

INTERPRETIVE MEMORANDUM 2000 - 7

To: Licensed Architects
Licensed Engineers
Licensed Sprinkler Contractors
Mark Gates, Administrator for Inspections/Arson
Pat Slaughter, Regional Manager of Fire & Safety/Arson
Stephen Gogreve, Regional Manager of Fire & Safety/Arson
Pat Day, Supervisor of Health Care Inspections
Plan Review Staff

From: *Jean Carter, Architect Supervisor*
Henry Reed, Architect Supervisor
Don Zeringue, Architect Supervisor

Approved by: *Jerry W. Jones,*
Deputy Assistant Secretary/Chief Architect

Date: April 19, 1999, Revision Date: October 15, 1999 (all underlined items)
February 24, 2000 (all italicized items)
April 26, 2000 (all dashed underlined items)

Re: *Use of CPVC Pipe and Fittings in Sprinklered Facilities*

CPVC has specific listing requirements, when used in various occupancy classifications and sprinkler system types. Please note the following requirements, pursuant to the Underwriters Laboratories "VIWT" listing documentation for "CPVC Sprinkler Pipe and Fittings (Piping, Sprinkler Systems, November 1, 1990):

Chlorinated Poly Vinyl Chloride (CPVC) pipe and fittings are intended for use in sprinkler systems in the following types of occupancies:

- 1. Light Hazard occupancies as defined in the Standard for Installation of Sprinkler Systems, NFPA 13.*
- 2. Residential occupancies as defined in the Standard for Installation of Sprinkler Systems in Residential Occupancies up to Four Stories in Height, NFPA 13R.*
- 3. Residential occupancies as defined in the Standard for Installation of Sprinkler Systems in One and Two Family Dwellings and Manufactured Homes, NFPA 13D.*

With respect to Item 1. above, please understand that the description of Light Hazard Occupancy, pursuant to NFPA 13:1-4.7.1 includes, "Occupancies or portions of other occupancies where the quantity and /or combustibility of contents is low, and fires with relatively low rates of heat are expected". Likewise, the description of Ordinary and Extra Hazard Occupancies include the phrase, " Occupancies or portions of other occupancies where..." The intent for denoting these excerpts is to reinforce the principle that hazard classification pursuant to NFPA 13 is evaluated on a room by room basis (not the overall building).

Based on the above listing qualifications and NFPA 13 occupancy descriptions noted above, please be advised of the following determinations of this office:

- A. *All sprinkler systems designed pursuant to NFPA 13 and utilizing CPVC pipe shall restrict the use of CPVC pipe to Light Hazard Occupancies, only. All portions of occupancies qualifying as Ordinary and Extra Hazard, within the NFPA 13 designed facility, shall be restricted from use of CPVC pipe and fittings.*

Exception: CPVC pipe listed for light hazard occupancies shall be permitted to be installed in ordinary hazard rooms of otherwise light hazard occupancies where the room does not exceed 400 sq ft. Although this exception is denoted in the 1999 edition of NFPA 13 (not yet promulgated for enforcement), this office will accept its use as an interpretation for the 1996 edition currently enforced.

- B. *All sprinkler systems designed pursuant to NFPA 13R and 13D and utilizing CPVC pipe, shall be allowed the use of CPVC pipe within all portions of occupancies qualifying as Light Hazard, Ordinary Hazard Group 1 and Ordinary Hazard Group 2, provided that the Ordinary Hazard Occupancies are incidental to the main occupancy of the building. Examples of incidental Ordinary Hazard Occupancies are kitchen, janitor closet, mechanical room, electrical room, laundry room, gift shop, etc. Extra Hazard Occupancies are restricted from use of CPVC pipe and fittings.*

Use of CPVC Piping in Large Residential Board and Care Facilities

NFPA 101 and NFPA 13R differ in their definition of residential occupancies. This difference creates a conflict, when comparing the application of sprinkler system types at Residential Board and Care Facilities. The following code and correspondence excerpts have formed the basis for the decision chart, below. As per LA R.S.55:V:103., this office requires compliance with the NFPA 101 Life Safety Code, which is our governing code in a conflict or interpretive situation.

