

# 2008 Title 24

## History and overview of changes to Residential Standards

# Title 24 Energy Compliance Beginning ?

- Since 1978, all new homes, additions and alterations to existing homes, and most commercial buildings within California are required to meet the minimum energy efficiency standards contained in Title 24, Part 6 of the California Code of Regulations.
- The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in response to a legislative mandate to reduce California's energy consumption.
- The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

# 2008 Title 24

Effective January 2010!

- Residential is ~15% more stringent than 2005 standards.
- Energy use standard based on TDV.
- New requirements for high performance fenestration products.
- Skylight glazing and shaft requirements.
- Mandatory requirements for high efficacy fixtures and lighting control devices.
- Mandatory new indoor air ventilation requirements
- Prescriptive requirements for duct sealing
- Tankless water heater de-rating.

# Time Dependent Valuation (TDV)

- 2005 standards instituted TDV as basis for the standards.
- Title 24 involves the basis for calculating the value of saved energy. Previously, energy standards hinged on the use of a flat kilowatt value, with the same value applicable regardless of the time the energy was used.
- The more advanced time-dependent valuation formula accounts for the fluctuation of energy value throughout a time period, assigning hour by hour values to energy consumption.
- As a result, energy use during peak demand time is weighted more heavily than use during non-peak times, giving a more accurate calculation of consumption and an incentive to reduce peak demand.
- *Structures are not yet recognized as energy producers – the standards are orientated toward conservation and efficiency.*

# Two Compliance Requirements

- **Installation of Mandatory Measures**
- **Demonstrate the buildings predicted annual energy consumption is no greater than the designated energy budget for heating, cooling and water heating in the designated zone.**

# Upgraded Fenestration Requirement

- **New minimum U-factor of .40 for all climate zones**
- **New Solar Heat Gain Co-efficient of .40 for zones 4& 5 (slo county).**

# Skylights & Shafts

- Skylight shaft walls must be insulated.
- Includes Tubular skylights.
- Tubular skylights are typically considered to be single glazed.
  - A tubular skylight has to have two panes with less than a two inch gap placed at the ceiling level, to be considered dual paned.
- Plans need to show skylight shaft at section detail.

# Lighting

- **Lighting is not part of the energy budget – there are no tradeoffs between lighting and other building features** (*i.e. you must do this!*)
- **Kitchens: At least half the installed wattage shall be high efficacy.** (however some lighting inside cabinetry may be excluded from this calculation)
- **Any luminaire with a medium base socket is considered low efficacy.**
- **Bathrooms, Garages, Laundry rooms, Closets and Utility rooms must have high efficacy or vacancy sensor controlled luminaires.**
- **Other Rooms – a dimmer may be substituted for the vacancy sensor.**

# Mechanical Ventilation

- Residences are required to have a whole house ventilation system – meeting ASHRAE Standard 62.2
- Typical Solution: quiet bath fan – 30 to 150 cfm. *ALWAYS ON!*
- Central integrated and combo systems are options.
- Kitchens & Bathrooms shall have exhaust systems vented to the outdoors.
- Clothes dryers *CAN NOT* be ventilated to the indoor space.

# Duct Leakage

- **New home duct testing shows up to 40% loss through leakage at joints.**
- **Duct sealing is now a prescriptive package requirement . (requires HERS verification)**
- **Credit now given for “buried” duct work.**
- **Credit now given for good duct layout.**

# Domestic Water Heating

- The manual de-rates tankless water heater performance by .92 multiplier.
- Explore using parallel piping instead of circulating pumps.
- Point of use distribution criteria:
  - The distance between the water heater and any DHW fixture cannot exceed 8ft (plan view)
  - Exception: Washing machine may be located further than eight feet from the water heater.

# What is an Certified Energy Analyst?

- Certified Energy Analyst (CEA) has passed the CEPE examination.
- Is a member of CABEC.
- A Certified Energy Plans Examiner is required for documenting Title-24 results for the NSHP (new solar homes program)