

# HOME CANDLE FIRES

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## **Abstract**

Based on data from the U.S. Fire Administration's (USFA's) National Fire Incident Reporting System (NFIRS) and the National Fire Protection Association's (NFPA's) annual fire department experience survey, NFPA estimates that candles were the heat source in an estimated average of 12,860 reported home fires annually during 2005-2009. These fires caused an average of 136 civilian deaths, 1,041 civilian injuries and \$471 million in direct property damage per year. Roughly one-third (36%) of home candle fires started in the bedroom. More than half (55%) of the fires occurred because the candle was too close to something that could burn. Candles used for light in the absence of electrical power appear to pose a particular risk of fatal fire. Home candle fires climbed through the 1990s but have been falling since the 2001 peak. ASTM F15.45 has developed a number of standards relating to candle fire safety.

Keywords: candle fires; home fires, fire causes, fire statistics

## **Acknowledgements**

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We are also grateful to the U.S. Fire Administration for its work in developing, coordinating, and maintaining NFIRS.

For more information about the National Fire Protection Association, visit [www.nfpa.org](http://www.nfpa.org) or call 617-770-3000. To learn more about the One-Stop Data Shop go to [www.nfpa.org/osds](http://www.nfpa.org/osds) or call 617-984-7443.

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## Executive Summary

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During 2005-2009, U.S. fire departments responded to an estimated average of 12,860 home structure fires started by candles per year. These fires caused an annual average of 136 civilian deaths, 1,041 civilian fire injuries, and \$471 million in direct property damage. Candles caused 3% of the reported home fires, 5% of home fire deaths, 8% of home fire injuries, and 7% of direct property damage during this period. On average, 35 home candle fires were reported per day.

### **During the five-year period of 2005-2009:**

- More than one-third (36%) of home candle fires started in bedrooms. These fires caused 43% of the associated deaths and 47% of the associated injuries. The 16% of fires that started in living rooms, family rooms, or dens caused 22% of the deaths. Fourteen percent (14%) of fires started in bathrooms and 11% began in kitchens or cooking areas.
- Candle fires start with a variety of items. Eleven percent began with a mattress or bedding; these fires caused 17% of the home candle fire deaths. An unclassified type of furniture or utensil was also the item first ignited in 11% of these incidents. Nine percent started when a curtain, blind or drapery ignited. Cabinetry was first ignited in 8% of these fires. Upholstered furniture was first ignited in 6% of the fires; these incidents caused 22% of the home candle fire deaths.
- Twelve percent of the home candle fires occurred in December, 1.5 times the monthly average of 8%. December candle fires often involve combustible seasonal decorations that would not have been present at other times of the year. From January to November, decorations were first ignited in only 4% of the home candle fires. This jumped to 11% in December. In other words, the heightened candle fire risk around the winter holidays reflects a combination of increased candle use and more things that can burn in the area around the candles.

The top three days for home candle fires were Christmas, New Year's Day, and Christmas Eve.

- Falling asleep was a factor in 12% percent of the home candle fires and 42% of the associated deaths. Extinguish all candles before going to sleep.

### **Factors contributing to ignition in 2005-2009:**

- More than half (55%) of the home candle fires occurred when some form of combustible material was too close to the candle. Keep candles at least 12 inches from anything that can burn.
- Unattended equipment or abandoned materials or products were contributing factors in one of every five (19%) home candle fires. Never leave a burning candle unattended. Blow out candles when you leave a room.
- Four percent were started by people (usually children) playing with the candle. Keep candles up high out of the reach of children. Never leave a child unattended in a room with a candle. A child should not sleep in a room with a lit candle.

### **Candle fires have been falling since the 2001 peak.**

From 1980, the first year of available data, to 1990, the number of home candle fires had been falling. They then started climbing. Incidents peaked in 2001 and have been falling since then. Even so, the estimate of 9,600 fires reported in 2009 is still 1.4 times the 6,800 reported in 1990, the previous low. From 2008 to 2009, reported home candle fires fell 20%.

The share of home structure fires started by candles jumped from 1% in the early 1980's to 5% in 1999, 2001, and 2002, partly because total home fires had declined so much since 1980 and partly because candle fires had increased. The share fell to 4% from 2004 to 2006, inclusive. In 2007, the share dropped to 3% and has remained there.

### **Using candles for light can be dangerous.**

NFPA reviewed fire service reports and news clips about 117 identified fatal home candle fires in 2005-2010 that resulted in a total of 177 civilian fire deaths. Candles were used for light in the absence of power in 30, or one-quarter (26%), of these fires and 60, or one-third (34%), of the associated deaths. The reason for the lack of power was mentioned in 25 of the fires and 50 of the deaths.

In roughly two-thirds of the no-power fires and deaths where the reason was known, the power had either been shut off or the home lacked utilities. In one-quarter of these fires and 12% of the deaths, the power outage was storm-related. Eleven people were killed in 2005 when they used candles when moving into a Louisiana home before the power had been connected. Participants in focus groups conducted by the Environics Research Group for Health Canada were more likely to leave candles burning in several rooms during power outages than when the power was on.

### **Lacerations were the most common type of candle or candlestick injury.**

According to the U.S. Consumer Product Safety Commission's (CPSC's) National Electronic Injury Surveillance System (NEISS), an estimated 10,900 people were seen at hospital emergency rooms for injuries from candles, candlesticks or related items during 2009. Almost half (47%) of the candle-related injuries that year were lacerations and one-quarter (24%) were thermal burns. Some of the lacerations were caused by sharp or broken candleholders; some occurred while candles were being trimmed or wax was being removed from candleholders. Some of the burns were from the hot wax, others were from fires started by the candle.

