2026 Los Angeles Historic Neighborhoods Conference *Meeting the Moment*

Resiliency and the Use of Substitute Materials in Historic Preservation

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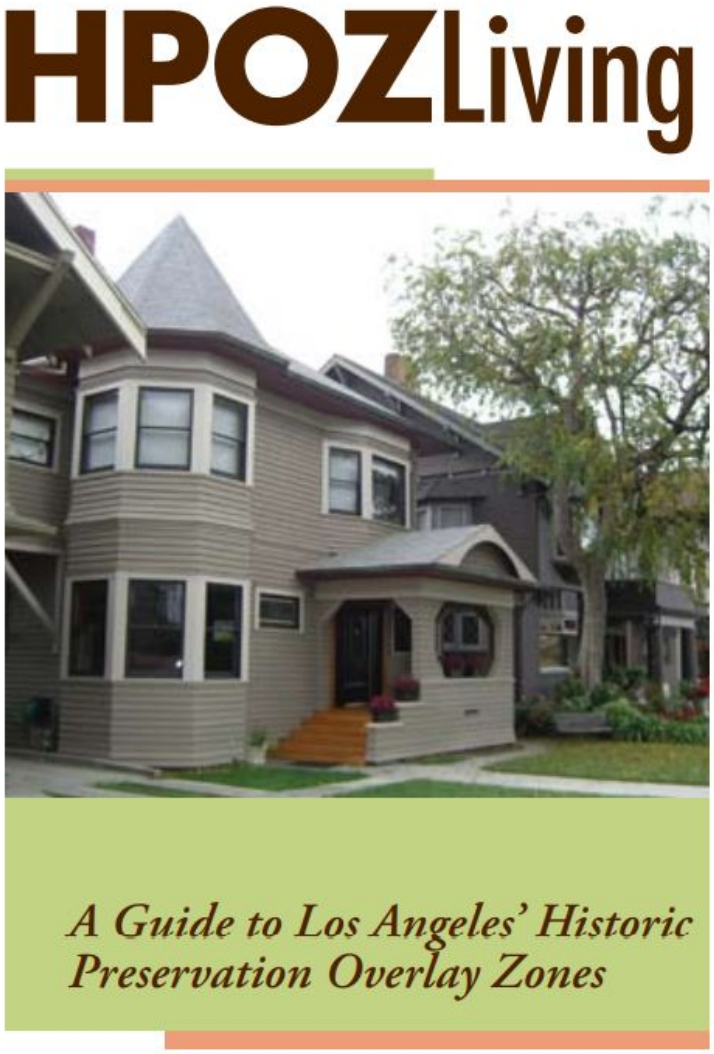


Issues

- Increasingly HPOZs are located in or near High Fire Severity Zones
- HPOZ Preservation Plans rely on application of the Secretary of the Interior's Standards for Rehabilitation
- the Secretary's Standards prioritize repair over replacement of historic materials
- Maintaining visual and material authenticity is a priority

16 PRESERVATION BRIEFS

The Use of Substitute Materials on Historic Building Exteriors

John Sandor, David Trayte, and Amy Elizabeth Uebel

National Park Service
U.S. Department of the Interior
Technical Preservation Services

The *Secretary of the Interior's Standards for Rehabilitation* generally require that deteriorated distinctive architectural features of a historic property be repaired rather than replaced. Standard 6 of the *Standards for Rehabilitation* further states that when replacement of a distinctive feature is necessary, the new feature must "match the old in composition, design, color, texture, and other visual properties, and, where possible, materials" (emphasis added). While the use of matching materials to replace historic ones is always preferred under the *Standards for Rehabilitation*, the Standards also purposely recognize that flexibility may sometimes be needed when it comes to new and replacement materials as part of a historic rehabilitation project. Substitute materials that closely match the visual and physical properties of historic materials can be successfully used on many rehabilitation projects in ways that are consistent with the Standards.

The flexibility inherent in the *Standards for Rehabilitation* must always be balanced with the preservation of the historic character and the historic integrity of a building, of which historic materials are an important aspect. Any replacement work reduces the historic integrity of a building to some degree, which can undermine the historic character of the property over time. With limited exceptions, replacement should only be considered when damage or deterioration is too severe to make repair feasible. When needed replacement is made with a material that matches the historic material, the impact on integrity can be minimal, especially when only a small amount of new material is needed. When a substitute material is used for the replacement, the loss in integrity can sometimes, although not always, be greater than that of a matching material. Also, whether historic or substitute material, there is a point where the amount of replacement can become excessive and the building's historic integrity is diminished to an unacceptable degree, regardless of the material used—that is, a loss of authenticity and the physical features and characteristics closely associated with the property's historic significance.

