



# Title 24 Guide

# Shake, Slate & Spanish Barrel Tile

Revised November 14, 2024

## 2022

**BUILDING ENERGY EFFICIENCY  
STANDARDS FOR RESIDENTIAL  
AND NONRESIDENTIAL BUILDINGS**

FOR THE 2022 BUILDING ENERGY  
EFFICIENCY STANDARDS

TITLE 24, PART 6, AND ASSOCIATED  
ADMINISTRATIVE REGULATIONS  
IN PART 1

AUGUST 2022  
CEC-400-2022-010-QM7  
CALIFORNIA ENERGY COMMISSION  
 Gavin Newsom, Governor



# Title 24 Guide Shake, Slate & Spanish Barrel Tile



## Summary

Brava’s cool roof products are products that have enhanced solar reflectance and thermal emittance properties. These solar reflective roofs help to keep your building cooler and increase efficiency from your HVAC system by reflecting sunlight away from a structure and preventing heat from penetrating the building below. Brava manufactures solar reflective products that meet the requirements of Title 24, which is critical for California residents.

## CEC & Title 24 Standards

The [California Energy Commission \(CEC\)](#), the state’s primary energy policy and planning agency, periodically modifies energy efficiency standards for residential and non-residential buildings. [California’s Title 24, Part 6 Building Energy Efficiency Standards](#) includes cool roof requirements for new and existing buildings. These requirements are for the thermal emittance, three-year aged reflectance, and Solar Reflectance Index (SRI) of roofing materials used in new construction and re-roofing projects.

## CRRC Reporting

Brava is required to submit samples to certified labs to be measured. The emissivity and reflectivity values are measured using ASTM standards. The results are reported to CRRC (Cool Roof Rating Council). Samples are sent to the CRRC-approved test farm for three years to evaluate aged results, which will eventually be on the [CRRC website](#) together with the initial results.

|   |                                      |                |             |
|---|--------------------------------------|----------------|-------------|
|   | <b>Rated Product ID #: 0000-0000</b> |                |             |
|   |                                      | <b>Initial</b> | <b>Aged</b> |
|   | <b>Solar Reflectance</b>             | <b>0.00</b>    | <b>0.00</b> |
|   | <b>Thermal Emittance</b>             | <b>0.00</b>    | <b>0.00</b> |
| <small>The ratings above are subject to CRRC rating program conditions, requirements, and limitations. Visit <a href="#">coolroofs.org</a> for important information and disclaimers about CRRC rating conditions, requirements, and limitations.</small> |                                      |                |             |

