Second Revision No. 1-NFPA 92-2014 [Section No. 3.3.4]

3.3.4* Draft Curtain.
A fixed or automatically deployable barrier that protrudes downward from the ceiling to channel, contain, or prevent the migration of smoke.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 08:17:47 EST 2014

Committee Statement

Committee Statement: As previously written, a deployable draft curtain could mean a manually operated unit. In order to be effective, the deployable unit must automatically deploy when needed. To ensure deployment of the non-fixed draft curtain, the word “automatically” should be added just before the word “deployable”. This removes the allowance of manually deployed draft curtains.

Response Message:

Public Comment No. 4-NFPA 92-2013 [Section No. 3.3.4]

Second Revision No. 7-NFPA 92-2014 [New Section after 3.3.9.2]

3.3.11 Registered Design Professional (RDP).
An individual who is registered or licensed to practice their respective design profession as defined by the statutory requirements of the professional registration laws of the jurisdiction in which the project is to be constructed, or other professional with qualifications or credentials acceptable to the jurisdiction in which the project is to be constructed. [**3,** 2015]

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 09:22:51 EST 2014

Committee Statement

Committee Statement: Added a new definition of Registered Design Professional extracted from NFPA 3. This term is used in section 6.4.8.6.
Response Message:

Second Revision No. 2-NFPA 92-2014 [Section No. 3.3.11 [Excluding any Sub-Sections]]

The airborne solid and liquid particulates and gases ~~involved~~ evolved when a material undergoes pyrolysis or combustion, together with the quantity of air that is entrained or otherwise mixed into the mass. [**556,** 2011]

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 08:23:57 EST 2014

Committee Statement

Committee Statement: The concept of smoke addresses the products of combustion "evolved" and it does not address what products are "involved" in any issue.

Response Message:

Public Comment No. 3-NFPA 92-2013 [Section No. 3.3.11 [Excluding any Sub-Sections]]

Second Revision No. 21-NFPA 92-2014 [Section No. 4.2.1 [Excluding any Sub-Sections]]

A smoke control system in a given building shall be designed to contain smoke to a given zone or keep smoke from entering another zone.

Submitter Information Verification

Submitter Full Name: Tracy Vecchiarelli
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 13 10:50:24 EDT 2014

Committee Statement

Committee Statement: Editorial revision. This section did not contain mandatory language.
Response Message:

Second Revision No. 3-NFPA 92-2014 [Section No. 4.3.1]

4.3.1 Smoke Containment Systems.
The design approach for smoke containment systems shall be one of or a combination of the following:

(1) Stairwell pressurization
(2) Zoned ~~pressurization~~ smoke control
(3) Elevator pressurization
(4) Vestibule pressurization
(5) Smoke refuge area pressurization

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 08:51:05 EST 2014

Committee Statement

Committee Statement: Not all of these methods use positive pressurization, so the submitter's suggestion to move pressurization to the leading paragraph would not be accurate. The committee revised item (2) to remove the term pressurization and replace it with "Zoned Smoke Control". Zoned Smoke Control is the term used throughout the document.

Response Message:

Public Comment No. 5-NFPA 92-2013 [Section No. 4.3.1]

Second Revision No. 8-NFPA 92-2014 [Section No. 4.4.2.2]

4.4.2.2* Pressure Differences Across Doors.
The pressure differences across doors shall not cause the maximum force permitted to begin opening the door to exceed the value stipulated in NFPA *101*, ~~*Life Safety Code*~~ , or state or local codes and regulations.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 09:51:26 EST 2014

Committee Statement

Committee Statement: Some states do not allow local codes or regulations to supersede that of the state codes or regulations, therefore “state” codes and regulations should be added. This language is similar to language used in other codes and standards.

Response Message:

Public Comment No. 6-NFPA 92-2013 [Section No. 4.4.2.2]

Second Revision No. 19-NFPA 92-2014 [New Section after 5.5.2.5]

5.5.2.6
In addition to the requirements in 5.5.2.5 , deployable draft curtains shall be activated automatically and shall remain in place until manually reset.

Submitter Information Verification

Submitter Full Name: Tracy Vecchiarelli
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Feb 28 14:55:28 EST 2014

Committee Statement

Committee Statement: Section 5.5.2.5 allows draft curtains to be deployable. This proposed revision adds the requirement that deployable draft curtains not reset automatically, but manually, so that the draft curtain stays in place while needed. Once the incident is over, manual reset can occur.

Response Message:

Public Comment No. 7-NFPA 92-2013 [Section No. 5.5.2.5]

Second Revision No. 5-NFPA 92-2014 [Section No. 6.4.8.6]

6.4.8.6
Operational capability of dedicated smoke control equipment shall be verified as specified by the registered design professional (RDP) and approved by the AHJ .

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 09:13:45 EST 2014

Committee Statement

Committee Statement: The frequency for operational capability should be specified by the registered design professional and the AHJ should approve of the frequency (based on the risk of the occupancy).