The term *substitute materials* is used to describe building materials that have the potential to match the appearance, physical properties, and related attributes of historic materials well enough to make them alternatives for use in current preservation practice when historic materials require replacement.

Compelling reasons to use a substitute material instead of the historic material include the unavailability or poor performance of the historic material, or environmental pressures or code-driven requirements that necessitate a change in material. When using a substitute material for replacement it is critical that it match the historic material in all of its visual and physical properties to preserve the historic character of the building and minimize the impact on its integrity.

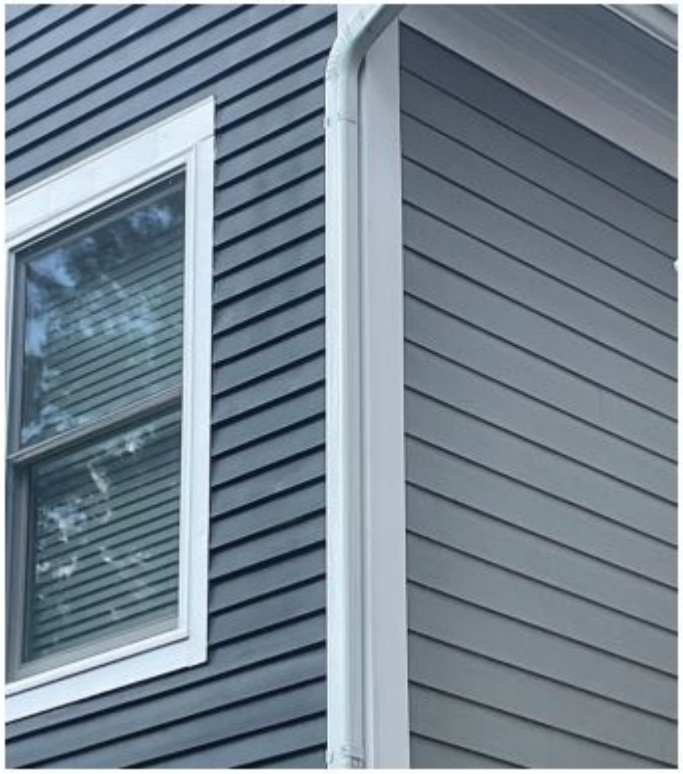
Substitute materials can be cost-effective, permit the accurate visual duplication of historic materials, and provide improved durability. While the behavior of traditional, historic materials is generally well understood, the behavior of newer materials can be less established and sometimes less predictable. Substitute materials are most successful when the properties of both the original material and the substitute are thoroughly understood by all those involved in the design and construction process. The architect must be adept at the selection of substitute materials and their incorporation into architectural plans and specifications. The contractor or tradesperson in the field must also be experienced with their use.

This Preservation Brief provides general guidance on the use of substitute materials as replacement materials for distinctive features on the exterior of historic buildings. Due to the ever-evolving product market for construction materials, this Brief does not provide specifications for substitute materials. This guidance should be used in conjunction with qualified professionals who are knowledgeable in current construction and historic preservation practices.

Overview

- Balancing historic integrity with historic character
- Environmental pressures to use substitute materials- fires and floods
- Cumulative effects
- Availability of materials
- Availability of Skilled Craftspeople
- Lifecycle costs

Examples



Example

Example

Example

8 LOW COST WAYS TO FIRE HARDEN YOUR HOME

ROOF REHAB

When it is time to replace your roof, replace it with fire-resistant Class A roof material.

SIDING

When it's time to replace your siding or deck, use noncombustible, ignition-resistant material.

CHIMNEY

Cover chimney with noncombustible metal mesh screen spark arrestor with 3/8-inch to 1/2-inch openings.

VENTS

Cover all vent openings with 1/16-inch to 1/8-inch metal mesh screens.

GUTTERS

Install non-combustible metal gutter covers to prevent accumulation of leaves and debris.

WINDOWS

When it's time to replace your windows, use multi-paned windows with at least one pane of tempered glass.

LANDSCAPING

Remove all dead or dying grass, plants, shrubs, trees, branches, leaves, weeds, and pine needles within 30 feet of all structures.

