Alarm Requirements for Existing Apartments and Condominiums

Ken Carlson, Fire Marshal
Travis Ripley, Assistant Fire Marshal – Plan Review
Doug Fox, Building Inspection Services Manager
Bob Lloyd, Electrical Inspection Supervisor
Agenda

- Single Station Smoke Detectors
- Carbon Monoxide Detectors
- Fire Alarm System
Single Station Smoke Detectors

Already required:
- Each bedroom/sleeping room
- Areas providing access to bedrooms/sleeping rooms
- All levels of the unit

Note: There are areas where detectors should not be installed….check installation instructions.

- Battery power ok if no construction involved
- No permit is required to install battery operated detectors
- Tenant is required to maintain detectors
LOCATIONS TO AVOID FOR SMOKE ALARMS

For best performance, AVOID installing Smoke Alarms in these areas:

• Where combustion particles are produced. Combustion particles form when something burns. Areas to avoid include poorly ventilated kitchens, garages, and furnace rooms. Keep units at least 20 feet (6 meters) from the sources of combustion particles (stove, furnace, water heater, space heater) if possible. In areas where a 20-foot (6 meter) distance is not possible – in modular, mobile, or smaller homes, for example – it is recommended the Smoke Alarm be placed as far from these fuel-burning sources as possible. The placement recommendations are intended to keep these Alarms at a reasonable distance from a fuel-burning source, and thus reduce “unwanted” alarms. Unwanted alarms can occur if a Smoke Alarm is placed directly next to a fuel-burning source. Ventilate these areas as much as possible.

• In air streams near kitchens. Air currents can draw cooking smoke into the sensing chamber of a Smoke Alarm near the kitchen.

• In very damp, humid or steamy areas, or directly near bathrooms with showers. Keep units at least 10 feet (3 meters) away from showers, saunas, dishwashers, etc.

• Where the temperatures are regularly below 40°F (4°C) or above 100°F (38°C) including unheated buildings, outdoor rooms, porches, or unfinished attics or basements.

• In very dusty, dirty, or greasy areas. Do not install a Smoke Alarm directly over the stove or range. Clean a laundry room unit frequently to keep it free of dust or lint.

• Near fresh air vents, ceiling fans, or in very drafty areas. Drafts can blow smoke away from the unit, preventing it from reaching sensing chamber.

• In insect infested areas. Insects can clog openings to the sensing chamber and cause unwanted alarms.

• Less than 12 inches (305 mm) away from fluorescent lights. Electrical “noise” can interfere with the sensor.

• In “dead air” spaces. “Dead air” spaces may prevent smoke from reaching the Smoke Alarm.

AVOIDING DEAD AIR SPACES

“Dead air” spaces may prevent smoke from reaching the Smoke Alarm. To avoid dead air spaces, follow the installation recommendations below.

On ceilings, install Smoke Alarms as close to the center of the ceiling as possible. If this is not possible, install the Smoke Alarm at least 4 inches (102 mm) from the wall or corner.

For wall mounting (if allowed by building codes), the top edge of Smoke Alarms should be placed between 4 inches (102 mm) and 12 inches (305 mm) from the wall/ceiling line, below typical “dead air” spaces.

On a peaked, gabled, or cathedral ceiling, install the first Smoke Alarm within 3 feet (0.9 meters) of the peak of the ceiling, measured horizontally. Additional Smoke Alarms may be required depending on the length, angle, etc. of the ceiling’s slope. Refer to NFPA 72 for details on requirements for sloped or peaked ceilings.

Example only, check your installation instructions
Carbon Monoxide Detectors

Required 1/1/2013:
• Areas providing access to bedrooms/sleeping rooms
• All levels of the unit

Note: There are areas where detectors should not be installed….check installation instructions.

