



CASCADIA  
CONSERVATION DISTRICT

# Home Hardening Incentive Program

Practice Specifications

---

## About This Guide

This guide is designed as a complementary document for cooperators implementing and installing home hardening retrofits/replacements on their homes and/or structures. For each practice standard, there is a short narrative about what purpose the practice serves, and how to implement and maintain the practice. This is not a comprehensive list of home hardening retrofits/replacements, it is merely a companion to the home hardening practices available for an incentive payment through Cascadia Conservation District's Home Hardening Incentive Program.

For thorough guidance on home hardening retrofits/replacements and building wildfire-resilient homes visit these links:

➔ **Wildfire Home Retrofit Guide**

[https://www.tahoelivingwithfire.com/wp-content/uploads/2021/01/LWF\\_RetrofitGuide\\_Accessible\\_for\\_Web.pdf](https://www.tahoelivingwithfire.com/wp-content/uploads/2021/01/LWF_RetrofitGuide_Accessible_for_Web.pdf)

➔ **Wildland Fire Embers and Flames: Home Mitigations That Matter**

<https://ibhs1.wpenginepowered.com/wp-content/uploads/Home-Mitigations-that-Matter-FINAL.pdf>

➔ **Building a Wildfire-Resistant Home: Codes and Costs**

<https://headwaterseconomics.org/wp-content/uploads/building-costs-codes-report.pdf>

➔ **NFPA Firewise: Preparing Homes for Wildfire**

<https://www.nfpa.org/education-and-research/wildfire/preparing-homes-for-wildfire>

➔ **Firewise Construction: Site Design & Building Materials**

<https://static.colostate.edu/client-files/csfs/pdfs/firewise-construction2012.pdf>

## Table of Contents

CAULKING GAPS .....	3
DECK FOOTING PROTECTION.....	4
METAL FLASHING.....	5
METAL FLASHING - Examples .....	6
EMBER RESISTANT PERIMETER .....	7
EMBER RESISTANT PERIMETER - Examples .....	8
SCREENING UNDER DECK.....	9
SCREENING UNDER DECK - Examples.....	10
VENT REPLACEMENT/RETROFIT .....	11
WINDOW SCREENING .....	12
GUTTER COVERS.....	13
IGNITION RESISTANT FENCING .....	14

---

## CAULKING GAPS

### Practice Standards

#### DEFINITION

A permanent or temporary filler and sealant for cracks on the outside of a structure.

#### PURPOSE

Reducing the number of gaps and cracks on structures can reduce the risk of embers entering areas with ignition potential.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all structures where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

Fill gaps and cracks larger than 1/8" that may allow embers enter a structure. Any caulking material or brand can be used except for products labeled "combustible."

#### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 2 years. If caulking is damaged it must be reapplied for the duration of its lifespan. If not reapplied, the cooperators must pay back the District at a prorated rate.



---

## DECK FOOTING PROTECTION

### Practice Standards

#### DEFINITION

Deck footing protection is metal flashing attached to the bottom of wood beams on elevated decks.

#### PURPOSE

Deck footing protection helps reduce the risk of combustible wood posts igniting in the event of a wildfire.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to wood support posts on decks where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

Deck footing protection must be metal (steel or aluminum), either corrugated or flat sheets. Install at least 6” from the ground up, around bottom and all sides of deck support posts. All posts must have deck footing protection to meet practice specifications. Flashing must be flush to the post with no gaps where embers and debris can collect. If gaps are larger than 1/8”, use caulking or trim to seal gaps. If trim is used, it must be ignition resistant. Wood trim cannot be used. Any vegetation touching posts must be removed prior to application of flashing.

#### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 5 years. If deck footing is damaged it must be repaired for the duration of its lifespan. If not repaired, the cooperator must pay back the District at a prorated rate.





---

## METAL FLASHING

### Practice Standards

#### DEFINITION

Metal flashing is a permanent or temporary attachment along the bottom of structures or to close gaps under decks.

