

WILDFIRE PREPARED

— A PROGRAM OF IBHS —

TECHNICAL STANDARD

WILDFIRE 
PREPARED
— HOME —

WILDFIRE 
PREPARED
— HOME PLUS —



Wildfire Prepared Home™ Standard

Program Overview & Scope

Wildfire Prepared Home™ was developed as a voluntary program to help homeowners protect their properties from wildfire. Based on IBHS's *Suburban Wildfire Adaptation Roadmaps*, the requirements in this standard provide a comprehensive, two-tiered approach for parcel-level wildfire risk reduction. Eligible homes that meet these requirements, as verified through an inspection associated with the Wildfire Prepared Home program, will earn a Wildfire Prepared Home designation.

While designation is currently available only for single-family homes of three stories or less in California, the requirements described herein are recommended for all construction types to reduce wildfire risk. Eligibility for designation may be extended to other building types and locations in future versions of the standard.

Available Designations

There are two designations available:

- Wildfire Prepared Home™
- Wildfire Prepared Home Plus™

To achieve a designation, a home must meet all the requirements listed for the designation level being sought, as verified by an authorized third-party and reviewed by IBHS.

Figure 1. List of Requirements



Eligibility

- Home must be located in California.
- Home must be a single-family detached home of three stories or less.
 - Manufactured homes, townhomes, multifamily housing, and nonresidential buildings are not eligible for designation.

Designation Maintenance & Renewal

Once achieved, the designation is valid for a 3-year period with required annual landscape reviews, which illustrate that the monthly maintenance required to keep the parcel in compliance with this standard is being accomplished.

At the end of the 3-year period, the designation is renewable with a full re-designation verifying continued compliance with the standard.

Definitions

Within this standard, acceptable products and materials are those listed by the California State Fire Marshal or in a current report issued by an approved agency (accredited to ISO 17065) to meet one of the following test standards:

- **Noncombustible** – Made from material of which no part will ignite and burn when subjected to fire. Any material passing ASTM E136 shall be considered noncombustible.
- **Ignition-resistant** – A type of building material that resists ignition or sustained flaming combustion sufficiently so as to reduce losses from wildland-urban interface conflagrations under worst-case weather and fuel conditions with wildfire exposure of burning embers and small flames. Ignition-resistant building materials must comply with one of the following:
 - Extended ASTM E84 (UL 723) test or ASTM E2768
 - Noncombustible material

NOTE: An ignition-resistant material should not be confused with ignition-resistant construction as ignition-resistant construction can include combustible materials in the assembly.

Parcel – Refers to a single plot of land (i.e., lawn, yard, property) and includes all buildings and structures within (house, shed, etc.).

Wildfire Prepared Home™ Designation

The requirements for this designation address the roof, features of the building, and defensible space. All listed requirements must be met and maintained to achieve this designation.

Roofs

The roof must be Class A fire-resistant rated and kept clear of debris. Several roofing materials have been tested as a roofing system to meet the ASTM E108 or UL 790 Class A requirements, including but not limited to the following:

- Asphalt shingles
- Concrete, brick, or masonry tiles with bird stops to reduce debris accumulation
- Metal shingles or sheets

Gutters & Downspouts

Gutters and downspouts must be made out of noncombustible material. Gutters and downspouts must be kept clear of debris such as leaves and pine needles.

Building Features

Vents

Ventilation openings for enclosed attics, gable ends, ridge ends, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, underfloor ventilation, foundations, and crawl spaces; under eaves and cornices; or for any other opening intended to permit ventilation, either in a horizontal or vertical surface, must resist the intrusion of burning embers and flames by meeting one of the following requirements:

- **Performance:** Corrosion-resistant vents conforming with the following ASTM E2886 test requirements:
 - No flaming ignition of the cotton material during the Ember Intrusion Test.
 - No flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
 - Temperature of the unexposed side of the vent does not exceed 662°F.
- **Prescriptive:** Vents must be made of a noncombustible material and covered with noncombustible, corrosion-resistant mesh with openings not to exceed 1/8 inch.
 - Exceptions:
 - Dryer vents must have a louver or flap in lieu of mesh.
 - Plumbing vents are excluded from these requirements.

