



RESEARCH

Home Fires Started by Smoking **Supporting Tables**

January 2019

Marty Ahrens

Home Fires Started by Smoking: Supporting Tables

The tables in this document are a companion to the report of the same name. Firefighter deaths and injuries are excluded from this analysis.

Most tables, with the exception of fires by year show estimates of 2012-2016 annual averages. Estimates were derived from the U.S. Fire Administration’s [National Fire Incident Reporting System \(NFIRS\)](#) and NFPA’s annual fire department experience survey and include proportional shares of unknown or missing data. Fires are rounded to the nearest 100, deaths and injuries are rounded to the nearest ten, and property loss is rounded to the nearest million dollars. Inflation adjustments were made only for the trend table. Percentages were calculated on unrounded estimates.

NFIRS 5.0 includes a category of structure fires collectively referred to as “confined fires,” identified by NFIRS incident type codes 113-118. These include confined cooking fires, confined chimney or flue fires, confined trash fires, confined fuel burner or boiler fires. Losses are generally minimal in these fires, which by definition, are assumed to have been limited to the object of origin. Although causal data is not required for these fires, it is sometimes present. To obtain estimates of fires, unknown data for confined and non-confined fires were analyzed separately and the results summed.

For more information on how these estimates were calculated, please see the full report and [“How NFPA’s National Estimates Are Calculated for Home Structure Fires.”](#)

List of Tables

Table	Home Structure Fires Started by Smoking Materials	Page
Table 1.	By Year	2
Table 2.	By Item First Ignited	4
Table 3.	By Area of Origin	6
Table 4.	By Extent of Fire Spread	8

Table 1. Home Structure Fires Started by Smoking Materials, by Year

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Millions) As Reported	Damage (in Millions) In 2016 Dollars
1980	70,800	1,820	4,190	\$314	\$915
1981	64,700	1,980	4,030	\$307	\$808
1982	52,400	1,680	3,710	\$332	\$824
1983	45,300	1,510	3,680	\$266	\$640
1984	45,600	1,480	3,340	\$310	\$714
1985	44,900	1,580	3,330	\$304	\$677
1986	42,500	1,350	2,980	\$301	\$659
1987	39,800	1,380	3,100	\$282	\$595
1988	38,900	1,570	3,570	\$300	\$609
1989	34,000	1,190	2,970	\$276	\$534
1990	30,800	1,150	2,930	\$320	\$588
1991	29,900	880	2,730	\$398	\$701
1992	28,000	1,000	2,740	\$231	\$395
1993	27,200	980	2,850	\$300	\$498
1994	26,300	840	2,380	\$294	\$476
1995	25,400	1,040	2,230	\$308	\$485
1996	26,600	1,090	2,480	\$316	\$483
1997	23,300	870	1,990	\$320	\$478
1998	23,200	850	2,010	\$308	\$454
1999	26,200 (25,100)	830 (830)	1,980 (1,900)	\$404 (\$402)	\$581
2000	18,800 (17,300)	860 (860)	1,990 (1,990)	\$480 (\$479)	\$669
2001	18,000 (15,300)	760 (760)	1,390 (1,360)	\$358 (\$358)	\$485
2002	20,100 (15,400)	610 (610)	1,280 (1,250)	\$393 (\$391)	\$524
2003	18,300 (13,300)	690 (690)	1,320 (1,280)	\$402 (\$400)	\$524
2004	19,300 (12,900)	710 (710)	1,210 (1,200)	\$369 (\$368)	\$469
2005	18,700 (12,700)	740 (740)	1,250 (1,190)	\$456 (\$455)	\$560
2006	21,600 (14,700)	690 (690)	1,360 (1,280)	\$494 (\$493)	\$588
2007	19,200 (13,900)	650 (650)	1,270 (1,230)	\$406 (\$404)	\$469
2008	18,400 (13,200)	620 (620)	1,250 (1,230)	\$524 (\$524)	\$584
2009	16,900 (12,100)	590 (590)	1,200 (1,160)	\$590 (\$589)	\$659
2010	17,500 (13,100)	540 (540)	1,320 (1,300)	\$535 (\$534)	\$589
2011	17,600 (13,300)	490 (490)	1,370 (1,350)	\$516 (\$515)	\$551
2012	21,300 (16,300)	620 (620)	1,220 (1,200)	\$630 (\$628)	\$659
2013	18,100 (13,400)	590 (590)	1,200 (1,160)	\$502 (\$501)	\$516
2014	17,200 (12,900)	570 (570)	1,140 (1,120)	\$426 (\$423)	\$431
2015	17,300 (13,100)	530 (530)	1,050 (1,020)	\$462 (\$461)	\$468
2016	16,500 (12,800)	660 (660)	1,060 (1,010)	\$372 (\$370)	\$372