#### PURPOSE

Metal flashing is ignition resistant and helps to reduce the risk of combustible siding igniting as well as protecting vulnerable open storage areas from collecting embers during a wildfire event.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all structures where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

Flashing must be metal (steel or aluminum), either corrugated or flat sheets. Install a minimum 6" flashing around bottom of home, enclosing attached storage areas or open decks. Flashing must cover all sides of the structure. No gaps must remain where embers and debris can collect. Where flashing will be installed, vegetation must be removed prior to installation. If decks or porches are present on the first story of a structure being treated, metal flashing or screening must be used. Refer to **Screening Under Deck Practice Specification (Page 9)**. When enclosing a deck or porch with metal flashing or screening, all combustible material under the deck (tools, firewood, vegetation, etc.) must be removed. If trim is used along the top of the metal flashing it must be ignition resistant.

#### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 5 years. If metal flashing is damaged it must be repaired for the duration of its lifespan. If not repaired, the cooperator must pay back the District at a prorated rate.

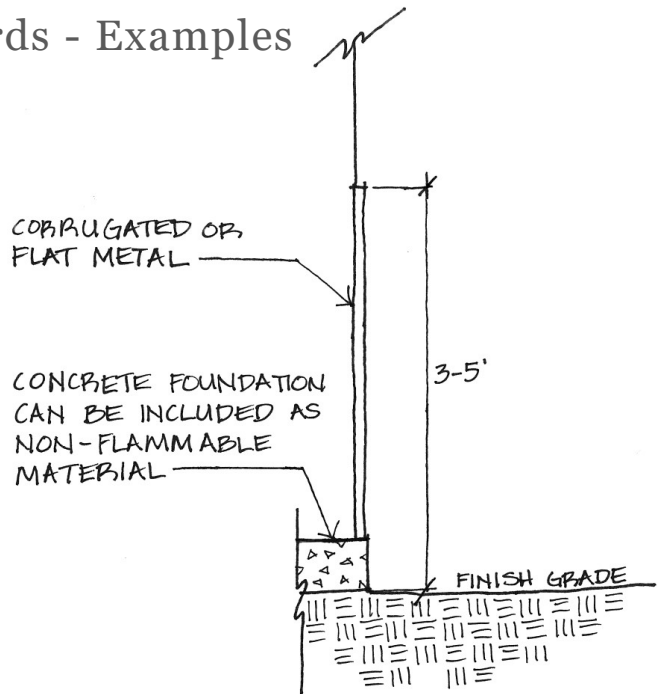


## METAL FLASHING

### Practice Standards - Examples



Do not put wood trim on top of metal flashing. Embers can collect on top. Use metal to ensure there are no gaps where embers may enter.





---

## EMBER RESISTANT PERIMETER Practice Standards

### DEFINITION

An ember resistant perimeter is a fuel break adjacent to a structure.

### PURPOSE

Removing and reducing fuels (debris, vegetation, etc.) adjacent to a structure reduces the risk of embers igniting the structure during a wildfire event.

### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all areas adjacent to structures where protection from wildfire is needed.

### PLANS AND SPECIFICATIONS

3-5' wide gravel perimeter applied around structures and under propane tanks. Gravel should be 3-4" deep. Weed barrier fabric, lawn edging, or pavers may be used in conjunction with gravel to prevent vegetation growth. No specification on the size of the gravel. Gravel must be installed on all sides of a structure and around all support posts (if applicable). If a structure has a first or second story deck, gravel must be applied under the deck and extend at least 1' past the drip line. See example drawing on **Page 8**. All vegetation, mulch, and debris must be removed within the 3-5' gravel perimeter prior to installation. Excavation of existing landscaping/soil for gravel prep is not to exceed 6" depth. Vegetation growing on any structure adjacent to gravel perimeter must be removed prior to installation. Fire resistant vegetation may be acceptable within the gravel perimeter with pre-approval by the District. Acceptable vegetation must be pruned, thinned, weeded, watered, and free of dead plant material and debris. A guide to fire resistant plants can be found here:

➔ [http://cascadiacd.org/images/site\\_graphics/FIRE-RESISTANT-PLANTS-BOOK-2017-sept.pdf](http://cascadiacd.org/images/site_graphics/FIRE-RESISTANT-PLANTS-BOOK-2017-sept.pdf)