Ground Clearance for Exterior Walls Covering/Cladding

Exterior walls are vulnerable because embers can accumulate and make direct contact. All exterior walls must have a minimum of 6 vertical inches of noncombustible material, measured from the ground (at grade) or the nearest horizontal surface.

Defensible Space

Decks or Covered Porches

Decks or covered porches including staircases, which are included in the building footprint as illustrated in Figure 2, must meet and maintain monthly the following requirements:

Around the structure:

- Must have 5 feet of defensible space (as part of the 5-foot Home Ignition Zone required for the home, described below).

Top surfaces:

- Must be clear of debris and have no woody vegetation (trees, shrubs). No more than 10 potted plants are permitted; each must not exceed 36 inches in height and width, including the noncombustible planter.
- Must have only noncombustible or ignition-resistant items (such as cast aluminum furniture). A small number of combustible items that can be easily removed and stored when necessary (chair cushions, door mats, etc.) are permitted.

Underneath:

- Must have no vegetation of any kind (trees, bushes, shrubs, plants, grass, weeds, etc.). Only noncombustible ground cover or bare earth are permitted.
- Must have nothing stored underneath.

Additionally, for decks or porches 4 feet or less above the ground (when measured nominally from the walking surface to the ground at the location where this distance is maximum): the underdeck area must be enclosed to reduce the accumulation of debris using one of the following methods:

- Install noncombustible, corrosion-resistant mesh material with openings not to exceed 1/8 inch around the outer edge of the deck from the walking surface to the ground to prevent ember intrusion. If a material (e.g., lattice) is installed over the mesh, it needs to be noncombustible.
- Fully enclose with a noncombustible wall covering/cladding.

For decks with an additional structure (like a pergola or gazebo): the additional structure must be constructed of noncombustible materials; must not have a solid cover (noncombustible slats that cover no more than 10% total of the surface area where a roof cover would be is acceptable); and must be free of any vegetation and curtains/drapes/screens.

Detached decks must meet the same requirements as attached decks.

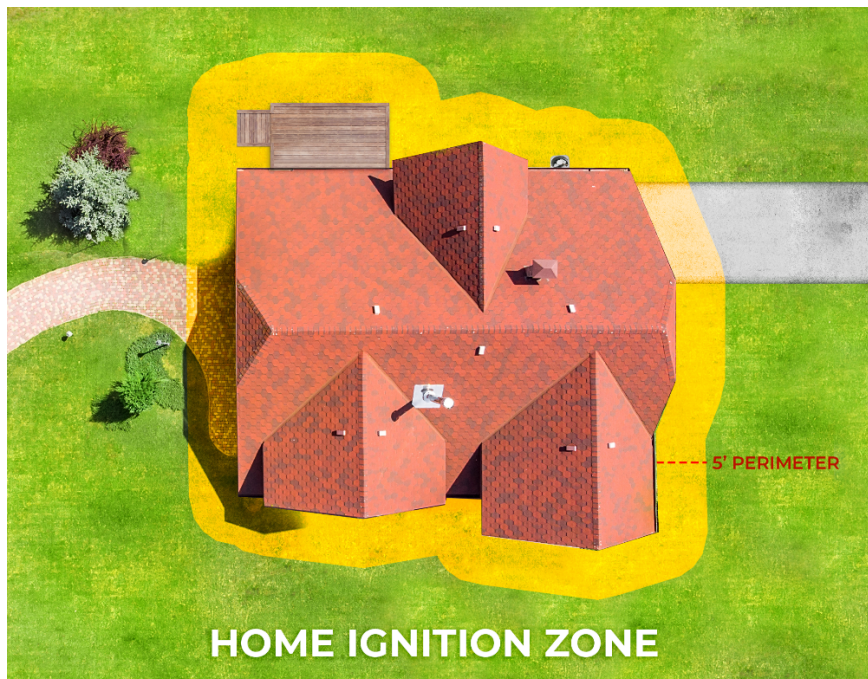


Figure 2. Home Ignition Zone

Home Ignition Zone – The First 5 Feet Around the Home

The Home Ignition Zone (HIZ) is one of the most critical aspects of wildfire mitigation at the parcel level and includes the space from the edge of the exterior walls to a distance of 5 feet from the building footprint, as shown in Figure 2. Note that when decks and/or covered porches including stairs are present, the HIZ must extend around them.

