

BenningfieldGroup

The Most Significant Changes in the 2005
Building Energy Efficiency Standards

source: California Energy Commission

All Buildings:

Time Dependent Valuation- favors peak energy saving measures over off-peak measures

New Federal Air Conditioner and Water Heater Standards- go into effect, become the basis of the energy budgets (applies to residential and to many commercial buildings that use “residential size” air conditioning)

Nonresidential buildings:

Cool roofs- requires new and re-roofing of nonresidential low-slope roofs with highly reflective roofing materials

Acceptance Requirements- sets guidelines for basic “building commissioning” for equipment prone to be installed improperly

Demand Control Ventilation- allows for sensors that vary ventilation depending on the CO2 levels in spaces with varying occupancy like conference rooms, dining rooms, lounges, gyms

T-bar Ceilings- prohibits insulation on t-bar ceilings (must be insulated at the roof or on hard ceilings)

Relocatable Public School Buildings- establishes special compliance approaches for relocatables so they can be moved anywhere statewide or they can be designed for specific climates

Duct Efficiency- requires mandatory R-8 duct insulation, duct sealing with field verification for ducts in unconditioned spaces in new buildings and when air conditioner is replaced

Indoor Lighting- sets lower power limits to encourage new efficient equipment. Limits the use of the tailored method

Skylights in Big Box Buildings- base case building assumes skylights and the code encourages controls to shut off the lights when daylight is available (buildings > 25,000 square feet with > 15 foot ceilings)

Efficient Space Conditioning Systems- addresses variable air volume, variable speed drives, electronically-commutated motors, better controls, certified cooling towers,. Prescriptive basis assumes water-cooled systems on large HVAC (more than 300 ton) systems

Unconditioned Buildings- sets lighting requirements pursuant to SB 5X (e.g., warehouses, parking garages)

Residential Buildings:

Efficient Lighting- requires high efficacy (e.g., fluorescent) in all permanent lighting or controls; high efficacy in kitchens; high efficacy or motion sensor bathrooms, utility rooms, garages, laundry rooms; high efficacy or motion sensor or dimmer in other lighting; high efficacy or motion combined photo sensor/motion sensor for exterior lights; airtight can lights

Duct Insulation- establishes levels depending on climate zone (R-4.2, R-6 or R-8)

Pipe Insulation- requires hot water pipes to the kitchen that are ¾ ” in diameter or greater have to be insulated

Replacement Windows- requires them to be high performance

Duct Sealing- requires sealing when air conditioner/furnace is replaced or ducts are replaced or significantly extended

Compliance Credit- allows credit for high EER air conditioners, gas cooling, high quality insulation installation, properly sized air conditioners, efficient air conditioner fan motors, ducts buried in attic insulation

Outdoor Lighting:

Covered Lighting Applications- establishes guidelines for lighting for automotive vehicles (e.g., parking lots), hardscape for pedestrian use (e.g., walkways, plazas), building entrances, outdoor sales lots (e.g., car lots), vehicle service stations, sales and non-sales areas under canopies, ornamental lighting

Lighting Power Limits- establishes requirements by lighting zones depending on how much illumination is needed (national and state parks, rural areas, urban areas highly lit areas)

Shielding- allows “cutoff” fixtures to save energy by reducing glare

Bi-level Controls- provides credit for automated controls that provide bi-level control

Signs:

Lighting Power Limits- requires efficient lighting sources for indoor and outdoor signs