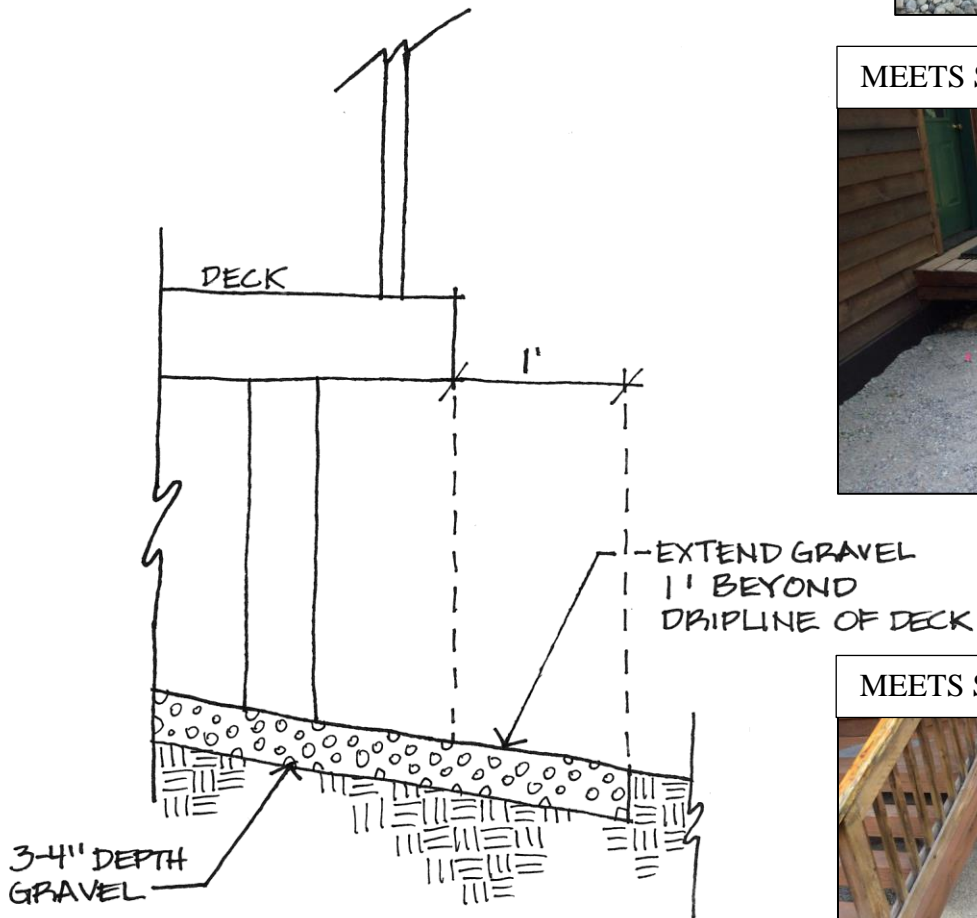
Combustible material such as firewood, tools, lumber, etc. is not permitted within the gravel perimeter. Flower boxes/pots are permitted within the gravel perimeter if they can be easily removed in the event of a wildfire.

### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 5 years. Gravel must be kept free of all vegetation. Litter build-up such as pine needles and leaves must be removed, especially during fire season (spring through mid-fall). If gravel perimeter is not maintained for the duration of its lifespan, the cooperator must pay back the District at a prorated rate.



## EMBER RESISTANT PERIMETER Practice Standards – Examples



---

## SCREENING UNDER DECK

### Practice Standards

#### DEFINITION

Metal screening under decks is permanent or temporary attachment to enclose gaps under the deck.

#### PURPOSE

Screening under decks prevents embers as well as combustible debris from accumulating below the deck. This reduces the risk of embers igniting the home or structure during a wildfire event.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all structures where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

