

3.08 Sleeping Area Fire Alarm Requirements (2022)

Reference: San Francisco 2016 Ordinance 165-16; San Francisco 2021 Ordinance 077-21; 2022 SFFC Section 1103.7.6.1; 2013 NFPA 72 Section 18.4.5— “Sleeping Area Requirements”

Purpose: To clarify requirements to satisfy the *Am. Ord. 77-21, File No. 210259, App. 5/28/2021, Eff. 6/28/2021* and 2022 San Francisco Fire Code (SFFC) Section 1103.7.6.1.

Scope: Compliance shall include all existing (R-2) residential buildings (three units or more) with an existing building fire alarm system. The building owner shall upgrade the fire alarm system (if necessary) to comply with sound level requirements for sleeping areas set forth in section 18.4.5.1 of NFPA 72 (2013 edition) as amended from time to time, upon any of the following:

(A) Before completion of work on a building permit with a cost of construction of \$99,000 or more, excluding seismic upgrade work required per the Existing Building Code.

(B) On or prior to July 1, 2023.

This 2022 San Francisco Fire Code section 1103.7.6.1 amended by SFBOS on Am. Ord. 77-21, File No. 210259, App. 5/28/2021, Eff. 6/28/2021

NOTE: If the existing R-2 building has only a **dedicated function fire alarm system** for water-flow and supervisory, AKA: “Sprinkler Monitoring System” – SFFC Section 1103.7.6.1 shall not apply in that case.

2013 NFPA 72 Section 18.4.5.1

Where audible appliances are installed to provide signals for sleeping areas, they shall have a sound level of at least 15 dB above the average ambient sound level or 5 dB above the maximum sound level having a duration of at least 60 seconds or a sound level of at least 75 dBA, whichever is greater, measured at the pillow level in the area required to be served by the system using the A-weighted scale (dBA).

2013 NFPA 72 Section 18.4.5.2

If any barrier such as a door, curtain, or retractable partition is located between the notification appliance and the pillow, the sound pressure level shall be measured with the barrier placed between the appliance and the pillow.

2013 NFPA 72 Section 18.4.5.3

Effective January 1, 2014, audible appliances provided for the sleeping areas to awaken occupants shall produce a low frequency alarm signal that complies with the following:

- 1) The alarm signal shall be a square wave or provide equivalent awakening ability
- 2) The wave shall have a fundamental frequency of 520 Hz +/- 10 percent.

Specific SFFD Requirements:

1. If the existing fire alarm system has existing audible appliances that achieve the sound pressure level requirements of NFPA 72-2013 they shall be acceptable even if they do not produce Low-Frequency tones. To demonstrate and memorialize compliance with the requirement, the following steps shall be taken:

Option1

- A) Provide a copy of the previously approved and issued (stamped by SFFD Plan-Check inspector and has a “complete” status in Permit Tracking System (PTS) FA plans including Cover Sheet, Equipment list, Sequence of Operation Matrix, Floor plans with devices and appliances layout, Riser Diagram, and Battery + Voltage drop calculations. The floor plans must specifically show audible appliances in each sleeping area/bedroom (living rooms, dens, etc. are not required to show audible appliances). Also, provide a proof of a completed Fire Inspection associated with the permit. In addition to the required information above provide a wet-signed statement on a letter/document signed by the owner indicating the following: “The existing FA system installed at my building located on (Building address) was permitted under Permit Application (PA #) and was accepted after a Fire Inspection dated (Date/record of Inspection) is operational and maintained as it was installed (Indicate FA Service Company Name, Contact information and License #) , and there were no changes made to the FA system after it was installed and accepted by SFFD” – All the above information, once submitted to the SFFD shall be sufficient to consider the existing FA system to be in compliance with the minimum audibility requirements of 2022 SFFC Section 1103.7.6.1 and this Administrative Bulletin. A system upgrade of the existing High-Frequency audible appliance to Low-Frequency audibility shall not be required. Additional audible appliances shall not be required to be added in living areas/dens, etc. and an audibility test by a C-10 Contractor shall not be required.

Option2

- B) If compliance with all the required documentation listed in item A above is not achieved:

Step 1) an audibility test of the existing FA system may be performed by a licensed C-10 contractor.

Step 2) The test results shall be documented in a report, on company letterhead, indicating the date the test was performed and statement confirming the test was conducted using a calibrated and approved dBA meter. Included in this report shall be data for each dwelling unit, indicating the dBA readings in each living area and sleeping area of at least 75dBA. This

report shall then be placed on 11" x 17" single sided sheets (2 sets required when submitted).

Step 3) With the submittal report package, a simple, \$1.00 Fire Only permit shall be applied for over the counter. The scope of the application shall read ***"To verify existing sound levels in sleeping areas, complying with SFFC Section 1103.7.6.1"***.

Step 4) Upon issuance of the permit, a random sampling inspection shall be witnessed by the District Fire Inspector to verify the sounds levels indicated on the test report. The licensed C-10 contractor that conducted the dBA measurements for the report shall be in attendance with a calibrated and approved dBA meter. Upon successful completion of the sound level verification inspection, the permit shall be completed. (No Electrical Inspection required).

