

**CTC Meeting #28
September 16 - 17, 2013
BFP-Roof Vents**

The following 2013 Group B changes have been compiled for the above noted CTC Area of Study. Included in this report are code changes which received a public comment following the 2013 Group B Committee Action Hearings. These changes are intended to serve as the agenda for the CTC in order to establish CTC positions, if any, for the upcoming 2013 Group B Public Comment Hearings. THIS REPORT ONLY INCLUDES THOSE CODE CHANGES FOR WHICH CTC HAS TAKEN A POSITION ON A CODE CHANGE

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910.1 (IBC [F] 910.1), 910.3.5 (IBC [F] 910.3.5), 202, 3202, Table 3206.2

Proposed Change as Submitted

Proponent: Jeffrey M. Shapiro, International Institute of Ammonia Refrigeration
(jeff.shapiro@intlcodeconsultants.com)

Revise as follows:

910.1 General. Where required by this code or otherwise installed, smoke and heat vents, or mechanical smoke exhaust systems, and draft curtains shall conform to the requirements of this section.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) or quick-response storage (QRS) sprinklers, automatic smoke and heat vents shall not be required within these areas.

910.3.5 (IBC [F] 910.3.5) Draft curtains. Where required by Table 910.3, draft curtains shall be installed on the underside of the roof in accordance with this section.

Exception: Where areas of buildings are equipped with ESFR or QRS sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers, and between QRS and the non-QRS sprinklers.

Add new definition as follows:

**SECTION 202
GENERAL DEFINITIONS**

QUICK RESPONSE STORAGE (QRS) SPRINKLER. A sprinkler with a response time index of 50 or less that is listed to control a specified fire in stored commodities with 12 or fewer sprinklers.

Revise as follows:

**SECTION 3202
DEFINITIONS**

QUICK RESPONSE STORAGE (QRS) SPRINKLER.

**TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

| COMMODITY CLASS | SIZE OF HIGH-PILED STORAGE AREA ^a (square feet) (see Sections 3206.2 and 3206.4) | ALL STORAGE AREAS (See Sections 3206, 3207 and 3208) ^b | | | | | SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 3207.3) | | |
|-----------------|---|--|---|---|--|--|---|---|-------------------------------------|
| | | Automatic fire-extinguishing system (see Section 3206.4) | Fire detection system (see Section 3206.5) | Building access (see Section 3206.6) | Smoke and heat removal (see Section 3206.7) | Draft curtains (see Section 3206.7) | Maximum pile dimension ^c (feet) | Maximum permissible storage height ^d (feet) | Maximum pile volume (cubic feet) |

(Portions of table not shown remain unchanged)

a through i (No change to current text)

j. Not required when storage areas are protected by early suppression fast response (ESFR) or quick-response storage (QRS) sprinkler systems installed in accordance with NFPA 13.

Reason: Factory Mutual data sheets no longer reference special sprinkler classifications, such as ESFR. Instead, FM now classifies sprinklers as “storage” and “non-storage” and provides appropriate installation parameters. Storage sprinklers now encompass a new category of quick-response sprinklers that share the key characteristics of ESFR sprinklers, i.e. fast response thermal elements and design areas that involve 12 or fewer sprinklers, but are not designated as ESFR. These quick-response storage sprinklers require similar precautions to ESFR sprinklers with respect to not introducing unknowns that were not represented in full-scale fire tests conducted to determine listing parameters. Thereby, it is important to extend the current provisions in Chapters 9 and 32 that are applicable to ESFR sprinklers to include quick-response storage sprinklers.

Cost Impact: The code change proposal will not increase the cost of construction.

910.1-F-SHAPIRO

Committee Action Hearing Results

Committee Action:

Disapproved

Committee Reason: There was concern that the technology was too new to be properly addressed within the code. In addition concerns and questions with regard to smoke and heat vent and the operation of the sprinklers were raised. There was particular concern with the terminology used and related testing. There was some concern for the need to provide specific data and reports for every installation.

Assembly Action:

None

Individual Consideration Agenda

This item is on the agenda for individual consideration because a public comment was submitted.

Public Comment:

Jeffrey M. Shapiro, P.E., International Code Consultants, representing Tyco; Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee, requests Approval as Modified by this Public Comment.

Replace the proposal as follows:

910.1 General. Where required by this code or otherwise installed, smoke and heat vents, or mechanical smoke exhaust systems, and draft curtains shall conform to the requirements of this section.