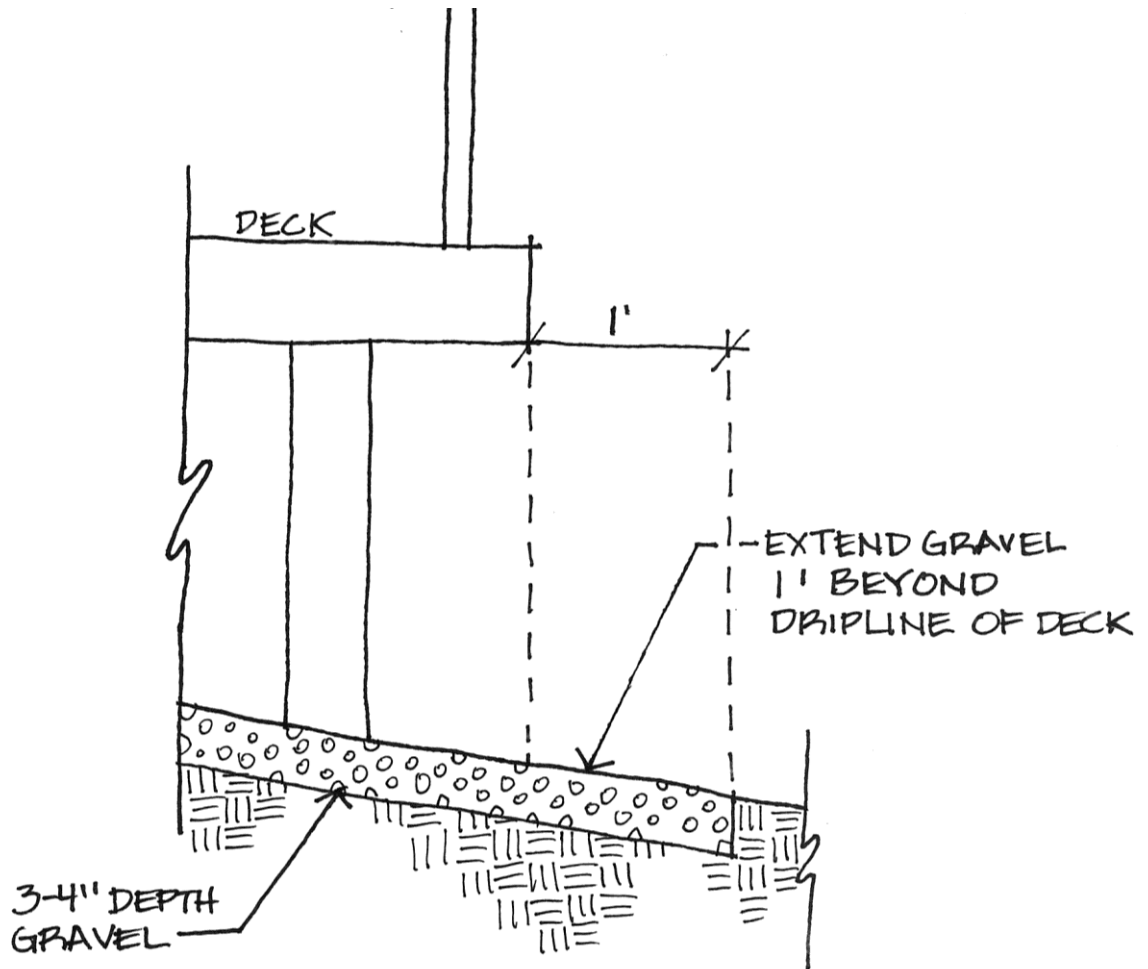
Screen must be 1/8" metal (stainless steel or galvanized) or smaller. Mesh cannot be fiberglass, nylon, vinyl, or have an abrasive coating. Non-metal materials can melt if in contact with embers or flames. Corrugated or flat sheets of metal may also be used under the deck and/or porches. Framing or staples may be needed to attach screen to the deck or porch. The bottom of the screen can be buried in dirt or gravel to hold it down. Other methods must be approved by the District prior to installation. It is recommended vegetation within a 3-5' radius of the deck be removed prior to installation. All material including tools, firewood, debris, vegetation, etc. must be removed from under deck prior to installation. Bare ground or gravel is required prior to installation on decks 4+' in height. Cooperator must add gravel 1' past the drip line of the deck. See drawing on **Page 10** for reference.

#### OPERATION AND MAINTENANCE

Practice will have to be maintained for the duration of its lifespan, which is 2 years. If metal screening is removed or falls out, it must be reattached for the duration of its lifespan. If not reattached, the cooperator must pay back the District at a prorated rate.

## SCREENING UNDER DECK

Practice Standards – Examples





---

## VENT REPLACEMENT/RETROFIT

### Practice Standards

#### DEFINITION

Ember resistant vents reduce the risk of embers and debris entering a structure while maintaining air circulation.

#### PURPOSE

Ember resistant vents can prevent most embers from entering the crawl space or attic of a home. Embers entering vents on a home cause structural ignition during a wildfire event.

