



MAINTENANCE OF
SMOKE ALARMS



July 1998

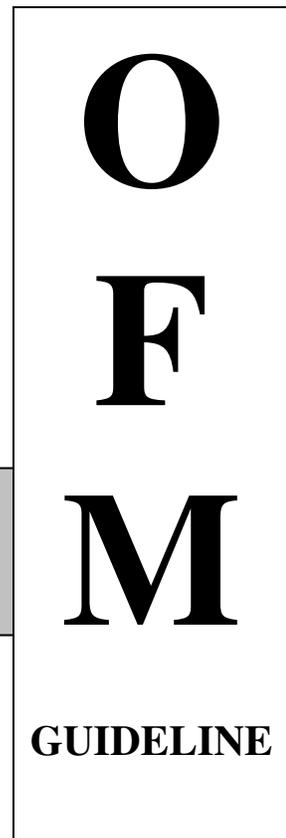


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OFM Section: Fire Safety Standards at (416) 325-3100

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Abstract

Smoke alarms are important life safety devices and as such must be maintained in operating condition at all times. Smoke alarms generally become inoperative when the power source (either battery or AC power supply) is disconnected. Disconnected power supply, missing batteries, dead batteries and improperly installed batteries are the most common reasons for smoke alarm failure during a fire emergency. This document has been prepared by the Office of the Fire Marshal to provide guidance to the general public, building owners and fire departments with respect to smoke alarm maintenance to ensure operability as required by the Fire Code.

This document provides information on the recommended maintenance schedule and procedures for testing of smoke alarms. The guideline also identifies the respective responsibilities of the landlord and tenants or occupants in rental residential units. A suggested maintenance checklist and tenant/occupant information sheet are included with the guideline.

1.0 SCOPE

This document has been prepared by the Office of the Fire Marshal to provide guidance to the general public, building owners and fire departments with respect to smoke alarm maintenance to ensure operability as required by the Fire Code.

2.0 BACKGROUND

Subsection 6.3.3. of the Fire Code requires that smoke alarms in all places of residence be maintained in operating condition. Section 1.1 of the Fire Code states that the "owner" is responsible for carrying out the provisions of the Code. In rental residential units, the landlord is considered to be the "owner" for purposes of the smoke alarm maintenance requirements. However, any person (including a tenant or other occupant) can be held responsible for intentionally disabling a smoke alarm so as to make in inoperable.

Every person who contravenes any provision of the Fire Code and every director or officer of a corporation who knowingly concurs in such contravention is guilty of a provincial offence. Failure to maintain smoke alarms in operating condition is a Fire Code violation subject to a fine, imprisonment, or to both.

3.0 TEST AND MAINTENANCE REQUIREMENTS

Smoke alarms are important life safety devices and as such must be maintained in operating condition at all times. Smoke alarms generally become inoperative when the power source (either battery or AC power supply) is disconnected. Disconnected power supply, missing batteries, dead batteries and improperly installed batteries are the most common reasons for smoke alarm failure during a fire emergency.

3.1 Schedule For Smoke Alarms

On AC powered smoke alarms, the "power on" indicator on the smoke alarm should be checked regularly to ensure operability. When the circuit breaker is turned off or the fuse is removed from the smoke alarm circuit to carry out servicing, the power should be restored to the circuit immediately on completion of the work. In the event that the circuit cannot be restored the same day, battery operated smoke alarms should be installed to provide protection on a temporary basis.

Battery operated smoke alarms normally provide an intermittent warning signal for up to seven days when the battery is nearing the end of its life. When this occurs, the correct battery type should be installed immediately to ensure continued operability of the smoke alarm.

The following test and maintenance procedures are recommended to ensure operability of smoke alarms and fulfil obligations under the Fire Code. More frequent testing and cleaning schedules will provide greater assurance of operability and may reduce nuisance alarms.

3.2 Frequency of Smoke Alarm Testing and Maintenance

Smoke alarms should be tested as described in Section 3.3 under the following conditions:

- (a) During a change of tenancy in rental units.
- (b) In the case of battery operated smoke alarms, when the occupants have been absent for seven or more days (such as for vacation) to ensure that the battery is still operational. (Note: In rental units, it is the responsibility of the tenant to inform the landlord of the absence and request a test of the smoke alarm - please refer also to the information contained in Section 5 of this guideline.)
- (c) Following installation of a new battery for battery operated smoke alarms.
- (d) Following electrical renovations or servicing when smoke alarms are AC powered to ensure that the smoke alarm circuit has not been disconnected.

3.3 Routine Test and Maintenance

- (a) The smoke alarm should be tested using the test device located on the smoke alarm or another test method recommended by the manufacturer. The alarm signal should sound during this test. If interconnected smoke alarms are installed, all smoke alarms should sound the alarm when any one of the smoke alarms is tested.
- (b) Do a visual check to ensure that the smoke alarm is securely fastened to the ceiling or wall.
- (c) Do a visual check to ensure that the smoke alarm is not obstructed/installed in a manner that would prevent smoke from reaching or entering the smoke alarm (i.e. the ventilation holes of the smoke alarm must be kept clean and unobstructed, any ceiling fans are not close enough to prevent air flow from reaching the smoke alarm, etc.).

3.4 Annual Test and Maintenance

- (a) Unless otherwise recommended by the manufacturer of the smoke alarm (such as for 10 year battery units), replace the battery in each battery operated smoke alarm and ensure that it is securely connected to the battery clips.

