

**Public Comment No. 5-NFPA 72-2023 [New Section after 29.1.2]**

Fuel gas detection and warning equipment shall be installed in accordance with NFPA 715, *Standard for the Installation of Fuel Gases Detection and Warning Equipment* .

Statement of Problem and Substantiation for Public Comment

Add new section 29.1.2 and renumber

NFPA 715 is the new standard for fuel gas detection. This will point the reader to NFPA 715 if the gas to be detected is a fuel gas. If the Committee designates this as new material, please carry over to the next cycle for consideration.

Related Item

- FR 5011

Submitter Information Verification

Submitter Full Name: Stephen Olenick

Organization: Combustion Science & Engineering, Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Mon Mar 13 10:45:35 EDT 2023

Committee: SIG-HOU

**Public Comment No. 199-NFPA 72-2023 [New Section after 29.1.5]****TITLE OF NEW CONTENT**

Add new section 29.1.5; renumber 29.1 as required.

With the exception of Section 29.11.1.1, the requirements of this chapter shall not apply to the installation of single and multiple station alarms furnished in commercial residential buildings provided with an Approved Building Fire Alarm system maintained in accordance with this Standard.

Statement of Problem and Substantiation for Public Comment

The proposed change seeks to provide clarity as to prevailing installation requirements applicable to commercial residential buildings provided with NFPA 72 compliant fire alarm systems and single station (in limited circumstances multiple station) alarms. This protective strategy has proven effective over decades of experience in commercial residential buildings, particularly those also protected by code-complaint automatic sprinklers.

Smart device technologies are clearly providing relatively new protective options for application to single and two-family homes and townhouses. Code requirements, notably in Chapter 29, will likely evolve to address these developments.

This proposed change seeks to avoid confusion for the large number of existing, code-compliant commercial residential buildings effectively served by the combination of traditional fire alarm systems and single station alarms.

Related Item

- Public Input 450

Submitter Information Verification

Submitter Full Name: Byron Brieze

Organization: FDFP Consulting LLC

Affiliation: American Hotel and Lodging Association

Street Address:

City:

State:

Zip:

Submittal Date: Tue May 30 22:40:54 EDT 2023

Committee: SIG-HOU

**Public Comment No. 236-NFPA 72-2023 [Section No. 29.4]****29.4 Remote Annunciation.**

Remote annunciation from single- and multiple-station alarms shall be permitted, provided signals at the remote annunciator properly identify the hazard.

29.4.1 "Remote annunciation provided from fire-warning, carbon monoxide-warning, and combustible gas-warning, listening equipment shall be permitted, provided the listening equipment is listed and properly identifies the hazard."

Statement of Problem and Substantiation for Public Comment

Currently there are no NFPA, UL, or industry standard requirements for smart speakers and smart home systems that provide "listening" equipment or services that alert remote monitoring centers when a fire-warning, carbon monoxide-warning, and combustible gas-warning alarm have been detected. NFPA 72 requires all devices, combinations of devices, and equipment to be installed in conformity with Chapter 29 to be approved or listed for the purposes for which they are intended. Since remote monitoring centers respond to remote annunciations from the listening equipment or services and potentially dispatch emergency services, manufacturers and service providers need to somehow demonstrate that signals coming from the equipment properly identify the hazard.

This public comment is being submitted on behalf of a SIG-HOU task group formed to address Public Input No. 321-NFPA 72-2022.

Related Item

- Public Input No. 321-NFPA 72-2022

Submitter Information Verification

Submitter Full Name: Greg Hansen

Organization: Vivint Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 31 16:32:08 EDT 2023

Committee: SIG-HOU

**Public Comment No. 104-NFPA 72-2023 [Section No. 29.5.4]****29.5.4***

Carbon monoxide warning equipment to be installed in residential occupancies shall produce the T4 signal consistent with 18.4.3.2 , and after the initial 4 minutes of alarm the 5-second "off" time shall be permitted to be changed to 60 seconds $\pm$ 10 percent.

Statement of Problem and Substantiation for Public Comment

The requirement should reference 18.4.3.2.

Related Item

- FR 5237

Submitter Information Verification

Submitter Full Name: Megan Hayes

Organization: NEMA

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 17 11:02:07 EDT 2023

Committee: SIG-HOU



Public Comment No. 144-NFPA 72-2023 [Section No. 29.5.5.2]

29.5.5.2

The voice message shall comply with all of the following:

- (1) The voice message is first preceded once by a minimum of eight cycles of the T3 signal.
- (2) The voice message periodically interrupts the T3 signal for no longer than 10 seconds, followed by a minimum of two cycles of the T3 signal between each voice message.
- (3) The initial eight-cycle period ~~shall~~ is not ~~be~~ required to be repeated.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CN_No._26.pdf	NFPA 72 Correlating Note No. 26	

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 26 appeared in the First Draft Report on First Revision No. 5238.

Review the language of 29.5.5.2 for consistent list items. 29.5.5.2(1) and (2) are not shall statements, (3) is a shall statement. A possible solution is replacing 'shall not be required' in (3) with 'is not required'. NFPA Manual of Style requires consistency in list items: all phrases, all sentences, all shall statements, etc.

Related Item

- FR - 5238

Submitter Information Verification

Submitter Full Name: CC on SIG-AAC

Organization: NFPA CC on Signaling Systems for the Protection of Life and Property

Street Address:

City:

State:

Zip:

Submittal Date: Tue May 23 10:40:01 EDT 2023

Committee: SIG-HOU

**Public Comment No. 44-NFPA 72-2023 [Section No. 29.5.9]****29.5.9***

Since hearing ~~deficits~~ disabilities are not always apparent, the responsibility for advising the appropriate person(s) of the existence of this ~~deficit~~ disability shall be that of the party with the hearing ~~deficit~~ disability .

Statement of Problem and Substantiation for Public Comment

The NFPA Disability Access Review Advisory Committee (DARAC) supplies this Public Comment change terminology within this requirement. Deficit is not an appropriate term to be used in regard to people with disabilities.

Related Item

- FR 5208

Submitter Information Verification

Submitter Full Name: Jessica Hubert

Organization: Guardian Services Inc.

Affiliation: Representing the DARAC Advisory Group

Street Address:

City:

State:

Zip:

Submittal Date: Thu Apr 27 14:36:05 EDT 2023

Committee: SIG-HOU



Public Comment No. 16-NFPA 72-2023 [Section No. 29.5.10]

29.5.10.1 * – Mild to Severe Hearing Loss:

~~Notification appliances provided for those with mild to severe hearing loss shall comply with the following: An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations: Where~~

29.5.10

~~Notification appliances provided in sleeping rooms and guest rooms for those with hearing loss shall comply with 29.5.10.1 and 29.5.10.2 , as applicable:~~

In rooms, where low frequency sounders and/or tactile notification appliances are required by governing laws, codes, or standards

for people with hearing loss

- ~~Where provided voluntarily for those with hearing loss~~

* ~~The low frequency alarm signal output shall comply with both of~~

, they shall be installed to comply with the following:

- (1) ~~A waveform having a fundamental frequency of 520 Hz $\pm$ 10 percent~~
- (2) ~~A minimum sound level at the pillow of 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater~~

29.5.10.2 * – Moderately Severe to Profound Hearing Loss:

~~Visual~~

(a) The low frequency waveform shall have a fundamental frequency of 520 Hz +/- 10 percent.

(b) Tactile notification appliances in accordance with the requirements of Section 18.

~~5.5.~~

10

~~and tactile notification appliances in accordance with the requirements of Section 18~~

~~.~~

~~10 shall be required for those with moderately severe to profound hearing loss in the following situations:~~

- * ~~Where required by governing laws, codes, or standards for people with hearing loss~~
- ~~Where provided voluntarily for those with hearing loss~~

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
SIG-HOU_Low_Frequency_TG_Public_Comment_v2.docx	SIG-HOU Low frequency public comment.	

Statement of Problem and Substantiation for Public Comment

This is the first of 2 public comments relating to 29.5.10 and A29.5.10. This public comment seeks to provide clear and enforceable language for alerting all people sleeping especially people with hearing loss, school age children, the elderly and alcohol impaired.

Related Item

- PI-206, PI-175, PI-216, PI-177 and PI-178.

Submitter Information Verification

Submitter Full Name: Eric Sacco
Organization: Siemens Building Technologies
Affiliation: I am submitting this public comment on behalf of the SIG-HOU task group formed for the First Draft Meeting.
Street Address:
City:
State:
Zip:
Submittal Date: Thu Mar 23 10:08:31 EDT 2023
Committee: SIG-HOU

Public Comment

SIG-HOU Low Frequency Task Group (TG)

Proposed text of Public Comment:

Applicable PI's: PI-206, PI-175, PI-216, PI-177 and PI-178.

~~29.5.10 Notification appliances provided in sleeping rooms and guest rooms for those with hearing loss shall comply with 29.5.10.1 and 29.5.10.2, as applicable.~~

~~29.5.10.1* Mild to Severe Hearing Loss. Notification appliances provided for those with mild to severe hearing loss shall comply with the following:~~

- ~~1) An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations:
 - ~~a) Where required by governing laws, codes, or standards for people with hearing loss~~
 - ~~b) Where provided voluntarily for those with hearing loss~~~~
- ~~2) The low frequency alarm signal output shall comply with both of the following:
 - ~~a) A waveform having a fundamental frequency of 520 Hz $\pm$ 10 percent.~~
 - ~~b) A minimum sound level at the pillow of 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater.~~~~

~~29.5.10.2* Moderately Severe to Profound Hearing Loss. Visual notification appliances in accordance with the requirements of 18.5.5.10 and tactile notification appliances in accordance with the requirements of Section 18.10 shall be required for those with moderately severe to profound hearing loss in the following situations:~~

- ~~1) Where required by governing laws, codes, or standards for people with hearing loss~~
- ~~2) Where provided voluntarily for those with hearing loss~~

~~A.29.5.10.1* Based on sleep studies to assess the waking effectiveness of different types of alarm signals, a low frequency alarm signal with a fundamental frequency of 520 Hz has been shown to provide improved awakening for people with mild to severe hearing loss when compared to typical alarms from high frequency piezoelectric sounders used in most smoke alarms [Bruck and Thomas, 2008]. Visual alarm signals, such as xenon strobes, have also been shown to not be very effective at waking people with mild to severe hearing loss [Thomas and Bruck, 2008; Ashley and Du Bois, 2004]. As for all alarm signals, effectiveness of the installed notification for the specific occupants should be tested by the occupants, if possible.~~

~~The low frequency alarm signal can be provided by the sounder in a smoke alarm or by a separate notification appliance. The exhibit below shows an example of a notification appliance that uses a low frequency wave to alert those with hearing loss; the appliance is activated by the sound from a traditional smoke alarm. This particular appliance also includes a supplementary bed shaker.~~

~~29.5.10.2* The use of visual notification appliances has been shown to be more effective for the deaf population than for those with mild to severe hearing loss. In addition, the low frequency signals specified in 29.5.10.1 are not adequate for those with moderately severe to profound hearing loss. Note that the requirement was clarified in the 2013 edition of the Code to apply to “moderately severe to profound hearing loss” compared to only “profound hearing loss” as specified in the 2010 edition of the Code. Therefore, due to the deficiencies with audible signals for this population, 29.5.10.2 requires the use of both visual notification appliances and tactile notification appliances per the requirements of Chapter 18. Tactile appliances can be effective for waking sleeping occupants. However, visual appliances are also needed because people might not always be in contact with the signal from tactile notification appliances. (Refer to A.29.5.10.2 for further insight into the performance of tactile~~

appliances.) For those who are awake, visual notification appliances enhance the ability of the system or equipment to alert them of a fire condition. Section 18.5 addresses requirements for visual signaling. The minimum illumination levels for visual signaling required for rooms in general are based on achieving a level of 0.0375 lumens/ft² (0.4037 lumens/m²). However, Chapter 18 requires a higher intensity for sleeping areas. See Section 18.5 for requirements on visual notification appliances and 18.5.5.8 for requirements specific to sleeping areas.