Response Message:

Public Comment No. 8-NFPA 92-2013 [Section No. 6.4.8.6]

Second Revision No. 14-NFPA 92-2014 [Section No. 8.6.1 [Excluding any Sub-Sections]]

~~Proper maintenance of the system shall, at a minimum, include the periodic testing of all equipment~~ Periodic testing of smoke control equipment shall be performed in accordance with this section .

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 11:25:45 EST 2014

Committee Statement

Committee Statement: Editorial rewording.
Response Message:

Second Revision No. 10-NFPA 92-2014 [Section No. A.4.4.1]

A.4.4.1

The temperature differences between the exterior and the interior of the building cause stack effect and determine the stack effect's direction and magnitude. The stack ~~effectshould~~ effect should be considered when selecting exhaust fans. The effect of temperature and wind velocity varies with building height, configuration, leakage, and openings in wall and floor construction. One source of weather data for outdoor temperatures and wind velocities is Chapter 2 of the ASHRAE/ICC/~~FNPA~~ NFPA /SFPE *Handbook of Smoke Control Engineering*. If available, newer or more site-specific ~~wind~~ weather data should be consulted.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 10:07:36 EST 2014

Committee Statement

Committee Statement: The last sentence should not be limited to wind data. There may be additional weather data found in ASHRAE's publication, however it is not published yet.

Response Message:

Second Revision No. 13-NFPA 92-2014 [Section No. A.4.5.1.1]

A.4.5.1.1

Tenability analysis is outside the scope of this document. However, other references are available that present analytical methods for use in tenability analysis. The SFPE *Engineering Guide to Performance-Based Fire Protection Analysis and Design of Buildings* describes a process of establishing tenability limits. Additional guidance is given in NFPA 130 and in the ASHRAE *Handbook of Smoke Control Engineering* .

The SFPE guide references D. A. Purser, "Toxicity Assessment of Combustion Products," Chapter 2/6, SFPE *Handbook of Fire Protection Engineering* [~~42~~ 41], which describes a fractional effective dose (FED) calculation approach, which is also contained in NFPA 269~~, *Standard Test Method for Developing Toxic Potency Data for Use in Fire Hazard Modeling*~~ . The FED addresses the effects of carbon monoxide, hydrogen cyanide, carbon dioxide, hydrogen chloride, hydrogen bromide, and anoxia. It is possible to use the test data, combined with laboratory experience, to estimate the FED value that leads to the survival of virtually all people. This value is about 0.8.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 11:21:21 EST 2014

Committee Statement

Committee Statement: NFPA 130 Annex B and the Handbook of Smoke Control Engineering has additional information on tenability. This change is related to CI #9.
Response Message:

Second Revision No. 20-NFPA 92-2014 [New Section after A.5.5.1.1]

A.5.5.2

An alternative method of spill plume calculation has been developed by Harrison and Spearpoint as part of a PhD thesis at the University of Canterbury, New Zealand [86-90].

Submitter Information Verification

Submitter Full Name: Patrick Foley
Organization: NFPA
Street Address:
City:
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Zip:
Submittal Date: Mon Mar 03 16:00:37 EST 2014

Committee Statement

Committee Statement: New annex note developed to reference an alternative method for calculating balcony spill plumes(corresponding section is 5.5.2 Balcony Spill Plumes). A list of references for the new method is referenced in Annex M.1.2.9.

Response Message:

Second Revision No. 11-NFPA 92-2014 [Section No. A.5.5.2.4]

A.5.5.2.4

Materials suitable for use as draft curtains can include steel sheeting, cementitious panels, and gypsum board or any materials that meet the performance criteria in ~~7.2~~ Section 7.2, NFPA 204 .

There is an ISO standard for draft curtains ~~(~~ ISO DIS ~~21927-1~~ 21927-1 , *Specification for smoke barriers*~~)~~ . The ISO standard is technically equivalent to the European (EN) standard for these products, EN 12101-1, *Specification for smoke barriers*. Products that carry the CE mark, which is mandatory for sale of these products within the European Union, are subject to independent testing and ongoing factory production control by Notified Bodies appointed by national governments.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 10:21:32 EST 2014

Committee Statement

Committee Statement: Revised incorrect reference. Annex note was taken from 204 during the First Draft and the reference was not updated. Performance criteria is in Section 7.2 of NFPA 204.

Response Message:

Second Revision No. 22-NFPA 92-2014 [Section No. A.6.4.4.2.2]

A.6.4.4.2.2

Manual pull stations are not used to activate smoke control ~~strategies~~ systems that require information on the location of the fire because of the likelihood of a person signaling an alarm from a station outside the zone of fire origin.

Submitter Information Verification

Submitter Full Name: Tracy Vecchiarelli
Organization: National Fire Protection Assoc
Street Address:
City:
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Zip:
Submittal Date: Thu Mar 13 11:10:19 EDT 2014

Committee Statement

Committee Statement: Editorial revision.
Response Message:

Second Revision No. 9-NFPA 92-2014 [Section No. A.6.4.8]

A.6.4.8

The means and frequency of verification methods will vary according to the complexity and importance of the system as follows:

(1) Positive confirmation of fan activation should be by means of duct pressure, airflow, or equivalent sensors that respond to loss of operating power, problems in the power or control circuit wiring, airflow restrictions, and failure of the belt, the shaft coupling, or the motor itself.

