



LIFE SAFETY UPDATE

FULL SPRINKLERING OF ALL NURSING FACILITIES – ADDITIONAL CLARIFICATIONS

Prepared by Eric Rosenbaum, P.E. – Hughes Associates, Inc.

The purpose of this update is as follows:

- Remind all state affiliates that all SNFs/NFs are required to be provided with automatic sprinkler protection throughout by August 13, 2013.
- Provide guidance on the requirements for installation and locations of automatic sprinklers throughout the facilities.
- Identify “special situations” where automatic sprinklers would not be required to be installed and yet the building could still be considered protected throughout by an automatic sprinkler system.

1. SURVEY AND CERTIFICATION LETTER REQUIREMENTS

All SNFs/NFs are required to be provided with automatic sprinkler protection throughout by August 13, 2013. Facilities with existing sprinkler systems should review: 1) their systems for compliance with the requirements of the NFPA 13-1999 Edition discussed in Section 2 and 3 of this memo.

Application of the requirements for sprinkler installation has been interpreted to apply to all facilities that have customary access by residents. This includes all living and care buildings but is not anticipated to include buildings where residents do not customarily access such as buildings used exclusively as laundries, maintenance buildings or storage structures. A clarification of the extent of application of the criteria has been requested from CMS.

2. AUTOMATIC SPRINKLER INSTALLATION REQUIREMENTS

NFPA 13, Standard for the Installation of Sprinkler Systems, 1999 Edition requires a building, where protected by an automatic sprinkler system, to be provided with sprinklers in all areas [NFPA 13, §1-6]. Exceptions to sprinkler installation in all areas apply where specific sections of NFPA 101-2000 edition or NFPA 13 permit the omission of sprinklers or providing alternate extinguishing systems.

3. AREAS PERMITTED TO NOT HAVE AUTOMATIC SPRINKLER PROTECTION

As a baseline automatic sprinklers should be provided throughout all spaces of a SNF/NF. In order to be compliant with the requirements of the NFPA 13-1999 Edition, all areas includes installing sprinklers in spaces such as closets, overhangs, loading docks, shafts, walk-in coolers and walk-in refrigerators. However, there are certain spaces that do not require sprinkler installation. Permitted areas of sprinkler omission are included in Sections 1-2 and 5-13 of NFPA 13 titled “Special Situations.”

NFPA 101 Sections 18-3.5.1 and 19-3.5.1 and NFPA 13 Section 1-2 allows alternate measures or arrangements to automatic sprinkler systems provided the level of safety is not lowered. Therefore, alternative suppression systems approved by the Authority Having Jurisdiction, e.g., kitchen hood and duct suppression systems, may be used to protect spaces as an alternative to automatic sprinklers.

Throughout Section 3 the terms **combustible**, **limited combustible** and **noncombustible** are used. Noncombustible means the item will not burn. **Noncombustible** construction includes steel, concrete, and glass. **Limited combustible** has a detailed definition of combustibility characteristics, but essentially, it means it may burn but will not contribute in any meaningful way to a fire. Example of a limited combustible material is gypsum wallboard. **Combustible** materials will ignite and burn and include wood and plastics.

3.1 Concealed Spaces

Concealed spaces include portions of the building that cannot be readily seen from the floor such as areas created by the building construction and located above the ceiling, inside a wall or below a floor. Concealed spaces can provide passage for fire spread throughout a building unless protected.

Concealed spaces in buildings constructed of steel and concrete construction typically do not require sprinkler protection because there are limited sources of fire and fire spread

Generally only large concealed spaces enclosed wholly or partly by exposed combustible construction, e.g., wood, are required to be protected by automatic sprinklers [NFPA 13, §5-13.1.1]. This requirement includes attics and similar spaces. Exceptions to this requirement include spaces filled with noncombustible materials of small spaces as identified in Appendix A (attached).

3.2 Vertical Shafts

A vertical shaft is an enclosed connection between floors. Shafts can contain stairs, ducts or other items. A sprinkler is required to be installed at the top of shafts [NFPA 13, §5-13.2.1]. There are two exceptions to this requirement for noncombustible, non-accessible shafts as detailed in Appendix A (attached).

Concealed shafts of noncombustible or limited combustible construction, e.g., gypsum, which do not have access doors, do not require sprinklers. Combustible shafts or shafts, which occupants can potentially access for storage, require sprinkler protection.

Sprinklers may also be required in shafts at alternate floors and the bottom depending on the construction and access [NFPA 13, §5-13.2.2 and .3]

3.3 Elevator Hoistways and Machine Rooms

Sprinklers are not required at the bottom of enclosed, noncombustible elevators shafts that do not contain combustible hydraulic fluids. Sprinklers are not required at the tops of noncombustible hoistways of passenger elevators if car enclosure materials have limited flame spread and smoke development [NFPA 13, §5-13.6.1 and .3].

