

# CALIFORNIA TITLE 24

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Energy

## California Title 24, Part 6

is legislation in California that sets an energy budget for residential and non-residential buildings. Compliance for qualifying buildings is mandatory.

Title 24 is intended to maximize energy efficiency by regulating many aspects of building construction. The Title 24 Energy Budget is set for residential and non-residential buildings. It varies by climate zone (there are 16 in California) and is defined in Kbtu/sq foot per year.

Compliance can be complicated, so the information on the reverse side is meant to help you understand some basic information and how GAF roofing products can help you comply.

There are multiple compliance methods. One of them, the envelope compliance method, requires the use of cool roof membranes. For low-slope buildings, a cool roof must have a minimum 3-year aged reflectivity value of 0.55 with a minimum emissivity value of 0.75 or a minimum aged solar reflectance index (SRI) of 64 to be compliant.

In addition, increasing roofing insulation R-value with EnergyGuard™ Insulation products will also help you achieve compliance. GardenScapes™ vegetated roofing systems are also compliant since the California Energy Commission considers a vegetated roof as one with thermal mass on it.

Effective 1/1/2010: Title 24 guidelines will also apply to steep-slope products.

Nonresidential steep-slope roofs with roofing products < 5 lbs. per square foot (asphalt shingles) shall have a minimum 3-year aged reflectivity value of 0.20 and a minimum emissivity value of 0.75, or a minimum aged solar reflectance index (SRI) of 16.

Steep-slope roofs with roofing products ≥ 5 lbs. per square foot (TruSlate® Roofing System) shall have a minimum 3-year aged reflectivity value of 0.15 and a minimum emissivity value of 0.75, or a minimum aged solar reflectance index (SRI) of 10.

For more information, please visit GAF's ecoScorecard website at [gaf.ecoscorecard.com](http://gaf.ecoscorecard.com).



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Manufacturers are 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 in order to evaluate aged results, which will eventually be on the CRRC website together with the initial results. Note: CRRC is an independent and non-biased organization that has established a system for providing building code bodies, energy service providers, architects, specifiers, property owners, and community planners with accurate data on reflective roof surfaces. This information helps to improve the energy efficiency of buildings, while positively impacting our environment.

The chart below lists Title 24-compliant GAF products for both low-slope and steep-slope roofing.