The HIZ must meet and maintain monthly all the following conditions:

- Ground cover must be noncombustible and kept free of debris (noncombustible hardscape such as gravel or paving stones is recommended).
- The HIZ must be free of vegetation (trees, shrubs, bushes, plants, grass, weeds, etc.). Any overhanging limbs or branches from nearby trees and bushes must be trimmed back to be outside the HIZ.
- The HIZ must be free of combustible items (such as furniture, firewood, trash cans, etc.).
- The HIZ must be free of any parked or stored boats, RVs, or other vehicles.

Landscaping in the Remainder of the Parcel

The remainder of the property beyond the 5-foot HIZ must maintain defensible space. Defensible space separates fuels to reduce flame intensity near a home. The following maintenance criteria must be met within 30 ft of the structure or to the property line:

- Routinely remove fallen pine needles, leaves, and other debris from trees and bushes accumulated in the yard.
- Vegetation, including plants with canopies within 30 feet of the home:
 - Trees with a trunk of 4 inches in diameter or greater when measured at a height of 4.5 feet above the ground¹:
 - Must have limbs and branches pruned to a minimum height of 6 feet off the ground.
 - Must have a minimum of 10 horizontal feet of spacing between the tree canopy and the next closest tree, shrub, or bush canopy.
 - May be clustered in small groupings with a combined canopy not larger than 10 feet in horizontal diameter.
 - Must have a minimum of 5 horizontal feet between a tree canopy and the home.
 - Shrubs, bushes, and small trees with a trunk less than 4 inches in diameter when measured at a height of 4.5 feet above the ground or less than 4.5 feet tall:
 - Must not be placed under larger trees.
 - Must not have a canopy larger than 10 feet in horizontal diameter.
 - May be clustered in small groupings with a combined canopy not larger than 10 feet in horizontal diameter.
 - Must have a minimum horizontal space between canopies of at least 10 feet.
- Routinely remove any dead vegetation, including piles from pruning and firewood.

Note: Large propane tanks must be located outside of 30 feet

Fences

Fencing within 5 feet of the home must be constructed of a noncombustible material including where fences attach to the home.

Accessory Structures & Outbuildings

All unattached accessory structures and outbuildings that are within 30 feet of the home and that have a footprint greater than or equal to 15 square feet—such as sheds, gazebos, accessory dwelling units (ADUs), open covered structures with solid roofs, dog houses, playhouses, etc.—must meet the same wildfire resilience requirements as the home structure. Up to 3 total accessory structures and/or outbuildings are acceptable. Each structure must have its own 5 feet of defensible space (as prescribed under Home Ignition Zone) that does not overlap the 5-foot HIZ required for the home, decks, or other structures within 30 feet of the home.

ADUs attached to the primary home by building permit are considered part of the primary structure and subject to the same requirements.

As of publication of this standard, IBHS continues active research into the spacing required between structures to reduce the likelihood of one igniting the other, including the impact of features such as combustible or noncombustible siding. The provisions of this section of the standard may be updated as this research matures.

Wildfire Prepared Home Plus™ Designation

To achieve a Wildfire Prepared Home Plus designation, homes must meet all the requirements listed for the Wildfire Prepared Home designation above (except where requirements for Wildfire Prepared Home Plus are more restrictive) **plus** all the following additional requirements below.

Gutters & Downspouts

Gutters must be covered (with a noncombustible material) to prevent the collection of debris such as leaves and pine needles.

Eaves & Soffits

In addition to the requirement for vent openings at eaves and soffits listed above, eaves and soffits must be enclosed or protected on the exposed underside by one of the following:

- Noncombustible materials
- Ignition-resistant materials
- Materials approved for not less than 1-hour fire-resistance-rated construction
- 2-inch nominal dimension lumber

Vents

Dryer vents must be made of noncombustible (i.e., metal) material and have a louver or flap.