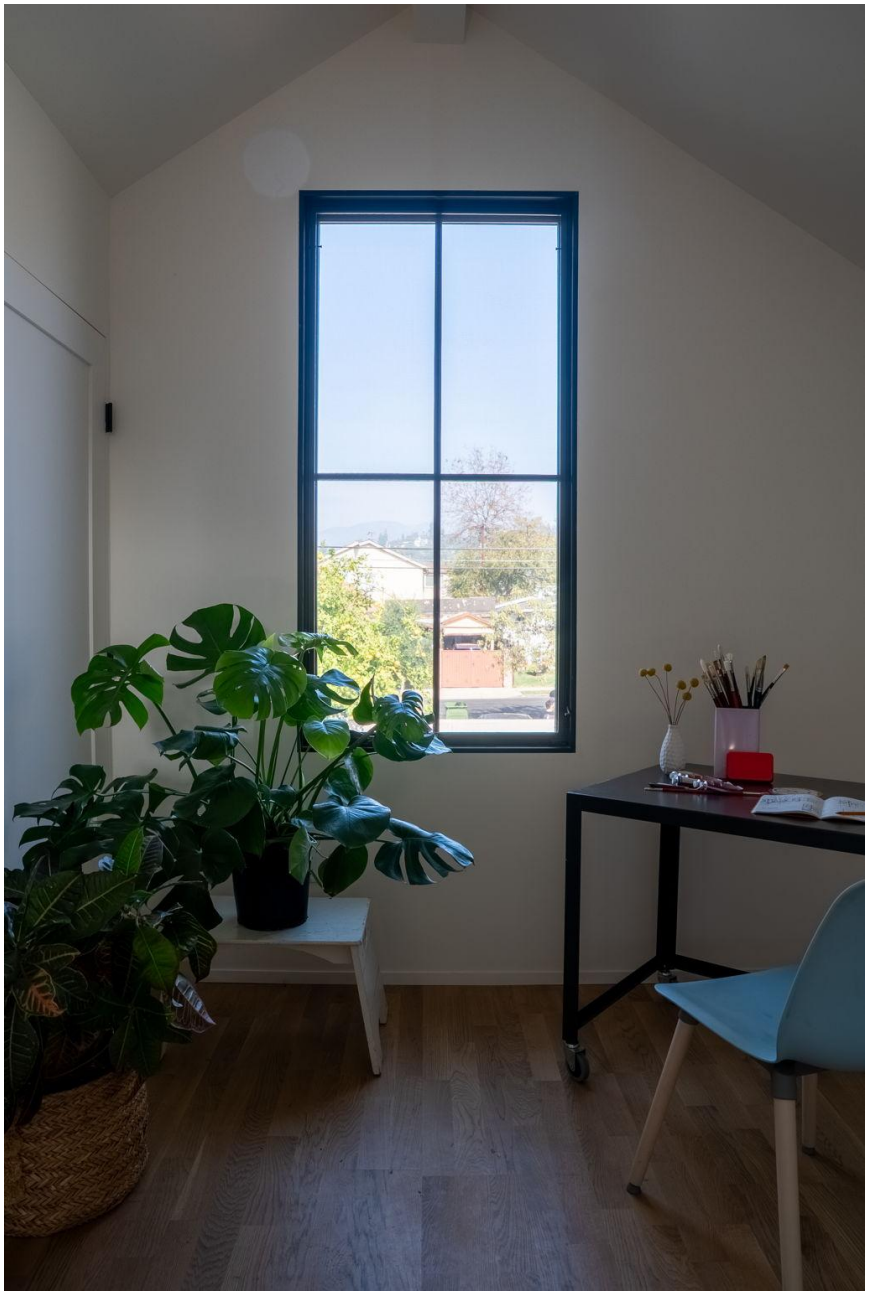
FOR MORE HOME FIRE SAFETY TIPS

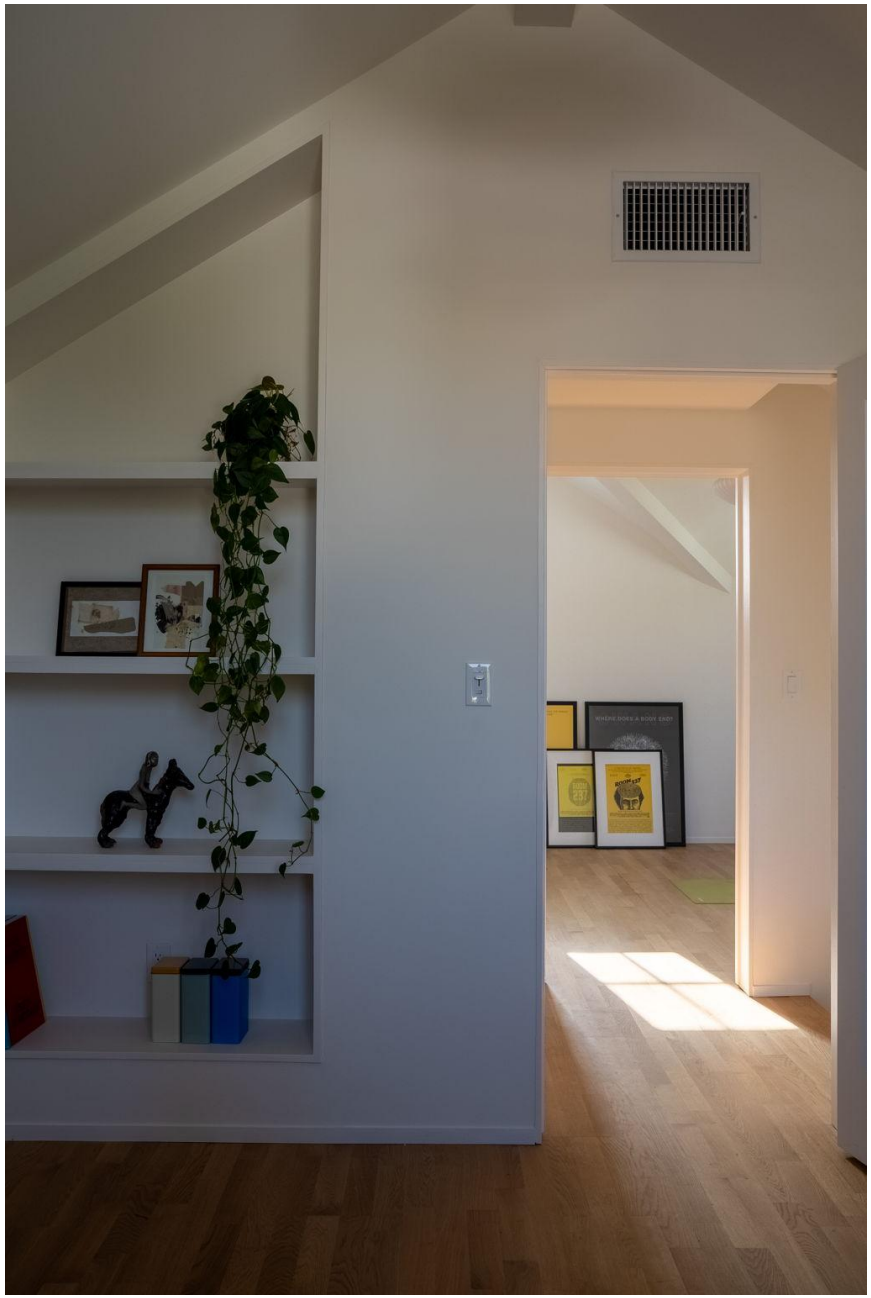
Visit rpvca.gov

VEGETATION

Remove vegetation or other