

## **SMOKE DETECTOR/ALARM INFORMATION**

### **Types of Smoke Alarms:**

**Ionization Type:** Ionization smoke alarms are generally more responsive to flaming fires.

**How they work:** Ionization-type smoke alarms have a small amount of radioactive material between two electrically charged plates, which ionizes the air and causes current to flow between the plates. When smoke enters the chamber, it disrupts the flow of

ions, thus reducing the flow of current and activating the alarm.

**Photoelectric Type:** Photoelectric smoke alarms are generally more responsive to fires that begin with a long period of smoldering (called "smoldering fires").

**How they work:** Photoelectric-type alarms aim a light source into a sensing chamber at an angle away from the sensor. Smoke enters the chamber, reflecting light onto the light sensor; triggering the alarm.

**Combination Type:** Combination smoke alarms feature both ionization and photoelectric technologies. The NFPA recommends using both smoke alarms in the home for the best protection.

### **Smoke Alarm Power Sources**

Smoke alarms vary in how they are powered. 9 volt battery powered smoke alarms are very popular due to their low cost; however, care must be taken to replace the battery on a regular basis.

Smoke alarms are also available in 120 volt and a long life 10 year rated lithium battery. Many local or state building codes may require 120 volt interconnected smoke alarms with a battery back-up in case of power outages. The interconnected feature allows all smoke alarms to be linked together. This is especially important in multi-levels homes or in apartment buildings. Smoke alarms with high intensity strobe lights are also available for the hearing impaired.

Regardless of the type of detector or alarm selected, the proper placement and maintenance of the device is crucial. Follow all manufacturers instructions for placement, testing and maintenance. The NFPA suggests battery replacement at least once a year on battery equipped units and a monthly detector test to verify the alarm function. Many users utilize daylight saving time in the spring and the fall as a reminder to change batteries



## FREQUENTLY ASKED QUESTIONS

### What to Do When Smoke Alarm Keeps Beeping?

Smoke detectors are intended to make a chirping noise once the battery needs changing. Newer smoke alarms keep some errors in the processor. The smoke alarm must clear errors after the battery is changed, but it might continue to chirp even after you change the batteries. This usually occurs in electrical powered smoke alarms with a battery backup. When

this happens, the way to stop the chirping noise is to reset the smoke alarm to manually clear the error from the processor.

### Why do smoke alarms chirp intermittently?

The “chirp” is usually caused by issues related with the battery or miss-wiring. However, don’t confuse the chirp with an intermittent alarm. A “chirp” sounds like a higher pitched tone and sound in equal intervals about once every minute. An intermittent alarm is usually a random sound for several seconds and has a lower pitched tone.

### Common Reasons for Smoke Alarms Chirping:

1. Battery Pull-tab is Still in the Alarm - The battery pull-tab should be removed after AC power is provided to the device.
2. The Battery Drawer is Open - The battery drawer should be totally closed for the battery to make contact with the terminals.
3. Low Battery - As the battery in a smoke alarm gets weak, the smoke alarm will “chirp” about once a minute to let you know that the battery needs to be replaced. Note: Only the device with a low battery will chirp. The other interconnected alarms should be silent.
4. Battery is There but Part of the Terminal is Obstructed - The battery may not be completely making contact with the terminals in the alarm. Check to ensure the battery pull-tab or any other obstruction is completely removed.
5. Dust on the Sensors - Ionization smoke detectors can mistake dust for smoke. So if your ionization smoke detector is covered in dust, that’s why it sets off the alarm even if there’s no smoke. You’ll know if you have an ionization smoke detector if the letter “I” is in the model number or there’s any mention of radioactive material, like Americum-241. You’ll find this information on the back of your smoke detector. Use an air spray can or a vacuum cleaner’s extension to blow or suck off the dust. Note: Doing this will move the dust and can cause the smoke detector to go off again. So be careful if you’re on a ladder and doing this.
6. Another Device or Appliance - Security systems, monitors, carbon monoxide alarms, and other devices have comparable low battery or alert sounds, and it might be one of these and not the smoke alarm.



7. Temperature Fluctuations in the Home - A smoke alarm beeping or chirping erratically could be temperature fluctuations in the house. If you set the thermostat at an unusual very high or low temperature, the smoke alarm detects this and issues a sounding alert. Another reason why the smoke alarm chirps could be if it detects hot air coming from the kitchen or bathroom. This could happen when you are cooking at high heat or someone opens the bathroom door soon after taking a hot shower. To avoid this kind of false alarm ensure that the hot air does not reach the alarm vents.