Early studies of persons who are deaf indicated that a 110 cd visual notification appliance, installed at least 24 in. (610 mm) below the ceiling, generally provides sufficient light intensity to awaken a sleeping deaf person. A 177 candela (cd) appliance is required where mounted within 24 in. (610 mm) of the ceiling because the light signal may be attenuated by the smoke layer during a fire. See the following exhibit for an example of a smoke alarm with an integral notification appliance.

29.5.10* In rooms, where low frequency sounders and/or tactile notification appliances are required by governing laws, codes, or standards, they shall be installed to comply with the following:

(a) The low frequency waveform shall have a fundamental frequency of 520 Hz +/- 10 percent.

(b) Tactile notification appliances in accordance with the requirements of Section 18.10.

A.29.5.10 As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability. Based on sleep studies to assess the waking effectiveness of different types of alarm signals, a low frequency alarm signal with a fundamental frequency of 520 Hz has been shown to provide improved awakening for people with hearing loss when compared to typical alarms from high frequency piezoelectric sounders used in most smoke alarms [Bruck and Thomas, 2008]. Visual alarm signals, such as xenon strobes or LED strobes, have also been shown to not be very effective at waking people with mild to severe hearing loss [Thomas and Bruck, 2008; Ashley and Du Bois, 2004]. As for all alarm signals, effectiveness of the installed notification for the specific occupants should be tested by the occupants, if possible. The low frequency alarm signal can be provided by the sounder in a smoke alarm or by a separate notification appliance. The exhibit below shows an example of a notification appliance that uses a low frequency wave to alert those with hearing loss; the appliance is activated by the sound from a traditional smoke alarm. This particular appliance also includes a supplementary bed shaker.

It is not the intent of this section to preclude devices that have been demonstrated through peer-reviewed research to awaken occupants with hearing loss as effectively as those using the frequency and amplitude specified in this section. Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005, UL 1971, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping persons. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow, tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.

The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when

[that are not in contact with a tactile appliance. See the NFPA Fire Protection Research Foundation report, Review of Alarm Technologies for Deaf and Hard of Hearing Populations, August 2021, for further details.](#)

Statement of Problem and Substantiation: This public comment seeks to provide clear and enforceable language for alerting all people sleeping especially people with hearing loss, school age children, the elderly and alcohol impaired.



Public Comment No. 84-NFPA 72-2023 [Section No. 29.5.10]

~~29.5.10.1~~ * – Mild to Severe Hearing Loss:

~~Notification appliances provided for those with mild to severe hearing loss shall comply with the following: An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations: Where~~

29.5.10

–

~~Notification appliances provided in sleeping rooms and guest rooms for those with hearing loss shall comply with 29.5.10.1 and 29.5.10.2 , as applicable.~~

*

–

In rooms or spaces where low frequency audible notification is required by governing laws, codes, or standards

for people with hearing loss

- ~~Where provided voluntarily for those with hearing loss~~

* ~~The low frequency alarm signal output shall comply with both of the following:~~

- ~~A waveform having a fundamental frequency of 520 Hz ± 10 percent~~

, the audible notification shall have a waveform having a fundamental frequency of 520 Hz +/- 10 percent and comply with one of the following: _____

(a) A minimum sound level of 79 dBA shall be produced by any UL 217 listed smoke alarm with integral sounder.

(b) A minimum sound level at the pillow of 75 dBA

, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater* Where required

shall be produced by any audible notification appliance.

29.5.

~~10.2~~ * – Moderately Severe to Profound Hearing Loss:

~~Visual notification appliances in accordance with the requirements of 18.5.5.10 and tactile notification appliances in accordance with the requirements of Section 18.10 shall be required for those with moderately severe to profound hearing loss in the following situations:~~

11*

In rooms or spaces where tactile notification appliances are required by governing laws, codes, or standards

for people with hearing loss

- ~~Where provided voluntarily for those with hearing loss~~

, they shall be installed in accordance with the requirements of Section 18.10.

Additional Proposed Changes

File Name	Description	Approved
PC_No_84_ - _Text.docx	Text of Changes by PC No. 84 shows clearly what is being changed, as TerraView makes it challenging to see what is actually being proposed.	

Statement of Problem and Substantiation for Public Comment

Related to PI-585 and other low frequency PIs, which was rejected by the SIG-HOU technical committee but was referred for follow-up by a Low Frequency Task Group.

The requirements of 28.5.10.1 for “mild to severe hearing loss” and 29.5.10.2 for “moderately severe to profound hearing loss” are overlapping and confusing in application. Multiple Fire Protection Research Foundation studies have proven that a low frequency signal provides the best waking ability for people with and without hearing loss. It is impossible for a designer to know if a sleeping room will be occupied with someone with hearing loss, much less what degree of hearing loss is experienced. Thus, the low frequency requirements, when required by other governing laws, codes and standards, should be applied evenly to all sleeping rooms. This rewrite is in line with the IFC 2021 section 907.5.2.1.3.

The SIG-HOU task group for low frequency agreed with this approach and this Public Comment provides a slight alternative to the language that the task group provided. It is believed that this language is more in line with the NFPA Manual of Style to not have two requirements in the same paragraph, by having audible and tactile requirements in separate paragraphs. The revised Annex A material for these sections is provided in another Public Comment.

As for the Sound Pressure Level (SPL) requirements in the text: The 2021 Edition of the IBC/IFC removed all references to minimum SPLs in Group R-1 and R-2 sleeping rooms (see 907.5.2.1.3) and instead required “520-Hz low-frequency signal complying with NFPA 72”. Thus, there is no reference to a minimum or required SPL in sleeping rooms in IBC/IFC. So, it is incumbent upon NFPA 72 to include a minimum or required SPL in Chapter 29 sleeping rooms and guest rooms. In the UL 217 Smoke Alarms product standard, section 84.2, smoke alarms producing a low frequency signal shall provide a 79 dBA minimum at 10 ft, while smoke alarms that produce a typical 3 kHz piezo signal must product an 85 dBA minimum at 10 ft. The revised language in Chapter 29 will reflect the low frequency minimum SPL of 79 dBA if a smoke alarm is used for the audible notification and will reflect the minimum SPL of 75 dBA measured at the pillow if a separate notification appliance is used for the audible notification, which matches the requirements of Chapter 18 for system devices.

Related Public Comments for This Document

<u>Related Comment</u>	<u>Relationship</u>
Public Comment No. 85-NFPA 72-2023 [Sections A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.1...]	
<u>Related Item</u>	
• PI No. 585 • SIG-HOU Low Frequency Task Group	

Submitter Information Verification

Submitter Full Name: Larry Rietz

Organization: Jensen Hughes

Street Address:

City:

State:

Zip:

Submittal Date: Tue May 16 12:06:10 EDT 2023

Committee: SIG-HOU

PC No. 84

~~29.5.10 Notification appliances provided in sleeping rooms and guest rooms for those with hearing loss shall comply with 29.5.10.1 and 29.5.10.2, as applicable.~~

~~29.5.10.1* Mild to Severe Hearing Loss. Notification appliances provided for those with mild to severe hearing loss shall comply with the following:~~

- ~~1) An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations:
 - ~~a) Where required by governing laws, codes, or standards for people with hearing loss~~
 - ~~b) Where provided voluntarily for those with hearing loss~~~~
- ~~2) The low frequency alarm signal output shall comply with both of the following:
 - ~~a) A waveform having a fundamental frequency of 520 Hz $\pm$ 10 percent.~~
 - ~~b) A minimum sound level at the pillow of 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater.~~~~

~~29.5.10.2* Moderately Severe to Profound Hearing Loss. Visual notification appliances in accordance with the requirements of 18.5.5.10 and tactile notification appliances in accordance with the requirements of Section 18.10 shall be required for those with moderately severe to profound hearing loss in the following situations:~~

- ~~1) Where required by governing laws, codes, or standards for people with hearing loss~~
- ~~2) Where provided voluntarily for those with hearing loss~~

29.5.10* In rooms or spaces where low frequency audible notification is required by governing laws, codes, or standards, the audible notification shall have a waveform having a fundamental frequency of 520 Hz +/- 10 percent and comply with one of the following:

- (a) A minimum sound level of 79 dBA shall be produced by any UL 217 listed smoke alarm.
- (b) A minimum sound level at the pillow of 75 dBA shall be produced by any audible notification appliance.

29.5.11* In rooms or spaces where tactile notification appliances are required by governing laws, codes, or standards, they shall be installed in accordance with the requirements of Section 18.10.

Substantiation:

Related to PI 585, which was rejected by the SIG-HOU technical committee but was referred for follow-up by a Low Frequency Task Group.

The requirements of 28.5.10.1 for “mild to severe hearing loss” and 29.5.10.2 for “moderately severe to profound hearing loss” are overlapping and confusing in application. Multiple Fire Protection Research Foundation studies have proven that a low frequency signal provides the best waking ability for people with and without hearing loss. It is impossible for a designer to know if a sleeping room will be occupied with someone with hearing loss, much less what degree of hearing loss is experienced. Thus, the low frequency requirements, when required by other governing laws, codes and standards, should be applied evenly to all sleeping rooms. This rewrite is in line with the IFC 2021 section 907.5.2.1.3.