combustible materials that are within five feet of windows and glass doors.

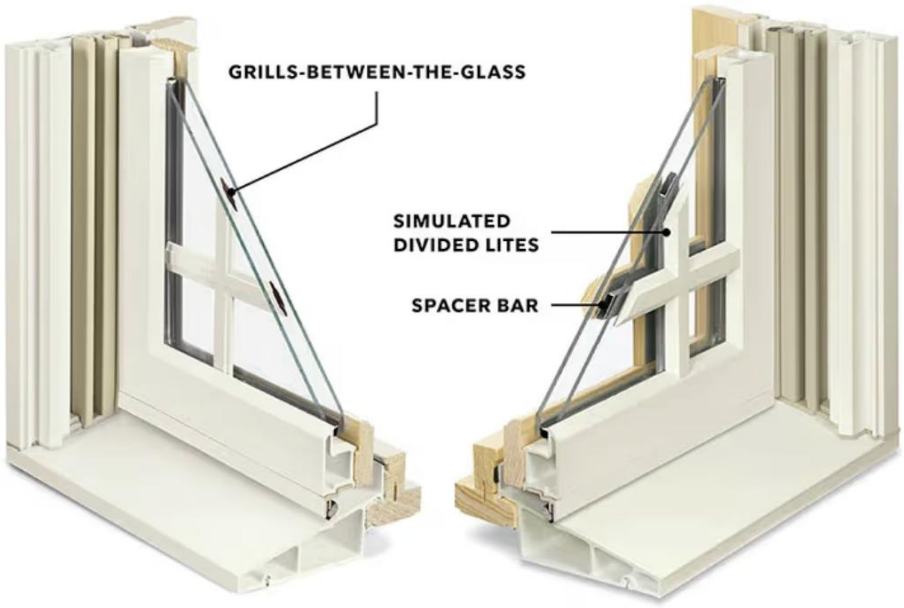
House and Flower Pot Illustrations Courtesy of Freepik

