

Title 24

What Contractors Need to Know

by Bob Hyer, Vice President, APOC Roofing & Waterproofing

Over the past few months, we received thousands of questions related to Title 24, ranging from "What is Title 24," to "How do I comply with Title 24," and "How will Title 24 impact my business?" These important questions are critical to the success of the Roof Contracting Community. To demystify the new requirements, APOC has completed this **Guide to Understanding Title 24 Compliance**.

Note: This guide addresses only low slope commercial applications.



Who is Responsible?

The first point that contractors need to understand is that ultimately you—the contractor—will be responsible for Title 24 Compliance. The code will not only be enforced at the time of installation, but down the road as well. Contractors that try to slide by today will be held liable tomorrow, next year or 10 years down the road. The liability trail for compliance will follow you wherever you go. For example, if a contractor completes a job after October 1st that requires Title 24 Compliance and the roof system installed does not comply with new Title 24 Standards, the contractor may be held liable to bring the roof up to code when the building is sold or when other renovations to the building envelope are completed (insulation, windows, lighting, fenestration etc.) It is extremely important for roofing contractors to understand Title 24 requirements and how it affects their business!

Title 24 in a Nutshell

Who: *Who is responsible for Title 24?*

The California Energy Commission is the state's primary energy policy and planning agency. One of the commission's responsibilities is promoting energy efficient building standards.

What: *What is Title 24?*

Title 24 is the energy efficiency building standard created by the California Energy Commission. Specifically, Part 6, Section 118 of Title 24 governs the Mandatory Requirements for Installation of Cool Roofs.

What is required in Section 118?

Section 118 requires installation of a Cool Roof under the following conditions:

1. Non residential, low slope (less than 2" in 12") and
2. The roof is over conditioned space (air conditioned or heated) and
3. The work being completed is 20 roofing squares, or half the total roof area, whichever is less.

What: *What is a Cool Roof?*

As defined in Title 24, a Cool Roof product must meet the following requirements, certifications and performance characteristics:

1. The label shall list reflectance and emittance values tested in accordance with Cool Roof Rating Council (CRRC). CRRC publishes manufacturer's rating on its web site located at www.coolroofs.org.

The minimum values are: **Emittance \geq 0.75** and **Reflectance \geq 0.70**

2. Liquid applied coatings must list additional physical performance properties as follows:

Elongation	ASTM D 2370	Minimum 200%
Tensile Strength	ASTM D 2370	Minimum 100 psi
Post Aging Elongation	ASTM D 2370	Minimum 100%
Permeance	ASTM D 1653	Maximum 50 perms
Weathering	ASTM D 4798	No cracking or checking

3. Products shall be certified by CRRC or another approved entity.
4. Liquid Applied Coatings must be applied at a minimum thickness of 20 dry mils.
5. Aluminum Coatings must meet ASTM D 2824 or ASTM D 6848 and be installed as specified in ASTM D 3805. Note: If you are completing a re-roofing project without any other improvements to the energy efficiency of the building envelope, an aluminum coating will NOT Comply with Title 24 minimum requirements. Aluminum coatings may only be used when using the Performance Approach. In the Performance Approach, only partial credit will be given for the aluminum coating because of the low "Emissivity" rating, which is typically around 0.40. Because it will not receive full credit, other portions of the building envelope must be improved so that the entire building meets the required energy budget under Section 141. This virtually eliminates the use of aluminum coatings except on new construction projects that have included Aluminum coatings as part of the energy budget.

When: *When Does Title 24 become effective?*

Title 24 has an effective date of October 1, 2005. As it currently stands, the effective date will be determined by the date on the building permit issued by your local building department.

Where: *Where will Title 24 be enforced?*

Title 24 affects only products applied in the State of California.

Why: *Why the need for Title 24?*

As California continues to grow, the state faces ever-increasing challenges in energy services and management. With the recent energy crisis and blackouts, the CEC is dedicated to ensuring the State of California maintains "affordable, reliable, diverse, safe and environmentally acceptable sources of energy." One way to ensure our future is to improve the energy efficiency of the building envelope.

Be Aware

Many white acrylic coatings DO MEET the reflectivity and emissivity requirement of Title 24 as published by the CRRRC; however, they may fall short on a number of performance properties and characteristics that are additional requirements of Title 24, including:

Elongation	ASTM D 2370	Minimum 200%
Tensile Strength	ASTM D 2370	Minimum 100 psi
Post Aging Elongation	ASTM D 2370	Minimum 100%
Permeance	ASTM D 1653	Maximum 50 perms
Weathering	ASTM D 4798	No cracking or checking

NOTE: The Manufacturer should be able to provide independent laboratory certification of these properties. It is the responsibility of the contractor to ensure the product they are using complies with these performance characteristics.

Exceptions to Title 24

1. Gravel Roofs: The recovering of gravel roofs do not need to comply with the new requirements under the following conditions:
 - The existing roof is rock or gravel; and
 - The new roof has a rock or gravel surface; and
 - There is no removal of existing layers > 50% or 20 roofing squares; and
 - There is no recoating with a liquid coating; and
 - There is no use of a recover board or insulation to separate & protect the new roof covering from the existing surface.
2. New Construction Tradeoffs- Performance Approach.
3. High-rise Residential Buildings- High-rise residential buildings of 4 stories or greater have a separate set of rules & guidelines.
4. Hospitals- Hospitals are NOT required to comply with Cool Roof rules.
5. Process Spaces- Refrigerated Warehouses (do not have Cool Roof requirements)
6. Unconditioned buildings- Non Residential, low slope buildings that do not use conditioning equipment to cool the building.

APOC #252 Sunwhite Elastomeric Coating

EXCEEDING ALL REQUIREMENTS OF TITLE 24

APOC #252 is the #1 Elastomeric for Title 24 Compliance.

Its unmatched Reflectivity and Emittance values are well above the competition and our physical performance properties speak for themselves.

All tests were conducted by an independent lab, videotaped and certified by a licensed engineer.



CRRC Reflectivity and Emittance		
Property	CRRC Requirement	APOC #252 result
Reflectance	min 0.70	min 0.90
Thermal Emittance	min 0.75	min 0.87

Other Required Physical Properties			
Property	ASTM Test	Requirement	APOC #252 result
Elongation	D 2370	min. 200%	463%
Tensile Strength	D 2370	min. 100 psi	365 psi
Post aging	D 2370	min 100%	131%
Permeance	D 1653	max 50 perms	<5 perms
Weathering	D 4798	no cracking or checking	no cracking or checking



**APOC #252 SUNWHITE ELASTOMERIC
YOUR #1 TITLE 24 COATING!**