The SIG-HOU task group for low frequency agreed with this approach and this Public Comment provides a slight alternative to the language that the task group provided. It is believed that this language is more in line with the NFPA Manual of Style to not have two requirements in the same paragraph. The revised Annex A material for these sections is provided in another Public Comment.

As for the Sound Pressure Level (SPL) requirements in the text: The 2021 Edition of the IBC/IFC removed all references to minimum SPLs in Group R-1 and R-2 sleeping rooms (see 907.5.2.1.3 below) and instead required “520-Hz low-frequency signal complying with NFPA 72”. Thus, there is no reference to a minimum or required SPL in sleeping rooms in IBC/IFC. So, it is incumbent upon NFPA 72 to include a minimum or required SPL in Chapter 29 sleeping rooms and guest rooms. In the UL 217 Smoke Alarms product standard, section 84.2, smoke alarms producing a low frequency signal shall provide a 79 dBA minimum at 10 ft, while smoke alarms that produce a typical 3 kHz piezo signal must product an 85 dBA minimum at 10 ft. The revised language in Chapter 29 will reflect the low frequency minimum SPL of 79 dBA if a smoke alarm is used for the audible notification and will reflect the minimum SPL of 75 dBA measured at the pillow if a separate notification appliance is used for the audible notification, which matches the requirements of Chapter 18 for system devices.

907.5.2.1.3 Audible signal frequency in Group R-1 and R-2 sleeping rooms. Audible signal frequency in Group R-1 and R-2 occupancies shall be in accordance with Sections 907.5.2.1.3.1 and 907.5.2.1.3.2.

907.5.2.1.3.1 Fire alarm system signal. In sleeping rooms of Group R-1 and R-2 occupancies, the audible alarm activated by a fire alarm system shall be a 520-Hz low-frequency signal complying with NFPA 72.

907.5.2.1.3.2 Smoke alarm signal in sleeping rooms. In sleeping rooms of Group R-1 and R-2 occupancies that are required by Section 907.2.8 or 907.2.9 to have a fire alarm system, the audible alarm signal activated by single- or multiple-station smoke alarms in the *dwelling unit* or *sleeping unit* shall be a 520-Hz signal complying NFPA 72.

Where a sleeping room smoke alarm is unable to produce a 520-Hz signal, the 520-Hz alarm signal shall be provided by a *listed* notification appliance or a smoke detector with an integral 520-Hz sounder.



Public Comment No. 12-NFPA 72-2023 [Section No. 29.7.1.1]

29.7.1.1*

Where required by other governing laws, codes, or standards for a specific type of occupancy, listed carbon monoxide alarms or carbon monoxide detectors shall be installed as follows:

- (1) Outside of each separate dwelling unit sleeping area, within 21 ft (6.4 m) of any door to a sleeping room, with the distance measured along a path of travel
- (2) On every occupiable level of a dwelling unit, including basements, excluding attics and crawl spaces
- (3) On the ceiling or on the wall with the top of the alarm or detector within 12 in. (300 mm) of the ceiling, when installed in the same room as the permanently installed fuel-burning ~~appliances~~ equipment
- (4) In accordance with the manufacturer's published instructions

Statement of Problem and Substantiation for Public Comment

The term "fuel-burning appliances" is not defined. "Fuel-burning equipment" was defined under FR-5006. This change revises the text to match the defined term.

Related Public Comments for This Document

<u>Related Comment</u>	<u>Relationship</u>
Public Comment No. 13-NFPA 72-2023 [Section No. 29.14.2.2]	
Public Comment No. 14-NFPA 72-2023 [Section No. A.29.7]	
<u>Related Item</u>	

• fr-5006

Submitter Information Verification

Submitter Full Name: Cory Ogle
Organization: Code Consultants, Inc.
Affiliation: SIG-HOU Technical Committee
Street Address:
City:
State:
Zip:
Submittal Date: Tue Mar 21 12:29:00 EDT 2023
Committee: SIG-HOU

**Public Comment No. 105-NFPA 72-2023 [Section No. 29.8.1.2]****29.8.1.2**

Where the area addressed in 29.8.1.1(2) is separated from the adjacent living areas by a door, a smoke alarm or smoke detector shall be installed in the following locations:

- (1) In the area between the door and the sleeping rooms, and additional alarms or detectors shall be installed
- (2) On the living area side of the door as specified by 29.8.1.1 and 29.8.1.3

Statement of Problem and Substantiation for Public Comment

During the first revision it appears that "or detectors" was inadvertently deleted from the requirement.

Related Item

- FR 5241

Submitter Information Verification

Submitter Full Name: Megan Hayes

Organization: NEMA

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 17 11:04:53 EDT 2023

Committee: SIG-HOU



Public Comment No. 190-NFPA 72-2023 [Section No. 29.9.3]

29.9.3 Household Fire and Carbon Monoxide Alarm Systems.

Power for household alarm systems shall comply with the following requirements:

- (1) Household fire and carbon monoxide alarm systems shall have two independent power sources consisting of a primary source that uses commercial light and power and a secondary source that consists of a rechargeable battery.
- (2) The secondary source shall be capable of operating the household alarm system for at least 24 hours in the normal condition, followed by 4 minutes of fire alarm or 12 hours of carbon monoxide alarm.
 - (a) The secondary power source of the household carbon monoxide system shall be capable of operating the system for at least 12 hours of alarm in accordance with 29.5.4.
 - (b) The secondary power source of a household carbon monoxide system shall not be required to operate the system for 12 hours of alarm if the power source of carbon monoxide detectors and carbon monoxide audible notification appliances incorporating a low-power radio (wireless) transmitter/transceiver is capable of providing at least 24 hours in the normal condition, followed by 12 hours of alarm.
- (3) The secondary power source shall be supervised ~~with a~~ so that a distinctive audible and visible trouble signal results upon removal or disconnection of a battery or a low-battery condition.
- (4) A rechargeable battery used as a secondary power source shall meet the following criteria:
 - (5) Be automatically recharged by an ac circuit of the commercial light and power source
 - (6) Be recharged within 48 hours
 - (7) Provide a distinctive audible trouble signal before the battery is incapable of operating the device(s) for alarm purposes
- (8) Low-power wireless systems shall comply with the performance criteria of Section 23.16, except as modified by 29.10.8.1.1.

Statement of Problem and Substantiation for Public Comment

The power source is not supervised with a distinctive audible and visible trouble signal. The intent is to provide distinctive audible and visible signals resulting from the supervision when a fault occurs. The revised text is provided for consideration by the technical committee.

Related Item

- 5070

Submitter Information Verification

Submitter Full Name: Megan Hayes

Organization: NEMA

Street Address:

City:

State:

Zip:

Submittal Date: Tue May 30 11:48:38 EDT 2023

Committee: SIG-HOU



Public Comment No. 145-NFPA 72-2023 [Section No. 29.9.4]

29.9.4 AC Primary Power Source.

The ac power source specified in 29.9.1 and 29.9.3 shall comply with the following conditions:

- (1) A visible "power on" indicator is provided.
- (2) All electrical systems installed by other than a qualified electrician are powered from a source not in excess of 30 volts that meets the requirements for power-limited fire alarm circuits as covered in Article 760 of *NFPA 70*.
- (3)* A restraining means is used at the plug-in of any cord-connected installation, unless the unit utilizes a secondary (standby) power source meeting the requirements of Section 29.9 and loss of the ac primary power source results in annunciation of an audible trouble signal meeting 29.10.6.5.
- (4) AC primary (main) power is supplied either from a dedicated branch circuit or the unswitched portion of a branch circuit also used for power and lighting.
- (5) Operation of a switch (other than a circuit breaker) does not cause loss of primary (main) power.
- (6) Alarms powered by branch circuits protected by arc-fault circuit-interrupters (AFCI) or ground-fault circuit-interrupters (GFCI) have a secondary power source.
- (7) Neither loss nor restoration of primary (main) power will cause an alarm signal that exceeds 2 seconds.
- (8) Where a secondary (standby) battery is provided, the primary (main) power supply is of sufficient capacity to operate the system under all conditions of loading with any secondary (standby) battery disconnected or fully discharged.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CN_No._28.pdf	NFPA 72 Correlating Note No. 28	

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 28 appeared in the First Draft Report on First Revision No. 5234.

Review the language of 29.9.4(2). The deletion of "designed to be" appears to change the intent of the requirement and is not substantiated as a revision.

Related Item

- FR - 5234

Submitter Information Verification

Submitter Full Name:	CC on SIG-AAC
Organization:	NFPA CC on Signaling Systems for the Protection of Life and Property
Street Address:	
City:	
State:	
Zip:	
Submittal Date:	Tue May 23 14:24:04 EDT 2023
Committee:	SIG-HOU



Public Comment No. 102-NFPA 72-2023 [Section No. 29.9.5.1]

29.9.5.1

Where alarms include a battery that is used as a secondary power source, the following conditions shall be met:

- (1) The secondary power source is supervised.
- (2) ~~The Supervision of the~~ secondary power source causes a distinctive audible or visible trouble signal upon removal or disconnection of a battery or a low-battery condition.
- (3) Acceptable replacement batteries are clearly identified by the manufacturer's name and model number on the unit near the battery compartment.
- (4) A rechargeable battery used as a secondary power source meets the following criteria:
 - (5) Be automatically recharged by the primary power source
 - (6) Be recharged within 4 hours where power is provided from a circuit that can be switched on or off by means other than a circuit breaker, or within 48 hours where power is provided from a circuit that cannot be switched on or off by means other than a circuit breaker
 - (7) Provide a distinctive audible trouble signal before the battery is incapable of operating the device(s) for alarm purposes
 - (8) At the battery condition at which a trouble signal is obtained, be capable of producing a fire alarm signal for at least 4 minutes or the carbon monoxide signal for 12 continuous hours, followed by not less than 7 days of trouble signal operation
 - (9) Produce an audible trouble signal at least once every minute for 7 consecutive days

Statement of Problem and Substantiation for Public Comment

The secondary rechargeable battery source does not provide the trouble signal, supervision of the secondary source provides the trouble signal.

The only changes are proposed in 29.9.9.5.1(2)

Related Item

- FR 5075

Submitter Information Verification

Submitter Full Name: Megan Hayes

Organization: NEMA

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 17 10:46:42 EDT 2023

Committee: SIG-HOU



Public Comment No. 157-NFPA 72-2023 [Section No. 29.10.4.2]

29.10.4.2*

Fixed-temperature alarms or detectors shall comply with both of the following:

- (1) Have a temperature rating at least 25°F (14°C) above the normal ambient temperature
- (2) Not be rated 50°F (28°C) higher than the maximum anticipated ambient temperature in the room or space where installed

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CN_No._8.pdf	NFPA 72 Correlating Note No. 8	

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 8 appeared in the First Draft Report on First Revision No. 5121.

