

THE SMOKING-MATERIAL FIRE PROBLEM

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Abstract

In 2008, U.S. fire departments responded to an estimated 114,800 smoking-material fires in the U.S., down from 140,700 in 2007. These fires resulted in an estimated 680 civilian deaths, 1,520 civilian injuries and \$737 million in direct property damage. Upholstered furniture and mattresses and bedding are the first items ignited for most home structure fatal fires started by smoking materials. One out of four fatal victims of smoking-material fires is not the smoker whose cigarette started the fire. Most deaths from smoking-material fires result from fires that started in living rooms, family rooms, and dens or in bedrooms. In recent years, Canada and all U.S. states have passed legislation requiring that all cigarettes sold be “fire safe,” that is, have sharply reduced ignition strength (ability to start fires), as determined by ASTM Standard E2187-04. When these laws are fully implemented, it is currently projected that smoking-material structure fire deaths will be down by 56-77% from 2003, the last year before any state implemented the law.

Keywords: Smoking, cigarette, fire statistics, fire safe cigarette

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Executive Summary

In 2008, U.S. fire departments responded to an estimated 114,800 smoking-material fires in the U.S., down from 140,700 in 2007. These fires resulted in an estimated 680 civilian deaths, 1,520 civilian injuries and \$737 million in direct property damage; deaths and injuries were down from the year before. In 2008, an estimated 18,400 smoking-material home structure fires caused 620 civilian deaths (23% of all home structure fire deaths), 1,250 civilian injuries and \$512 million in direct property damage.

Estimates of fires reported to U.S. municipal fire departments are based on data from the National Fire Incident Reporting System (NFIRS) and the NFPA annual survey. “Smoking materials” are lighted tobacco products but do not include lighting implements such as matches and lighters. Smoking materials are identified under heat source, and estimates include a proportional share of fires coded as heat source unknown or as unknown between smoking material and open flame source.

The long-term trend in smoking-material fires has been down, by 66% from 1980 to 2008, helped by the decline in smoking and by the effect of standards and regulations that have made mattresses and upholstered furniture more resistant to cigarette ignition. (In this analysis, “smoking materials” refer only to lighted tobacco products, not matches or lighters.)

A simple projection linking the percentage decline in fires or fire deaths to the percentage of smokers covered would suggest that when the law is fully effective across the entire country (in late 2012), the reduction in fires should reach 50-70% and the reduction in fire deaths should reach 56-77%, both relative to levels in 2003, the last year before the fire-safe cigarette law was effective in any state.

Mattresses and bedding, upholstered furniture, and trash are the items most commonly ignited in smoking-material home fires. Excluding trash, these items also account for most associated fire deaths. Roughly equal shares of civilian deaths due to smoking-material fires involved fires that started in living rooms, family rooms, and dens (33%) as in bedrooms (36%).

One out of four fatal victims of smoking-material fires is not the smoker whose cigarette started the fire.

The risk of dying in a home structure fire caused by smoking materials rises with age. Two out of five (39%) fatal home smoking-material-fire victims were age 65 or older, compared to their 12% share of the population. Older adults (age 65 and over) are less likely to smoke than younger adults. Therefore, their high rates of smoking-material fire deaths per million people are even more noteworthy.

Canada and all U.S. states have passed laws or other requirements that all cigarettes sold must be “fire safe,” that is, have sharply reduced ignition strength (ability to start fires), as determined by ASTM Standard E2187-04.

The first state to adopt a fire-safe cigarette requirement was New York, which passed the law at the end of 2003 and used 2004 to implement the law, giving time for wholesalers and retailers to clear their inventories of older non-compliant cigarettes. Smoking material fire deaths averaged 43 per year in 2000-2002, the last three years before action began on the bill, and averaged 25 per year in 2006-2008, the three years after any lingering transitional effects. This implies a 41% reduction. If all four years (2005-2008) after the official implementation period are analyzed, the average was 27 deaths per year and the reduction was 37%.

At the beginning of 2008, eight states had reached or passed the effective date for their fire-safe cigarette law. By the end of 2008, another ten states reached their effective dates. If weights are applied to reflect for each state the fraction of the year when its law was effective, the results indicate that on average in 2008, 29% of U.S. smokers were in states within effective laws. If one allows for a 3-month period to sell off inventories of cigarettes made before the effective date, the average drops to 25%. If a 6-month period is used, the average drops to 21%.

A USFA/NFPA study recommended educational messages to support the behavioral side of a comprehensive strategy to reduce smoking fires:

- If you smoke, smoke outside.
- Whenever you smoke, use deep, wide, sturdy ashtrays. Ashtrays should be set on something sturdy and hard to ignite, like an end table.
- Before you throw out butts and ashes, make sure they are out. Dowsing in water or sand is the best way to do that.
- Check under furniture cushions and in other places people smoke for cigarette butts that may have fallen out of sight.
- Smoking should not be allowed in a home where medical oxygen is used.
- To prevent a deadly cigarette fire, you have to be alert. You won't be if you are sleepy, have been drinking, or have taken medicine or other drugs.

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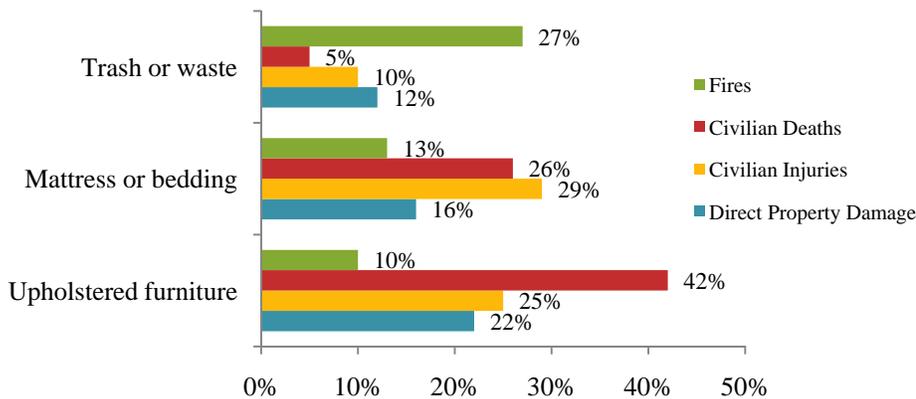
Smoking-Material Fire Problem

U.S. fire departments responded to an estimated 114,800 smoking-material fires in 2008. These fires caused:

- 680 civilian deaths
- 1,520 civilian injuries, and
- \$737 million in direct property damage.

These estimates are derived from the U.S. Fire Administration National Fire Incident Reporting System (NFIRS) Version 5.0 and NFPA's annual fire department experience survey.

Smoking-Material Fires in Homes by Leading Item First Ignited in 2004-2008 (Including Fires Reported as Confined)



 **FACT:** Roughly equal shares of deaths resulting from smoking-material fires were in fires that started in bedrooms (36%) as in living rooms, family rooms and dens (33%).

 **FACT:** The risk of dying in a home structure fire caused by smoking materials rises with age.

In recent years, Canada and all 50 U.S. states, have required that all cigarettes sold must be "fire safe," that is, have sharply reduced ignition strength or ability to start fires. The laws were effective in eight states when 2008 began and became effective during 2008 in ten other states. When these laws are fully implemented, it is currently projected that smoking-material structure fire deaths will be down by 56-77% from 2003, the last year before any state implemented the law. See www.firesafecigarettes.org for more details.

Trend in Civilian Deaths in U.S. Smoking Material Home Fires