**Table 1. Home Structure Fires Started by Smoking Materials, by Year
(Continued)**

Note: Numbers in parentheses exclude fires with incident types indicating structure fires confined to trash, cooking vessel, chimney or flue, fuel burner or boilers, commercial compactors or incinerators (collectively called “confined fires.”) These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. National estimates are projections. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Fires are rounded to the nearest hundred, casualties are rounded to the nearest ten and property damage is rounded to the nearest million. Estimates include a proportional share of fires with heat source unknown or unknown between smoking material and open flame. *Because of low participation in NFIRS Version 5.0 during 1999-2001, estimates for those years are highly uncertain and must be used with caution.* Estimates are calculated separately for non-confined fires and confined fires.

Source: NFIRS Version 4.1 (1980-1998), and Version 5.0 (1999-2016) from NFPA’s fire experience survey.

Table 2.
Home Structure Fires Started by Smoking Materials, by Item First Ignited
2012-2016 Annual Averages

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Rubbish, trash, or waste	3,900	(22%)	20	(3%)	80	(7%)	\$59	(12%)
Non-confined	1,500	(9%)	20	(3%)	70	(6%)	\$58	(12%)
Confined	2,400	(13%)	0	(0%)	10	(1%)	\$1	(0%)
Mattress or bedding	1,800	(10%)	170	(29%)	330	(29%)	\$56	(12%)
Non-confined	1,700	(9%)	170	(29%)	330	(29%)	\$56	(12%)
Confined	100	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Exterior wall covering or finish	1,400	(8%)	0	(0%)	20	(2%)	\$44	(9%)
Non-confined	1,400	(8%)	0	(0%)	20	(2%)	\$44	(9%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Upholstered furniture	1,300	(7%)	220	(38%)	240	(21%)	\$64	(13%)
Non-confined	1,200	(7%)	220	(38%)	240	(21%)	\$64	(13%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Structural member or framing	1,000	(5%)	0	(0%)	10	(1%)	\$18	(4%)
Non-confined	1,000	(5%)	0	(0%)	10	(1%)	\$18	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Light vegetation, including grass	900	(5%)	0	(0%)	10	(1%)	\$30	(6%)
Non-confined	700	(4%)	0	(0%)	10	(1%)	\$30	(6%)
Confined	100	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Box, carton, bag, basket, or barrel	700	(4%)	10	(1%)	20	(2%)	\$20	(4%)
Non-confined	500	(3%)	10	(1%)	20	(2%)	\$20	(4%)
Confined	200	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Unclassified organic materials	700	(4%)	0	(0%)	20	(2%)	\$36	(7%)
Non-confined	600	(3%)	0	(0%)	20	(2%)	\$36	(7%)
Confined	100	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Unclassified item first ignited	700	(4%)	10	(2%)	50	(4%)	\$27	(6%)
Non-confined	500	(3%)	10	(2%)	40	(4%)	\$27	(6%)
Confined	200	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Unclassified structural component or finish	600	(3%)	0	(0%)	10	(1%)	\$13	(3%)
Non-confined	600	(3%)	0	(0%)	10	(1%)	\$13	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Exterior trim, including doors	500	(3%)	0	(0%)	10	(0%)	\$8	(2%)
Non-confined	500	(3%)	0	(0%)	10	(0%)	\$8	(2%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Magazine, newspaper, or writing paper	500	(3%)	10	(2%)	20	(2%)	\$7	(1%)
Non-confined	200	(1%)	10	(2%)	20	(2%)	\$7	(1%)
Confined	300	(1%)	0	(0%)	0	(0%)	\$0	(0%)