There is a correlation issue between 17.6.2.3.2 and 29.10.4.2. Revise section 29.10.4.2 to 20 degrees to coordinate the temperature requirement based on UL539.

Related Item

- FR - 5121

Submitter Information Verification

Submitter Full Name: CC on SIG-AAC
Organization: NFPA CC on Signaling Systems for the Protection of Life and Property
Street Address:
City:
State:
Zip:
Submittal Date: Wed May 24 14:11:33 EDT 2023
Committee: SIG-HOU

**Public Comment No. 2-NFPA 72-2023 [Section No. 29.10.4.2]****29.10.4.2***

Fixed-temperature alarms or detectors shall comply with both of the following:

- (1) Have a temperature rating at least ~~25°F~~ 20°F (14°C 11°C) above ~~the normal ambient temperature~~ the temperature expected at the ceiling
- (2) Not be rated 50°F (28°C) higher than the maximum anticipated ambient temperature in the room or space where installed

Statement of Problem and Substantiation for Public Comment

Changing the requirement for heat alarm set points to be 20 degrees F above the ambient temperature makes the requirement consistent with Chapter 17, clause 17.6.2.3.2.

Related Item

- PI 24

Submitter Information Verification

Submitter Full Name: Scott Lang

Organization: Honeywell International

Street Address:

City:

State:

Zip:

Submittal Date: Fri Mar 10 09:37:57 EST 2023

Committee: SIG-HOU

**Public Comment No. 238-NFPA 72-2023 [Section No. 29.10.9.1.2]****29.10.9.1.2**

Where off-premises supervision is provided, the system shall transmit at least a general alarm signal.

29.10.9.1.2 "Automatic transmission of signals from listening equipment used for dispatching emergency services shall be processed by a control unit or household fire alarm system"

Statement of Problem and Substantiation for Public Comment

Currently there are no NFPA, UL, or industry standard requirements for smart speakers and smart home systems that provide "listening" equipment or services that alert remote monitoring centers when a fire-warning, carbon monoxide-warning, and combustible gas-warning alarm have been detected. NFPA 72 requires all devices, combinations of devices, and equipment to be installed in conformity with Chapter 29 to be approved or listed for the purposes for which they are intended. Since remote monitoring centers respond to remote annunciations from the listening equipment or services and potentially dispatch emergency services, manufacturers and service providers need to somehow demonstrate that signals are coming from approved, labeled, or listed equipment that properly identifies the hazard.

This public comment is being submitted on behalf of a SIG-HOU task group formed to address Public Input No. 321-NFPA 72-2022.

Related Item

- Public Input No. 321-NFPA 72-2022

Submitter Information Verification

Submitter Full Name: Greg Hansen

Organization: Vivint Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 31 16:37:52 EDT 2023

Committee: SIG-HOU



Public Comment No. 158-NFPA 72-2023 [Section No. 29.10.9.10.4]

29.10.9.10.4

Where a communication or transmission means other than DACT is used, all equipment necessary to transmit an alarm signal shall comply with both of the following:

- (1) Be provided with a minimum of 24 hours of secondary power capacity
- (2) ~~Report~~ Transmit a specific trouble ~~condition indicating~~ signal upon loss of primary power

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CN_No._29.pdf	NFPA 72 Correlating Note No. 29	

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 29 appeared in the First Draft Report on First Revision No. 5250.

Review for consistency in use of the terms "condition", "signal", and "response" as defined in chapter 3. The system should send a trouble signal when a trouble condition is detected. Review the language of 29.10.9.10.4. Consider revisions such as:

29.10.9.10.4

Where a communication or transmission means other than DACT is used, all equipment necessary to transmit an alarm signal shall comply with both of the following:

- (1) Be provided with a minimum of 24 hours of secondary power capacity
- (2) Transmit a specific trouble signal upon loss of primary power

Related Item

- FR - 5250

Submitter Information Verification

Submitter Full Name: CC on SIG-AAC

Organization: NFPA CC on Signaling Systems for the Protection of Life and Property

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 24 14:16:18 EDT 2023

Committee: SIG-HOU



Public Comment No. 159-NFPA 72-2023 [Section No. 29.10.10]

29.10.10 Cybersecurity.

29.10.10.1*

All control units shall be designed for cybersecurity as determined by the manufacturer.

29.10.10.2

All devices that are connected wirelessly to a control unit and rely on the control unit for occupant notification activation shall not diminish the cybersecurity of the control unit.

29.10.10.3

All system or software updates required or initiated by the manufacturer shall not diminish the cybersecurity of the control unit.

29.10.10.4*

All alarms that use IP or cellular communication shall be designed for cybersecurity as determined by the manufacturer.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CN_No._30.pdf	NFPA 72 Correlating Note No. 30	

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 30 appeared in the First Draft Report and is related to First Revision No. 5188.

Review and correlate the language of the new Chapter 11 on Cybersecurity which the Fundamentals committee added. Chapter 11 will now contain mandatory requirements that could apply to Chapter 29. The Household Committee should review these requirements for the Second Draft.

Related Item

- FR - 5188

Submitter Information Verification

Submitter Full Name: CC on SIG-AAC

Organization: NFPA CC on Signaling Systems for the Protection of Life and Property

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 24 14:20:27 EDT 2023

Committee: SIG-HOU



Public Comment No. 160-NFPA 72-2023 [Section No. 29.11.1.4.2]

29.11.1.4.2

The supplier or installing contractor shall provide the system owner or other responsible parties with information noting both of the following requirements :

- (1) Unless otherwise recommended by the manufacturer's published instructions, smoke alarms and carbon monoxide alarms ~~are replaced~~ shall be replaced when they fail to respond to tests.
- (2) Smoke alarms and carbon monoxide alarms ~~do shall~~ not remain in service longer than 10 years from the date of manufacture unless otherwise provided by manufacturer's published instructions.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CN_No._27.pdf	NFPA 72 Correlating Note No. 27	

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 27 appeared in the First Draft Report and is related to First Revision No. 5219.

Review the language of 29.11.1.4.2. The charging statement does not make sense with the list items. The revision to the MOS appears to have changed the requirement and made the requirement unenforceable and not possible to comply with. Consider revisions such as:

"29.11.1.4.2

The supplier or installing contractor shall provide the system owner or other responsible parties with information noting both of the following requirements:

- (1) Unless otherwise recommended by the manufacturer's published instructions, smoke alarms and carbon monoxide alarms shall be replaced when they fail to respond to tests.
- (2) Smoke alarms and carbon monoxide alarms shall not remain in service longer than 10 years from the date of manufacture unless otherwise provided by manufacturer's published instructions."

Related Item

- FR - 5219

Submitter Information Verification

Submitter Full Name: CC on SIG-AAC

Organization: NFPA CC on Signaling Systems for the Protection of Life and Property

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 24 14:25:08 EDT 2023

Committee: SIG-HOU



Public Comment No. 191-NFPA 72-2023 [Section No. 29.11.3.4]

29.11.3.4 Specific Location Requirements.

The installation of smoke alarms and smoke detectors shall comply with the following requirements:

- (1) Smoke alarms and smoke detectors shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.
- (2) Smoke alarms and smoke detectors shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40°F (4.4°C) or exceed 100°F (38°C).
- (3)* Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, smoke alarms and smoke detectors shall be mounted on an inside wall.
- (4)* Smoke alarms and smoke detectors shall not be installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance unless the devices are listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, *Smoke Alarms*, the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems*, or subsequent editions.
- (5) Smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance. When the 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this Code, and when the kitchen or cooking area and adjacent spaces have no clear interior partitions or headers, smoke alarms or smoke detectors shall be permitted for installation at a radial distance between 6 ft (1.8 m) and 10 ft (3.0 m) from any stationary or fixed cooking appliance unless the devices are listed for resistance to common nuisance sources from cooking nuisance alarms in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.
- (6)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations.
- (7) Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.
- (8)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan unless the room configuration restricts meeting this requirement.
- (9) Where stairs lead to other occupiable levels, a smoke alarm or smoke detector shall be located so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction.
- (10) For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.
- (11)* For tray-shaped ceilings (coffered ceilings), smoke alarms and smoke detectors shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 in. (300 mm) vertically down from the highest point.
- (12) Smoke alarms and smoke detectors installed in rooms with joists or beams shall comply with the requirements of 17.7.4.2.4.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
TIA_72_22_4.pdf	NFPA 72 TIA 22-4 Log No. 1643	

Statement of Problem and Substantiation for Public Comment

NOTE: This public comment originates from Tentative Interim Amendment No. 22-4 (Log 1643) issued by the Standards Council on August 12, 2022 and per the NFPA Regs., needs to be reconsidered by the Technical Committee for the next edition of the Document.

Substantiation: Underwriters Laboratories has moved the UL217 and UL268 effective dates to June 30, 2024. This creates a conflict in the 2022 edition of NFPA 72 Chapter 29 installation requirements. The current installation date is January 1, 2023. This date must now be adjusted to reflect the change in the effective date of the listing standard to allow manufacturers to meet the new listing requirements and provide product to the marketplace.

Emergency Nature:
The proposed TIA intends to accomplish a recognition of an advance in the art of safeguarding property or life where an alternative method is not in current use or is unavailable to the public. The current situation presented by the COVID pandemic is causing significant delays in getting products through the UL listing process. If the date remains as currently drafted, it will conflict with the new UL compliance date. Due to this fact there will not be sufficient product in the marketplace to support the current date.

Related Item

• FR - 5220 • PI - 160

Submitter Information Verification

Submitter Full Name: TC on SIG-HOU
Organization: NFPA 72 TC on Single- and Multiple-Station Alarms and Household Signaling Systems
Street Address:
City:
State:
Zip:
Submittal Date: Tue May 30 12:18:08 EDT 2023
Committee: SIG-HOU



Tentative Interim Amendment

NFPA[®] 72[®]

National Fire Alarm and Signaling Code[®]

2022 Edition

Reference: 29.11.3.4 items (4)(a), (4)(b), (5)(a), and (5)(b)

TIA 22-4

(SC 22-8-26 / TIA Log #1643)

Pursuant to Section 5 of the NFPA *Regulations Governing the Development of NFPA Standards*, the National Fire Protection Association has issued the following Tentative Interim Amendment to NFPA 72[®], *National Fire Alarm and Signaling Code[®]*, 2022 edition. The TIA was processed by the Technical Committee on Single- and Multiple-Station Alarms and Household Signaling Systems, and the Correlating Committee on Signaling Systems for the Protection of Life and Property, and was issued by the Standards Council on August 12, 2022, with an effective date of September 1, 2022.