3.4 Spaces Under Ground Floors, Exterior Docks and Platforms

Sprinklers are required to be installed under all combustible ground floors, exterior docks and platforms [NFPA 13, §5-13.7]. However sprinkler protection is not required provided the space is not accessible for storage purposes and is protected from the accumulation of wind born debris, the space contains no equipment, and the floor over the space is of tight construction. The criteria recognizes that sprinklers may be hard to maintain in these spaces.

3.5 Exterior Roofs or Canopies

Sprinklers are required beneath canopies or exterior roof overhangs exceeding four (4) feet in width [NFPA 13, §5-8.1]. Sprinklers are not required where the canopy or roof is of noncombustible or limited combustible construction. However, this exception would not apply if combustibles are stored or handled under the canopy or roof [NFPA 13, §5-8.2]. Sprinkler systems should be installed beneath combustible overhangs or roofs exceeding four (4) feet in width and beneath loading dock roofs or overhangs regardless of the construction materials used.

3.6 Bathrooms and Closets

Sprinklers are required in bathrooms and closets in nursing homes [NFPA 13, §5-13.9.1 and .2]. Portable wardrobe units including those mounted to the wall do not require sprinkler protection.

3.7 Electrical Rooms

Sprinkler protection is required in electrical equipment rooms [NFPA 13, §5-13.11]. An exception permits the omission of sprinklers from electrical rooms where all of the following conditions are met:

- (a) The room is dedicated to electrical equipment only.
- (b) Only dry-type electrical equipment is used.
- (c) Equipment is installed in a 2-hour fire-rated enclosure including protection for penetrations.
- (d) No combustible storage is permitted in the room.

4. SUMMARY

All SNFs/NFs are required to be provided with automatic sprinkler protection throughout by August 13, 2013. NFPA 13, Standard for the Installation of Sprinkler Systems, 1999 Edition requires a building, where protected by an automatic sprinkler system, to be provided with sprinklers in all areas [NFPA 13, §1-6]. Exceptions to sprinkler installation in all areas apply where specific sections of NFPA 13 permit the omission of sprinklers or where an equivalent alternate form of suppression has been provided. The exceptions are limited and require specific criteria be applied. If cited, assistance with application and interpretation of these exceptions may require the involvement of a knowledgeable architect, or fire protection engineer.

Sprinkler deficiencies should not constitute the building being addressed and cited as not protected throughout by an automatic sprinkler system. Deficiencies include items such as dust or paint on a sprinkler, corrosion on the system or a small area without sprinkler protection. These types of sprinkler deficiencies would be handled as part of a normal Plan of Correction.

APPENDIX A

Appendix A contains the specific code language for the Special Situations identified in NFPA 13.

1. CONCEALED SPACES

“Exception No.1: Concealed spaces formed by studs or joists with less than 6 inches between the inside near edges of the studs or joists.

Exception No. 2: Concealed spaces formed by bar joists with less than 6 inches between the roof or floor deck and ceiling.

Exception No. 3: Concealed spaces formed by ceilings directly attached to or within 6 inches of wood joist construction.

Exception No. 4: Concealed spaces formed by ceilings attached directly to the underside of composite wood joist construction provided, the joist channels are firestopped into volumes each not exceeding 160 ft³ using materials equivalent to the web construction.

Exception No. 5: Concealed spaces entirely filled with noncombustible insulation.

Exception No. 6: Concealed spaces within wood joist construction and composite wood joist construction having noncombustible insulation filling the space from the ceiling up to the bottom edge of the joist of the roof or floor deck, provided that in composite wood joist construction the channels are firestopped into volumes each not exceeding 160 ft³ to the full depth of the joist with material equivalent to the web construction.

Exception No. 7: Concealed spaces over isolated small rooms not exceeding 55 ft² in area.

Exception No. 8: Where rigid materials are used and the exposed surfaces have a flame spread rating of 25 or less and the materials have been demonstrated not to propagate fire in the form in which they are installed in the space.

Exception No. 9: Concealed spaces in which the exposed materials are constructed entirely of fire retardant treated wood as defined by NFPA 703, Standard for Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials.

Exception No. 10: Concealed spaces having exposed combustible insulation where the heat content of the facing and substrate of the insulation material does not exceed 1000 BTU/ft².

Exception No. 11: Sprinklers shall not be required in the space below insulation that is laid directly on top of or within the ceiling joists in an otherwise sprinklered attic.

Exception No. 12: Pipe chases under 10 ft² formed by studs or wood joists, provided that in multifloor buildings the chases are firestopped at each floor using materials equivalent to the floor construction. Such pipe chases shall contain no sources of ignition, piping shall be noncombustible and pipe penetrations at each floor shall be properly sealed.”

2. VERTICAL SHAFTS

“Exception No.1: Noncombustible or limited-combustible, nonaccessible vertical duct shafts.

Exception No.2: Noncombustible or limited-combustible, nonaccessible vertical electrical or mechanical shafts.”