



# Fire Alarm Systems Required in Existing Group R-1 / R-2 Occupancies

TECHNICAL BULLETIN  
**FIRE-9-9**

City of San Diego  
Development Services Department

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The purpose of this Technical Bulletin is to provide guidance in meeting the fire alarm system requirements of the California Fire Code (CFC) Section 1113 for existing Group R-1 and Group R-2 occupancies.

## I. GENERAL

CFC Section 1113 applies to multiple-story structures existing on January 1, 1975, used for human habitation, including, and limited to, apartment houses, hotels and motels wherein rooms used for sleeping are located above the ground floor.

An automatic or manually operated fire alarm system shall be provided so that all occupants of the building will be warned simultaneously. An automatic fire alarm system provides an evacuation signal throughout the building without the necessity for human intervention (i.e. – evacuation signal triggered by actuation of a smoke detector or waterflow signal from a fire sprinkler system, typically); a manually operated fire alarm system provides an evacuation signal upon operation of a manual fire alarm box. Buildings with automatic fire sprinkler systems are required to provide an automatic fire alarm system.

## II. RESIDENTIAL BUILDINGS THAT REQUIRE FIRE ALARM SYSTEMS PER CFC 1113.12

CFC Section 1113.12 requires the following buildings to be provided with fire alarm systems:

- A. Every apartment 3 or more stories in height or containing more than 15 apartments
- B. Every hotel / motel 3 or more stories in height or containing 20 or more guest rooms

**Exception:** A fire alarm system need not be installed provided such apartment house or hotel is separated by an unpierced wall of not less than four-hour fire resistance in buildings of Type IA, Type IIB, Type III or Type IV construction and two-hour fire resistance in buildings of all other types of construction provided:

1. Areas do not exceed the number of apartments or guest rooms stipulated.
  2. The fire-resistive wall conforms to the requirements of Section 706.6 of the California Building Code (CBC).
  3. The wall complies with all other applicable provisions of the CBC.
  4. The wall extends to all outer edges of horizontal projecting elements, such as balconies, roof overhangs, canopies, marquees or architectural projections.
  5. No openings are permitted for air ducts or similar penetrations, except that openings for pipes, conduits and electrical outlets of copper, sheet steel or ferrous material shall be permitted through such wall and need not be protected, provided they do not unduly impair the required fire resistance of the assembly.
  6. Tolerances around such penetrations shall be filled with approved noncombustible materials.
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**III. INSTALLATION REQUIREMENTS****A. INITIATING DEVICES**

1. Group R-1 Occupancies
  - a. Manual fire alarm boxes are not required throughout the building where all of the following conditions are met:
    - The building is equipped throughout with an automatic sprinkler system
    - The notification appliances will activate upon sprinkler water flow
    - Not fewer than one manual fire alarm box is installed at an approved location
  - b. Group R-1 occupancies with interior corridors serving sleeping units shall be provided with an automatic smoke detection system that activates the occupant notification system.
2. Group R-2 Occupancies  
Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the occupant notification appliances will automatically activate throughout the notification zones upon sprinkler water flow.
3. Fire alarm systems shall be activated by automatic fire detectors, automatic sprinkler system waterflow devices, manual fire alarm boxes and automatic fire-extinguishing systems, as applicable. Fire sprinkler and/or standpipe systems shall be monitored per the CBC / CFC.
4. Single- and multiple-station smoke alarms, if provided, are not considered as part of the fire alarm system. However, smoke detectors listed in accordance with UL 268 and provided as part of the building fire alarm system shall be an acceptable alternative to single- and multiple-station smoke alarms when in compliance with CFC 907.2.10.7.

**B. NOTIFICATION APPLIANCES**

1. Audible Alarms
    - a. Audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of not less than 60 seconds, whichever is greater, in every occupiable space within the building.
    - b. 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). 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.
    - c. Maximum sound pressure level shall be 110 dBA.
    - d. Audible signal shall be the standard three pulse temporal pattern fire alarm evacuation signal per ANSI S3.41 Audible Emergency Evacuation Signal.
    - e. Audible appliances provided for the sleeping areas to awaken occupants shall produce a low frequency alarm signal that complies with the following:
      - The alarm signal shall be a square wave or provide equivalent awakening ability.
      - The waveform shall have a fundamental frequency of 520 Hz ± 10 percent.
      - Hotel / Motel sleeping areas include guest rooms.
      - Apartment sleeping areas include bedrooms and living rooms.
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2. Visible Alarms – R-1 Occupancies (hotels or motels) visual notification appliances are required in the following areas:
  - a. Public use areas and common use areas including corridors, public restrooms, lobbies, meeting rooms, multipurpose rooms and similar areas.
  - b. Habitable spaces in dwelling units and sleeping units (i.e., spaces used for living, sleeping, eating or cooking) in accordance with CFC Table 907.5.2.3.2 (e.g., percentage of units).
3. Visible Alarms – R-2 Occupancies (apartments/condos) visual notification appliances are required in the following areas:
  - a. Public use areas and common use areas including corridors and similar areas.
  - b. Any units currently designated for the hearing impaired.
  - c. Each story that contains dwelling units and sleeping units shall be provided with the future capability to support visible alarm notification appliances.

**C. MONITORING**

Fire alarm systems are required to be monitored by an approved supervising station in accordance with the CFC and NFPA 72. An ongoing contract to monitor the fire alarm system is required. Fire alarm plans shall include the monitoring station contact information.

**D. OTHER REQUIREMENTS**

See Technical Bulletin FIRE-9-2, Requirements for Fire Alarm Control Panels, for additional requirements pertaining to fire alarm control panels, remote annunciator, communication methods to central station, etc.

**Documents referenced in this Technical Bulletin**

- California Building Code ([CBC](#))
- California Fire Code ([CFC](#))
- National Fire Alarm and Signaling Code, ([NFPA 72](#))
- [Technical Bulletin FIRE-9-2](#), Requirements for Fire Alarm Control Panels