

STATE OF LOUISIANA
DEPARTMENT OF PUBLIC SAFETY AND CORRECTIONS
OFFICE OF STATE FIRE MARSHAL CODE ENFORCEMENT AND BUILDING SAFETY
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LA FIRE SPRINKLER ASSOCIATION QUARTERLY MEETING
10-19, 2004
SFM ITEMS OF CONCERN

1 2003 NFPA 101:8.6.8.6 PROTECTION OF UNPRETECTED VERTICAL OPENINGS: NFPA 101 VS. NFPA 13
2002 NFPA 13:8.14.4.1

05-03-2004, e-mail to Kirsten Paoletti at lsc@nfpa.org

The referenced code chapter refers to, "Any escalators and moving walks not constituting an exit...". Paragraph (2) of this section states, "escalator and moving walk openings shall be permitted to be protected in accordance with the method detailed in NFPA 13..."

What if a building has unprotected vertical openings that fall within the parameters of NFPA 101:8.6.8.6, but the openings do not contain escalators or moving walks? In other words, is a building that has architectural openings strictly for esthetic reasons (no escalators or moving walks within) but fit the small opening limitations of NFPA 13, required to have the closely spaced sprinklers with draft stops? Or does the code limit the requirement of the water curtain/draft stop only to small openings that incorporate a convenience stair/escalator/moving walk connecting the floors?

05-07-2004, e-mail to Dana Haagensen @nfpa.org

Kirsten Paoletti, called back, regarding question above. She said that the referenced NFPA 101 code section is specifically limited to escalators and moving walks. She said the reason does not have so much to do with the escalator being a "communicating escalator" - this code item is required due to potential fire from escalator/moving walk equipment installed just below the unprotected vertical opening within the floor hole directly below the escalator/moving walk.

Fixed stairs and vertical openings that are simply "esthetic holes in the floor" are not applicable to this section (nor or they mentioned in this section) because they do not involve the greater potential of fire from electrical equipment, motors, etc.

Kirsten said 101:8.6.8.2 permits a convenience stair connecting two floors only, to be located within an unprotected vertical opening, provided the opening is compartmentalized on at least one floor.

NFPA 13:8.14.4.1, 2002 edition, includes, "...moving stairways, staircases, or similar floor openings...". Is the intent of 13 the same as 101, regarding this issue? I understand that a small hole (less than 1000 sf or less than 20' to opposite sides) requires the water curtain/draft stop, when the hole incorporates an escalator or a horizontal moving walk. But what does the code mean by "staircases"? If the intent includes a traditional fixed staircase, then I would suspect that NFPA 13's intent would be to provide a water curtain/draft stop, regardless if the hole has an escalator or a fixed stair. If this is the case, I would assume that the code intent would require water curtain/draft stop protection for a hole with no vertical communication in it ("esthetic hole in the floor"). Please advise.

05-10-2004, from Dana Haagensen @nfpa.org

The provisions of Section 8.14.4.4 in NFPA 13-2002 are intended to prevent multiple levels of sprinklers from operating with certain vertical opening arrangements. NFPA 13 requires the water supply to be capable of supplying only one level of activated sprinklers, and multiple levels operating could potentially overwhelm an NFPA 13 designed water supply. Since the heated fire gases from a fire do not know which type of opening it is (i.e. escalator vs. aesthetic), the provisions of Section 14.4.4 in NFPA 13-2002 would apply to any vertical openings except those specifically identified in Paragraphs 8.14.4.4 and 8.14.4.5.

The answer may be different to your question between documents because NFPA 13 and NFPA 101 do not share the same scope. The requirements of NFPA 13 are intended to specify the minimum design and installation requirements so that the automatic fire sprinkler system works properly in controlling the fire. The requirements of NFPA 101 are intended to specify the minimum fire protection requirements for a building so that it offers acceptable life safety to its occupants.

SFM Determination:

This office shall continue to take guidance from NFPA 13:8.14.4.1, regarding requirement for closely spaced sprinklers and draft stops, regardless of the use of then opening (escalator, stair, aesthetic opening with no vertical communication, etc.).

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| 2 | 2002 NFPA 13:6.2.1 | NFPA 13 REQUIRES NEW SPRINKLERS IN RENOVATED PROJECTS, REGARDLESS OF HOW FEW SPRINKLERS ARE INVOLVED. |
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06-03-2004 Call in question:

Can sprinkler heads be reused in the instance of never having been discharged and only rotating at the swing arm?

NFPA 13:6-2.1 requires new sprinklers in all installations. The intent includes renovation projects. It is a policy of this office, and most sprinkler contractors in this state, that whenever renovations to existing systems are proposed, no matter how simple, if the sprinkler head is manipulated, moved, etc., the existing head is replaced with a new one.

The only alternative is to remove and test a reasonable quantity of existing heads in accordance with NFPA 25:2-3.1, 1998 edition.

SFM Determination:

This office shall continue to require sprinkler heads to be replaced, if they are manipulated in any way (armover, drop, shift to center tile, etc.).

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| 3 | 1999 NFPA 13:1-4.2 1999 NFPA 13:5-13.8 | ACKNOWLEDGEMENT OF SPECIFIC PRODUCT MEETING REQUIREMENT OF LIMITED COMBUSTIBLE CONSTRUCTION |
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04-21-2004 Response to POR:

The back-up information received regarding the burn characteristics of "Pyro-Guard" fire retardant plywood, manufactured by Hoover Treated Wood Products, Inc., is deficient in that no specific test results are available to confirm the maximum 3,500 btu per pound potential heat value. Ample information is provided regarding the flame spread 25 rating on the product.

The writer contacted technical representative Steve Hall, Hoover Treated Wood Products, Inc., today. Mr. Hall stated that their "Pyro-Guard" fire retardant plywood product has never been tested for maximum potential heat value. He stated that, although the flame retardant chemistry is pressure impregnated throughout all plies of the plywood, the chemistry is not designed to lower the existing heat value of the different species of plywood veneers used in the manufacturing process. The various species of plywood used by Treated Wood Products, Inc., produce approximately 12,000 btu per pound potential heat value. Mr. Hall concluded that, although a fire ignition time lag is formed by the chemistry treatment, when the plywood actually does ignite, the heat value will not be diminished but will be maintained at the approximate 12,000 btu per pound range.

In conclusion, it is a determination of this office that the "Pyro-Guard" product does not meet NFPA 13:1-4.2, definition of "Limited Combustible Material", therefore, sprinkler protection is required below the porte cochere, per NFPA 13:5-13.8.