

VACANT BUILDING FIRES

Overview of vacant building fire problem including property types, secured vs. unsecured, causes, fire spread and when fires occur. Also includes previously published incident descriptions.

Executive Summary

Fires in vacant buildings have become a matter of increasing concern as the economy has weakened. In 2003-2006, U.S. fire departments responded to an estimated average of 31,000 structure fires in vacant buildings per year. These fires resulted in an average of 50 civilian deaths, 141 civilian injuries, and \$642 million in direct property damage per year. Based on annual averages for 2003-2006, the 31,000 reported vacant structure fires accounted for 6% of the 520,100 structure fires, 2% of the 3,125 civilian structure fire deaths, 1% of the 15,200 civilian structure fire injuries, and 7% of the \$9.0 billion in direct property loss.

These statistics are national estimates of fires reported to U.S. municipal fire departments based on the detailed information collected in Version 5.0 of the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS 5.0) and the National Fire Protection Association's (NFPA's) annual fire department experience survey.

Vacant building fires increased by 2% from 31,900 in 2005 to 32,700 in 2006. The increase was similar to the 3% increase in all structure fires. Fires in vacant homes increased more than vacant building fires overall. Vacant home fires increased 11% from 18,900 in 2005 to 21,000 in 2006 compared to a 4% increase in overall home fires during the same period. The U.S. Census Bureau's Housing Vacancy Survey found that the number of vacant housing units grew by 5% from 15.7 million in 2005 to 16.4 million in 2006, by 7% from 2006 to 17.7 million in 2007, and by 6% from 2007 to 18.7 million units in 2008.

During 2003-2006, 63% of the reported vacant building fires occurred in homes, including 58% in one-or two-family dwellings and 5% in apartments or multiple family properties. Home fires overall (including both vacant and occupied), accounted for 73% of reported structure fires during this time.¹

Vacant buildings should be secured and combustible materials removed. Section 10.13 of the 2009 edition of NFPA® 1, *Fire Code* requires owners or those in charge of vacant properties to remove waste and combustible materials and to secure the building to prevent unauthorized people from entering. Fire protection systems are to be maintained unless the authority having jurisdiction grants permission to have them removed from service. Despite these requirements, half of the reported vacant building fires were in properties that were unsecured.

Automatic extinguishing equipment was found in only 2% of vacant building fires. The equipment operated in two-thirds (68%) of fires considered large enough to activate the equipment, but failed to operate in 31%. In 82% of the fires in which the equipment failed to operate, the system had been shut off.

Fires in vacant buildings pose a danger to the neighborhood. Flame damage spread beyond the structure in 9% of the fires in secured vacant properties and 12% of unsecured properties, compared to only 3% of structure fires overall.

Fires in vacant buildings are more likely to have been intentionally set than other structure fires. Forty-three percent of reported vacant building fires during this period were intentionally set, compared to 10% of structure fires overall. Vacant buildings accounted for 25% of all intentionally set structure fires. Intentional fires were much more common in unsecured vacant properties (57%) than in those that had been secured (31%). Other leading causes of vacant building fires were exposure to other fires (8%), heating equipment (also 8%), electrical distribution or lighting equipment (7%), cooking equipment (5%), someone, typically a child, playing with heat source (4%), and smoking

materials (3%). When equipment is listed as the cause of the fire, it means that the equipment provided the heat that started the fire. It does not mean that the equipment malfunctioned or failed. Hot embers and ashes were the most common heat source in vacant building fires.

Vacant building fires are more common on weekends and less common between 6:00 a.m. and noon. Vacant building fires were spread out throughout the year, but certain holidays with some more raucous traditions stand out. The four peak days were July 4, July 5, January 1, and October 31.

Vacant building fires pose a threat to firefighters. During the ten-year period 1998-2007, a total of 15 firefighters were fatally injured at the scene of vacant structure fires. On average, 4,500 firefighters were injured at vacant building fires annually during 2003-2006. These account for 13% of the reported firefighter injuries incurred at structure fires per year during this period.

InterFire has a number of resources related to vacant building fires and fire prevention on its [website](#), including a draft ordinance to address blight. The best way to prevent vacant building fires is to prevent vacant buildings. The [National Vacant Properties Campaign's website](#) describes a number of strategies to address the problem of vacant properties and provides examples of how these strategies have been used. Based on the findings of the Urban Fire Safety Project, NFA recommends that local fire departments and the national fire service partner with financial institutions and other organizations to prevent home foreclosures and home abandonment.² Vacant building arson is also addressed in the Arson Prevention PowerPoint Presentation developed by NFA and Columbus Division of Fire. [The presentation, intended for use by local fire departments and community organizations is available.](#)

¹Marty Ahrens. *Home Structure Fires*, Quincy, MA: National Fire Protection Association, 2009, p. 3.

²Robert Adams, Judy Comoletti, Sharon Gamache, John Hall, and Pat Mieszala. *Urban Fire Safety Project: Report to the NFA Board of Directors and the Metropolitan Fire Chiefs Association*, November 2007, p. 26, online at http://www.nfpa.org/assets/files//PDF/Member%20Sections/Urban_Report.pdf.

