

**MOST SIGNIFICANT CHANGES IN THE
2005 BUILDING ENERGY EFFICIENCY STANDARDS**
(not a comprehensive list)

All Buildings

Time Dependent Valuation – favors peak energy saving measures over offpeak measures

New Federal Air Conditioner and Water Heater Standards – basis of the energy budgets (applies to residential and to many commercial buildings that use “residential size” air conditioners)

Nonresidential Buildings

Cool Roofs – new and reroofing of nonresidential low-slope roofs (prescriptive not mandatory) [§10-113, 118(i), 143(a)iA, 149(b)1B]

Acceptance Requirements – basic building commissioning (testing) for HVAC and lighting equipment and controls (mandatory) [§122(h), 125, 131(f)]

Demand Control Ventilation – sensors vary ventilation depending on CO₂ levels in spaces with varying occupancy like conference rooms, dining rooms, lounges, gyms (mandatory) [§121(c)]

T-bar Ceilings – not allowed to insulate on T-bar ceilings (have to insulate at the roof or on hard ceilings) (mandatory) [§118(e)]

Relocatable Public School Buildings – special compliance approaches for relocatables so they can be moved anywhere statewide or they can be designed for specific climates (performance) [§141(d)]

Duct Efficiency – R-8 duct insulation (mandatory) [§124(a)]; duct sealing with field verification for ducts in unconditioned spaces in new buildings and when air conditioner is replaced (prescriptive) [§144(k)]

Indoor Lighting – lower power limits to encourage new efficient equipment (mandatory) [§130(c)]

Skylights in ‘Big Box’ Buildings – skylights with controls to shut off the lights when daylight is available (buildings > 25,000 square feet with > 15 foot ceilings) (prescriptive) [§143(c)]

Thermal Breaks for Metal Roofs – continuous insulation required between metal roofs and metal framing members (prescriptive) [§143(a)]

Efficient Space Conditioning Systems – variable air volume, variable speed drives, electronically-commutated motors, better controls, certified cooling towers, have to use efficient cooling towers not air-cooled equipment on large systems (prescriptive) [§144]

Unconditioned Buildings – Energy efficient lighting requirements per SB 5X (e.g., warehouses, parking garages) (prescriptive and mandatory) [§100(e)2C]

Compliance credits – gas cooling, underfloor ventilation [Alternative Calculation Methods (ACM) Manual, performance]

Continued

Outdoor Lighting - Nonresidential Buildings (prescriptive and mandatory) [§ 132, 147]

Covered Lighting Applications - hardscape 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 – established by Lighting Zone depending on how much illumination is needed (national and state parks, rural areas, urban areas, highly lit areas)

Shielding – “Cutoff” fixtures to save energy by reducing glare

Bi-level Controls – Capability for lighting to be shut off to half level when not needed

Residential Buildings

Efficient Lighting – High efficacy (e.g., fluorescent) in all permanent lighting or controls; high efficacy in kitchens; high efficacy or motion sensor in bathrooms, utility rooms, garages, laundry rooms; high efficacy or combined photosensor/motion sensor for exterior lights; high efficacy or dimmer in other lighting; airtight can lights (mandatory) [§ 150(k)]

Duct Insulation – Levels depending on climate zone (R-4.2 to R-8) (prescriptive) [§ 151(f)10]

Pipe Insulation – Hot water pipes to the kitchen have to be insulated (prescriptive) [§ 151(f)8D]

Loopholes Closed – Credit no longer given for reduced glazing area or central water heating systems in multi-family buildings [Alternative Calculation Methods (ACM), performance]

Replacement Windows – Have to be high efficiency (prescriptive) [§ 152(b)1B]

Duct Sealing – required when air conditioner/furnace is replaced or ducts are replaced (prescriptive) [§ 152(b)1D,E]

Compliance Credit – High EER air conditioners, gas cooling, high quality insulation installation, properly sized air conditioners, efficient air conditioner fan motors, ducts buried in attic insulation (ACM Manual, performance)

Third Party Field Verification – Changes made to encourage quality installation to be field verified; group measures requiring third party testing and verification and improve protocols and procedures (ACM Manual, performance)

Outdoor Lighting – high-efficacy or motion sensor/photocontrol for fixtures attached to buildings (mandatory) [§ 152(k)6]

Signs

Lighting Power Limits or Efficient Lighting Sources required – indoor and outdoor signs (prescriptive and mandatory) [§ 132, 147]