **X** \_\_\_\_\_ = **Area** \_\_\_\_\_

Horizontal distance (inches)      Horizontal distance (inches)      Net horizontal opening (square inches)

Is the clear openable area, **Area** at least 1,080 square inches?      Yes     No

## 3) Check the vertical depth of the window well

If the distance, **D** from the bottom of the well to the top at grade is more than 44 inches, a ladder is required.  
If a ladder is required, is one provided?



Yes     No

If you answered yes to all questions then the window should comply with the 2007 Minnesota State Fire Code  
For assistance: Minnesota State Fire Marshal Division (651) 201-7200; TTY: (651) 282-6555; firecode@state.mn.us