Type	Model	Initial Reflectivity	Initial Emissivity	3-Yr. Reflectivity	3-Yr. Emissivity	Aged SRI Index	CRRC Product ID#
Steep	Glenwood™ - Golden Prairie	0.17	0.92	Pending	Pending	17	0676-0103
Steep	Timberline® Cool Series® - Cool Weathered Wood	0.26	0.92	0.26	0.91	27	0676-0042
Steep	Timberline® Cool Series® - Cool Antique Slate	0.27	0.92	0.26	0.81	28	0676-0043
Steep	Timberline® Cool Series® - Cool Barkwood	0.27	0.92	0.26	0.81	28	0676-0041
Steep	Timberline Ultra HD® - Birchwood	0.20	0.92	Pending	Pending	20	0676-0096
Steep	Timberline HD® - Birchwood	0.20	0.92	Pending	Pending	20	0676-0096
Steep	Timberline HD® - Golden Amber	0.20	0.92	Pending	Pending	20	0676-0098
Steep	Timberline HD® - Copper Canyon	0.17	0.92	Pending	Pending	17	0676-0097
Steep	Timberline® American Harvest® - Amber Wheat	0.18	0.92	Pending	Pending	19	0676-0099
Steep	Timberline® Natural Shadow® - Arctic White	0.26	0.85	0.29	0.78	28	0676-0089
Steep	Royal Sovereign® - Desert Sand	0.19	0.92	Pending	Pending	19	0676-0100
Steep	Royal Sovereign® - White	0.27	0.91	0.27	0.84	28	0676-0033
Low	RUBEROID® EnergyCap™ 30 Granule FR	0.71	0.09	Pending	Pending	Pending	0676-0017a
Low	RUBEROID® EnergyCap™ HW Plus Granule FR	0.75	0.82	0.60	0.80	69	0676-0026
Low	RUBEROID® EnergyCap™ Mop Plus Granule FR	0.74	0.84	0.59	0.88	70	0676-0086
Low	RUBEROID® Torch Granule	0.84	0.81	0.70	0.82	84	0676-0025
Low	RUBEROID® EnergyCap™ Torch Plus Granule FR	0.74	0.90	Pending	Pending	Pending	0676-0019a
Low	TOPCOAT® 322 White Elastomeric Coating	0.87	0.89	0.68	0.86	82	0676-0010
Low	TOPCOAT® EnergyCote™ Elastomeric Coating	0.91	0.87	0.78	0.89	97	0676-0023
Low	TOPCOAT® EPDM Coating	0.86	0.88	0.70	0.87	85	0676-0009
Low	TOPCOAT® FireShield® MB	0.72	0.91	0.69	0.90	84	0676-0015
Low	TOPCOAT® FireShield® SB	0.81	0.90	0.71	0.89	87	0676-0014
Low	TOPCOAT® MB Plus	0.83	0.88	0.74	0.85	90	0676-0008
Low	TOPCOAT® Membrane	0.85	0.90	0.68	0.88	83	0676-0006
Low	TOPCOAT® Surface Seal SB	0.84	0.90	0.59	0.87	70	0676-0007
Low	EverGuard® TPO - Energy Gray	0.72	0.87	0.67	0.90	82	0676-0045
Low	EverGuard® TPO - Energy Tan	0.72	0.89	0.66	0.89	80	0676-0039
Low	EverGuard® Freedom™ TPO HW - White	0.83	0.84	0.72	0.91	89	0676-0093
Low	EverGuard Extreme® TPO	0.83	0.84	0.72	0.91	89	0676-0088
Low	EverGuard Extreme® TPO FB - Ultra White	0.83	0.84	0.72	0.91	89	0676-0094
Low	EverGuard® Freedom™ TPO - Gray	0.40	0.89	0.42	0.86	46	0676-0038
Low	EverGuard® Freedom™ TPO - Tan	0.65	0.90	0.59	0.84	69	0676-0037
Low	EverGuard® Freedom™ TPO - White	0.76	0.90	0.68	0.83	81	0676-0013
Low	EverGuard® PVC Smooth - White	0.87	0.87	0.76	0.84	93	0676-0090
Low	EverGuard® PVC - White	0.87	0.95	0.61	0.86	72	0676-0040
Low	EverGuard® PVC XK Fleece-back - White	0.87	0.87	0.76	0.84	93	0676-0091
Low	EverGuard® PVC XK - White	0.87	0.87	0.76	0.84	93	0676-0092
Low	EverGuard® TPO FB - Ultra Gray	0.40	0.89	0.42	0.86	46	0676-0029
Low	EverGuard® TPO FB - Ultra Tan	0.65	0.90	0.59	0.84	69	0676-0028
Low	EverGuard® TPO FB - Ultra White	0.76	0.90	0.68	0.83	81	0676-0027
Low	EverGuard® TPO - Gray	0.40	0.89	0.42	0.86	46	0676-0003
Low	EverGuard® TPO - Hartford Green	0.29	0.88	0.28	0.90	29	0676-0048
Low	EverGuard® TPO - Regal Blue	0.26	0.88	0.25	0.90	25	0676-0047
Low	EverGuard® TPO - Regal Red	0.33	0.86	0.32	0.91	25	0676-0046
Low	EverGuard® TPO - Tan	0.65	0.90	0.59	0.84	69	0676-0002
Low	EverGuard® TPO - White	0.76	0.90	0.68	0.83	81	0676-0001
Low	WeatherCote™ Elastomeric Coating	0.88	0.88	0.76	0.89	94	0676-0095
Low	GAFLAS® EnergyCap™ Mineral-Surfaced Cap Sheet	0.72	0.91	Pending	Pending	Pending	0676-0021a

\*Aged SRI (Title 24) is calculated using Aged Reflectivity and Initial Emissivity.

\*\*Calculated value per Title 24 requirements.

To find out more about CRRC (Cool Roof Rating Council), visit: <http://www.coolroofs.org>.

This is a partial list of products. For a current list of products, contact GAF Technical Services at 1-800-766-3411.