



CAL FIRE

Office of the State Fire Marshal

Combining Home Hardening & Defensible Space

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Speaker Introduction

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Resources can be found at:

- <https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/>
- <https://www.fire.ca.gov/dspace/>
- <https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/defensible-space/>

Defensible space

The area adjacent to a structure where wildfire prevention or protection practices are implemented to provide defense from an approaching wildfire burning under average weather conditions or to minimize the spread of a structure fire to wildlands or surrounding areas.



Home Hardening

Home Hardening is the term used to describe vegetation management compliance and building materials, systems and/or assemblies used in the exterior design, construction or retrofitting of buildings to resist the intrusion of flames or embers projected by a wildland fire.



A house without home hardening vs with

Home Hardening

- The term Home Hardening can be applied to new construction or for retrofitting existing nonconforming structures in Wildland-Urban Interface (WUI) Fire Areas.
- Home Hardening also considers the relationship between the primary residence and its exposure to nearby combustibles. These nearby combustibles create fire pathways that can impact the primary structure.



Grass fire transitioned to fence > transitioned to a shed > transitioned to the primary residence.

What is the Difference Between Defensible Space and Home Hardening?

Not Much...



A Running Wildfire

Before

During

After



What does Defensible Space look like?

Before

After



Before

After



Home Hardening & Defensible Space Training and Education

<https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/>

In your search bar type www.readyforwildfire.org

→ Click on PREPARE → Click on Hardening Your Home

The screenshot shows the CAL FIRE website with the following elements:

- Header:** CAL FIRE logo and the text "WILDFIRE IS COMING... ARE YOU READY?"
- Navigation Menu:** HOME, PREPARE (highlighted with a yellow box and labeled "1."), PREVENT, POST WILDFIRE, WILDFIRE RESILIENCY, PERMIT.
- PREPARE FOR WILDFIRE HOME Section:**
 - READY, SET, GO!** (with sub-items: Seasonal Actions, RSG Campaign Toolkit)
 - GET READY** (highlighted with a yellow box):
 - Defensible Space (highlighted with a yellow box)
 - Defensible Space and Drought
 - 2. Hardening Your Home** (highlighted with a yellow box):
 - Fire Smart Landscaping
 - Firewise Communities
- Left Sidebar:** 171k Shares, social media icons for Facebook, Twitter, Pinterest, Email, and a share icon.
- Bottom:** "Use the CAL FIRE App: English | Español" and the CAL FIRE logo.



Low Cost Retrofit List and WUI Products Handbook



Low-Cost Retrofit List

Low-Cost Ways to Harden Your Home

1. When it is time to replace your roof, replace it with a Class A fire rated roof. [OFSM Wildland Urban Interface \(WUI\) Products](#)
2. Block any spaces between your roof covering and sheathing with noncombustible materials (bird stops).
3. Install a noncombustible gutter cover on gutters to prevent the accumulation of leaves and debris in the gutter.
4. Cover your chimney and stovepipe outlets with a noncombustible corrosion resistant metal mesh screen ([spark arrester](#)), with 3/8-inch to 1/2-inch openings.
5. Install ember and flame-resistant vents. [OFSM Wildland Urban Interface \(WUI\) Products](#)
6. Caulk and plug gaps greater than 1/8-inch around exposed rafters and blocking to prevent ember intrusion into the attic or other enclosed spaces.
7. Inspect exterior siding for dry rot, gaps, cracks, and warping. Caulk or plug gaps greater than 1/8-inch in siding and replace any damaged boards, including those with dry rot.
8. Install weather-stripping to gaps greater than 1/8-inch between garage doors and door frames to prevent ember intrusion. The weather-stripping must be compliant with UL Standard 10C.
9. When it's time to replace your windows, replace them with multi-paned windows that have at least one pane of tempered glass. [OFSM Wildland Urban Interface \(WUI\) Products](#)
10. When it's time to replace your siding or deck, use compliant noncombustible, ignition-resistant, or other [OFSM Wildland Urban Interface \(WUI\) Products](#)
11. Cover openings to operable skylights with noncombustible metal mesh screen with openings in the screen not to exceed 1/8-inch.
12. Install a minimum 6-inch metal flashing, applied vertically on the exterior of the wall at the deck-to-wall intersection to protect the combustible siding material.

*This list was developed as a best practices guide and to assist homeowners to ensure their home is more ignition-resistant from wildfires. Low cost can be subjective. Some of these items are based on upgrading to more stringent materials when that feature is up for replacement due to normal maintenance or lifespan, i.e. roofs.

