Is Your Home Hardened to Survive a Wildfire Ember Storm?

FIRE HARDENED means your home is prepared for wildfire and an ember storm. It does not mean fireproof. Home hardening addresses the most vulnerable components of your house with building materials and installation techniques that increase resistance to heat, flames, and embers that accompany most wildfires.

Learning to live with wildfire includes taking steps to reduce the risk to homes. Homes built to modern (2008 or later) building codes, with an adjacent and well-maintained defensible space, have a much better chance of surviving wildfire. Maintenance and upgrades to older homes can significantly improve the chance of your home surviving a fire.

Part of learning to live with wildfire is understanding that we have some control in how we prepare for and address this hazard, and how we manage fire in our individual communities.

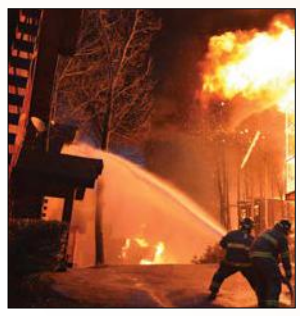
This brochure can help you better understand options for hardening your home and where to find more information.

How Homes Catch Fire

THREE WAYS YOUR HOME CAN BE EXPOSED TO FIRE

EMBER STORM

Embers are small pieces of burning material that can travel more than a mile ahead of a wildfire. They can create spot fires when they land on combustible materials, such as leaves in your gutter or plants under your windows.



RADIANT HEAT

Radiant heat generated from burning structures or plants can be hot enough to ignite a house without direct flame contact. This is particularly challenging in densely populated areas, where the heat from one burning home can ignite the next.

DIRECT FLAME

Depending on time and exposure, direct flame contact can ignite your home. The flaming front of a wildfire is often not hot enough to ignite a house, but plants under windows ignited by embers or direct flame can break glass, allowing fire to enter the house.

Embers are responsible for most damage during wildfires. They can accumulate on your home, deck, or porch and ignite plants, mulch, leaves, fencing, or furniture. They can also be forced into gaps in the home (e.g. attic vents or an open or broken window) and burn the home from the inside out. When this happens, there can be little damage to the surrounding vegetation, leaving people puzzled as to what caused the home to burn.

Embers cause the majority of wildfire home ignitions.

PHOTO CREDITS: INSURANCE INSTITUTE FOR BUSINESS & HOME SAFETY (above left); TENNESSEE DIVISION OF FORESTRY (center)

Home and Property

WE'VE LEARNED FROM RECENT FIRES. HARDENING YOUR HOME and keeping the 5 feet closest to your house clear of flammable materials (including patio furniture and décor) greatly improves its chance of surviving a fire.

Maintaining defensible space is the law within 100 feet of a home in wildfire-prone areas, and highly recommended elsewhere. If a garage, shed, your neighbor's house, or the property line is closer than 100 feet, it is especially important to harden your home to reduce vulnerability to radiant heat and to work together with your neighbors to reduce risk—a great way to build community while protecting assets.

See the *California Fire Safe Council, Defensible Space* brochure for more information.

KEY ELEMENTS OF DEFENSIBLE SPACE

- ✔ Keep your gutters and roofs clear of leaves and debris.
- ✔ Maintain a 5-foot noncombustible zone around your home and deck.
- ✔ Break up fuel by creating space between plants, and between the ground and the branches of trees.
- ✔ Mow grass to a height of 4 inches.
- ✔ Keep mulch away from the house. Bark mulch helps plants retain water but ignites and becomes flying embers during a wind-driven fire.
- ✔ During a wildfire move anything burnable—such as patio furniture or gas BBQ tanks—30 feet away from structures.

Helpful Resources

The **CALIFORNIA FIRE SAFE COUNCIL** (CFSC) helps coordinate a strong network of partnerships with local, regional, state, and national organizations in order to help California residents acquire the education, resources, and tools they need to be better prepared for wildfire.