Table 2.
Home Structure Fires Started by Smoking Materials, by Item First Ignited
2012-2016 Annual Averages
(Continued)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified furniture or utensil	500	(3%)	30	(6%)	40	(4%)	\$19	(4%)
Non-confined	400	(2%)	30	(6%)	40	(4%)	\$19	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Multiple items first ignited	500	(3%)	10	(2%)	30	(2%)	\$14	(3%)
Non-confined	300	(2%)	10	(2%)	20	(2%)	\$14	(3%)
Confined	200	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Clothing	400	(2%)	30	(6%)	50	(5%)	\$7	(1%)
Non-confined	400	(2%)	30	(6%)	50	(5%)	\$7	(1%)
Confined	100	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Floor covering rug, carpet, or mat	400	(2%)	10	(2%)	20	(2%)	\$13	(3%)
Non-confined	400	(2%)	10	(2%)	20	(2%)	\$13	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Other known item first ignited	2,200	(12%)	50	(8%)	160	(14%)	\$42	(9%)
Non-confined	1,700	(9%)	50	(8%)	160	(14%)	\$42	(9%)
Confined	600	(3%)	0	(0%)	0	(0%)	\$0	(0%)
Total	18,100	(100%)	590	(100%)	1,130	(100%)	\$476	(100%)
Non-confined	13,700	(76%)	590	(100%)	1,100	(97%)	\$475	(100%)
Confined	4,400	(24%)	0	(0%)	30	(3%)	\$2	(0%)
The following items were first ignited in fewer than 2% of the fires but at least 2% of the deaths.								
Flammable or combustible liquids or gases, piping or filter			20	(4%)				
Unclassified soft goods or wearing apparel			10	(2%)				

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. National estimates are projections. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Fires are rounded to the nearest ten, civilian deaths and civilian injuries to the nearest one and direct property damage to the nearest million dollars. Damage has not been adjusted for inflation. Estimates include a proportional share of fires with heat source unknown, fires unknown between smoking material and open flame source, and smoking-material fires with unknown item first ignited. Totals may not equal sums because of rounding. Statistics are calculated separately for non-confined fires and confined fires, i.e., fires with incident types that indicated they were confined to trash, cooking vessel, chimney or flue, fuel burner or boiler, commercial compactor or incinerator.

Source: NFIRS 5.0 and NFPA's fire experience survey.

Table 3.
Home Structure Fires Started by Smoking Materials, Area of Origin
2012-2016 Annual Averages

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Property Damage (in Million)	
Exterior balcony or unenclosed porch	3,300	(18%)	20	(3%)	60	(6%)	\$118	(25%)
Non-confined	2,900	(16%)	20	(3%)	60	(6%)	\$118	(25%)
Confined	300	(2%)	0	(0%)	0	(0%)	\$0	(0%)
Bedroom	2,700	(15%)	200	(34%)	450	(39%)	\$76	(16%)
Non-confined	2,400	(13%)	200	(34%)	430	(38%)	\$76	(16%)
Confined	300	(2%)	0	(0%)	10	(1%)	\$0	(0%)
Living room, family room or den	1,300	(7%)	250	(43%)	260	(23%)	\$50	(10%)
Non-confined	1,100	(6%)	250	(43%)	250	(22%)	\$50	(10%)
Confined	200	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Courtyard, terrace, or patio	1,200	(6%)	10	(1%)	20	(2%)	\$32	(7%)
Non-confined	900	(5%)	10	(1%)	20	(2%)	\$32	(7%)
Confined	200	(1%)	0	(0%)	0	(0%)	\$1	(0%)
Unclassified outside area	1,000	(6%)	0	(0%)	10	(1%)	\$24	(5%)
Non-confined	600	(3%)	0	(0%)	10	(1%)	\$24	(5%)
Confined	400	(2%)	0	(0%)	0	(0%)	\$0	(0%)
Exterior wall surface	1,000	(5%)	0	(0%)	10	(1%)	\$19	(4%)
Non-confined	900	(5%)	0	(0%)	10	(1%)	\$19	(4%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Kitchen or cooking area	800	(5%)	10	(2%)	40	(3%)	\$23	(5%)
Non-confined	400	(2%)	10	(2%)	30	(3%)	\$23	(5%)
Confined	500	(3%)	0	(0%)	0	(0%)	\$0	(0%)
Garage or vehicle storage area*	800	(4%)	0	(1%)	40	(3%)	\$29	(6%)
Non-confined	600	(3%)	0	(1%)	40	(3%)	\$29	(6%)
Confined	200	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Bathroom or lavatory	800	(4%)	0	(1%)	40	(3%)	\$4	(1%)
Non-confined	400	(2%)	0	(1%)	40	(3%)	\$4	(1%)
Confined	400	(2%)	0	(0%)	0	(0%)	\$0	(0%)
Exterior stairway, ramp, or fire escape	800	(4%)	0	(0%)	10	(1%)	\$13	(3%)
Non-confined	700	(4%)	0	(0%)	10	(1%)	\$13	(3%)
Confined	100	(1%)	0	(0%)	0	(0%)	\$0	(0%)
Trash or rubbish chute, area or container	700	(4%)	0	(0%)	10	(1%)	\$3	(1%)
Non-confined	100	(0%)	0	(0%)	0	(0%)	\$2	(1%)
Confined	600	(3%)	0	(0%)	0	(0%)	\$0	(0%)
Unclassified function area	600	(3%)	60	(10%)	70	(7%)	\$21	(4%)
Non-confined	400	(2%)	60	(10%)	70	(7%)	\$21	(4%)
Confined	100	(1%)	0	(0%)	0	(0%)	\$0	(0%)