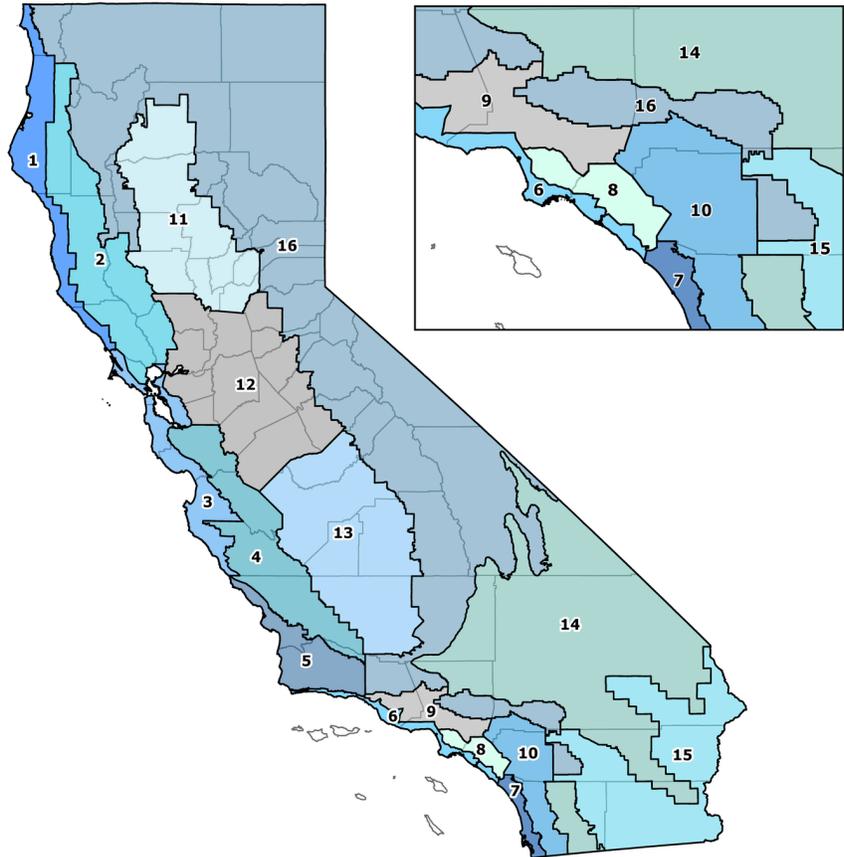
Figure A: CRRC Standard Label

|   |                                      |                |              |
|---|--------------------------------------|----------------|--------------|
|   | <b>Rated Product ID #: 0000-0000</b> |                |              |
|   |                                      | <b>Initial</b> | <b>Aged</b>  |
|   | <b>Solar Reflectance</b>             | <b>0.00</b>    | <b>0.00*</b> |
|   | <b>Thermal Emittance</b>             | <b>0.00</b>    | <b>0.00*</b> |
| <small>The ratings above are subject to CRRC rating program conditions, requirements, and limitations. Visit <a href="#">coolroofs.org</a> for important information and disclaimers about CRRC rating conditions, requirements, and limitations.</small> |                                      |                |              |
| <small>*CRRC Rapid Ratings: Interim laboratory-aged values that simulate naturally-aged values and will be replaced by the measured three-year naturally-aged values upon completion of the weathering process.</small>                                   |                                      |                |              |

Figure D: CRRC Rapid Ratings Label

### Building Climate Zones

Title 24 is intended to maximize energy efficiency by regulating many aspects of building construction. It varies by climate zone (there are **16** in California) and is set for residential and non-residential buildings.



### Title 24 Compliance Paths

Section 140.3-B – Prescriptive Envelope Criteria for Nonresidential Buildings

| Building Type            | Climate Zones |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Min. Requirements   |
|--------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| Nonresidential Buildings | 1 & 3         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Aged Reflectance: > 0.20<br>Thermal Emittance: > 0.75<br>Or<br>Aged SRI >16 |
|                          | 2, 4-16       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Aged Reflectance: > 0.25<br>Thermal Emittance: > 0.80<br>Or<br>Aged SRI >23 |
| <b>Climate Zones</b>     |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |
|                          | 1             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  |   |
| Aged Solar Reflectance   | .20           | .25 | .20 | .25 | .25 | .25 | .25 | .25 | .25 | .25 | .25 | .25 | .25 | .25 | .25 | .25 |   |
| Thermal Emittance        | .75           | .80 | .75 | .80 | .80 | .80 | .80 | .80 | .80 | .80 | .80 | .80 | .80 | .80 | .80 | .80 |   |



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## Title 24 Compliance Paths (Continued)

### Section 140.3-C – Prescriptive Envelope Criteria for Guest Rooms of Hotel/Motel Buildings

| Building Type                          | Climate Zones |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Min. Requirements   |  |
|--|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|--|
| Guest Rooms of Hotel & Motel Buildings | 2 -15         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | Aged Reflectance: > 0.20<br>Thermal Emittance: > 0.75<br>Or<br>Aged SRI >16 |  |
| <b>Climate Zones</b>                   |               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |   |  |
|  | 1             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  |   |  |
| Aged Solar Reflectance                 | NR            | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | NR  |  |
| Thermal Emittance                      | NR            | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | NR  |  |

### Section 150.1 – Performance and Prescriptive Compliance Approaches

| Building Type                       | Climate Zones |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     | Min. Requirements   |  |
|-------------------------------------|---------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|---|--|
| Single-Family Residential Buildings | 10-15         |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     | Aged Reflectance: > 0.20<br>Thermal Emittance: > 0.75<br>Or<br>Aged SRI >16 |  |
| <b>Climate Zones</b>                |               |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |   |  |
|                                     | 1             | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11  | 12  | 13  | 14  | 15  | 16  |   |  |
| Aged Solar Reflectance              | NR            | NR | NR | NR | NR | NR | NR | NR | NR | NR | .20 | .20 | .20 | .20 | .20 | .20 | NR  |  |
| Thermal Emittance                   | NR            | NR | NR | NR | NR | NR | NR | NR | NR | NR | .75 | .75 | .75 | .75 | .75 | .75 | NR  |  |

**Exception 1 to Section 150.1(c)ii:** Building integrated photovoltaic panels and building integrated solar thermal panels are exempt from the minimum requirements for aged solar reflectance and thermal emittance or SRI.

**Exception 2 to Section 150.2(b)iii:** Roof constructions with a weight of at least 25 lb./ft2 are exempt from minimum requirements for aged solar reflectance and thermal emittance, or SRI.

