

# Structure fire

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A **structure fire** is a fire involving the structural components of various types of residential, commercial or industrial buildings. Residential buildings range from single-family detached homes and townhouses to apartments and tower blocks, or various commercial buildings ranging from offices to shopping malls. This is in contrast to "room and contents" fires, chimney fires, vehicle fires, wildfires or other outdoor fires.

Structure fires typically have a similar response from the fire department that include engines, ladder trucks, rescue squads, chief officers, and an EMS unit, each of which will have specific initial assignments. The actual response and assignments will vary between fire departments.

It is not unusual for some fire departments to have a pre-determined mobilisation plan for when a fire incident is reported in certain structures in their area. This plan may include mobilising the nearest aerial firefighting vehicle to a tower block, or a foam-carrying vehicle to structures known to contain certain hazardous chemicals.



A structure fire in Massueville, Canada

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## Types (United States)

In the United States, according to NFPA, structures are divided into five construction types for the purposes of firefighting, and are listed from least combustible to most combustible:

Type I: Fire Resistive	Typically used in high-rises. The material comprising the structure is either inherently able to withstand significant exposure to fire (concrete), or in which a fire resistive covering is applied to steel structural members.
Type II: Non-combustible	Typically used in strip shopping center malls. Roofs are constructed out of steel rafters.
Type III: Ordinary construction	Brick and mortar walls, wood frame floors. City rowhouses are where this type of construction is most often found.
Type IV: Heavy timber	Often used in churches or other community-based buildings.
Type V: Wood frame	Typically used in recent construction of single-family dwellings, townhouses, garden apartments with four floors or less.

## Causes of house fires

In a recent study, conducted by American Survey CO, for the period of 2005 - 2010, the causes of house fires across America were as follows:

- Appliances and electrical (stoves, microwaves, toasters, radiators, various heating systems, small appliances) - approximately 47%
- Gas leaks - around 5-7%
- Open flames (candles, fireplaces) - approximately 32%
- Children (there was, and still is, a dramatic decrease in these fires every year) - Around 10%
- Spreading of fires from house to house - approximately 3%

## References

## External links

- National Fire Protection Association (US) (<http://nfpa.org>)
- NFPA Research (<http://www.nfpa.org/categoryList.asp?categoryID=15&URL=Research>)
- Construction Types (<http://www.workingfire.net/misc7.htm>)
- Haung, Kai. 2009. Population and Building Factors That Impact Residential Fire Rates in Large U.S. Cities. Applied Research Project. Texas State University. <http://ecommons.txstate.edu/arp/287/>



Wikimedia Commons has media related to ***Burning buildings***.

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