* Excludes garages coded as separate properties.

Table 3.
Home Structure Fires Started by Smoking Materials, Area of Origin
2012-2016 Annual Averages
(Continued)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Property Damage (in Million)	
Unclassified means of egress	300	(2%)	0	(0%)	10	(1%)	\$3	(1%)
Non-confined	200	(1%)	0	(0%)	10	(1%)	\$3	(1%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0	(0%)
Other known area of origin	2,900	(16%)	30	(6%)	110	(10%)	\$60	(13%)
Non-confined	2,000	(11%)	30	(6%)	110	(9%)	\$60	(13%)
Confined	900	(5%)	0	(0%)	0	(0%)	\$0	(0%)
Total	18,100	(100%)	590	(100%)	1,130	(100%)	\$476	(100%)
Non-confined	13,700	(76%)	590	(100%)	1,100	(97%)	\$475	(100%)
Confined	4,400	(24%)	0	(0%)	30	(3%)	\$2	(0%)
Although fewer than 2% of the fires began in the following areas of origin, these fires caused at least 2% of the deaths.								
Dining room			10	(2%)				

*Excludes garages coded as separate properties.

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Fires are rounded to the nearest ten, civilian deaths and civilian injuries are expressed to the nearest one and direct property damage is rounded to the nearest million dollars. Damage has not been adjusted for inflation. Figures include a proportional share of fires with heat source unknown, or unknown between smoking material and open flame, and smoking-material fires with unknown area of origin. Totals may not equal sums because of rounding. Statistics are calculated separately for non-confined fires and confined fires, i.e., fires with incident types that indicated they were confined to trash, cooking vessel, chimney or flue, fuel burner or boiler, commercial compactor or incinerator.

Source: NFIRS 5.0 and NFPA's fire experience survey

Table 4.
Home Structure Fires Started by Smoking Materials, by Extent of Fire Spread
2012-2016 Annual Averages

Extent of Flame Damage	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	4,400	(24%)	0	(0%)	30	(3%)	\$2	(0%)
Confined to object of origin	2,600	(15%)	40	(7%)	120	(10%)	\$12	(3%)
Confined to room of origin	5,400	(30%)	230	(39%)	500	(44%)	\$66	(14%)
Confined to floor of origin	1,800	(10%)	80	(13%)	130	(12%)	\$55	(12%)
Confined to building of origin	3,500	(19%)	220	(37%)	300	(27%)	\$286	(60%)
Extended beyond building of origin	400	(2%)	30	(5%)	60	(5%)	\$56	(12%)
Total	18,100	(100%)	590	(100%)	1,130	(100%)	\$476	(100%)

Note: These are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. National estimates are projections. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Fires are rounded to the nearest ten, civilian deaths and civilian injuries are expressed to the nearest one and direct property damage is rounded to the nearest million dollars. Damage has not been adjusted for inflation. Figures include a proportional share of fires with non-confined structure fire incident types and with heat source unknown, or unknown between smoking material and open flame, and smoking-material fires with unknown extent of fire spread. Totals may not equal sums because of rounding.

Confined fires identified by incident type include structure fires confined to trash, cooking vessel, chimney or flue, fuel burner or boiler, commercial compactor or incinerator. All of these were assumed to be confined to the object of origin. Some fires with “non-confined” incident types were also confined to the object of origin.

Source: NFIRS 5.0 and NFPA’s fire experience survey.

Acknowledgements

The National Fire Protection Association thanks all the fire departments and state fire authorities who participate in the National Fire Incident Reporting System (NFIRS) and the annual NFPA fire experience survey. These firefighters are the original sources of the detailed data that make this analysis possible. Their contributions allow us to estimate the size of the fire problem.

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

To learn more about research at NFPA visit www.nfpa.org/research.
 E-mail: research@nfpa.org.

NFPA No. USS10ST