As per the commentary in NFPA 101 Life Safety Code Handbook, Supplement 3: Sprinkler Systems for Life Safety Code Users:

"...One scope difference between NFPA 13R and NFPA 101 Life Safety Code centers on the use of NFPA 13R in certain residential board and care occupancies. In Sections 22-3.3.5 and 23-

3.3.5, the Life Safety Code permits the use NFPA 13R systems, regardless of the evacuation capability of the residents, in facilities defined as 'large'. ..."

As per NFPA 101: 22-3.1.2.2 Impractical:

"large facilities classified as impractical evacuation capability shall meet the requirements for limited care facilities in Chapter 12."

The commentary in NFPA 101: A-22-3.1.2.2 reiterates:

"...new large board and care facilities with impractical evacuation capability are subject to the requirements of Chapter 12, 'New Health Care Occupancies', rather than Chapter 22, 'New Residential Board and Care Occupancies'. Chapter 12 employs a detailed defend-in-place strategy."

Per NFPA 101: A-12-3.5.2 Commentary:

"...Where sprinkler protection is specified, complete building coverage in accordance with the provisions of NFPA 13 is required..."

Use of CPVC Piping in Small Residential Board and Care Facilities

Pursuant to NFPA 101:22-2.3.5.2:

Exception No. 1: "In prompt and slow evacuation capability facilities, a sprinkler system complying with 13D shall be permitted. Facilities with more than eight residents shall be treated as two-family dwellings with regard to water supply. Additionally, entrance foyers shall be sprinklered."

Exception No. 2: "In impractical evacuation capability facilities, a sprinkler system complying with 13D, with a 30-minute water supply shall be permitted. All habitable areas and closets shall be sprinklered. Facilities with more than eight residents shall be treated as two-family dwellings with regard to water supply."

Exception No. 4: "In prompt and slow evacuation capability facilities up to and including four stories in height, systems installed in accordance with NFPA 13R shall be permitted."

Exception No. 5: "In impractical evacuation capability facilities up to and including four stories in height, systems installed in accordance with NFPA 13R shall be permitted. All habitable areas and closets shall be sprinklered."

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As noted on Page 2, NFPA 13R differs from some of the specifics described in Exceptions 1, 2, 4, and 5 OF NFPA 101 above. However, NFPA 101 takes precedence, and the exceptions as described above form a basis for this interpretive memorandum.

Compliance in the use of CPVC sprinkler pipe is also an integral issue of concern. As conveyed to this office in writing from Mr. Emil Misichko, Underwriters Laboratories, 7-17-97,

"...it is not the intent to exclude the use of UL Listed CPVC pipe and fittings for installations in residential occupancies allowed by NFPA 101 and to be protected in accordance with NFPA 13R..."

Please note the following chart, which conveys our interpretive policy on the acceptance of NFPA 13R systems, as well as the acceptance of CPVC pipe, in Residential Board and Care Occupancies:

CPVC PIPING IN RESIDENTIAL BOARD AND CARE FACILITIES, WITH 13R AND 13D SYSTEMS

(entire chart revised April 26, 2000)

EVACUATION CAPABILITY	13R ACCEPTABLE	13D ACCEPTABLE	CPVC PIPE ACCEPTABLE
SMALL FACILITIES			
PROMPT	YES See 101:22-2.3.5.2 Ex 4	YES See 101:22-2.3.5.2 Ex 1 See 13D:4-6 Ex 1, 2, 3, 4	YES See Page 2, paragraph B
SLOW	YES See 101:22-2.3.5.2 Ex 4	YES See 101:22-2.3.5.2 Ex 1 See 13D:4-6 Ex 1, 2, 3, 4	YES See Page 2, paragraph B
IMPRACTICAL	YES See 101:22-2.3.5.2 Ex 5 See 13R:2-6 Ex 1, 3, 4 only	YES See 101:22-2.3.5.2 Ex 2 See 13R:2-6 Ex 3, 4 only	YES See Page 2, paragraph B
LARGE FACILITIES			
PROMPT	YES See 101:22-3.3.5.1 Ex 1, 2 See 13R:2-6 Ex 1, 3, 4 only	NO	YES See Page 2, paragraph B
SLOW	YES See 101:22-3.3.5.1 Ex 1, 2 See 13R:2-6 Ex 1, 3, 4 only	NO	YES See Page 2, paragraph B
IMPRACTICAL	NO See 101:3-1.2.2	NO	YES See Page 2, paragraph A

JCC/JWJ/jcc

Cc: Marc Reech