

The ignition of a building can be caused by one of the following processes:

EXPOSURE TO WIND-BLOWN EMBERS (ALSO KNOWN AS FIREBRANDS)

Embers land on combustible materials and ignite. These can be materials that are adjacent to a building, such as landscaping material, organic material that has accumulated on a roof or in a gutter, or the building materials themselves (such as a wood shake roof or siding).



Indirect ignition. Debris in the gutters was ignited by embers.

DIRECT FLAME CONTACT

This occurs when flames are in direct contact with the structure, igniting combustible building materials. Direct flame contact is the most aggressive type of fire spread, which can be caused by ember deposition on a vulnerable material.



Direct ignition. Embers have accumulated and ignited combustible wood shake siding.

RADIANT HEAT EXPOSURE

Radiant heat is the thermal energy that you feel when standing next to a fire. As this energy is transferred to nearby materials, their temperature rises, and a vulnerable material will ignite once a critical temperature is reached. In this scenario, the heat source can be a burning woodpile, outbuilding, shrub, or the approach of the fire front itself.



Radiant heat. Here an infrared burner is used to simulate the radiant heat from flame.



Radiant heat. The radiant heat caused the glass to break and the window frame to ignite.