1. Revise 29.11.3.4 items (4)(a), (4)(b), (5)(a) and (5)(b) to read as follows:

29.11.3.4 Specific Location Requirements. The installation of smoke alarms and smoke detectors shall comply with the following requirements:

(1) ...

(4)* Smoke alarms and smoke detectors shall not be installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance unless the devices comply with the following:

(a) Prior to ~~January 1, 2023~~, January 1, 2025, smoke alarms and smoke detectors shall be equipped with an alarm silencing means, use photoelectric detection, or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, *Smoke Alarms*, the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems*, or subsequent editions.

(b) Effective ~~January 1, 2023~~, January 1, 2025, smoke alarms and smoke detectors shall be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(5) Smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance. When the 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this Code, and when the kitchen or cooking area and adjacent spaces have no clear interior partitions or headers, smoke alarms or smoke detectors shall be permitted for installation at a radial distance between 6 ft (1.8 m) and 10 ft (3.0 m) from any stationary or fixed cooking appliance unless the devices comply with the following:

(a) Prior to ~~January 1, 2023~~, January 1, 2025, the devices shall use photoelectric detection or be listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(b) Effective ~~January 1, 2023~~, January 1, 2025, the devices shall be listed for resistance to common nuisance sources from cooking nuisance alarms in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.

(6)*...

Issue Date: August 12, 2022

Effective Date: September 1, 2022

(Note: For further information on NFPA Codes and Standards, please see www.nfpa.org/docinfo)

Copyright © 2022 All Rights Reserved
NATIONAL FIRE PROTECTION ASSOCIATION



Public Comment No. 6-NFPA 72-2023 [Section No. 29.11.3.4]

29.11.3.4 Specific Location Requirements.

The installation of smoke alarms and smoke detectors shall comply with the following requirements:

- (1) Smoke alarms and smoke detectors shall not be located where ambient conditions, including humidity and temperature, are outside the limits specified by the manufacturer's published instructions.
- (2) Smoke alarms and smoke detectors shall not be located within unfinished attics or garages or in other spaces where temperatures can fall below 40°F (4.4°C) or exceed 100°F (38°C).
- (3)* Where the mounting surface could become considerably warmer or cooler than the room, such as a poorly insulated ceiling below an unfinished attic or an exterior wall, smoke alarms and smoke detectors shall be mounted on an inside wall.
- (4)* Smoke alarms and smoke detectors shall not be installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a stationary or fixed cooking appliance unless the devices are listed for resistance to common nuisance sources from cooking in accordance with the 8th edition of UL 217, *Smoke Alarms*, the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems*, or subsequent editions.
- (5) Smoke alarms and smoke detectors shall not be installed within an area of exclusion determined by a 10 ft (3.0 m) radial distance along a horizontal flow path from a stationary or fixed cooking appliance. When the 10 ft (3.0 m) area of exclusion would prohibit the placement of a smoke alarm or smoke detector required by other sections of this Code, and when the kitchen or cooking area and adjacent spaces have no clear interior partitions or headers, smoke alarms or smoke detectors shall be permitted for installation at a radial distance between 6 ft (1.8 m) and 10 ft (3.0 m) from any stationary or fixed cooking appliance ~~unless provided~~ the devices are listed for resistance to common nuisance sources from cooking ~~nuisance alarms~~ in accordance with the 8th edition of UL 217, the 7th edition of UL 268, or subsequent editions.
- (6)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from a door to a bathroom containing a shower or tub unless listed for installation in close proximity to such locations.
- (7) Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the supply registers of a forced air heating or cooling system and shall be installed outside of the direct airflow from those registers.
- (8)* Smoke alarms and smoke detectors shall not be installed within a 36 in. (910 mm) horizontal path from the tip of the blade of a ceiling-suspended (paddle) fan unless the room configuration restricts meeting this requirement.
- (9) Where stairs lead to other occupiable levels, a smoke alarm or smoke detector shall be located so that smoke rising in the stairway cannot be prevented from reaching the smoke alarm or smoke detector by an intervening door or obstruction.
- (10) For stairways leading up from a basement, smoke alarms or smoke detectors shall be located on the basement ceiling near the entry to the stairs.
- (11)* For tray-shaped ceilings (coffered ceilings), smoke alarms and smoke detectors shall be installed on the highest portion of the ceiling or on the sloped portion of the ceiling within 12 in. (300 mm) vertically down from the highest point.
- (12) Smoke alarms and smoke detectors installed in rooms with joists or beams shall comply with the requirements of 17.7.4.2.4.

Statement of Problem and Substantiation for Public Comment

The first change addresses a sentence that is not written correctly. As written, it is prohibiting the use of detection equipment listed for nuisance sources between 6 and 10 feet from a cooking appliance. The intent is to allow such devices.

The second change addresses what appears to be a typo.
Both of these issues are also present at least in the 2022 edition.

Related Item

- FR 5220

Submitter Information Verification

Submitter Full Name: Stephen Olenick

Organization: Combustion Science & Engineering, Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Mon Mar 13 10:47:56 EDT 2023

Committee: SIG-HOU



Public Comment No. 161-NFPA 72-2023 [Section No. 29.14.1.2]

29.14.1.2 Carbon Monoxide Alarms and Carbon Monoxide Detectors.

In addition to 29.14.1.1, carbon monoxide alarms or carbon monoxide detectors shall be marked with the following information:

- (1) Statement that indicates the unit is not suitable as a fire detector
- (2) Warning that carbon monoxide is odorless, colorless, and tasteless
- (3) Emergency actions to be taken
- (4) Recommended replacement date
- (5) ~~If~~ With the text required by the product standard, if the device is listed for use in an unconditioned area as defined in Chapter 3

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
CN_No._31.pdf	NFPA 72 Correlating Note No. 31	

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 31 appeared in the First Draft Report and is related to First Revision No. 5222.

Review the language of 29.14.1.2. The revision is unclear and does not indicate that the marking for an unconditioned area should be consistent with the product standard. Consider revisions such as:

"29.14.1.2 Carbon Monoxide Alarms and Carbon Monoxide Detectors.

In addition to 29.14.1.1, carbon monoxide alarms or carbon monoxide detectors shall be marked with the following information:

- (1) Statement that indicates the unit is not suitable as a fire detector
- (2) Warning that carbon monoxide is odorless, colorless, and tasteless
- (3) Emergency actions to be taken
- (4) Recommended replacement date
- (5) With the text required by the product standard, if the device is listed for use in an unconditioned area as defined in Chapter 3"

Related Item

- FR - 5222

Submitter Information Verification

Submitter Full Name: CC on SIG-AAC

Organization: NFPA CC on Signaling Systems for the Protection of Life and Property

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 24 14:31:18 EDT 2023

Committee: SIG-HOU



Public Comment No. 103-NFPA 72-2023 [Sections 29.14.2.1, 29.14.2.2]

Sections 29.14.2.1, 29.14.2.2**29.14.2.1– Instructions Carbon Monoxide Alarms and Carbon Monoxide Detectors.**

The following information shall be included in the instructions provided with carbon monoxide alarms and carbon monoxide detectors:

~~In addition to 29.14.2.1, the following information shall be included in the instructions provided with carbon monoxide alarms and carbon monoxide detectors:~~

- (1) Installation instructions
- (2) Operating instructions
- (3) Testing instructions
- (4) Maintenance instructions
- (5) Replacement and service instructions

~~29.14.2.2 – Carbon Monoxide Alarms and Carbon Monoxide Detectors.~~

- (1) Statement indicating that smoke might not be present during a carbon monoxide alarm condition
- (2) * Information on the actions to be taken in case of an alarm
- (3) Minimum and recommended distances from fuel-burning appliances

Statement of Problem and Substantiation for Public Comment

There is no need to have two lists. The above text consolidates the lists and the annex material needs to be referenced accordingly.

The only change was the deletion of 29.14.2.2 and moving those list items to 29.14.2.1.

Related Item

- FR 5224

Submitter Information Verification

Submitter Full Name: Megan Hayes

Organization: NEMA

Street Address:

City:

State:

Zip:

Submittal Date: Wed May 17 10:52:44 EDT 2023

Committee: SIG-HOU



Public Comment No. 13-NFPA 72-2023 [Section No. 29.14.2.2]

29.14.2.2 Carbon Monoxide Alarms and Carbon Monoxide Detectors.

In addition to 29.14.2.1, the following information shall be included in the instructions provided with carbon monoxide alarms and carbon monoxide detectors:

- (1) Statement indicating that smoke might not be present during a carbon monoxide alarm condition
- (2)* Information on the actions to be taken in case of an alarm
- (3) Minimum and recommended distances from fuel-burning ~~appliances~~ equipment

Statement of Problem and Substantiation for Public Comment

The term "fuel-burning appliances" is not defined. "Fuel-burning equipment" was defined under FR-5006. This change revises the text to match the defined term.

Related Public Comments for This Document

Related Comment
Public Comment No. 12-NFPA 72-2023 [Section No. 29.7.1.1]

Relationship
similar change to existing text

Related Item
• FR-5006

Submitter Information Verification

Submitter Full Name: Cory Ogle
Organization: Code Consultants, Inc.
Affiliation: SIG-HOU Technical Committee
Street Address:
City:
State:
Zip:
Submittal Date: Tue Mar 21 12:33:03 EDT 2023
Committee: SIG-HOU



Public Comment No. 35-NFPA 72-2023 [Section No. A.29.5.8]

A.29.5.8 —

~~Low frequency or tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [CSE NIH report, 2005; Bruck and Thomas, 2009; Bruck, Thomas, and Ball, NFPA RF report, 2007]. Additionally, see the NFPA Fire Protection Research Foundation report, *Review of Alarm Technologies for Deaf and Hard of Hearing Populations*, August 2021, for further details.~~

Statement of Problem and Substantiation for Public Comment

The charging paragraph for this annex material does not reference low frequency or tactile notification appliances – rather it refers to visual notification appliances. As such this annex entry should be removed. Note that there are two other annex sections (A.29.5.10.2 & A.18.10.2) that capture all this information, so nothing is being lost from the code by deleting this.

Related Item

- FR-5203

Submitter Information Verification

Submitter Full Name: Michael Pallett

Organization: Pallett Corner Consulting

Street Address:

City:

State:

Zip:

Submittal Date: Sat Apr 15 12:35:54 EDT 2023

Committee: SIG-HOU



Public Comment No. 18-NFPA 72-2023 [Sections

A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.10.2(1)]

Sections A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.10.2(1)

A.29.5.10.1 —

As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability.