### Title 24 Compliance Paths (Continued)

#### Section 150.2 – Performance and Prescriptive Compliance Approaches

| Building Type  | Climate Zones |    |    |     |    |    |    |     |     |     |     |     |     |     |     |    | Min. Requirements   |
|--|---------------|----|----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|----|---|
| <b>Additions And Alterations to Existing Single-Family Residential Buildings</b> | 4, 8-15       |    |    |     |    |    |    |     |     |     |     |     |     |     |     |    | Aged Reflectance: > 0.20<br>Thermal Emittance: > 0.75<br>Or<br>Aged SRI >16 |
| <b>Climate Zones</b>   |               |    |    |     |    |    |    |     |     |     |     |     |     |     |     |    |   |
|  | 1             | 2  | 3  | 4   | 5  | 6  | 7  | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16 |   |
| Aged Solar Reflectance   | NR            | NR | NR | .20 | NR | NR | NR | .20 | .20 | .20 | .20 | .20 | .20 | .20 | .20 | NR |   |
| Thermal Emittance  | NR            | NR | NR | .75 | NR | NR | NR | .75 | .75 | .75 | .75 | .75 | .75 | .75 | .75 | NR |   |

**Exception 1 to Section 150.2(b)11i: The following shall be considered equivalent to Subsection i:**

- a.** Buildings with ceiling assemblies with a U-factor lower than or equal to 0.025 or that are insulated with at least R-38 ceiling insulation; or
- b.** Buildings with a radiant barrier in the attic, where the radiant barrier is not installed directly above spaced sheathing, meeting the requirements of Section 150.1(c)2; or
- c.** In Climate Zones 2, 4, 9, 10, 12 and 14, buildings that have no ducts in the attic; or
- d.** Buildings with R-2 or greater continuous insulation above or below the roof deck.

**Exception 2 to Section 150.2(b)11i:** Roof area covered by building integrated photovoltaic panels or building integrated solar thermal panels is not required to meet minimum requirements for aged solar reflectance, thermal emittance, or SRI.

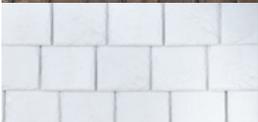
**Exception 3 to Section 150.2(b)11i:** Roof constructions with a weight of at least 25 lb./ft<sup>2</sup> are exempt from minimum requirements for aged solar reflectance and thermal emittance, or SRI.





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## Brava's Eligible Cool Roof Products

| Color   | CRRC Prod ID.             | Product Name                                   | Solar Reflectance |        | Thermal Emittance |        | SRI     |        |
|---|---------------------------|--|-------------------|--------|-------------------|--------|---------|--------|
|   |                           |  | Initial           | 3 Year | Initial           | 3 Year | Initial | 3 Year |
|    | <a href="#">1374-0002</a> | <b>Brava Cedar Shake</b><br>Cool Lake Forest   | .25               | .28    | .92               | .92    | 26      | 30     |
|    | <a href="#">1374-0001</a> | <b>Brava Cedar Shake</b><br>Cool Weathered     | .30               | .35    | .92               | .91    | 33      | 39     |
|    | <a href="#">1374-0005</a> | <b>Brava Cedar Shake</b><br>Cool Western Cedar | .28               | .28*   | .92               | .89*   | 30      | 29*    |
|    | <a href="#">1374-0013</a> | <b>Brava Cedar Shake</b><br>Cool Light         | .65               | .60*   | .92               | .89*   | 79      | 72*    |
|   | <a href="#">1374-0007</a> | <b>Brava Slate</b><br>Cool Arendale            | .27               | .27*   | .91               | .88*   | 28      | 27*    |
|  | <a href="#">1374-0008</a> | <b>Brava Slate</b><br>Cool Atlantic            | .29               | .27*   | .91               | .88*   | 31      | 27*    |
|  | <a href="#">1374-0010</a> | <b>Brava Slate</b><br>Cool Light Arendale      | .31               | .29*   | .91               | .88*   | 33      | 30*    |
|  | <a href="#">1374-0008</a> | <b>Brava Slate</b><br>Cool Weathered           | .27               | .26*   | .91               | .88*   | 29      | 26*    |
|  | <a href="#">1374-0013</a> | <b>Brava Slate</b><br>Cool Light               | .65               | .60*   | .92               | .89*   | 79      | 72*    |
|  | <a href="#">1374-0003</a> | <b>Brava Barrel Tile</b><br>Cool Terra Cotta   | .37               | .39    | .89               | .91    | 41      | 44     |
|  | <a href="#">1374-0004</a> | <b>Brava Barrel Tile</b><br>Cool French Clay   | .33               | .34    | .88               | .89    | 35      | 37     |
|  | <a href="#">1374-0013</a> | <b>Brava Barrel Tile</b><br>Cool Light         | .65               | .60*   | .92               | .89*   | 79      | 72*    |

\* Indicates the product obtained a Rapid Rating, which will be replaced by three-year aged values once the weathering period is complete.



# Title 24 Guide

## Shake, Slate & Spanish Barrel Tile

### Brava's Eligible Cool Roof Products

For more information on Title 24, please visit <http://www.energy.ca.gov/title24> and the [2022 Building Energy Efficiency Standards](#) for code requirements.

Brava provides installation guidance, resources, and product certification documents for all products at <https://www.bravarooftile.com/resources/>.

Brava's CRRC listings: <https://coolroofs.org/directory/roof?keywords=brava>

### Questions?

If you have any questions regarding Brava Roof Tile products and accessories, call 844-290-4196 and ask for Technical Support.

Or contact us through our website at <https://www.bravarooftile.com/contact-brava/>.

