



# Fencing

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## Material, Installation and Maintenance Choices

### RESEARCH FINDINGS:

**1** Use a noncombustible fence section when it's attached to a building.

**2** The area at the base of the fence should be kept clear of debris. Flame spread to the building will be more likely if fine vegetative fuels (e.g., pine needles, leaf litter and small twigs) have accumulated. Avoid placement of combustible mulch near the fence.

**3** A fence design that allows for greater air flow, such as a single panel lattice fence, makes it more difficult for wind-blown embers to accumulate at plank, or lattice panel to horizontal support locations. If an ignition occurs, it's also more difficult for lateral flame spread to occur in the fencing material. Fence ignitions from wind-blown embers are more likely to occur at locations where vertical fencing planks attach to horizontal support members. The most vulnerable fencing from this perspective is a "privacy" fence, where the fence planks are on the same side as the horizontal support members.

**4** A fence built from lattice that's applied to both sides of the support posts may be desired for privacy or other landscaping purposes, but should be avoided in wildfire-prone areas. Recent research at NIST has demonstrated that fire growth and lateral flame spread are much greater in this design style.

**5** Vinyl fencing is not vulnerable to ember exposures alone, but did burn when subjected to flaming exposures from burning debris. Vinyl fencing will deform if subjected to radiant heat.

### NONCOMBUSTIBLE FENCING PRODUCTS REDUCE POTENTIAL HOME IGNITIONS

Many wildfire educational programs, along with the Insurance Institute for Business & Home Safety (IBHS) recommend noncombustible fencing products when placed within five feet of a building. As a necessary component, fencing located within the zero to five-foot noncombustible zone should be constructed of noncombustible materials.

A noncombustible zone minimizes the likelihood of wind-blown embers igniting fine fuels (such as bark mulch) located close to the building. Ember-ignited mulch can result in a radiant heat and/or flaming exposure to the building's exterior. Using noncombustible fencing where it attaches to the building reduces the opportunity of a burning fence igniting the exterior of the structure. Fencing products are often available in eight-foot pieces and use of that full section of noncombustible material is recommended. Observations made during the 2012 Waldo Canyon fire in Colorado Springs, CO provided evidence that burning fencing generates embers that can result in additional ignitions down-wind.

### PERIMETER FENCING

When neighboring buildings are located within 20 feet of each other, use of steel fencing for the perimeter area can serve as a radiant barrier, providing added protection should a neighboring building ignite and burn. Research in Australia demonstrated the ability of panelized steel fencing to resist a radiant heat exposure.

### RESEARCH FINDINGS TO HELP AVOID FENCE IGNITIONS

Recent research conducted by IBHS and the National Institute of Standards and Technology (NIST), both independently and in a collaborative project, provided additional information about the vulnerability of combustible fencing.

#### Photo Captions:

- A** Flame spread to the building when combustible debris was at the base of the fence.
- B** Gates made from noncombustible materials should be used where a fence is attached to the home. Source: University of California, Agriculture and Natural Resources
- C** Ignition from ember accumulation at the intersection of the vertical planks and horizontal support member.



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