A.29.5.10.1(2) —

Based on sleep studies to assess the waking effectiveness of different types of alarm signals, a low frequency alarm signal with a fundamental frequency of 520 Hz has been shown to provide improved awakening for people with hearing loss when compared to typical alarms from high frequency piezoelectric sounders used in most smoke alarms [Bruck and Thomas, 2008]. Visual alarm signals, such as xenon strobes or LED strobes, have also been shown to not be very effective at waking people with mild to severe hearing loss [Thomas and Bruck, 2008, Ashley and Du Bois, 2004]. As for all alarm signals, effectiveness of the installed notification for the specific occupants should be tested by the occupants, if possible. The low frequency alarm signal can be provided by the sounder in a smoke alarm or by a separate notification appliance. The exhibit below shows an example of a notification appliance that uses a low frequency wave to alert those with hearing loss, the appliance is activated by the sound from a traditional smoke alarm. This particular appliance also includes a supplementary bed shaker.

It is not the intent of this section to preclude devices that have been demonstrated through peer-reviewed research to awaken occupants with hearing loss as effectively as those using the frequency and amplitude specified in this section.

A.29.5.10.2 —

Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005,

UL 1974

UL 1974, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping persons. However, there are many variables that have not been tested that might affect the reliability of their performance: - Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow - tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.

The

The Code requires both visual notification appliances and tactile appliances. - Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when

they

that are not in contact with a tactile appliance. - See the NFPA Fire Protection Research Foundation report, Review of Alarm Technologies for Deaf and Hard of Hearing Populations, August 2021, for further details.

A.29.5.10.2(1) —

As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability.

Additional Proposed Changes

<u>File Name</u>	<u>Description</u>	<u>Approved</u>
SIG-HOU_Low_Frequency_TG_Public_Comment_v2.docx	SIG-HOU Low frequency sounder public comment.	

Statement of Problem and Substantiation for Public Comment

This is the second comment relating to 29.5.10 and A29.5.10. This public comment seeks to provide clear and enforceable language for alerting all people sleeping especially people with hearing loss, school age children, the elderly and alcohol impaired.

Related Item

- PI-206, PI-175, PI-216, PI-177 and PI-178.

Submitter Information Verification

Submitter Full Name: Eric Sacco

Organization: Siemens Building Technologies

Affiliation: I am submitting this public comment on behalf of the SIG-HOU Task Group created during the first draft meeting.

Street Address:

City:

State:

Zip:

Submittal Date: Thu Mar 23 10:23:37 EDT 2023

Committee: SIG-HOU

Public Comment

SIG-HOU Low Frequency Task Group (TG)

Proposed text of Public Comment:

Applicable PI's: PI-206, PI-175, PI-216, PI-177 and PI-178.

~~29.5.10 Notification appliances provided in sleeping rooms and guest rooms for those with hearing loss shall comply with 29.5.10.1 and 29.5.10.2, as applicable.~~

~~29.5.10.1* Mild to Severe Hearing Loss. Notification appliances provided for those with mild to severe hearing loss shall comply with the following:~~

- ~~1) An audible notification appliance producing a low frequency alarm signal shall be installed in the following situations:
 - ~~a) Where required by governing laws, codes, or standards for people with hearing loss~~
 - ~~b) Where provided voluntarily for those with hearing loss~~~~
- ~~2) The low frequency alarm signal output shall comply with both of the following:
 - ~~a) A waveform having a fundamental frequency of 520 Hz $\pm$ 10 percent.~~
 - ~~b) A minimum sound level at the pillow of 75 dBA, or 15 dB above the average ambient sound level, or 5 dB above the maximum sound level having a duration of at least 60 seconds, whichever is greater.~~~~

~~29.5.10.2* Moderately Severe to Profound Hearing Loss. Visual notification appliances in accordance with the requirements of 18.5.5.10 and tactile notification appliances in accordance with the requirements of Section 18.10 shall be required for those with moderately severe to profound hearing loss in the following situations:~~

- ~~1) Where required by governing laws, codes, or standards for people with hearing loss~~
- ~~2) Where provided voluntarily for those with hearing loss~~

~~A.29.5.10.1* Based on sleep studies to assess the waking effectiveness of different types of alarm signals, a low frequency alarm signal with a fundamental frequency of 520 Hz has been shown to provide improved awakening for people with mild to severe hearing loss when compared to typical alarms from high frequency piezoelectric sounders used in most smoke alarms [Bruck and Thomas, 2008]. Visual alarm signals, such as xenon strobes, have also been shown to not be very effective at waking people with mild to severe hearing loss [Thomas and Bruck, 2008; Ashley and Du Bois, 2004]. As for all alarm signals, effectiveness of the installed notification for the specific occupants should be tested by the occupants, if possible.~~

~~The low frequency alarm signal can be provided by the sounder in a smoke alarm or by a separate notification appliance. The exhibit below shows an example of a notification appliance that uses a low frequency wave to alert those with hearing loss; the appliance is activated by the sound from a traditional smoke alarm. This particular appliance also includes a supplementary bed shaker.~~

~~29.5.10.2* The use of visual notification appliances has been shown to be more effective for the deaf population than for those with mild to severe hearing loss. In addition, the low frequency signals specified in 29.5.10.1 are not adequate for those with moderately severe to profound hearing loss. Note that the requirement was clarified in the 2013 edition of the Code to apply to “moderately severe to profound hearing loss” compared to only “profound hearing loss” as specified in the 2010 edition of the Code. Therefore, due to the deficiencies with audible signals for this population, 29.5.10.2 requires the use of both visual notification appliances and tactile notification appliances per the requirements of Chapter 18. Tactile appliances can be effective for waking sleeping occupants. However, visual appliances are also needed because people might not always be in contact with the signal from tactile notification appliances. (Refer to A.29.5.10.2 for further insight into the performance of tactile~~

appliances.) For those who are awake, visual notification appliances enhance the ability of the system or equipment to alert them of a fire condition. Section 18.5 addresses requirements for visual signaling. The minimum illumination levels for visual signaling required for rooms in general are based on achieving a level of 0.0375 lumens/ft² (0.4037 lumens/m²). However, Chapter 18 requires a higher intensity for sleeping areas. See Section 18.5 for requirements on visual notification appliances and 18.5.5.8 for requirements specific to sleeping areas.

Early studies of persons who are deaf indicated that a 110 cd visual notification appliance, installed at least 24 in. (610 mm) below the ceiling, generally provides sufficient light intensity to awaken a sleeping deaf person. A 177 candela (cd) appliance is required where mounted within 24 in. (610 mm) of the ceiling because the light signal may be attenuated by the smoke layer during a fire. See the following exhibit for an example of a smoke alarm with an integral notification appliance.

29.5.10* In rooms, where low frequency sounders and/or tactile notification appliances are required by governing laws, codes, or standards, they shall be installed to comply with the following:

(a) The low frequency waveform shall have a fundamental frequency of 520 Hz +/- 10 percent.

(b) Tactile notification appliances in accordance with the requirements of Section 18.10.

A.29.5.10 As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability. Based on sleep studies to assess the waking effectiveness of different types of alarm signals, a low frequency alarm signal with a fundamental frequency of 520 Hz has been shown to provide improved awakening for people with hearing loss when compared to typical alarms from high frequency piezoelectric sounders used in most smoke alarms [Bruck and Thomas, 2008]. Visual alarm signals, such as xenon strobes or LED strobes, have also been shown to not be very effective at waking people with mild to severe hearing loss [Thomas and Bruck, 2008; Ashley and Du Bois, 2004]. As for all alarm signals, effectiveness of the installed notification for the specific occupants should be tested by the occupants, if possible. The low frequency alarm signal can be provided by the sounder in a smoke alarm or by a separate notification appliance. The exhibit below shows an example of a notification appliance that uses a low frequency wave to alert those with hearing loss; the appliance is activated by the sound from a traditional smoke alarm. This particular appliance also includes a supplementary bed shaker.

It is not the intent of this section to preclude devices that have been demonstrated through peer-reviewed research to awaken occupants with hearing loss as effectively as those using the frequency and amplitude specified in this section. Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005, UL 1971, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping persons. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow, toppers, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.

The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when

[that are not in contact with a tactile appliance. See the NFPA Fire Protection Research Foundation report, Review of Alarm Technologies for Deaf and Hard of Hearing Populations, August 2021, for further details.](#)

Statement of Problem and Substantiation: This public comment seeks to provide clear and enforceable language for alerting all people sleeping especially people with hearing loss, school age children, the elderly and alcohol impaired.



**Public Comment No. 85-NFPA 72-2023 [Sections
A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.1...]**

Sections A.29.5.10.1, A.29.5.10.1(2), A.29.5.10.2, A.29.5.10.2(1)

A.29.5.10.1 — 

As an example, governing laws, codes, or standards might require a certain space within an occupancy, like a sleeping room or guest suite, or a specific number of accommodations be equipped for those with hearing loss or other disability.

A.29.5.10.1(2) —

Based on sleep studies to assess the waking effectiveness of different types of alarm signals, a low frequency alarm signal with a fundamental frequency of 520 Hz has been shown to provide improved awakening for people with hearing loss when compared to typical alarms from high frequency piezoelectric sounders used in most smoke alarms [Bruck and Thomas, 2008]. Visual alarm signals, such as xenon strobes or LED strobes, have also been shown to not be very effective at waking people with mild to severe hearing loss [Thomas and Bruck, 2008; Ashley and Du Bois, 2004]. As for all alarm signals, the effectiveness of the installed notification for the specific occupants should be tested by the occupants, if possible.

It is not the intent of this section to preclude devices that have been demonstrated through peer-reviewed research to awaken occupants with hearing loss as effectively as those using the frequency and amplitude specified in this section.

A.29.5.10.2 — 11

Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005,

UL 1971

UL 1971, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping

persons

people. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow, tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.

The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when

they

that are not in contact with a tactile appliance. See the NFPA Fire Protection Research Foundation report, Review of Alarm Technologies for Deaf and Hard of Hearing Populations, August 2021, for further details.

A.29.5.10.2(1) —

As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability.

Additional Proposed ChangesFile NameDescriptionApproved

PC_No_85_-
_Text.docx

Text of Changes by PC No. 85 shows clearly what is being changed, as TerraView makes it challenging to see what is actually being proposed.

Statement of Problem and Substantiation for Public Comment

Related to PI 586, which was rejected by the SIG-HOU technical committee but was referred for follow-up by a Low Frequency Task Group.

This revised Annex A language it to match the modified code language provided in PC No. 84. The SIG-HOU task group for low frequency agreed with this approach and this Public Comment provides a slight alternative to the language that the task group provided. It is believed that this language is more in line with the NFPA Manual of Style to not have two requirements in the same paragraph. It contains basically the same language as in the existing NFPA 72, but reformatted to meet the modified language.