8. Its Life has Ended - A smoke alarm will beep when it has reached the end of its lifetime. Smoke alarms usually last for between eight and ten years. Check the date of manufacturing on the back. If it is more than eight years old, you should replace the smoke alarm as soon as possible.

### **Why do I hear the smoke alarm "low battery chirp" if the battery is new?**

**Any of these reasons can cause your smoke alarm low battery chirp:**

1. Does your smoke alarm have a separate silence push button? If so, the button could have been pressed by accident. The alarm will then "chirp" once every minute for up to 15 minutes.
2. Make sure it's the smoke alarm. Other devices have comparable low battery chirps or warning sounds. The reason of a single chirp is often hard to pinpoint. Check devices like carbon monoxides alarms in use.
3. Sometimes "new" batteries may not be fresh. If batteries are kept in cold areas they can lose their charge more quickly. Be sure to check the freshness date listed on the package when purchasing new batteries.

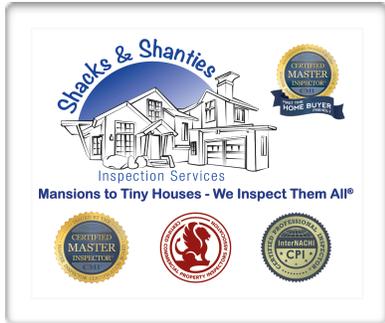
### **Why does my smoke detector go off after installing a new battery or after power outage?**

It is typical for the smoke alarms to go off and sound (from 5 to 10 seconds) when you install a new battery or they are powered up. In case the alarm continues to go off and there is no smoke present, the cause could be:

1. There may not be sufficient battery power. Try another battery.
2. Problems with voltage or not enough electrical power (brownout) may cause a constant weak sounding alarm. For hardwired alarms, momentarily disconnect power at the service panel until the brownout is over.
3. Incompatible warning device. If an incompatible alarm or secondary device is connected into a series of hardwired smoke alarms it could cause the system inadvertently go off.

### **How to Reset a Smoke Detector to Stop Chirping after Installing a New Battery?**

**Electric Smoke Detectors with Battery Backup:**



1. Shut off the main breaker in your home's breaker box to turn off the electrical current running to the smoke detector.

2. Take the smoke detector off its mounting bracket on the ceiling and disconnect the power cable plugged to the smoke detector.

3. Take out its battery, then press the "Test" button holding it down for 15 seconds. An alarm will sound for a short time, then the alarm will silence.

4. Install the battery in the smoke detector, reconnect the power cable and mount the smoke detector back on its mounting bracket. Turn the breaker on. The smoke alarm will chirp one time to indicate power was restored to the unit.

#### **Battery-Powered Smoke Detectors:**

1. Remove the battery out of the smoke detector.
2. Press the "Test" button holding it down for 15 seconds. An alarm will sound for a short time then the alarm will stop.
3. Install the battery back in the smoke detector. The smoke alarm will chirp once to indicate the battery is connected.

## **CALIFORNIA SMOKE DETECTOR REQUIREMENTS**

### **Where are smoke alarms required?**

1. One smoke alarm is required on every floor of the home.
2. One smoke alarm is required inside every sleeping room.
3. One smoke alarm is required outside of every sleeping room.
4. If your home or apartment has an attached garage, a gas appliance, or a fireplace, a combination smoke and carbon monoxide detector, or, separately operating carbon monoxide and smoke detectors must be installed.

### **What Is the California Health and Safety Code for Smoke Detectors?**

1. New construction and remodels require new smoke and carbon monoxide detectors to be hardwired to the home's electric system and have a battery backup, and have an interconnecting alarm.
2. In older homes, without the ability to hardwired devices, all smoke and carbon monoxide detectors must contain a non-removable battery that can last 10 years.
3. Whenever permits for improvements or repairs over one thousand dollars (\$1000) are issued, the permit issuer cannot sign off on the completion of work until the permittee demonstrates that existing devices meet the above requirements.

**There are two types of Smoke Detectors, not all devices contain both.**



1. Ionization smoke alarms: sensing alarms may detect invisible fire particles (associated with fast flaming fires) sooner than photoelectric alarms.