Exceptions:

1. Frozen food warehouses used solely for storage of Class I and II commodities where protected by an *approved automatic sprinkler system*.
2. Where areas of buildings are equipped with early suppression fast-response (ESFR) sprinklers, automatic smoke and heat vents shall not be required within these areas.

3. Where areas of buildings are equipped with control mode special application sprinklers with a response time index of 50 or less, which are listed to control a fire in the stored commodities with 12 or fewer sprinklers, automatic smoke and heat vents shall not be required within these areas.

910.3.5 (IBC [F] 910.3.5) Draft curtains. Where required by Table 910.3, draft curtains shall be installed on the underside of the roof in accordance with this section.

Exceptions:

1. Where areas of buildings are equipped with ESFR sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between the ESFR sprinklers and the non-ESFR sprinklers.
2. Where areas of buildings are equipped with control mode special application sprinklers with a response time index of 50 or less, which are listed to control a fire in the stored commodities with 12 or fewer sprinklers, draft curtains shall not be provided within these areas. Draft curtains shall only be provided at the separation between these areas and areas protected by other types of sprinklers.

**TABLE 3206.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS**

- j. Not required when storage areas are protected by either early suppression fast response (ESFR) sprinkler systems or control mode special application sprinklers with a response time index of 50 or less, which are listed to control a fire in the stored commodities with 12 or fewer sprinklers, installed in accordance with NFPA 13.

Commenter’s Reason:

Shapiro: The text proposed in this public comment addresses the concerns that were raised at the committee hearing. In particular, it resolves questions that were raised about introducing the new term “quick response storage sprinkler” by no longer using that term, and it clarifies that both the RTI and number of sprinklers operating limits (not just one or the other) must be satisfied to for the referenced sprinklers to be treated equivalently to ESFR.

After the hearing, I spoke with a number of attendees and committee members to better understand their concerns and see if there were other questions about this proposal. I learned that some people were confused as to why the sprinklers included in this proposal are not simply considered ESFR. In response, I explained that the type of sprinklers covered by this proposal is very versatile. They can qualify and be used as either control mode density area (CMDA) or CMSA sprinklers under their UL listing and NFPA 13. When these sprinklers are used as CMDA, they are essentially “regular” sprinklers that can be used with smoke and heat vents because the installation will involve large design areas. When they are used as CMSA with limitations that parallel those that are applicable to ESFR (as described in this proposal), the same concerns about compatibility with smoke and heat vents apply. Once these points were clear, individuals who I spoke with, including some committee members who had opposed the change, agreed with the proposal.

It is also important to note that the proposal was cleared with FM, UL the National Fire Sprinkler Association and the American Fire Sprinkler Association.

Zubia: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: <http://www.iccsafe.org/cs/CAC/Pages/default.aspx>.

There is a new category of fire sprinklers that shares the key characteristics of ESFR sprinklers, i.e. thermal elements that have a response time index (RTI) of 50 or less and that are listed to protect a design area that involves 12 or fewer sprinklers. These sprinklers are not called ESFR, but they still require similar precautions to ESFR sprinklers with respect to not introducing unknowns, such as smoke and heat vents, that were not present in the full-scale fire tests that determined the listing parameters. Such unknowns can lead to sprinkler “skipping” and exceeding the 12 sprinkler design area, which was the exact concern that led to the ESFR-related provisions that are currently in Chapters 9 and 32. This comment will extend application of the special ESFR provisions to include quick-response storage sprinklers that share ESFR characteristics.

The public comment also resolves the concerns expressed by some at the committee hearing that the introduction of new terminology suggested in the original proposal might have confused some code users. The previously proposed terminology is not included in this public comment. Instead, the technical provisions are provided directly in the sections of the code where they will apply. The text has also been revised to clarify that sprinklers must have BOTH an RTI of 50 or less and be listed to control/suppress a fire with 12 or fewer sprinklers to qualify for an exception to smoke and heat venting requirements. Any sprinkler listed as “quick response” will satisfy the “50 RTI or less” criteria, based on the definition of “quick response” in NFPA 13 Section 3.6.4.7. The number of operating sprinklers will be indicated in the listing criteria for each sprinkler.

In summary, there is no technical basis for not accepting this proposal. The proposed exceptions parallel those that the code already provides for ESFR sprinklers, and the sprinklers that will qualify for the proposed new exceptions must meet the ESFR RTI and suppression area criteria.

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Final Action: AS AM AMPC_____ D