Related Public Comments for This Document

<u>Related Comment</u>	<u>Relationship</u>
<u>Public Comment No. 84-NFPA 72-2023 [Section No. 29.5.10]</u>	Dependent
<u>Related Item</u>	
• PI No. 586 • SIG-HOU Low Frequency Task Group	

Submitter Information Verification

Submitter Full Name: Larry Rietz

Organization: Jensen Hughes

Street Address:

City:

State:

Zip:

Submittal Date: Tue May 16 12:35:28 EDT 2023

Committee: SIG-HOU

PC No. 85

~~A.29.5.10.1-~~

~~As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability.~~

~~A.29.5.10.1(2)-~~

~~It is not the intent of this section to preclude devices that have been demonstrated through peer-reviewed research to awaken occupants with hearing loss as effectively as those using the frequency and amplitude specified in this section.~~

~~A.29.5.10.2-~~

~~Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005, UL 1971, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping persons. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.~~

~~The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when they are not in contact with a tactile appliance.~~

~~A.29.5.10.2(1)-~~

~~As an example, governing laws, codes, or standards might require a certain number of accommodations be equipped for those with hearing loss or other disability.~~

A.29.5.10

As an example, governing laws, codes, or standards might require a certain space within an occupancy, like a sleeping room or guest suite, or a specific number of accommodations be equipped for those with hearing loss or other disability. Based on sleep studies to assess the waking effectiveness of different types of alarm signals, a low frequency alarm signal with a fundamental frequency of 520 Hz has been shown to provide improved awakening for people with hearing loss when compared to typical alarms from high frequency piezoelectric sounders used in most smoke alarms [Bruck and Thomas, 2008]. Visual alarm signals, such as xenon strobes or LED strobes, have also been shown to not be very effective at waking people with mild to severe hearing loss [Thomas and Bruck, 2008; Ashley and Du Bois, 2004]. As for all alarm signals, the effectiveness of the installed notification for the specific occupants should be tested by the occupants, if possible.

It is not the intent of this section to preclude devices that have been demonstrated through peer-reviewed research to awaken occupants with hearing loss as effectively as those using the frequency and amplitude specified in this section.

A.29.5.11

Tactile notification appliances such as bed shakers have been shown to be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005, UL 1971, 2018]. Tactile signaling has been studied and found to be an effective way to alert and notify sleeping people. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow, tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.

The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when that are not in contact with a tactile appliance. See the NFPA Fire Protection Research Foundation report, Review of Alarm Technologies for Deaf and Hard of Hearing Populations, August 2021, for further details.

Substantiation:

Related to PI 586, which was rejected by the SIG-HOU technical committee but was referred for follow-up by a Low Frequency Task Group.

This revised Annex A language it to match the modified code language provided in PC No. 84. The SIG-HOU task group for low frequency agreed with this approach and this Public Comment provides a slight alternative to the language that the task group provided. It is believed that this language is more in line with the NFPA Manual of Style to not have two requirements in the same paragraph. It contains basically the same language as in the existing NFPA 72 but reformatted to meet the modified language.



Public Comment No. 46-NFPA 72-2023 [Section No. A.29.5.10.2]

A.29.5.10.2 [🔗](#)

Tactile notification appliances such as bed shakers ~~have been shown to~~ may be effective in waking those with normal hearing to profound hearing loss [Ashley et al., 2005, UL 1971, 2018]. Tactile signaling ~~has been studied and found to~~ may be an effective way to alert and notify sleeping persons. However, there are many variables that have not been tested that might affect the reliability of their performance. Some of the appliance variables include the mass of the appliance, frequency of vibration, and the throw or displacement of the vibrating mass. Occupant variables that might affect the reporting of test results and the effectiveness of the appliance include the person's age, how long a person has lived with their hearing loss, and what sleep stage the person is experiencing when the appliance operates. The type of mattress might also have an effect of the performance of certain tactile appliances. Mattress variables can include thickness, firmness, memory foam, pillow tops, water beds, air beds, and motion isolation mattresses. Users of tactile appliances should be cautioned to test how well they might sense the effect of the appliance.

The Code requires both visual notification appliances and tactile appliances. Visual notification appliances can awaken sleeping persons, provide verification that there is a fire alarm condition, and serve to alert persons when they are not in contact with a tactile appliance. See the NFPA Fire Protection Research Foundation report, *Review of Alarm Technologies for Deaf and Hard of Hearing Populations*, August 2021, for further details.

Statement of Problem and Substantiation for Public Comment

The NFPA Disability Access Review Advisory Committee (DARAC) supplies this Public Comment to address the following items:

- None of the studies reference included comprehensive research across a large sample size.
- Giving small scope of studies, “shown to be” draws a broad conclusion which may be misleading.
- “may be” indicates that these technologies might be effective for a given individuals unique response to the specific implementation of the technology.

Related Item

- FR 5210

Submitter Information Verification

Submitter Full Name: Jessica Hubert

Organization: Guardian Services Inc.

Affiliation: Representing the DARAC Advisory Group

Street Address:

City:

State:

Zip:

Submittal Date: Thu Apr 27 14:42:04 EDT 2023

Committee: SIG-HOU



Public Comment No. 14-NFPA 72-2023 [Section No. A.29.7]

A.29.7

Hazardous concentrations of carbon monoxide can accumulate in a residence, generally from improperly operating ~~heating appliances~~ fuel-burning equipment, insufficient make-up air into the residence or space, or blocked chimneys or vents. However, there are many other potential sources of carbon monoxide within a home, including, but not limited to, the following:

- (1) Malfunctioning fossil fuel-burning ~~appliances~~ equipment
- (2) Wood stoves
- (3) Fireplaces
- (4) Idling automobiles in attached garages
- (5) Portable equipment such as gasoline-powered lawn and garden equipment and electric power generators
- (6) Barbecues

Carbon monoxide is odorless, tasteless, and colorless; therefore, its presence is undetectable by smell, taste, or sight. Carbon monoxide can be mixed and migrate throughout a residence through the HVAC system. Carbon monoxide alarms meeting the requirements of UL 2034, *Single and Multiple Station Carbon Monoxide Alarms*, carbon monoxide detectors meeting the requirements of UL 2075, *Safety Gas and Vapor Detectors and Sensors*, and installed in accordance with this standard should provide a significant level of protection against fatal carbon monoxide exposure.

The installation of additional carbon monoxide alarms could result in a higher degree of protection. Adding alarms to rooms where fuel-burning ~~appliances are located~~ equipment is located could provide earlier warning of carbon monoxide hazards caused by those sources. Additional alarms located in rooms normally closed off from the required alarms could increase the escape time, since the carbon monoxide concentration needed to force the carbon monoxide out of the closed rooms to the alarms would not be necessary. As a consequence, the installation of additional carbon monoxide alarms should be considered.

Carbon monoxide alarms or detectors are not substitutes for proper maintenance, inspection, and testing of fuel-burning equipment. Fuel-burning equipment ~~and appliances~~ should be used, maintained, tested, and inspected according to the manufacturers' instructions.

Carbon monoxide detectors/alarms are cross sensitive to hydrogen, an explosive gas that can be given off by recharging lead acid batteries. Where households include recharging stations (e.g., for golf carts), the alarm should be located away from the recharging location.

Statement of Problem and Substantiation for Public Comment

The term "fuel-burning appliances" is not defined. "Fuel-burning equipment" was defined under FR-5006. This change revises the text to match the defined term and be consistent throughout this section.

Related Public Comments for This Document

<u>Related Comment</u>	<u>Relationship</u>
Public Comment No. 12-NFPA 72-2023 [Section No. 29.7.1.1]	similar change to existing text
<u>Related Item</u>	
• FR-5006	

Submitter Information Verification

Submitter Full Name: Cory Ogle

Organization: Code Consultants, Inc.

Affiliation: SIG-HOU Technical Committee
Street Address:
City:
State:
Zip:
Submittal Date: Tue Mar 21 12:36:47 EDT 2023
Committee: SIG-HOU



Public Comment No. 7-NFPA 72-2023 [Section No. A.29.11.3.4(4)]



A.29.11.3.4(4) 

As per annex material located in A.29.8.1, it is not normally recommended that smoke alarms or smoke detectors be placed in kitchen spaces. This section of the code provides guidelines for safe installation if a need exists to install a smoke alarm or smoke detector in a residential kitchen space or cooking area.

Within this Code section, a fixed cooking appliance is any appliance that is intended to be permanently connected electrically to the wiring system or the fuel source. A stationary cooking appliance is any appliance that is intended to be fastened in place or located in a dedicated space, and is connected to the supply circuit or fuel source.

Smoke alarms and smoke detectors that ~~are currently~~ were previously available to consumers (i.e., not listed for resistance to common nuisance sources from cooking) are susceptible to particles released into the air during normal cooking procedures. If these smoke alarms and smoke detectors ~~are placed~~ were placed too close to the area where the cooking source originates, a high level of nuisance alarms ~~can occur~~ often occurred. Frequent nuisance alarms can result in an occupant disabling the smoke alarm or smoke detector.

Nuisance alarm studies show that legacy commercially available residential smoke alarms and smoke detectors ~~are susceptible~~ were susceptible to nuisance alarms when installed too close to cooking appliances. As the horizontal distance between the smoke alarm or smoke detectors and the cooking appliance increases, the frequency of nuisance alarms decreases. ~~Smoke~~ Legacy smoke alarms or smoke detectors that use ionization smoke detection have been shown to be generally more susceptible to cooking nuisance alarms than those that use photoelectric smoke detection when the alarms or detectors are installed within 10 ft (3.0 m) along a horizontal smoke travel path from a cooking appliance. Smoke alarms or smoke detectors that use photoelectric smoke detection also produce nuisance alarms when installed ~~less than 10 ft (3.0 m) from~~ near a cooking appliance, though to a lesser degree.