Updated 2/17/2022

CALIFORNIA DEPARTMENT of FORESTRY
and FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL



STATE FIRE MARSHAL LISTED WILDLAND URBAN INTERFACE (WUI) PRODUCTS HANDBOOK

Published by **CAL-FIRE**
FIRE ENGINEERING AND INVESTIGATIONS DIVISION
BUILDING MATERIALS LISTING PROGRAM
December 14, 2021

- http://www.readyforwildfire.org/wp-content/uploads/Low-cost-Retrofit-List-Update-2_17_22-2.pdf
- <https://osfm.fire.ca.gov/media/5e4drz1r/2021-sfm-wui-listed-products-handbook-12-14-2021.pdf>



Low-Cost Ways to Create Defensible Space

- 1) Regularly clean your roof, gutters, decks, and the base of walls to avoid the accumulation of fallen leaves, needles, and other flammable materials (see Defensible Space Webpage for more details).
- 2) Ensure that all combustibles are removed from underneath, on top of, or within five feet of a deck.



Low-Cost Ways to Create Defensible Space

- 3) Remove vegetation or other combustible materials that are within five feet of windows and glass doors.
- 4) Replace wood mulch products within five feet of all structures with noncombustible products such as dirt, stone, or gravel.



Low-Cost Ways to Create Defensible Space

- 5) Remove all dead or dying grass, plants, shrubs, trees, branches, leaves, weeds, and pine needles within 30 feet of all structures or to the property line.
- 6) Ensure exposed firewood is stored at least 30 feet away from structures or completely covered in a fire-resistant material that will not allow embers to penetrate. Additionally, make sure you have 10 feet of clearance around your wood piles.



Low-Cost Ways to Create Defensible Space

- 7) Be sure to store combustible outdoor furnishings away from your home when not in use.
- 8) Remember to properly store retractable awnings and umbrellas when not in use so they do not collect leaves and embers



Fire Resistant Landscaping



Low-Cost Ways to Harden Your Home

- 1) When it is time to replace your roof, replace it with a Class A fire rated roof. OFSM Wildland Urban Interface (WUI) Products
- 2) Block any spaces between your roof covering and sheathing with noncombustible materials (bird stops).



Low-Cost Ways to Harden Your Home

- 3) Install a noncombustible gutter cover on gutters to prevent the accumulation of leaves and debris in the gutter.
- 4) Cover your chimney and stovepipe outlets with a noncombustible corrosion resistant metal mesh screen (spark arrestor), with 3/8-inch to 1/2-inch openings.



Low-Cost Ways to Harden Your Home

- 5) Install ember and flame-resistant vents. OFSM Wildland Urban Interface (WUI) Products
- 6) Caulk and plug gaps greater than 1/8-inch around exposed rafters and blocking to prevent ember intrusion into the attic or other enclosed spaces.



Low-Cost Ways to Harden Your Home

7) Inspect exterior siding for dry rot, gaps, cracks, and warping. Caulk or plug gaps greater than 1/8-inch in siding and replace any damaged boards, including those with dry rot.

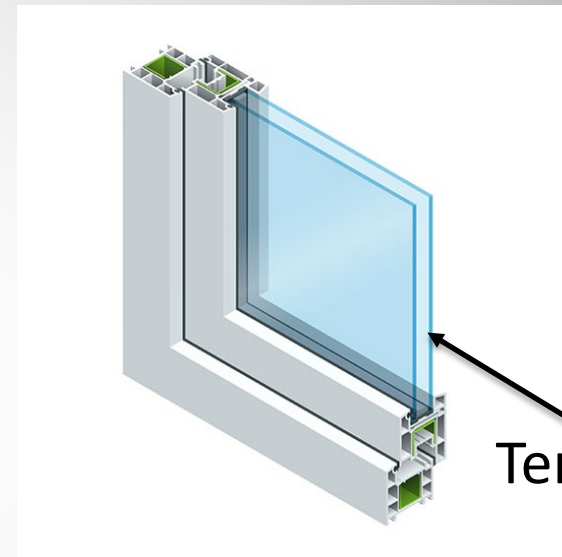


8) Install weather-stripping to gaps greater than 1/8-inch between garage doors and **door frames** to prevent ember intrusion. The weather-stripping must be compliant with UL Standard 10C.

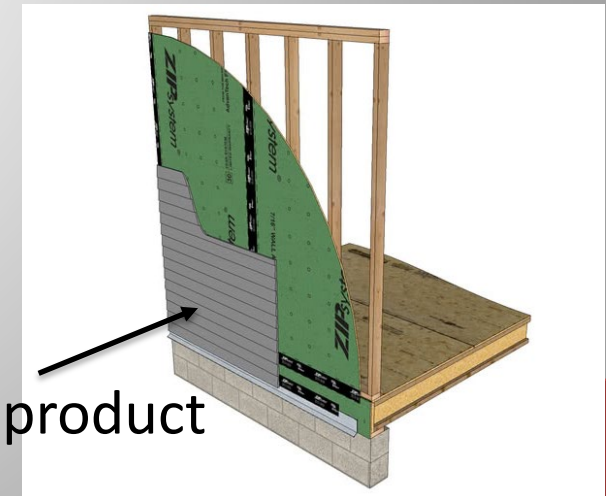


Low-Cost Ways to Harden Your Home

- 9) When it's time to replace your windows, replace them with multi-paned windows that have at least one pane of tempered glass. OFSM Wildland Urban Interface (WUI) Products
- 10) When it's time to replace your siding or deck, use compliant noncombustible, ignition-resistant, or other OFSM Wildland Urban Interface (WUI) Products



