

RESIDENTIAL FIRE PREVENTION FOR PROPERTY OWNERS AND MANAGERS

BACKGROUND

Even with the advances we have made as a society in fire prevention technology and education, fires in residential structures remain a big issue. According to the National Fire Protection Association (NFPA), 387,000 U.S. residential fires in 2013 resulted in 2,785 deaths, 12,585 injuries, and \$7 billion in direct property damage. PHLY has identified fires as a leading loss cost based on our experience as a property insurer in the residential real estate space.

THE LEADING CAUSES

Based on our experience, we have identified the following as the leading causes of residential fires:

- Electrical issues
- Smoking
- Cooking

THE SOLUTIONS

Electrical Issues

There are several steps you can take to prevent fires caused by electrical issues:

1. Have your electrical system inspected. The three main types of inspections are electrical system inspection, infrared inspection, and visual inspection

- Electrical system inspection
 - Performed by a qualified electrician
 - Includes the entire electrical system in scope
 - Complete before making any property purchase
 - › Deficiencies and solutions can be identified before purchasing
 - › Not only helps you identify what you will have to address after purchase, but also allows you to negotiate the cost implications of addressing these issues into the purchase price of the building
 - Complete at least every 10 years
 - › Like any other building system, issues can develop over time and need to be uncovered if present
- Infrared inspection
 - Connections in the electrical system and electrical powered building machinery can become loose over time, which creates “hot spots”
 - Hot spots lead to an inefficient use of power and wasted energy and can become an ignition source for a fire. Furthermore, as they relate to building machinery, hot spots can indicate a possible future failure of the equipment



- Hot spots can be identified with infrared thermography, which provides a visual representation of the temperatures of electrical components through the use of a special camera
- Infrared thermography inspections are performed by a qualified infrared inspection contractor or a qualified individual in your organization. If you need assistance on procuring this service, please contact PHLY Risk Management Services at phlyrms@phly.com
- If an infrared inspection has never been completed, we recommend having one done as soon as possible. The frequency of infrared inspections afterward can be determined based on the results of the initial inspection in consultation with the individual who completed it. Generally speaking, these are done every three to seven years depending on the age of the building

- Identifying, tightening, or replacing components where these hot spots exist so that they no longer generate excessive heat can help prevent electrical fires and can lead to some savings in electrical consumption



Finally, if you have an older building, it is possible that your facility has aluminum wiring and/or Federal Pacific Stab-Lok breakers. These items were popularly used in decades past and are known fire hazards. If you encounter them, our recommendation is that they be replaced with current components.

Smoking

Building fires from the improper disposal of cigarette ash and butts occur when smoking takes place inside and outside of the building. This is one of the most difficult causes to control because it relies heavily on the behavior of the smoker. Therefore, it is PHLY's recommendation that your facility be entirely smoke free.

- This means common areas as well as residents' living spaces
- If your building is not currently smoke free and you want to implement this policy, follow the same procedures that you would to adopt, document, and notify residents of a change to the lease or rules and regulations

If it is not possible to have a non-smoking building, then encourage residents to smoke outdoors

- Establish a smoking area that is at least 20 feet away from the building and free of any combustible ground covering like dried grass, leaves, and wooden decks
- Provide a proper, non-combustible, non-tipping receptacle for ash and butts
- Motivate residents by enforcing housekeeping policies if ash and butts are not disposed of properly; use a consequence if needed



- Visual inspection
 - Completed in-house by a property manager, facilities manager, or other knowledgeable person
 - Visually inspect key electrical components (e.g. panels, breakers, outlets, and switches) throughout the property for abnormalities
 - Complete at least annually and document
- 2. Have any electrical work done by a qualified electrician
 - If electrical work is being done by a third party, be sure to screen them. This should include checking references, obtaining a certificate of insurance to confirm that liability and workers' compensation coverage is in place, and obtaining additional insured status on their policy
- 3. Maintain electrical rooms
 - Remember the terms clean, dry, and tight
 - Clean: Electrical rooms should be free of storage, especially any combustible storage
 - Dry: Electrical rooms should be maintained free of any moisture
 - Tight: Going along with the previous section on infrared testing, connections should be tight. In addition, electrical boxes and receptacles need to be closed to help prevent moisture, dirt/debris, and other potentially damaging elements from accessing them

REFERENCES & RESOURCES

[Fire Safety - National Safety Council \(nsc.org\)](https://www.nsc.org)

[Key fire safety tips \(nfpa.org\)](https://www.nfpa.org)

[Workplace Fire Safety \(fema.gov\)](https://www.fema.gov)



Cooking

While cooking can also be difficult to control from the property owner/manager's perspective, there are devices out there that you can install in your kitchens to help prevent fires or limit the impact if one starts. These products are separated into two categories:

1. Preventive devices

As the name suggests, these devices help prevent a fire from starting in the first place. One such device works by detecting movement in the kitchen. If no movement is detected for a period of time, indicating unattended cooking, the device will automatically turn off the range. Some of these devices will provide the resident with an audible and/or visual alarm prior to shut down so they have a chance to respond. Another preventive device works by making sure cooking surfaces do not get too hot causing an unsafe condition.

2. Reactive devices

These devices respond to a fire that has started and limit its impact on the building. These are essentially residential grade localized automatic fire suppression devices. Automatic suppression is desirable because many kitchen fires start due to unattended cooking. Some of these devices operate by using electronic sensors to detect a fire, which then causes the device to expel an extinguishing agent on the stove. Others operate mechanically, where the heat from a fire fuses the device and the extinguishing agent is expelled.

CONCLUSION

Preventing fires arising out of these causes is not only the responsibility of the property owner and/or manager, but is a joint effort with residents. Since residents' behaviors have an effect on your success in fire prevention, we recommend conducting routine inspections of units at least annually.

Use this inspection time to confirm the operation of any fire prevention and detection devices installed.

Electrical issues, smoking, and cooking combined have accounted for the vast majority of the fires PHLY has seen in the residential property side of our insurance business, from both a frequency of occurrence and cost standpoint. With a modest investment of time and resources directed at these three leading causes of residential fires, you can help keep people safe and protect your real estate investment.



A Member of the Tokio Marine Group

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