### **ASTM's voluntary standards address candles and accessories.**

The ASTM subcommittee F15.45 was created to address candle safety issues in 1997. Since then, it has issued a variety of candle-safety standards, including standards addressing terminology, fire safety labeling, glass candle containers, visible emissions, and fire safety for candles and candle accessories. These standards can be incorporated into law, contracts, codes and procedures.

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## U.S. Home Candle Fires Fact Sheet

In 2005-2009, U.S. fire departments responded to an average of 12,860 home<sup>1</sup> structure fires that were started by candles. These fires caused an annual average of 136 civilian fire deaths; 1,040 civilian fire injuries; and \$471 million in direct property damage.

Overall, candles caused 3% of reported home fires, 5% of the home fire deaths, 8% of the home fire injuries, and 7% of the direct property damage in reported home fires during this period.

### Causes and Circumstances of Home Candle Fires

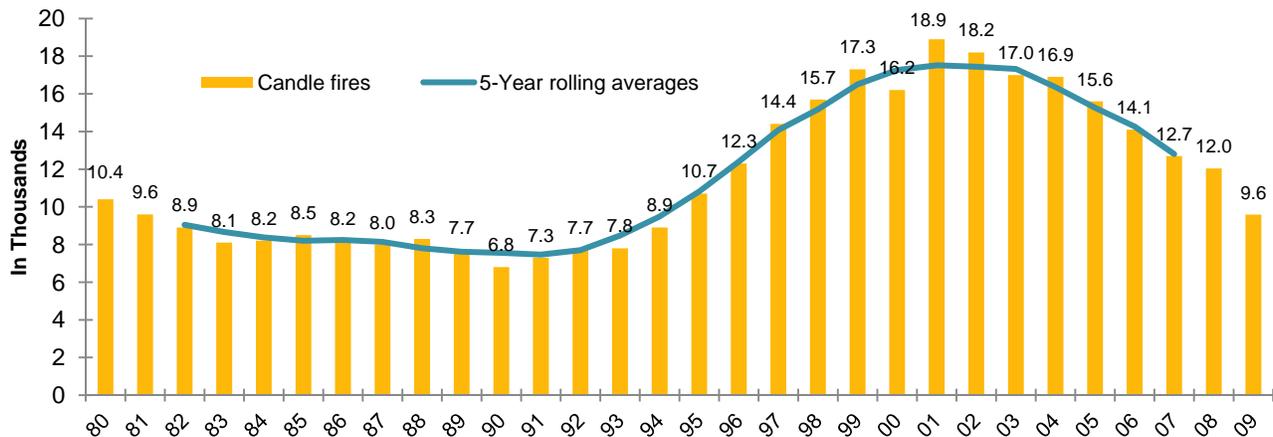
Details from the U.S. Fire Administration’s National Fire Incident Reporting System show that in 2005-2009:

- On average, 35 home candle fires were reported per day.
- More than half (55%) of all candle fires started when something that could burn, such as furniture, mattresses or bedding, curtains, or decorations, was too close to the candle.
- In one-fifth (19%) of the fires, the candles were unattended or abandoned.
- More than one-third of home candle fires begin in the bedroom, although the candle industry found that only 13% of candle users burn candles in the bedroom most often.
- December is the peak time of year for home candle fires. In December, 11% of home candle fires began with decorations compared to 4% the rest of the year.
  - The top three days for home candle fires were Christmas, New Year’s Day, and Christmas Eve.

### Candle Fire Trends

Home candle fires climbed through the 1990s but have been falling since the 2001 peak.

Home Candle Fires (in Thousands) by Year: 1980-2009



<sup>1</sup>Homes include one- or two-family homes, manufactured homes, apartments and other multi-family homes..

# Candle Safety

Candles may be pretty to look at but they are a cause of home fires — and home fire deaths. Remember, a candle is an open flame, which means that it can easily ignite anything that can burn.

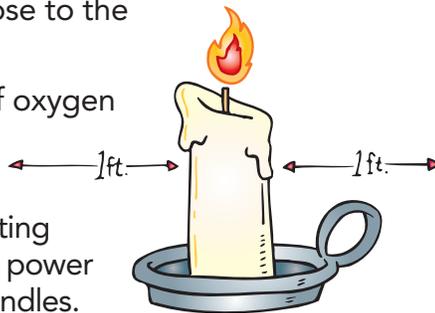
## "CANDLE WITH CARE"

- » Blow out all candles when you leave the room or go to bed. Avoid the use of candles in the bedroom and other areas where people may fall asleep.
- » Keep candles at least 12 inches away from anything that can burn.

Think about using flameless candles in your home. They look and smell like real candles.

## IF YOU DO BURN CANDLES, make sure that you...

- » Use candle holders that are sturdy, and won't tip over easily.
- » Put candle holders on a sturdy, uncluttered surface.
- » Light candles carefully. Keep your hair and any loose clothing away from the flame.
- » Don't burn a candle all the way down — put it out before it gets too close to the holder or container.
- » Never use a candle if oxygen is used in the home.
- » Have flashlights and battery-powered lighting ready to use during a power outage. Never use candles.



## Candles and Kids

Never leave a child alone in a room with a burning candle. Keep matches and lighters up high and out of children's reach, in a locked cabinet.



## FACTS

- ! On average, a candle fire in the home is reported to a U.S. fire department every **40** minutes.
- ! More than **one-third** of home candle fires started in the bedroom.
- ! More than half of all candle fires start when things that can burn are too close to the candle.



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