• Combination smoke/CO detectors are acceptable
• Battery power or plug in ok if no construction involved
• No permit needed to install battery or plug in detectors
• Tenant is required to maintain detectors
Where NOT To Install Your Kidde CO Alarm

- Do not install in dead air spaces such as peaks of vaulted ceilings, or gabled roofs.
- Do not install in turbulent air from ceiling fans. Do not place near fresh air vents or close to doors and windows that open to the outside.
- Keep the CO alarm away from excessively dusty, dirty, or greasy areas such as kitchens, garages and furnace rooms. Dust, grease and household chemicals can affect the sensor.
- Keep out of damp and humid areas such as the bathroom. Avoid spraying aerosols near the CO alarm.
- Do not install in areas where the temperature is below 40 degrees Fahrenheit (4.4°C) or hotter than 100 degrees Fahrenheit (37.8°C) during use. This unit can be stored to -10 degrees Fahrenheit without harm to the alarm but it must be above 40 degrees Fahrenheit for use.
- Do not place behind curtains or furniture. CO must be able to reach the sensor for the unit to accurately detect CO.
- DO NOT locate Alarm within 5 feet (1.5 meters) of any cooking appliance.
- Be aware that certain conditions can result in transient CO situations, such as: i) Excessive spillage or reverse venting of fuel-burning appliances caused by: 1) outdoor ambient conditions, such as wind direction and/or velocity, including high gusts or wind and insufficient draft in vent pipes; 2) negative pressure differential resulting from the use of exhaust fans; 3) simultaneous operation of several fuel-burning appliances competing for limited internal air; 4) loose vent pipe connections from fuel-fired appliances; 5) obstructions, or unconventional vent pipe designs which can amplify the above situations; 6) poorly designed and maintained chimneys and/or vents; ii) extended operation of unvented fuel-burning devices (range, oven, fireplace, etc.); iii) temperature inversions which can trap exhaust near the ground; and iv) car idling in an open or closed attached garage, or near a home.

Example only, check your installation instructions
Fire Alarm Systems

Required since 7/1/2004 for certain buildings:
• More than 3 stories in height or
• More than 16 units
Determining the # of Stories

- Reference point

**Dimensions and Grade are symmetrical**

- $h_1 \leq 6 \text{ ft for 50\%} \rightarrow \text{Basement}$
- $h_2 < 12 \text{ ft} \rightarrow \text{Basement}$

$h_3 = 100 - \text{Average Grade Plane}$

$(30)(92)(2) + (30)(95)(2) + (60)(96) + (60)(90) = 22380$

**Average Grade Plane =** $22380/240 = 93.3$

$h_3 = 100 - 93.3 = 6.7' > 6' \rightarrow \text{Story}$
There are some exceptions:
The building already has an existing, previously approved fire alarm system.
Exception #1

Each unit has its own **independent** exit and is separated from other units by fire barriers.
Exception #2

• Building is equipped throughout with fire sprinkler system and is equipped with a local alarm to notify all occupants
Exception #3

- Building is equipped throughout with a fire sprinkler system and has no interior corridors
Why?

- This retroactive requirement is one of many in the fire code for existing buildings intended to provide a minimum degree of fire and life safety to persons occupying them.
- Buildings targeted by this requirement comprise the oldest housing stock in Bellevue affording the residents with the least level of fire safety.
- If there is a fire in these buildings, there is no timely way to notify all of the occupants putting everyone in the building at substantial risk.

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<th>Civilian Injuries</th>
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Source: Fire Loss in the United States series of NFPA annual reports by Michael J. Karter, Jr. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

U.S. Home Structure Fires, 5/11
89 NFPA Fire Analysis and Research Division, Quincy, MA
Notable Multi-Family Fires in Bellevue

March 1, 2008 – 157 Unit apartment building constructed in 1969. Discarded smoking materials were most probable cause. Damage was estimated at $400,000

April 25, 2012 – 20 unit apartment building constructed in 1968. Unattended cooking was the cause of the fire. Damage was estimated at $200,000
January 26, 2009  12 unit condominium constructed in 1981. Combustible materials too close to a heat source in the attic area, converted to storage space without permits. Damage was estimated to be $160,000.

February 20, 2009  36 unit condominium constructed in 1969. Heating pad failure extended to the chair and resulted in a fatality. Damage was estimated to be $20,000.
February 23, 2009. Apartment building constructed in 1984. A candle left unattended on a desktop ignited combustible materials nearby. Damage was estimated to be $200,000.