The occurrence of the higher frequency of nuisance alarms observed in legacy smoke alarms or smoke detectors that use ionization detection ~~have been~~ has been documented in the fire research data. Due to the differences in technology between ionization detection and photoelectric detection, the sensitivity typically used for legacy ionization detection is much higher than that used for photoelectric detection. This sensitivity difference ~~is~~ was a result of each type of the detection being required to satisfy UL 217 performance tests. Removing detection technology from consideration, the frequency of nuisance alarms is solely due to the sensitivity of the detection method used. Thus, both ionization and photoelectric legacy detector technologies will produce nuisance alarms due to cooking, but ~~currently available~~ legacy smoke alarms and smoke detectors that use ionization detection typically produce more cooking-related nuisance alarms. ~~The higher sensitivities of currently available smoke alarms and smoke detectors that use ionization detection do provide a benefit at the expense of a potentially higher rate of cooking-related nuisance alarms. Research has demonstrated that ionization detection will typically respond faster than photoelectric detection to flaming fires, providing earlier warning to occupants that might allow for quicker intervention or faster egress. In general, the installation of smoke alarms or smoke detectors that use ionization detection will result in increased fire safety at the risk of a higher frequency of nuisance alarms. The installation of smoke alarms or smoke detectors that use photoelectric detection will result in reduced fire safety for flaming fires and a reduced risk of nuisance alarms. Based on the trade-off between faster response to fires and the frequency of nuisance alarms, detectors that utilize both technologies (i.e., ionization, photoelectric, and a combination) are allowed to be installed between 10 ft (3.0 m) and 20 ft (6.1 m) along a horizontal flow path from a standard or fixed cooking appliance if the~~

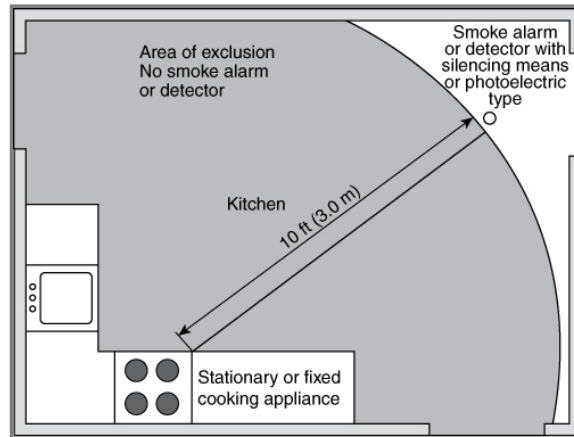
~~specific detector is equipped with an alarm silencing means or is of the photoelectric type~~

In response to the above noted nuisance alarm studies, the 8th edition of UL 217, *Smoke Alarms*, and the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems*, have added a new performance test to help reduce nuisance alarms from normal cooking. Smoke alarms complying with these UL standards, and subsequent editions, will be listed “for resistance to common nuisance sources from cooking” and are suitable for installation at distances from cooking appliances outlined in this Code.

Nuisance alarm studies provide data on cooking nuisances that emanate from both fixed ~~cooking appliances and~~ (stationary) cooking appliances (e.g., stove, oven) as well as portable cooking appliances (e.g., toaster). Based on these studies, which demonstrate the potential of all cooking appliances to generate nuisance sources, a zone of exclusion has been specified surrounding each stationary or fixed cooking appliance. The purpose of this zone is to limit the installation of smoke alarms and detectors in areas where stationary, fixed, or portable cooking appliances will be located within the residential kitchen space such that potential nuisance alarms are minimized. The size of the zone of exclusion is specified to attempt to take into account the unknown and transitory locations of portable cooking appliances. This zone of exclusion is determined by measuring a 10 ft (3.0 m) radial

distance from the closest edge of a stationary or fixed cooking appliance. The zone of exclusion is not intended to pass through walls or doorways. Figure A.29.11.3.4(4)(a) provides an example of the zone of exclusion in a generalized residential kitchen.

Figure A.29.11.3.4(4)(a) Example of Zone of Exclusion (gray area) Within Typical Residential Kitchen. CHANGE FIGURE TO "SMOKE ALARM OR DETECTOR LISTED FOR RESISTANCE TO COMMON NUISANCE SOURCES FROM COOKING"



If other areas of this code require that a smoke alarm or smoke detector be placed within a horizontal flow path distance between 10 ft (3.0 m) and 20 ft (6.1 m) from a stationary or fixed cooking appliance, the following method should be used to determine the distance, and only ~~photoelectric detection or smoke alarms/detectors with alarm silencing means~~ detection equipment listed for resistance to common nuisance sources from cooking can be installed in this area.

To install a smoke alarm or detector between 10 ft (3.0 m) and 20 ft (6.1 m) from the cooking appliance, an installer must first determine the 10 ft (3.0 m) area of exclusion. Once the area of exclusion is determined, an installer must then determine the horizontal flow distance. This is the horizontal distance along the ceiling from the closest edge of the cooking appliance to the smoke alarm or detector. The horizontal distance can consist of line segments due to impediments, such as interior partitions. Once an impediment is met, the measurement of the distance will then continue along the new horizontal path segment until the distance requirement is met or another impediment is encountered. Figure A.29.11.3.4(4)(b) provides an example for placement outside a kitchen in a nearby hallway. Figure A.29.11.3.4(4)(c) provides another example of appropriate placement outside of a kitchen in an adjacent room.

Figure A.29.11.3.4(4)(b) Example of Smoke Alarm or Smoke Detector Placement Between 10 ft (3.0 m) and 20 ft (6.1 m) Away in Hallway from Center of Stationary or Fixed Cooking Appliance. CHANGE FIGURE TO "SMOKE ALARM OR DETECTOR LISTED FOR RESISTANCE TO COMMON NUISANCE SOURCES FROM COOKING"

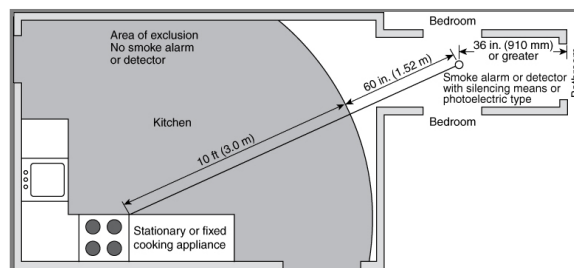
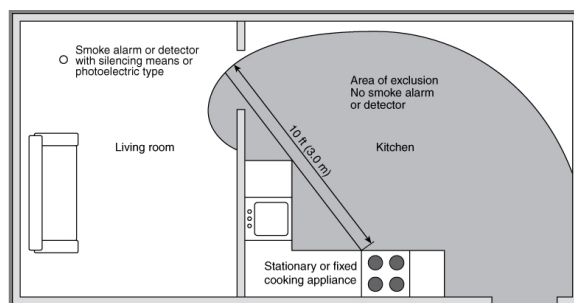


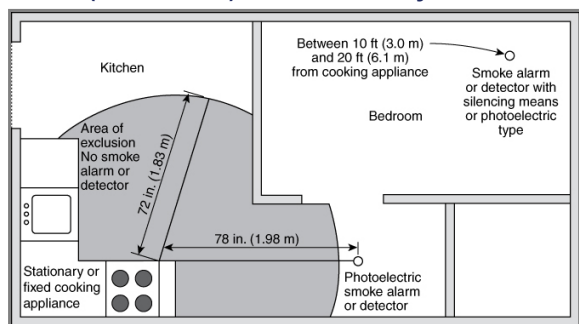
Figure A.29.11.3.4(4)(c) Example of Smoke Alarm or Smoke Detector Placement Between 10 ft (3.0 m) and 20 ft (6.1 m) Away in Hallway from Center of Stationary or Fixed Cooking Appliance. CHANGE FIGURE TO "SMOKE ALARM OR DETECTOR LISTED FOR RESISTANCE TO COMMON NUISANCE SOURCES FROM COOKING"



At a horizontal flow path distance of greater than 20 ft (6.1 m), any type of smoke alarm or smoke detector can be installed.

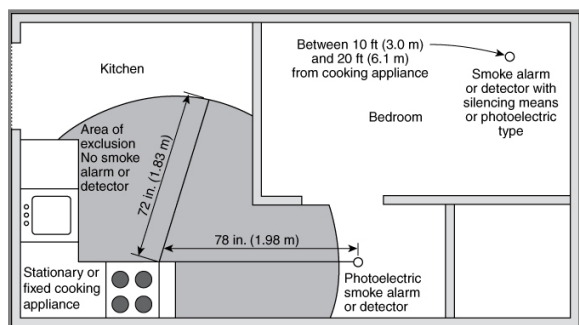
In rare cases, a residential dwelling can be of such size and configuration that an area of exclusion of 10 ft (3.0 m) from a stationary or fixed cooking appliance excludes the placement of a smoke alarm or smoke detector required by other areas of this Code. In these cases, a smoke alarm or smoke detector ~~using photoelectric detection~~ listed for resistance to common nuisance sources from cooking can be installed at least ~~72 in (1.83 m)~~ 72 in (1.83 m) from the fixed or stationary cooking appliance. Figure A.29.11.3.4(4)(d) provides an example of this situation in practice where a smoke alarm or smoke detector is required outside of the sleeping area, but the space is in close proximity to the kitchen space.

Figure A.29.11.3.4(4)(d) Example of Exception Placement of Photoelectric Smoke Alarm or Smoke Detector at 72 in (1.83 m) from Stationary or Fixed Cooking Appliance.



~~In response to the above noted nuisance alarm studies, the 8th edition of UL 217, *Smoke Alarms*, and the 7th edition of UL 268, *Smoke Detectors for Fire Alarm Systems*, have added a new performance test to help reduce nuisance alarms from normal cooking. This end-product performance and listing requirement aligns with 29.11.3.4 (6) of this Code. Smoke alarms complying with these UL standards will be listed "for resistance to common nuisance sources from cooking" and are suitable for installation at distances from cooking appliances outlined in this Code.~~

CHANGE FIGURE TO "SMOKE ALARM OR DETECTOR LISTED FOR RESISTANCE TO COMMON NUISANCE SOURCES FROM COOKING" IN BOTH LOCATIONS AND CHANGE "72 IN." TO "6 FT." AND "1.83 M" TO "1.8 M". ALSO CHANGE "78 IN." TO "6.5 FT" AND "1.98 M" TO "2.0 M"



Statement of Problem and Substantiation for Public Comment

This section required significant revisions based on changes that have been made to the body in 29.11.3.4 which basically allows only detection equipment listed for nuisance resistance to cooking to be installed between 10 and 20 feet from a cooking appliance, with a small except for these same types of nuisance-resistant detection equipment to be installed between 6 and 10 feet from a cooking appliance if 10 to 20 feet is not feasible. The rewrites change some of the figures, re-orders the section to provide a shorter introduction to the issue with nuisance alarms from legacy detection equipment followed by the discussion of nuisance-resistant equipment, and then discusses the areas of exclusion. The reference to 29.11.3.4(6) is removed. This section relates to bathrooms/showers.

Related Item

- FR 5220

Submitter Information Verification

Submitter Full Name: Stephen Olenick

Organization: Combustion Science & Engineering, Inc.

Street Address:

City:

State:

Zip:

Submittal Date: Mon Mar 13 10:51:23 EDT 2023

Committee: SIG-HOU