CAUTION: Check to ensure that the battery is of the type recommended by the manufacturer. Smoke alarms identified by the manufacturer as requiring alkaline batteries should have only alkaline batteries installed, otherwise the smoke alarm may fail to operate. Rechargeable batteries should not be used in smoke alarms unless the manufacturer has specifically recommended such use.

- (b) Smoke alarms should be checked to ensure that battery terminals have not corroded and batteries have not leaked. Where batteries show evidence of leakage or corrosion, the smoke alarm should be replaced.

- (c) Vacuum the exterior of the smoke alarm with a household vacuum cleaner. A brush attachment may assist in removing accumulated dust on the cover of the device. If specifically recommended by the manufacturer, open the battery cover on battery operated smoke alarms and gently vacuum the circuit board.

CAUTION: For smoke alarms that are AC powered, some manufacturer's specify that the power supply to the smoke alarm circuit be disconnected (normally a separate breaker or fuse at the main panel) before vacuuming. AC powered smoke alarms should only be vacuumed externally and no attempt should be made to open the case. Be sure to follow the manufacturer's instructions at all times. **Remember to restore the power supply** when the cleaning is completed.

- (d) Do a visual check to ensure that the smoke alarm is securely fastened to the ceiling or wall.
- (e) After vacuuming, test the smoke alarm using smoke from an incense stick, punk stick, or a cotton string placed in an ashtray or other suitable noncombustible container.

CAUTION: Smouldering materials used in this test should be disposed of in a manner that does not create a fire hazard. Direct open flames from matches, lighters or candles should not be used to test smoke alarms.

3.5 Replacement of Smoke Alarms

Smoke alarms should be replaced if:

- (a) The smoke alarm does not sound an alarm during the test (after it is confirmed that the battery is fully charged or the AC power supply is not disconnected).
- (b) The exterior of the case is physically damaged.
- (c) The exterior case is painted.
- (d) The unit is covered with smoke stains, heavy grease or dirt accumulations.
 - (e) The smoke alarm causes frequent false alarms that are not the result of cooking or steam.
 - (f) Batteries show evidence of leakage or corrosion.
 - (g) The smoke alarm is more than 10 years old or has exceeded the manufacturer's recommended life cycle.

4.0 RESPONSIBILITY OF THE LANDLORD IN RENTAL UNITS

As indicated previously, the landlord is responsible for smoke alarm maintenance in rental residential units. This includes the obligation to take action when a tenant or occupant reports a problem or files a complaint respecting operability of smoke alarms. The testing and maintenance schedule identified in Section 3 of this guideline is also the landlord's responsibility. Such testing can only be carried out with the full co-operation of the tenant or occupant since access to the smoke alarm must be available. The lease agreement should therefore include provisions for access to carry out the necessary testing and maintenance.

Unless it is an emergency, the Tenant Protection Act requires that landlords give 24 hours written notice to enter a tenant's premises and the time of entry must be between 8 a.m. and 8 p.m.

Although the Fire Code does not specifically require that written records of smoke alarm maintenance be maintained, a general requirement in Sentence 1.1.2.1.(1) states that written records of "corrective measures" must be maintained for a period of two years after they are made. It is in the landlord's interest to keep written records as they will help to demonstrate due diligence in maintaining the smoke alarms in operating condition. The checklist attached to this guideline can be used for this purpose.

In addition to the above, the Fire Code requires that the landlord provide a copy of the smoke alarm manufacturer's maintenance instructions or approved alternative to the occupant in each rental unit. A sample tenant/occupant information sheet is provided with this guideline. This information sheet may be used in lieu of the manufacturer's instructions to satisfy the intent of Article 6.3.3.3. of the Fire Code. Once again, it is in the landlord's interest to keep a written record to demonstrate that this information has been provided to the occupant of each rental unit.

5.0 RESPONSIBILITY OF THE TENANT OR OCCUPANT IN RENTAL UNITS

The primary responsibility for ensuring that smoke alarms are maintained in operating condition rests with the landlord. This includes the test and maintenance schedule identified in Section 3 of this guideline. The Fire Code also contains the provision that "no person shall intentionally disable a smoke alarm so as to make it inoperable". A tenant or occupant who disables a smoke alarm is therefore guilty of a provincial offence and may be subject to a fine.

Smoke alarms are important life safety devices installed for the protection of the occupants of the suite as well as other building occupants. It is reasonable to expect that tenants and occupants will take the following actions to ensure the operability of the smoke alarms:

- (a) Advise the landlord when the low battery signal is activated on battery operated smoke alarms and make arrangements for replacement of the battery.
- (b) Advise the landlord if the "power on" indicator goes out on AC powered smoke alarms and arrange for appropriate repairs.
- (c) Advise the landlord if the smoke alarm is damaged and make arrangements for repair/replacement of the unit.
- (d) Following an absence of seven or more days (such as vacation), arrange for battery operated smoke alarms to be tested in accordance with Section 3.3(a) of this guideline to ensure that the devices are operable.
- (e) Advise the landlord of any electrical problems that may affect the operability of AC powered smoke alarms.

Tenants or occupants are encouraged to take active participation in ensuring that the smoke alarms are maintained in operating condition and co-operate with the landlord in carrying out the necessary testing and maintenance.