2. When new audible appliances are required to meet the minimum 75dBA sound level in sleeping rooms and bedrooms, they shall be current CSFM listed as Low-Frequency audible appliances. In this case, New Low-Frequency audible appliances shall also be provided in the living room/area and in any other room/area within the dwelling unit that potentially could be used for sleeping.
3. Any fire alarm work associated with this bulletin shall comply with the applicable sections in SFFD 2022 Administrative Bulletin 2.01.
4. Wireless fire alarm system equipment shall be permitted to be used for this application per SFFD 2022 Administrative Bulletin 2.01 specific requirements.

5. If the **existing FACU is being replaced with a new FACU**, the following applicable requirements shall apply:

a) The primary power source for the Fire Alarm Control Unit (FACU) and remote power supplies shall be from a dedicated circuit. This circuit shall be labeled at both the electrical sub panel and on the inside of the FACU/Power supply door and be provided with a circuit lock (if it is not installed in a locked room). If the existing FACU and/or remote power supplies did not have dedicated power circuit(s), new dedicated circuit(s) must be provided for the new FACU and any remote power supply (if provided). The building owner shall be responsible to provide the dedicated power circuit(s) if required. The dedicated power circuit(s) shall be in accordance with the 2022 SFEC- and be provided by a CA licensed electrical contractor (not required to be the same C-10 FA contractor performing the FA work).

b) Where applicable, a replacement FA system design shall differentiate the intent to meet current codes or replaced on a like-for-like basis per CSFM Code interpretation 12-001 and information bulletin dated 9/4/2008 (These two documents shall be scanned onto the FA permit plans).

c) If not provided for the existing FA system, a new wireless communicator shall be required per 2022 AB # 2.01 Section VIII.

d) If the existing FA system does not have existing initiating devices per current codes to generate the activation of the FA notification system, additional initiating devices shall be required to be provided and installed per current codes. This will include both automatic and manual initiating devices. When the building is not fully sprinklered per NFPA 13 or NFPA 13R, new smoke detectors shall be installed in all interior corridors leading to dwelling units per the 2022 SF Building Code Section 907.2.9.5.

Exception: Existing Fire Alarm Boxes (Manual Pull Stations) which are installed at all required exits (within 5 feet to the entrance of each required exit) at higher elevation than 42"-48" AFF, shall be permitted to remain at their current elevation. If new manual pull stations are required to be provided at required Exits they shall be installed in approved locations within 5 feet to the entrance of each required Exit at 42"-48" elevation AFF.

e) If the existing FA system does not have current code complaint audible and visual notification system in common areas of the building outside the dwelling units, additional audible and visual appliance shall be provided in the common areas for general public notification per current applicable codes.

Exception 1: If existing unsynchronized strobes are provided in common areas and have Candela (CD) rating coverage per NFPA 72, they shall not have to be replaced with new synchronized strobes. If the CD rating coverage of the existing strobes does not meet 2022 NFPA 72 requirements, they will have to be modified by selecting a higher CD rating or by replacing the existing strobes with new strobes.

Exception 2: *If existing audible appliances such as horns, bells, sounders, speakers, etc. are provided in common areas and generate 15 dBA sound pressure level above ambient, they shall not have to be replaced with new audible appliances if they do not interfere with the Temporal-3 FA alert tone inside the dwelling units and sleeping areas. This will be verified by the Fire inspector at the time of inspection.*

f) When the existing FACU is replaced but the existing initiating devices are not replaced, Compatibility Listing (backwards compatibility) between the new FACU and the existing initiating devices must be provided by the applicant and be placed on the FA permit plans. The plans shall indicate that a 100% test of all the fire alarm system functions plus 10% of all existing initiating devices is required per the approved FA Sequence of Operation Matrix (S.O.O.M.). All new/replacement fire alarm system devices and components (if provided) shall be 100% tested.

g) If an existing FA remote annunciator is not provided, a new LCD or LED annunciator shall be provided at the main building entrance (SFFD response point) in an approved location per 2022 SFFD AB # 2.01, 2022 AB # 3.01, and 2022 AB # 3.02. A new LCD annunciator shall be required for any building, where the existing FACU is not located at the main entrance and where LED annunciator is not required per 2022 AB #

3.02. A new LED annunciator shall be required for any High-Rise building at the FCC or other approved location in high-rise buildings without FCC, and for any low-rise building with more than 4 levels per 2022 AB # 3.02. On a case-by-case basis, the SFFD may require LED or Graphic annunciator for building with 4 or less levels based on the specific building configuration. The LED annunciator layout shall be provided on the FA permit plans and its layout shall comply with 2022 AB # 3.01. A key map/sign shall be required to be mounted adjacent the LCD or LED annunciator with a "You Are Here" symbol and the following features: Location of FACU, other buildings in the complex (if applicable), Egress stairs, Elevators, Exits Doors, Horizontal Exits, FDC(s), locations of other Emergency Systems control units and other required features on a case-by-case basis, as applicable. The owner shall be responsible for providing this required key map/sign.

6. If any of the specific requirements above or any other applicable codes requirements are not clear or require further and specific SFFD interpretation, the building owner or the permit applicant may request to have a Pre-Application meeting with the SFFD by submitting a Pre-Application meeting request form--

<https://sf-fire.org/services/plan-check#pre-ap>