



WOODSIDE FIRE PROTECTION DISTRICT

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DON BULLARD – FIRE MARSHAL

Wildfire Protection with Sprinklers

Many homeowners ask Woodside Fire for recommendations on exterior foam, gel, and sprinkler systems. Although many seem to believe these are a "common sense" solution, their potential use cases are limited, and there are many considerations that must be balanced before installing such a system. First and foremost: home hardening, using ignition resistant and non-combustible materials, design, and construction is likely to be more effective, less expensive, and will increase the value and longevity of your home.

- Woodside Fire does not recommend any exterior sprinkler system which must be manually triggered on-site! You must evacuate early, and it is impossible to predict exactly when a home will be impacted by a wildfire.
- Exterior garden sprinklers are ineffective and can reduce critical water pressure for entire neighborhoods when many are turned on.
- Before installing any exterior protection system, consult with your local fire and building officials, and ensure that you have created an immaculate Defensible Space, and retrofitted all aspects of your building with the wildfire home hardening techniques.
- Beware of snake oil! Be alert for manufacturers overselling their products' capabilities and know that there are no magic solutions to protect an otherwise vulnerable home from wildfires.
- Retrofitting exterior materials and designs with home hardening techniques is likely to be more effective than any exterior sprinkler, foam, or gel system.
- Woodside Fire does not recommend any products.

Exterior Sprinkler Systems

Functionality and Installation

The function of an exterior sprinkler system is to minimize the opportunity for ignition by wetting the home and surrounding property. Sprinkler systems should be able to protect a home against the three basic wildfire exposures: wind-blown embers, radiant heat, and direct flame contact.

Sprinkler systems can be mounted in one or more locations, including:

- The roof
- Under the eave at the edge of the roof
- On the property, in which case the sprinklers are directed at the home from multiple locations surrounding it. Ember ignition of combustibles located on or near the home can result in a radiant and/or flame contact exposure. Water should reach all vulnerable areas for the system to have maximum effect both on and near the home.

Potential Issues

Post-fire assessments have shown exterior sprinkler systems can be effective in helping a home survive a wildfire, but potential issues exist with their use. These issues include:

- The water supply should be adequate to deliver water, when needed, for the time embers could threaten a home. This period could be up to 8 hours.
- The effectiveness of a sprinkler system is questionable when a neighboring home is burning since this would result in an extended radiant heat and/or contact exposure to the home.
- These systems can be activated manually or by an automated device, such as a sensor that detects heat or flame, or by an SMS-enabled cell phone. The ability of these systems to activate based strictly on an ember exposure has not been determined. Since wind-blown embers can be transported for up to a mile from the flame front of a wildfire, this may be a limitation.
- The most threatening wildfires occur during high-wind events and the homeowner should consider how the distribution/transport of water droplets may be influenced by elevated wind speeds.

Recommendations

Given the potential issues regarding performance, it is recommended that use be a supplement to, and not a replacement for, already proven mitigation strategies, such as the reduction of potential fuels throughout the home ignition zones, along with removal of roof and gutter debris, and use of noncombustible and fire/ember ignition resistant building materials and installation design details.

IMPORTANT NOTE

Interior sprinkler systems, designed to protect homes from interior fires, are extremely effective and save lives. They are required on most new construction in California. They provide no protection against wildfires.