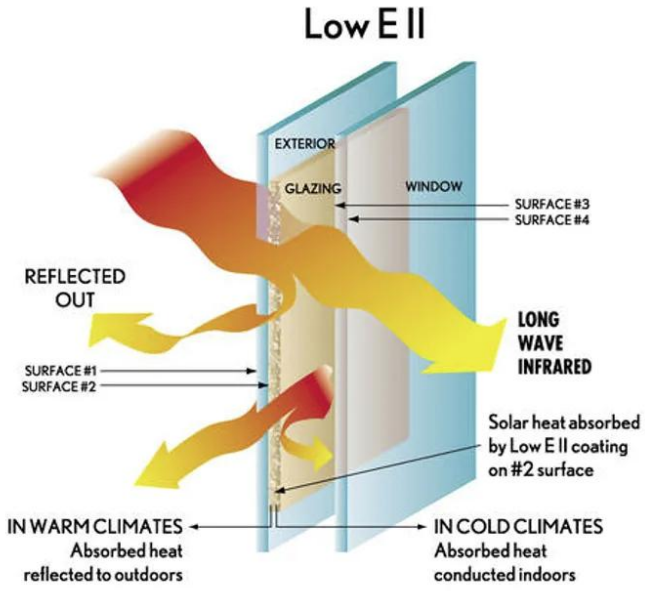




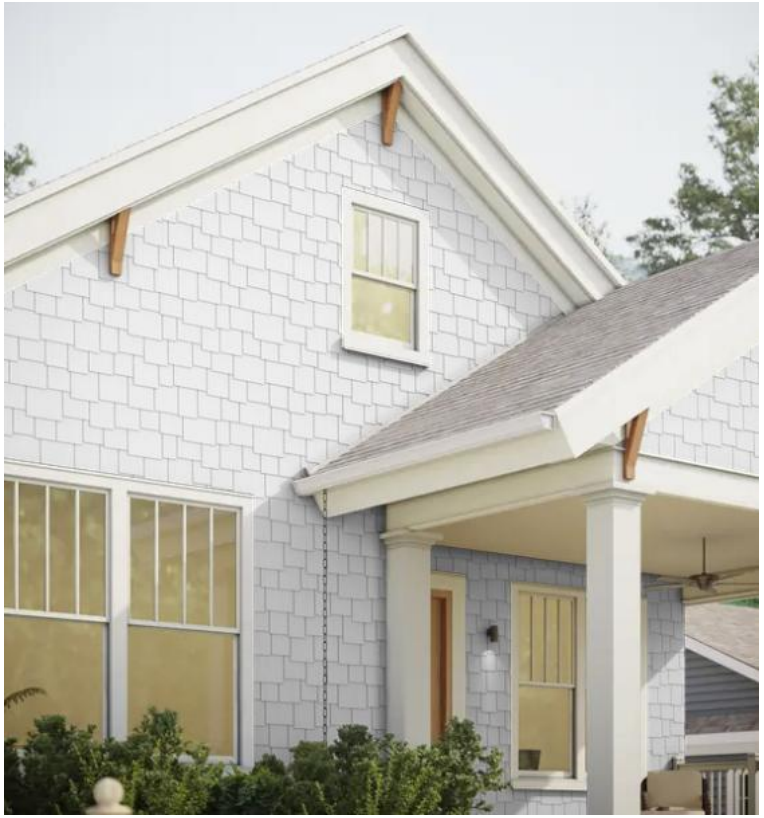

BIG 5
SPORTING GOODS


RADIO FLYER
BIG RED Classic ATW





Dual Pane Fiberglass Windows at the intersection of Fire Prevention and Climate resilience



Straight Edge Panel

Staggered Edge Panel

Shingle Options in Cement Board

HELP SAVE ENERGY CONFIDENTLY MEET CODE

Cool Roof Requirements in California and Other Compliance Programs

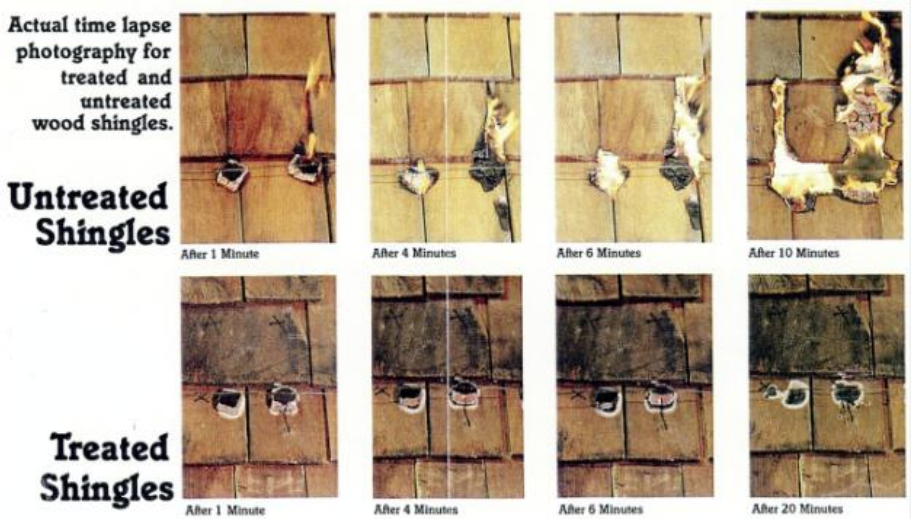
- Meet the prescriptive Cool Roof requirements of California Title 24, Part 6
- Are Cool Roof Rating Council (CRRC) rated
- Meet the Green Building Standards Code of Los Angeles County and Los Angeles City Cool Roofs Ordinance
- Meet Property Assessed Clean Energy (PACE) financing program requirements
- May help lower household energy consumption by keeping the roof cooler; also may help decrease CO_2 emissions