Exterior Walls Covering/Cladding

Wall coverings/claddings must be a noncombustible or ignition-resistant material, such as:

- Metal siding
- Fiber-cement siding
- Masonry veneer
- Stucco
- Shutters must be made of noncombustible materials

Exterior Glass (Windows, Skylights & Glass within Doors)

All exterior windows, skylights, and glazed openings within doors must comply with one of the following requirements:

- Multipaned glass with at least two tempered panes
- Glass with a minimum of 20-minutes fire-resistance rating when tested in accordance with NFPA 257
- Glass blocks (windows only)

Exterior Doors

All exterior doors must comply with one of the following requirements:

- Exterior surface or cladding of the exterior doors must be solid, have a metal threshold, and be constructed with noncombustible or ignition-resistant material, such as:
 - Metal
 - Solid hardwood
 - Fiberglass

- Exterior door assembly shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252.
- Doors made of combustible material are permissible provided a noncombustible exterior storm door is installed as the outermost door.

Enclosed Space Underneath Bay Windows

Any open space under first-floor bay windows must be enclosed by constructing a noncombustible wall section.

Decks

In addition to the requirements listed above, decks must comply with one of the following requirements:

- All deck components including posts, joists, railings, stairs, and walking surfaces are constructed with noncombustible materials.
- Deck walking surfaces constructed with a solid (no gaps), noncombustible material* such as metal or light-weight concrete; railings within 5 feet of the home constructed of a noncombustible material, including where railings attach to the home; and deck posts with a minimum of 6 vertical inches of noncombustible material at grade. As noted in the defensible space section, all decks including attached staircases must include the noncombustible 5-foot Home Ignition Zone around them.
 - For staircases 4 feet in width or less that attach to a deck and are open underneath should have one of the following requirements:
 - Open risers (no solid risers)
 - Must have a minimum of 6 vertical inches of the bottom of stairs made from noncombustible material.
 - Stair treads should be a solid (no gaps), noncombustible material, such as metal or light-weight concrete.
 - Closed risers
 - Must have a minimum of 6 vertical inches of the bottom of stairs made from noncombustible material.
 - Stair treads and risers should be a solid (no gaps), noncombustible material, such as metal or light-weight concrete.
 - For staircases wider than 4 feet that attach to a deck, the staircase should be cleared underneath and enclosed with noncombustible material with openings not to exceed 1/8-inch, such as 1/8-inch or finer metal mesh and include the following requirements:
 - Closed risers
 - Must have a minimum of 6 vertical inches of the bottom of stairs made from noncombustible material.
 - Stair treads and risers should be a solid (no gaps), noncombustible material, such as metal or light-weight concrete.

Fences

In addition to the requirements listed above, back-to-back fencing (meaning separate fences that are closer than 5 feet apart) is not permitted. Meeting this requirement may necessitate coordination with neighboring parcels to eliminate duplicative fences that can trap debris between them.

Accessory Structures & Outbuildings

All unattached accessory structures and outbuildings with a footprint greater than or equal to 15 square feet—such as sheds, gazebos, accessory dwelling units (ADUs), open covered structures with solid roofs, dog houses, playhouses, etc.—must be located a minimum of 30 feet away from the home.

ADUs attached to the primary home by building permit are considered part of the primary structure and subject to the same requirements.

As of publication of this standard, IBHS continues active research into the spacing required between structures to reduce the likelihood of one igniting the other, including the impact of features such as combustible or noncombustible siding. The provisions of this section of the standard may be updated as this research matures.

List of Referenced Standards

ASTM

E84 – Standard Test Methods for Surface Burning Characteristics of Building Materials

E108 – Standard Test Methods for Fire Tests of Roof Coverings

E136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C

E2768 – Standard Test Method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test)

E2886 – Standard Test Method for Evaluating the Ability of Exterior Vents to Resist the Entry of Embers and Direct Flame Impingement

NFPA

252 – Standard Methods of Fire Tests of Door Assemblies

257 – Standard on Fire Test for Windows and Glass Block Assemblies

UL

723 – Standard for Test for Surface Burning Characteristics of Building Materials

790 – Standard Test Methods for Fire Tests of Roof Coverings

ISO

17065 – Requirements for Bodies Certifying Products, Processes and Services