For more information:
FireSafeCouncil.org • *ReadyForWildfire.org*

Contact your local Fire Safe Council to get involved.

For building codes in California, visit Office of the State Fire Marshal:
OSFM.Fire.ca.gov/CodeDevelopment/WildFireProtectionBuildingConstruction

Additional Hardened Home Information:
ReadyForWildfire.org/Hardening-Your-Home
DisasterSafety.org/ibhs/ibhs-Wildfire-Publications
UCANR.edu/Sites/Fire/Prepare/Building

Sign up for CAL FIRE Alerts:
ReadyForWildfire.org/Ready-for-Wildfire-App

Look for an emergency alert system in your county.

ALWAYS CALL 911 FOR EMERGENCIES

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Recommendations for Hardening Your Home to Better Survive Wildfire

EMBER-RESISTANT CONSTRUCTION RELIES ON BOTH MAINTAINING DEFENSIBLE SPACE AND HARDENING YOUR HOME. HERE ARE SOME THINGS YOU CAN DO TO HARDEN YOUR HOME TO MAKE IT MORE FIRE-RESISTANT.

YOUR TOP 3 PRIORITIES SHOULD BE YOUR ROOF, VENTS, AND NEAR-HOME VEGETATION.

1) Avoid combustible materials on the property, especially within the first five feet of the home.
2) Incorporate fire- and ember-resistant construction materials, installation details, and maintenance.
3) Be thoughtful about landscaping choices and maintenance.

THE ROOF has the greatest exposure to fire embers.

- ❑ Inspect and repair or replace your roof with tile, metal, asphalt, or shingles (materials with a Class-A fire rating).
- ❑ Plug gaps between your roof covering and sheathing to prevent ember entry.
- ❑ Install a metal drip edge (i.e., metal angle flashing) at the roof edge.
- ❑ Cover tile caps to prevent bird nesting.

VENTS can allow embers to enter a crawl space, the attic, soffit, or foundation.

- ❑ Upgrade vents with 1/8-inch metal mesh, or install vents approved to resist embers and flames (see resources).

EAVES AND SOFFITS with open-eave construction should be inspected.

- ❑ Wherever possible enclose open eaves.
- ❑ Caulk and plug gaps around exposed rafters and blocking.

WINDOWS can break from the heat, even before a home ignites, allowing burning embers or flames into the home.

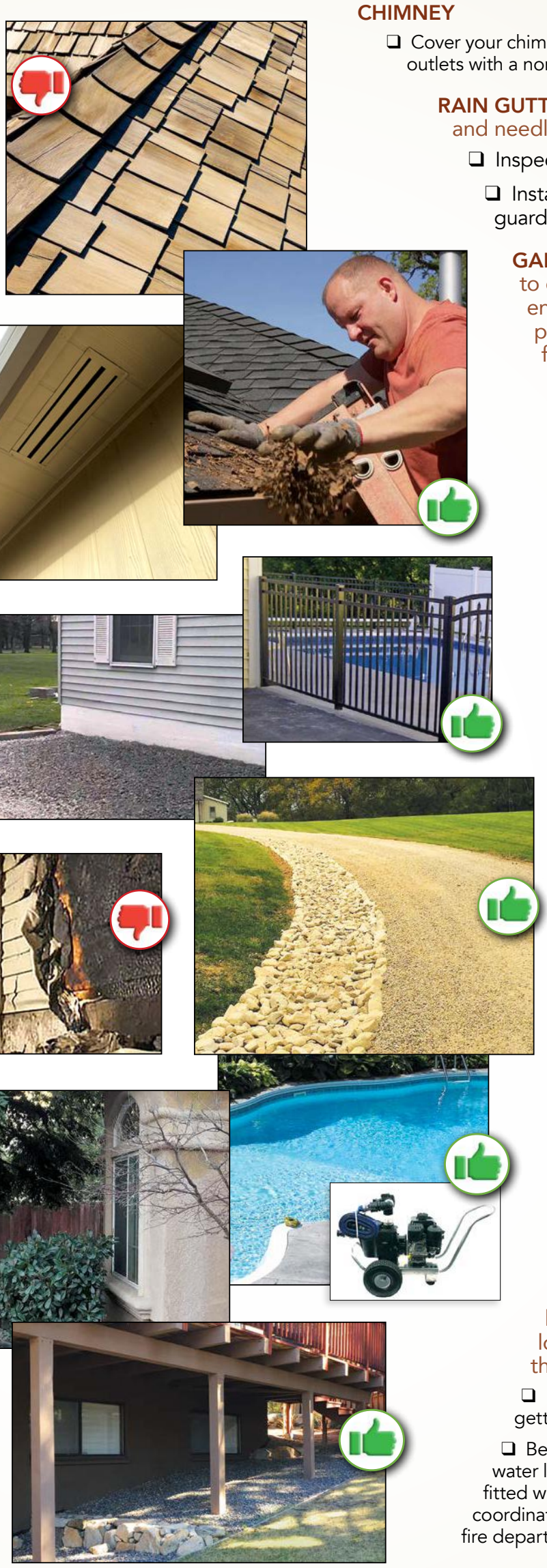
- ❑ Install or upgrade to multi-pane tempered glass.
- ❑ Ensure there is no vegetation or other combustible materials within 5 feet of windows and glass doors.