(2) Positive confirmation of damper operation should be by contact, proximity, or equivalent sensors that respond to loss of operating power or compressed air; problems in the power, control circuit, or pneumatic lines; and failure of the damper actuator, the linkage, or the damper itself.

(3) Other devices, methods, or combinations of methods as approved by the authority having jurisdiction might also be used.

Items A.6.4.8(1) through A.6.4.8(3) describe multiple methods that can be used, either singly or in combination, to verify that all portions of the controls and equipment are operational. For example, conventional (electrical) supervision might be used to verify the integrity of portions of the circuit used to send an activation signal from a fire alarm system control unit to the relay contact within 3 ft (1 m) of the smoke-control system input *(see 6.4.8.4)*, and end-to-end verification might be used to verify operation from the smoke-control system input to the desired end result. If different systems are used to verify different portions of the control circuit, controlled equipment, or both, then each system would be responsible for indicating off-normal conditions on its respective segment.

End-to-end verification monitors both the electrical and mechanical components of a smoke control system. End-to-end verification is a self-testing method that provides positive confirmation that the desired result (e.g., airflow or damper position) has been achieved during the time that a controlled device is activated, such as during smoke control testing, or manual override operations . The intent of end-to-end verification goes beyond determining whether a circuit fault exists, but instead ascertains whether the desired end result (e.g., airflow or damper position) is achieved. True end-to-end verification, therefore, requires a comparison of the desired operation to the actual end result.

An open control circuit, failure of a fan belt, disconnection of a shaft coupling, blockage of an air filter, failure of a motor, or other abnormal condition that could prevent proper operation is not expected to result in an off-normal indication when the controlled device is not activated, since the measured result at that time matches the expected result. If a condition that prevents proper operation persists during the next attempted activation of the device, an off-normal indication should be displayed.

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 09:55:07 EST 2014

Committee Statement

Committee Statement: The term "end to end verification" is only used in the annex. The annex was revised to include the definition which was removed from Chapter 3 during the First Draft.

Response Message:

Second Revision No. 12-NFPA 92-2014 [Section No. M.1.2.7]

M.1.2.6 ISO Publications .

International Organization for Standardization, 1, ch. de la Voie-Creuse CP 56 CH-1211 Geneva 20 Switzerland.

ISO 21927-1:2008 *Smoke and heat control systems — ~~Part 1~~ Specification for ~~S~~ s moke ~~B~~ b arriers~~, 2008~~* .

Submitter Information Verification

Submitter Full Name: [Not Specified]
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 10:28:44 EST 2014

Committee Statement

Committee Statement: Editorial revision to remove "Part".
Response Message:

Second Revision No. 15-NFPA 92-2014 [Section No. M.1.2.8]

M.1.2.4 ~~British Standards~~ BSI Publications .
BSI British Standards, 389 Chiswick High Road, London W4 4AL UK.

BS EN 12101-8: *Smoke and heat control systems~~-~~ — ~~Part 8:~~ Smoke control dampers*, 2011.

Submitter Information Verification

Submitter Full Name: Tracy Vecchiarelli
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Wed Feb 26 15:07:32 EST 2014

Committee Statement

Committee Statement: Editorial revision to remove the word "Part".
Response Message:

Second Revision No. 18-NFPA 92-2014 [Section No. M.1.2.9]

M.1.2.9 Other Publications.

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9. Heskestad, G., "Fire Plumes, Flame Height, and Air Entrainment," Chapter 2-1, *SFPE Handbook of Fire Protection Engineering*, DiNenno et al. editors, National Fire Protection Association, Quincy, MA, 2002.

10. Heskestad, G., "Letter to the Editor," *Fire Technology*, 27, 2, pp. 174–185, May 1991.

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Committee Statement

Committee Statement: Additional resources are available for calculating balcony spill plumes.
Response Message:

Second Revision No. 16-NFPA 92-2014 [Section No. M.2.1]

M.2.1 ISO ations.
International Organization for Standardization, 1, ch. de la Voie-Creuse, Case postale 56, CH-1211, Geneva 20, Switzerland.

ISO 21927-1:2008 *Smoke and heat control systems — ~~Part 1~~ Specification for smoke barriers*.

ISO 21927-2:2006~~+~~ A1 *Smoke and heat control systems — ~~Part 2~~ Specification for natural smoke and heat exhaust ventilators*.

ISO 21927-3:2006 A1 ~~+A1~~ *Smoke and heat control systems — ~~Part 3:~~ Specification for powered smoke and heat exhaust ventilators*.

ISO 21927-7:2013 *Smoke and heat control systems — ~~Part 7:~~ Smoke control ducts*.

ISO 21927-8:2013 *Smoke and heat control systems — ~~Part 8:~~ Specification for smoke control dampers*.

ISO 21927-9:2012 *Smoke and heat control systems — ~~Part 9:~~ Control panels and emergency control panels*.

ISO 21927-10:2011 *Smoke and heat control systems — ~~Part 10:~~ Power supplies*.

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Committee Statement

Committee Statement: Editorial revision to remove the term "Part" from each reference.
Response Message: