

# California Title 24, Part 6

## AN EASY-TO-UNDERSTAND OVERVIEW OF STEEP-SLOPED ROOFING



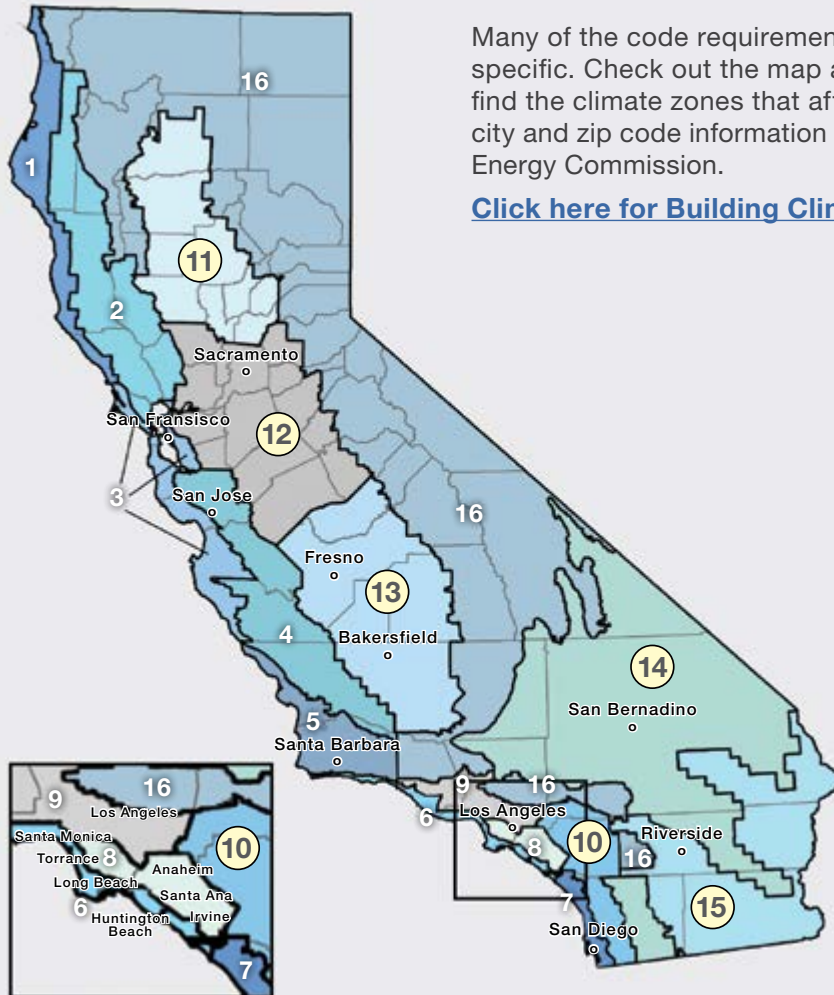
California Title 24, Part 6 Building Energy Efficiency Standards were established to reduce California's energy consumption. Cool roofs are important elements of an energy efficient structure, offering significant energy and cost savings. The California Energy Commission updated the standards effective January 1st, 2023, to revise cool roof requirements for all buildings.

Inside is a straightforward explanation of the new 2022 California energy code<sup>1</sup> related specifically to roofing when using Westlake Royal Roofing Solutions™ products. In addition to providing valuable information on how to ensure that your projects meet the new standards, you can be confident that you're also providing roofs your customers will love for their beauty as well as their energy savings.

*This brochure is provided for guidance purposes only. To ensure compliance, please refer to the full California Title 24, Part 6 code as provided by the California Energy Commission.*

## WHAT IS A COOL ROOF?

According to the California energy code, “COOL ROOF is a roofing material with high thermal emittance and high solar reflectance, or low thermal emittance and exceptionally high solar reflectance as specified in Part 6 that reduces heat gain through the roof.”



Many of the code requirements are climate zone (CZ) specific. Check out the map and representative cities to find the climate zones that affect your business. Detailed city and zip code information are available from the California Energy Commission.

[Click here for Building Climate Zones Tools](#)

## REROOF & ALTERATIONS

### Residential<sup>2</sup> Steep-Slope<sup>3</sup>

Climate Zones 4 & 8-15 require a Cool Roof to comply with the Prescriptive Approach<sup>4</sup>, the preferred method for reroof projects. Note that Elevated Batten System<sup>®</sup> battens and high profiled tiles no longer qualify as energy efficient alternatives to the Cool Roof requirement. The only remaining alternative options to the Cool Roof requirement are:

- R-38 or greater ceiling insulation; or
- Radiant barrier in the attic covering the walls and underside of the roof deck;
- No ducts in the attic (only allowed for Climate Zones 2, 4, 9, 10, 12 and 14); or
- R-2 or greater continuous insulation above or below the roof deck.

### Non-Residential, Hotels, & Motels Steep-Slope<sup>3</sup>

Non-Residential buildings, hotels & motels need to meet the same Cool Roof requirements as new build. No alternative options are allowed for these types of buildings.

## NEW BUILDS

### Residential Steep-Slope

The California energy code is divided into different categories depending on the building type, listed in the chart below. Each building type has different requirements to meet specific energy goals. All of Westlake Royal Roofing Solutions' products are designed for use in Steep-Slope applications so please make sure to reference Steep-Slope2 portions of the code when using Westlake Royal roofing products.

Solar Reflectance, Thermal Emittance and Solar Reflective Index are properties of roofing materials that California specifies to meet certain requirements depending on the building type and climate zone. Solar Reflective Index (SRI) is an easier number to reference as it combines the Solar Reflectance and Thermal Emittance values into a single, easy to use number. Also, as many roofing products have high Thermal Emittance values, lower reflectivity value products may be used provided they meet the minimum SRI value. The minimum Prescriptive values are listed below.

BUILDING TYPE	CLIMATE ZONES	SOLAR REFLECTANCE	THERMAL EMISSANCE	SOLAR REFLECTIVE INDEX
Single-Family Residential	10-16	0.20	0.75	16
Multi-Family Residential	10-16	0.20	0.75	16
Non Residential	1 & 3	0.20	0.75	16
	2 & 4-16	0.25	0.80	23
Hotels & Motels	2-15	0.25	0.75	16

All values above are minimum values when using the Prescriptive Approach, however, products with lower values may be selected when using the Performance Approach.

The preferred method for New Build is the Performance Approach using California Energy Commission approved software. This approach provides flexibility for the builder or designer to select any roofing product, including those with lower than minimum Prescriptive values, provided they are "trading" by implementing other more energy efficient building materials or designs for the building. The input variables for steep-slope roofing are the following:

1. Aged Solar Reflectance and Thermal Emittance provided by the Cool Roof Rating Council's (CRRC) Roof Product Listing at [www.coolroofs.org](http://www.coolroofs.org).
2. Radiant Barrier installed under the roof deck and on interior walls of the attic
3. Below Roof Deck Insulation

Any roofing product not listed in the CRRC's roof product directory must use the following default values:

PRODUCT TYPE	SOLAR REFLECTANCE	THERMAL EMISSANCE
Asphalt Shingles	0.08	0.75
All other roofing products	0.10	0.75

*Additionally, the code requires all new residential and most new non-residential buildings to have a new solar photovoltaic (PV) system installed. See code for full details.*

## LOCAL BUILDING ENERGY EFFICIENCY STANDARDS

California Title 24, Part 6 establishes a process which allows for local adoption of standards that are more stringent than the statewide requirements. This process provides authorities having jurisdiction the ability to adopt and enforce their own energy efficiency standards for newly constructed buildings, additions, alterations, and repairs to existing buildings. For more information and a listing of local energy efficiency standards, refer to:

[California Energy Commission's Local Ordinance Program.](#)

## Los Angeles County:

Los Angeles County requires roofing materials used for new builds and reroofs of both residential and non-residential buildings with steep-sloped roofs (>2:12) meet the requirements in the table listed below.

BUILDING TYPE	MIN 3 YEAR AGED VALUES		
	REF.	EMIT.	SRI
Low Rise Residential	0.25	& 0.85	or 20
High Rise Residential, Hotels & Motels	0.25	& 0.75	or 20
Non-Residential	0.28	& 0.85	or 27

Applicable Exceptions:

1. Roof repairs.
2. Reroofs when the roof area being replaced is less than 50% of the total roof area.

## City of Los Angeles:

The Los Angeles Green Building Code requires that roofing material used in residential buildings meet certain values for the “aged solar reflectance” and “thermal emittance” or for “SRI”.

BUILDING TYPE	MIN 3 YEAR AGED VALUES		
	REF.	EMIT.	SRI
Low-Slope < 2:12	0.65	& 0.85	or 78
Steep-Slope > 2:12	0.25	& 0.85	or 20

## LADWP Rebates:

The Los Angeles Green Building LADWP’s cool roof rebates are available to single-family and multi-family residential customers, and are part of the Consumer Rebate Program. See [Cool Roof Fact Sheet](#) for details.”

<sup>1</sup> 2022 BUILDING ENERGY EFFICIENCY STANDARDS FOR RESIDENTIAL AND NONRESIDENTIAL BUILDINGS, TITLE 24, PART 6, AUGUST 2022, CEC-400-2022-010-CMF, California Energy Commission. <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>

<sup>2</sup> Includes single family dwellings, duplexes, and multifamily buildings up to three stories.

<sup>3</sup> Roof slopes steeper than 2:12 pitch.

<sup>4</sup> The Prescriptive Approach requires that each building component meet a prescribed minimum efficiency based on climate zone. This is preferred for reroof projects.

## RESOURCES

[About WRRS California Title 24](#)

[About WRRS Cool Roof System](#)

[Southern California - Newpoint Concrete Cool Roof Tiles](#)

[Northern California - Newpoint Concrete Cool Roof Tiles](#)

[US Tile Clay Cool Roof Tiles](#)

[Cool Roof Rating Council \(CRRC\)](#)

[Building Energy Efficiency Standards - California Title 24](#)

[LA County Department of Public Works](#)