2. Photoelectric alarms: sensing alarms may detect visible fire particles (associated with slow smoldering fires) sooner than ionization alarms.

## **CALIFORNIA CARBON MONOXIDE DETECTOR REQUIREMENTS**

The California's Carbon Monoxide Poisoning Prevention Act of 2010 dictates that, starting from July 1, 2011, all residential property, 1 to 4 units must be equipped with approved carbon monoxide detector equipment.

The equipment must be approved by the California State Fire Marshal. New construction or remodels shall be hard-wired with battery back-up, interconnecting all detectors so that when one alarm sounds, they all do. Finally, Carbon Monoxide alarms are not intended and neither suitable for fire and smoke detection.

### **California's Carbon Monoxide Poisoning Prevention Act of 2010**

A carbon monoxide detector is a plug-in device, either battery supplied or wired to alternate current that emits a highly distinctive sound when carbon monoxide is detected. A carbon monoxide detector is not the same as a smoke detector; however, if a combination detector is being installed, it should be capable of identifying both fumes with different sounds.

Every builder must install these approved devices, Cal. Health & Safety Cod17926(a), in each dwelling unit as following this applicable time period:

#### **For all existing single-family dwelling units on or before July 1, 2011**

For all other existing dwelling units, duplex/apartment/condominium complex, on or before Jan. 1, 2013. The Carbon Monoxide Poisoning Prevention Act of 2010 mandates that detectors must be installed if the residential unit has any of the following:

- Gas appliances such as gas stove, fireplace, gas water heater, etc.
- Fireplace
- An attached garage

From January 1, 2013, all multi-family units will be required to install Carbon Monoxide detectors, even if the property is listed as a rental property.

Information specific to the Act is found in the California Health and Safety Code Sections 13260 through 13263. See the California Health & Safety Code Sections 13261 & 17926.

### **Carbon Monoxide Detector California Code Requirements**



California building code standards require that all new constructions, per section R315, mandate that the detector must be:

"Installed outside of each separate sleeping area in the immediate vicinity of the bedroom(s) in dwelling units and on every level including basements within which fuel-fired appliances are installed and in dwelling units that have attached garages."

Under section 420 of the CBC also requires that the monoxide detector must be:

"Installed outside of each separate sleeping area in the immediate vicinity of the bedroom(s) in dwelling units and on every level including basements within which fuel-fired appliances are installed and in dwelling units that have attached garages."

### **Carbon Monoxide Detector Installation**

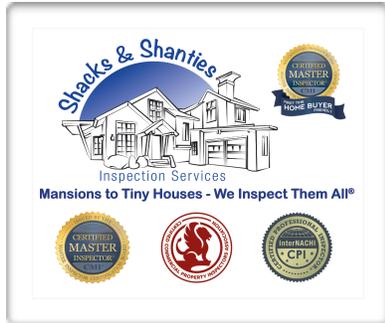
Carbon monoxide detectors required by the law on the State of California should be installed properly. As a general practice smoke detectors shall be installed:

- On a wall about five feet above from floor level.
- It is recommended installing the detector at least 6 inches from all exterior walls and at least 3 feet from HVAC vents.
- Carbon monoxide detectors can be installed on ceiling; however, wall installation is recommended.
- Each floor needs its own set of monoxide detectors when required by building codes.
- It is recommended installing carbon monoxide detectors near the sleeping area.
- Follow manufacturer's recommendations or follow guidelines by Standard 720 of the National Fire Protection Association.

### **Carbon Monoxide Approved Manufacturers**

The following is a list of carbon monoxide detectors manufacturers approved by the State Fire Marshall Office. Please check the current and updated approved manufacturers for the most recent list.

BRK BRANDS, INC.  
 GENTEX CORPORATION  
 Linear LLC  
 Universal Security Instruments  
 KIDDE SAFETY  
 PATRICK PLASTICS INC  
 QUANTUM GROUP INC



### Carbon Monoxide Risk

Carbon monoxide can be deadly and extreme harmful. It is produced by burning fuels, coal, wood, oil, gas and several other petroleum-based products. It is also produced by common industrial equipment, cars, and electrical generators. Lower levels of carbon monoxide poisoning could produce:

- Headaches
- Dizziness
- Disorientation
- Nausea
- Fatigue