TruDefinition® Duration MAX® Shingles *with SureNail® Technology*

TruDefinition® Duration® COOL *Plus* Shingles *with SureNail® Technology*

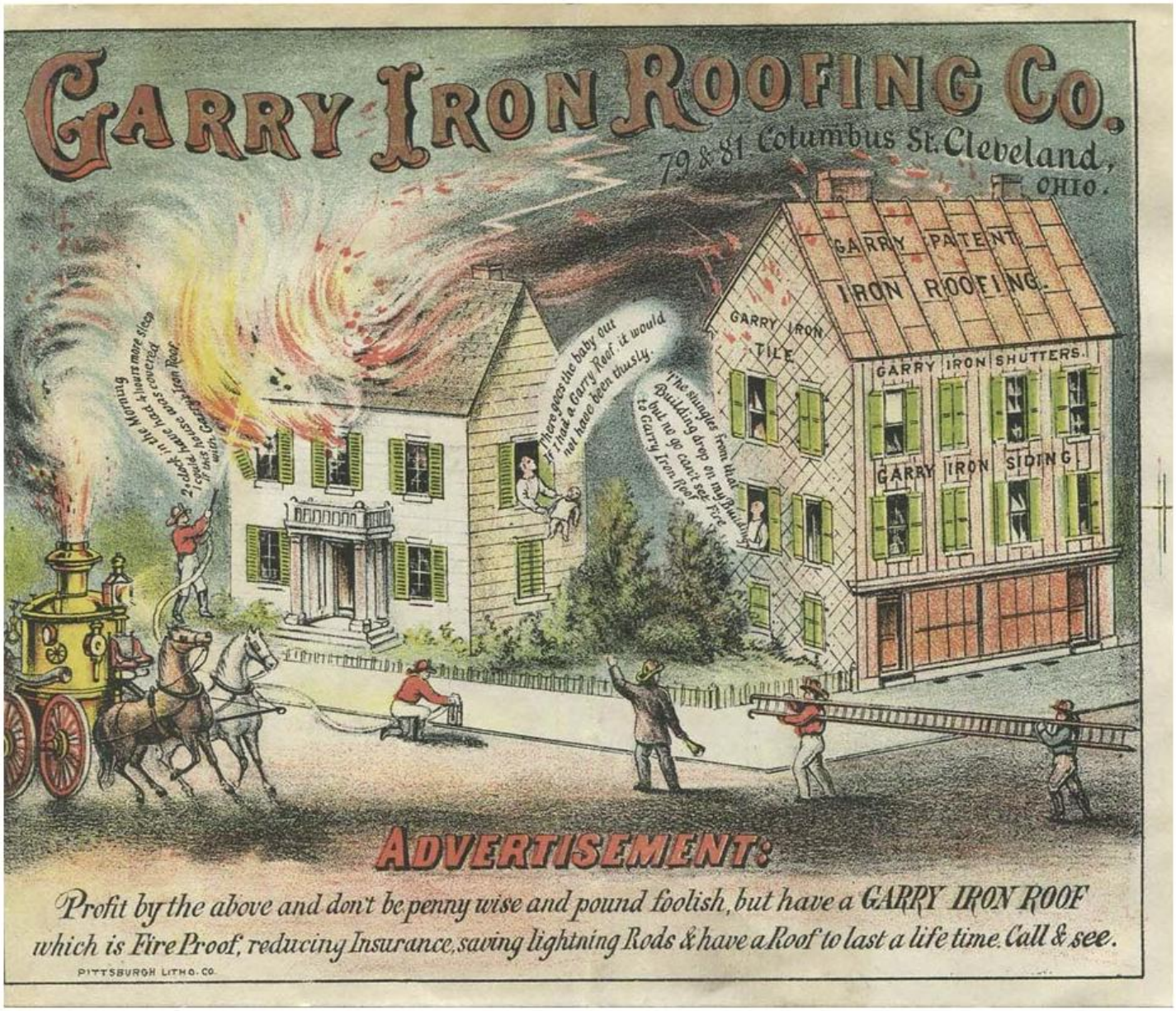
20+ SRI

Asphalt Roofing Products at the intersection of
Fire Prevention and Climate resilience



