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NITMAM 204-1: REQUIREMENTS FOR DRAFT CURTAINS

By Richard Schulte

Background

Section 910.2 in the 2009 edition of the International Building Code (IBC) requires that one-story buildings which contain F-1 (moderate hazard) industrial or S-1 (moderate hazard) storage occupancies be provided with roof vents and draft curtains if the building contains an "undivided area" exceeding 50,000 square feet.

Section 910.2 further requires that buildings which contain high-piled storage comply with the requirements contained in section 413 in the IBC and also the International Fire Code (IFC). Section 413 in the IBC makes reference to the provisions for high-piled storage contained in the IFC.

Table 910.3 in the IBC contains the design requirements for both roof vents and draft curtains. This Table indicates that draft curtains are required to be provided to limit the maximum area within draft curtains to 50,000 square feet in F-1 and S-1 occupancies, except in buildings which contain high-piled storage. In buildings which contain high-piled storage, the maximum area permitted within draft curtains varies from 2,000 square feet to 10,000 square feet depending upon the commodity classification of the storage and the storage height.

The requirements for draft curtains outlined above are modified by the provisions for high-piled storage contained in Chapter 23 of the International Fire Code. The provisions addressing high-piled storage contained in the 2003 and subsequent editions of the International Fire Code indicate that draft curtains are not required to be provided in buildings protected by a sprinkler system.

Based upon the above, it can be concluded that draft curtains are only required to be provided in one-story sprinklered buildings containing industrial occupancies and storage occupancies which do not contain high-piled storage, where these buildings have an "undivided area" exceeding 50,000 square feet. Given that the International Fire Code indicates that draft curtains are not required in sprinklered storage buildings containing high-piled storage, it seems a logical interpretation of the code that draft curtains should also not be required in sprinklered storage buildings which do not contain high-piled storage.

NITMAM 204-1/NFPA STANDARDS COUNCIL APPEAL

With the background above, let's take a look at NITMAM 204-1. NITMAM 204-1 was a motion to return the technical report on NFPA 204, the *Standard for Smoke and Heat Venting*, back to the Smoke Management Committee for further study. This motion was proposed based upon the fact that the proposed Chapter 11 in the next edition of NFPA 204, the 2012 edition, will be conflict with the provisions for roof vents contained in section 12.1.1 in the 2010 edition of NFPA 13. NITMAM 204-1 was discussed at the NFPA technical meeting held in Boston on June 15, 2011 and the motion was rejected by a unanimous vote (estimated to be 0-200).

On June 24, 2011, the Association's action on NITMAM 204-1 was appealed to the NFPA Standards Council. The basis for the appeal of Association's action on NITMAM 204-1 was as follows:

- The proposed provisions contained in Chapter 11 in NFPA 204 and commentary contained in Annex F.3 in NFPA 204 are in conflict with the intent of roof vent provisions (section 12.1.1) contained in the 2010 edition of NFPA 13.

- The proposed next edition of NFPA 204 contains provisions for the design of sprinkler systems. Sprinkler system design provisions should be determined by the NFPA 13 committee, not the Smoke Management Committee.

- The proposed next edition of NFPA 204 does not address the issue of fire fighter safety as outlined in two NIOSH Alerts, **NIOSH 2005-132** and **NIOSH 2010-153**.

- The proposed next edition of NFPA 204 does not indicate that a methodology to demonstrate compliance with the provisions which require an "*engineering analysis*" does not presently exist.

The chairman of the Smoke Management Committee, Randy Tucker, addressed the concerns outlined in the appeal to the NFPA Standards Council in an e-mail note to the Secretary of the Standards Council dated July 7, 2011. The following is an excerpt from Mr. Tucker's response:

> "*In response to Mr. Schulte's concerns raised at the 2011 Annual Meeting and his subsequent appeal to the Standards Council to return the document, I requested one of the Committee members who helped draft the new language to offer his comments. The following was prepared by Richard J. Davis of FM Global:*

"While the debate over the effectiveness of smoke and heat vents and draft curtains in sprinklered buildings has been going on for over 35 years, regardless of what NFPA 204 has or has not said regarding this subject, codes (such as IBC and IFC) continue to require them. It states in the scope of NFPA 204 that this standard does not require where they should be used. Mr. Schulte's concern needs to be addressed within the IBC and IFC.

Changes proposed to this revision of 204 include one grammatical change and an added reference to NFPA 13. In my opinion, the most significant change is the addition of requirements for the proper spacing and location of aisle spaces and draft curtains used with smoke and heat vents in sprinklered buildings. While IBC and IFC require draft curtains with smoke and heat vents in sprinklered buildings, they provide no requirements for the proper spacing and location of aisle spaces and draft curtains. Large scale fire test data submitted proves that this is an important issue that needs to addressed in order to prevent the operation of an excessive number of sprinklers which could result in the depletion of the water supply and potential loss of fire control."

I concur with Mr. Davis' comments and encourage the Standards Council to reject the Motion to Return NFPA 204."

Based upon the background information provided above and the July 7, 2011 response to the appeal by Messrs. Tucker and Davis, it seems clear that the Smoke Management Committee is unaware that the high-piled storage provisions contained in the 2003 and subsequent editions of the International Fire Code have eliminated the requirements for draft curtains in buildings which contain high-piled storage. Hence Mr. Davis' comments relative to the draft curtains requirements contained in the IBC/IFC are irrelevant.

Further, it should be noted that the response by Messrs. Tucker and Davis did not address any of the other issues identified in the appeal to the Standards Council.

Do the proposed provisions to be included in Chapter 11, including Annex F.3, conflict with the roof vents provisions contained in the 2010 edition of NFPA 13? There is no doubt about the conflict between these two technical standards. The substantiation statement for the roof vent provisions contained in the 2010 edition of NFPA 13 reads as follows:

"**Substantiation:** *The intent of the* [NFPA 13] *standard is that roof vents and draft curtains should not be used in conjunction with storage protection. . .*"

No where in the proposed Chapter 11 to be included in NFPA 204 does it indicate the expressed intent of the roof vent provisions contained in the 2010 edition of NFPA 13. Without an acknowledgment of the intent of the NFPA 13 roof vent provisions, NFPA 204 implies that the use of roof vents in storage buildings protected by a sprinkler system is "accepted engineering practice". The installation of roof vents in sprinklered buildings is not "accepted engineering practice"-it never has been.

It appears that the purpose of the proposed provisions contained in Chapter 11 (and Annex F.3) of NFPA 204 are to circumvent the **intent** of the roof vent provisions contained in NFPA 13 (as expressed in the substantiation statement above). And, that's why the vote of the Association on NITMAM 204-1 on June 15, 2011 is being appealed to the NFPA Standards Council.

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