SIDING is vulnerable if exposed to flames or radiant heat for periods of time.

- ❑ Inspect all siding. Plug or caulk gaps and joints.
- ❑ Maintain 6 inches of vertical noncombustible material between the ground and the start of the siding.
- ❑ Replace shingle or shake siding with ignition-resistant materials.
- ❑ If a neighboring home or outbuilding is closer than 30 feet, be sure to use noncombustible or ignition-resistant materials.
- ❑ Use a noncombustible louvered or self-closing dryer vent cover.

DECKS are vulnerable to fires from embers igniting vegetation or materials near or below them.

- ❑ Ensure that all combustible items are removed from underneath, on, or next to your deck.
- ❑ Put a noncombustible layer between wood decks and siding.



CHIMNEY

- ❑ Cover your chimney and stovepipe outlets with a noncombustible mesh screen.

RAIN GUTTERS should be cleared of leaves and needles that embers can easily ignite.

- ❑ Inspect and clean gutters regularly.
- ❑ Install a noncombustible gutter guard to reduce accumulated debris.

GARAGES are especially vulnerable to embers and ash. Embers can enter a garage as easily as dust, potentially igniting a house from the inside.

- ❑ Install weather stripping, or gaskets, around and under the garage door to limit ember entry.
- ❑ Store all combustible and flammable liquids away from ignition sources.
- ❑ Know how to operate your garage door when there is no power.

FENCES

- ❑ Fences or gates that connect to structures should use noncombustible materials within 5 feet of the building, to prevent the fence from burning up to the structure.

DRIVEWAYS AND ACCESS ROADS should be built and maintained according to state and local codes so that emergency vehicles can safely reach your home.

- ❑ Maintain access roads with a minimum of 10 feet of clearance on either side.
- ❑ Ensure that all gates can open without power to accommodate emergency equipment.
- ❑ Trim overhanging trees up to 15 feet from the ground in order to allow emergency vehicles to pass.

ADDRESS

- ❑ Make sure your address is clearly visible from the road.

WATER SUPPLY can be enhanced by having multiple garden hoses long enough to reach all areas of the structures on your property.

- ❑ If you have a pool or well, consider getting a fuel-powered pump.
- ❑ Best practice is to provide a 2½-inch water line from a water tank to a standpipe fitted with 1½-inch fire hose fittings coordinated with your local fire department.

For best practices to protect your home and property, see the ***California Fire Safe Council, Defensible Space*** brochure.