Fire Resistant Paints and Stains for Wood

Victorian Era Home Hardening Products:
"Lowe's Metallic Paint"



Victorian Era Home Hardening Products:
"Garry Iron Roof"

Zone Zero

History, Facts and Living in the Wildland Urban Interface (WUI)

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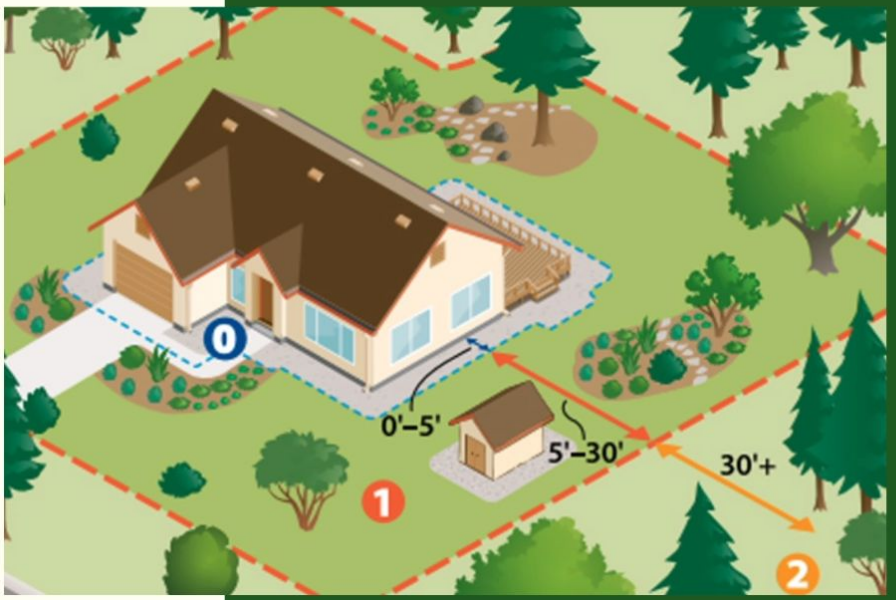
HISTORY

2020:
AB 3074

The California Legislature passes a bill creating the requirement for a five-foot ember-resistant buffer zone in designated Fire Hazard Severity Zones.



2025:

Executive Order N-18-25 LRA

Governor directs the State Fire Marshal to update Local Responsibility Area Maps.

State Responsibility Areas (SRA)

Local Responsibility Areas (LRA)

Government Code 51178

The State Fire Marshal shall identify areas in the state

01 Moderate

02 High

03 Very high fire hazard severity zones (VHFSZ)

Based on consistent statewide criteria and based on the severity of fire hazard that is expected to prevail in those areas.

Local Responsibility Area (LRA)

01 LRA is where city/county fire departments have responsibility for wildfire protection and prevention.

02 Zone Zero regulation will apply to areas in the Very High Fire Severity Zones (VHFSZ) in the LRA.

- SB 63 (Stern, 2021) Government Code 51178 added Moderate and High Fire Hazard Severity Zones with the Very High in local jurisdictions (LRA).