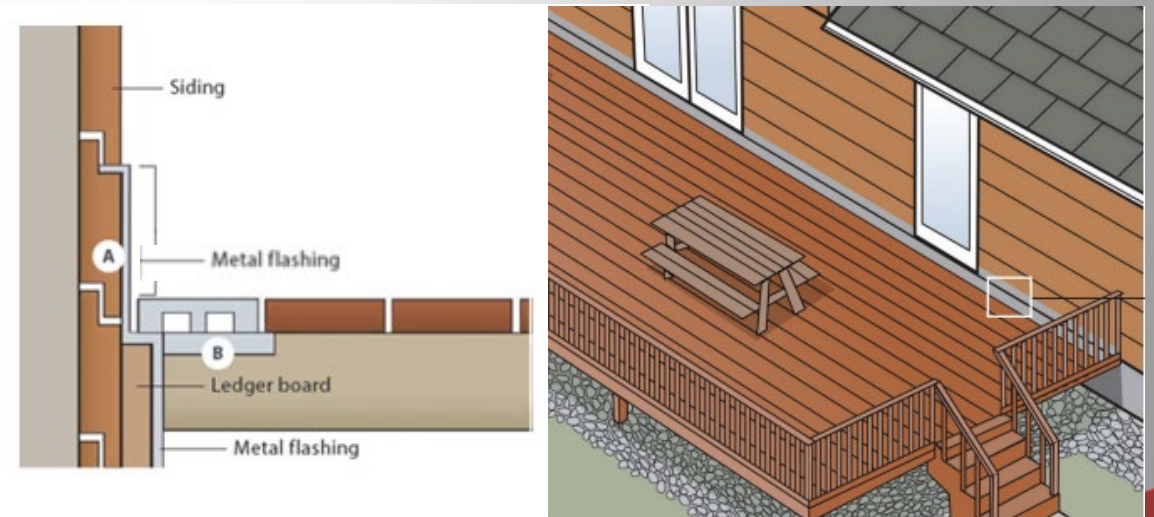
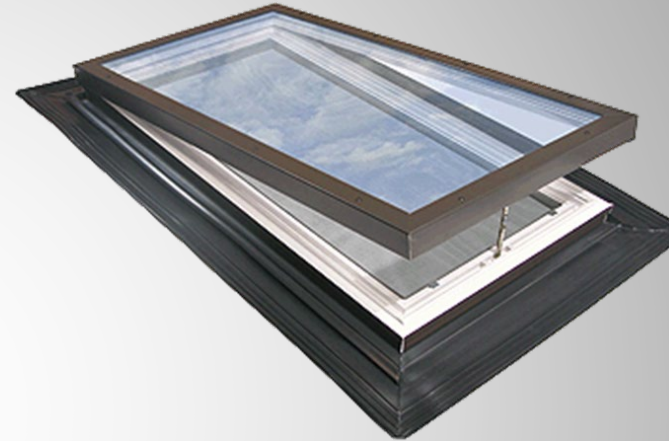
Tempered Glass



WUI compliant product

Low-Cost Ways to Harden Your Home

- 11) Cover openings to operable skylights with noncombustible metal mesh screen with openings in the screen not to exceed 1/8-inch.
- 12) Install a minimum 6-inch metal flashing, applied vertically on the exterior of the wall at the deck-to-wall intersection to protect the combustible siding material



Attached Fences

- Combustible attached fences can create a direct path for fire to spread to your home.
- Break this pathway by installing a noncombustible attached gate or fence to the first five feet.



Sheds – Auxiliary Buildings

- Remove or relocate sheds if the sheds size and its distance from your residence is closer than the recommended separation distance.

Shed Building Size	Separation Distance
Shed (>120 sq. ft.)	50 feet
Shed (64 – 120 sq. ft.)	40 feet
Shed (<64 sq. ft.)	30 feet



[NIST TN 2235](#)

Questions?

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Upcoming Webinars

Join us for our upcoming webinars!

- 3/13/2023 – CalSTATS program
- 3/27/2023 – Strategic Fire Plan and Unit Fire Plans
- 4/10/2023 – Summary of the 2022 fires and the Redbooks



More information on the webinar series can be found any time at osfm.fire.ca.gov/wildfire-public-education/