#### CONDITIONS WHERE PRACTICE APPLIES

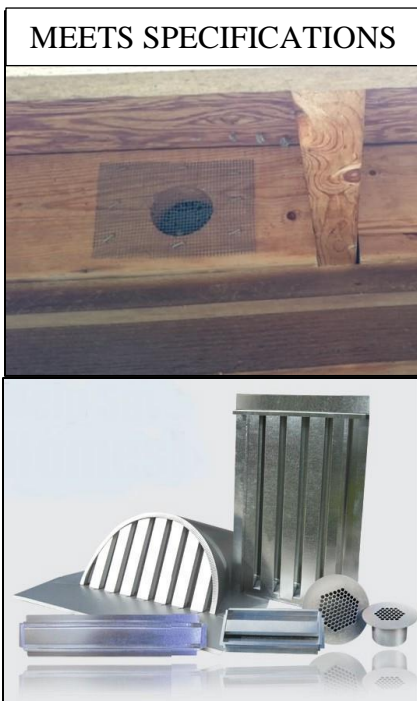
This practice applies to all structures where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

Replace air exchange vents with ember resistant vents or add mesh screening to existing vents. Screens must be 1/8" or smaller and metal (stainless steel or galvanized). Mesh screening cannot be fiberglass, nylon, vinyl, or have an abrasive coating. The coating can melt if in contact with embers or flames.

#### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 2 years. Vents or screens must be kept clear of debris. If metal screening or vents are removed or damaged, they must be replaced for the duration of their lifespan. If not replaced, the cooperator must pay back the District at a prorated rate.





---

## WINDOW SCREENING

### Practice Standards

#### DEFINITION

Metal mesh screening on windows.

#### PURPOSE

Metal screening provides protection against radiant heat exposure to the glass in windows in the event of a wildfire. Windows cracked or broken by radiant heat may permit embers or flames to enter the home or structure.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all structures where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

Screens must be metal. The mesh cannot have a coating of any kind or be made of fiberglass, nylon, or vinyl. Coatings and materials other than metal can melt if in contact with embers or flames. Mesh size must be 1/8" or less.

#### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 2 years. If metal screening is removed or damaged it must be replaced. If not replaced during its lifespan, the cooperator must pay back the District at a prorated rate.



MEETS SPECIFICATIONS



MEETS SPECIFICATIONS

---

## GUTTER COVERS

### Practice Standards

#### DEFINITION

Metal covers attached to rain gutters.

#### PURPOSE

Noncombustible (metal) gutter covers minimize accumulation of debris in the gutter. Debris in the gutter can ignite from embers, and flames can ignite other components at the roof edge (e.g., wood-based sheathing and fascia board) during the event of a wildfire.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all structures where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

Gutter covers must be corrosion-resistant metal (stainless steel or galvanized), and can be solid, metal mesh, or perforated metal. Gutter covers must fully cover the length and width of the gutter. No gaps may exist between the roof and gutter cover where debris or embers can accumulate. Debris must be removed from gutters prior to installation. All gutters attached to the house or structure must have gutter covers installed to meet practice specifications.

#### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 2 years. Gutter covers must be kept free of debris, especially during fire season (spring through mid-fall). If gutter covers are removed or damaged, they must be replaced. If not replaced during its lifespan, the cooperator must pay back the District at a prorated rate.

MEETS SPECIFICATIONS



DOES NOT MEET  
SPECIFICATIONS



---

## IGNITION RESISTANT FENCING

### Practice Standards

#### DEFINITION

Fencing attached to a structure made of ignition resistant material.

#### PURPOSE

Combustible fencing material (wood, vinyl) can ignite in the event of a wildfire. When a fence made of combustible material is attached to a structure, flames and embers can easily ignite the attached structure. Burning fencing generates embers that can result in additional ignitions down-wind.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all structures where protection from wildfire is needed.

#### PLANS AND SPECIFICATIONS

Where fencing is attached to a structure, replace a minimum of 5' from the structure outwards. Fencing can be metal (corrugated, steel, iron, steel wire, or perforated), or fiber cement (Hardie plank). All components of the fence, including support posts, horizontal supports, and attachment to the adjoining structure must be noncombustible. Wood framing or supports do not meet specifications. All vegetation, mulch, and debris (pine needles, leaves, etc.) must be removed prior to installation. There is no specification on design of the fence.

#### OPERATION AND MAINTENANCE

Practice must be maintained for the duration of its lifespan, which is 5 years. Fence base must be kept free of vegetative debris build-up, especially during fire season (spring through mid-fall). If fencing is removed or damaged, it must be replaced. If not replaced during its lifespan, the cooperator must pay back the District at a prorated rate.