October 4, 2012. 6 unit condominium building constructed in 1967. Occupant forgot to turn off the burner after deep frying meat on the stovetop. Damage was estimated to be $175,000.
Fire Alarm Systems (manual or automatic) – General Requirements

- Design and installation requirements in accordance with NFPA 72 (2010 edition)
- Audible throughout:
  - 15 decibels (dBA) above the average ambient sound level
  - Minimum 70 dBA (75 dBA in sleeping areas).
  - Maximum of 120 dBA at any “hearing distance”
- Visual notification in all public and common areas (exit balconies, hallways, meeting rooms, etc.)
  Note: dwelling and sleeping units shall have the capability of supporting strobes.
- Panel must be located in a accessible/heated location with room clearly marked
- Annual maintenance and inspection is required
Selecting a Contractor

Basics for Homeowners: Guide to Hiring a Contractor

Before Hiring a Contractor

Make sure you:

- Plan your project.
- Interview contractors.
- Check that contractor is registered.
- Verify workers' comp coverage.
- Check contractor using other resources.
- Ask for references and check them.
- Get a disclosure statement.
- Learn about permits.
- Check for warning signs of a scam.
Look Up Contractors or Tradespeople

Use this form to look up a business or individual to be sure they've met all legal requirements for operating in Washington before hiring them.

This site uses “hover over” functionality. Placing your mouse over an info button 🔄 will result in further information being displayed relative to the item selected.

Search for a Contractor

Please choose one item below to begin your search:

- Name (enter the first characters of the name)
- City and/or County
- License (number or type)
- UBI Number

Get more search options >  Lookup Violators >
Contractors obtaining fire alarm permits in Bellevue - 2011
Welcome to MyBuildingPermit.com

MyBuildingPermit.com is an easy-to-use permitting portal that makes it possible to apply for, pay for, and receive electrical, low voltage, mechanical, plumbing, and re-roof permits from each of the participating jurisdictions. This is one-stop government service at its best.

Plan Review Permits
For information on the plan review process and functionality specific to plan review applications, please visit our Help Page.

For More Information Select a Permit Packet
Permit packets provide you essential information about how to apply online, cancel a permit, request a refund, and research permit requirements.

- Electrical Permit Packet
- Mechanical Permit Packet
- Plumbing Permit Packet
- Low Voltage Electrical Permit Packet
- Building Re-Roof Packet

Permit Fast Facts
- Participating Jurisdictions
- What permits can be applied for online
- Why permits are important

- Construction Tip Sheets
- Interpretations and guidelines

Important Service Message
Routine maintenance is performed on Wednesdays between 7PM and 9PM. You may experience interruptions of service during this time.
What you need to do:

- Install single station smoke detectors and carbon monoxide detectors
- If you disagree that your building(s) meet the criteria for a fire alarm system, let us know
- If there is no disagreement, then get bids from licensed fire alarm contractors – we recommend you get 3 bids
- File permit application to do the work
- Complete the work
- Obtain all required inspections
What you can expect from us

- Answer any questions you have and offer assistance where we can, some examples:
  - Evacuation drills, safety surveys or fire extinguisher training
  - Smoke detectors for the deaf and hard of hearing
- In 2013 we will issue a “notice of violation” for buildings meeting the criteria that do not have smoke detectors, carbon monoxide detectors and fire alarm systems
- In 2014 we will verify that progress has been made (e.g. permits filed, work progressing, inspections completed) – if not we will move to code enforcement
- In 2015 we will verify the work has been completed and final inspections performed – if not we will move to code enforcement
Contact Information

Ken Carlson, Fire Marshal
425.452.6874  kcarlson@bellevuewa.gov

Travis Ripley, Assistant Fire Marshal – Plan Review
425.452.6042  tripley@bellevuewa.gov

Kathy Barker, Public Education Coordinator
425.452.7881  kbarker@bellevuewa.gov

Doug Fox, Building Inspection Services Manager
425.452.4447  dfox@bellevuewa.gov

Bob Lloyd, Electrical Inspection Supervisor
425.452.7911  blloyd@bellevuewa.gov
Questions?