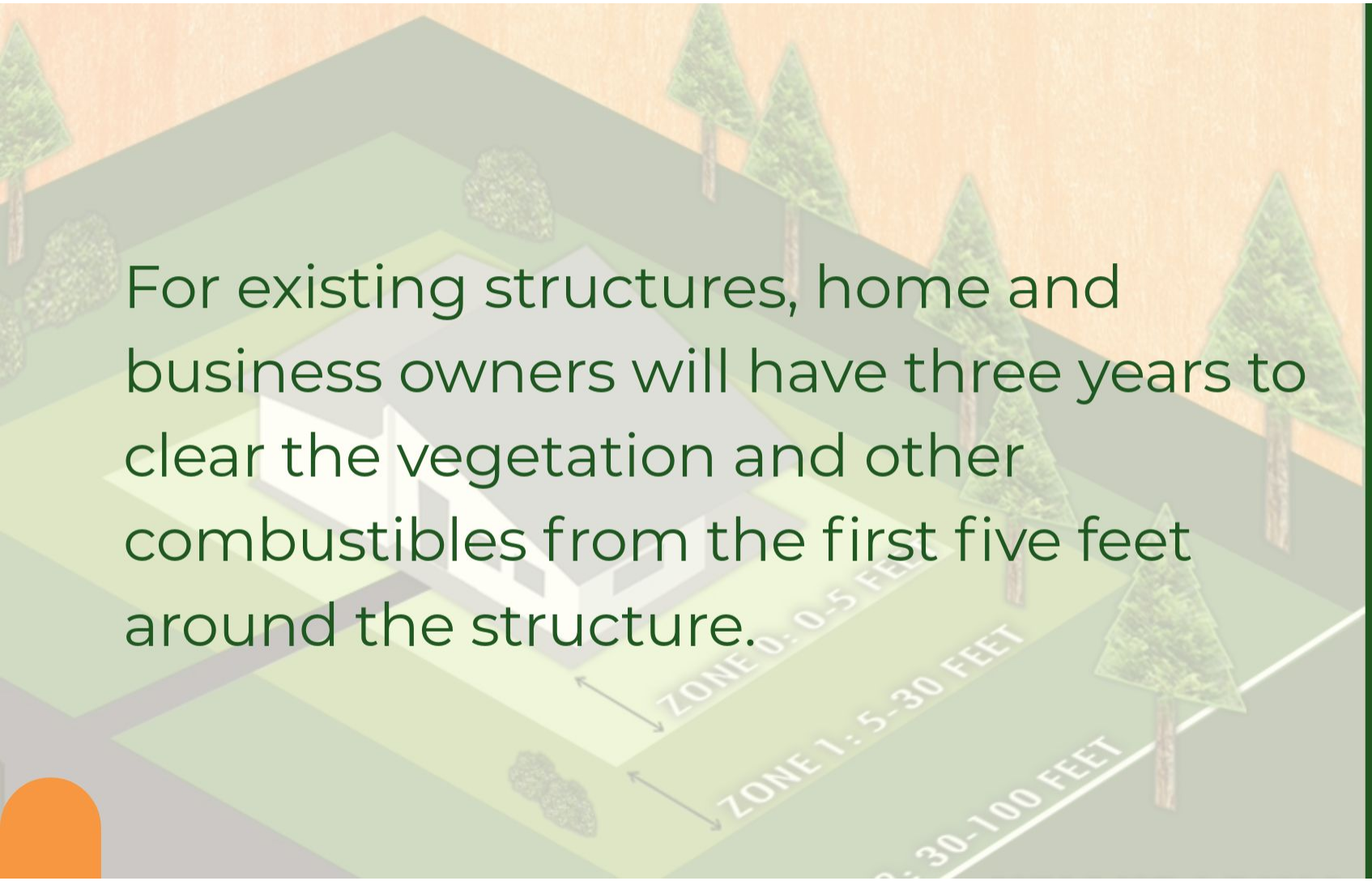
How will

Zone Zero

affect

Southern California and the State

For existing structures, home and business owners will have three years to clear the vegetation and other combustibles from the first five feet around the structure.



Options for Landscaping Materials/Vegetation:

All options exclude fallen leaves, weeds, and combustible mulches

01 Some plants in pots allowed

02 Some plants in pots and low, maintained vegetation allowed

03 Some plants, in pots or planted, allowed

04 Well maintained plants allowed
(The current requirement for vegetation in Zone 1)

Options for Trees:

All options exclude fallen leaves, weeds, and combustible mulches

01 Well-maintained trees allowed with no limbs in Zone 0, local tree ordinances included.

02 Well-maintained trees allowed, branches must be 10 feet from chimneys.

(This is the statutory minimum requirements)

Requirements and Summary of Rule Text for Zone 0

- Keeping roofs, gutters, and the area within 5’ of a home free of leaves and needles.
- Removing combustible materials such as firewood near buildings.
- Ensuring that fences and gates attached to buildings must be made of noncombustible materials for the first 5 feet.
- Ensuring that outbuildings within 5 feet be built entirely of non-combustible materials. • Applying to new construction immediately once this regulation is adopted, and to existing homes over a three-year period.
- Applying discretion across the state for local fire agencies to approve alternative methods that provide similar fire safety results as those outlined in the regulation.
- Local governments may develop their own compliance methods based on local conditions and materials. Historic buildings can also qualify for exemptions.

For more information, please read the latest Board FAQ, track the Board’s Zone 0 webpage, and/or submit your comment to PublicComments@bof.ca.gov.


LACAÑADA VALLEY BEAUTIFUL

Thank You


ZONE 0: 0-5 FEET
ZONE 1: 5-30 FEET
ZONE 2: 30-100 FEET
NEIGHBORING PROPERTY
ROAD
CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
CAL FIRE
SINCE 1885