



## Modernizations: Solving Title 24 Compliance Problems

As the building market continues to evolve we find that more of our clients are modernizing existing facilities to meet their users changing needs. These alterations, as the code terms them, present special challenges under California’s 2008 Building Energy Efficiency Standards (aka Title 24-2008). Proving compliance via the Prescriptive Method is easiest, but may result in more expense to the owner. Complying via the Performance Method can limit the scope of envelope modifications and the budget. Some of the prescriptive requirements for alterations that may cause compliance problems are:

### Altered Walls

- Max U value allowed per T-24-2008 Table 143-A.
- 2x6 walls may not have adequate thickness for minimum insulation levels
- Metal framed walls, and 2x6 or thinner wood walls, may require continuous insulation board

### Altered Roofs

- If >50% of roof area or 2,000 ft<sup>2</sup> of the roof is replaced, recovered, or recoated you must demonstrate compliance
- When low-sloped roofs are exposed to the roof deck or to the recover boards, the exposed area shall be insulated to the levels specified in T-24-2008 Table 149-A.
- Roofing Required Thermal Properties (see Rated Products @ [www.coolroofs.org](http://www.coolroofs.org))

	Aged Solar Reflectance	Thermal Emittance
Low Slope ≤ 2:12	0.55	0.75
Steep Slope > 2:12		
Lightweight (< 5lbs/ft <sup>3</sup> )	0.20	0.75
Heavyweight (>5 lbs/ft <sup>3</sup> )	0.15	0.75

### Altered Windows

- Replacing existing glazing with new (ie dual pane) will trigger the standards.
- Max U factor and RSHG from T-24-2008 Table 143-A
- Zones 1 & 9-16 may require “thermally broken” window frames
- Windows-to-Wall area is limited to 40%. Conditions where the existing glazing area exceeds 40% will likely require infill with opaque assemblies (i.e. wall or spandrel panels)

If your proposed project cannot accommodate these minimums, compliance can be demonstrated under the “performance” method which trades increased performance in one category against deficiency in another. Capital Engineering can help advise you on the most cost effective solutions for any project. The consequences of poor Title 24 compliance range from rejected or incomplete permit submittal to under performance in certification and energy based incentive programs such as SBD, HPI, CHPS, and LEED.

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