



**Split Systems and Packaged Systems**

Change This (and nothing else)	 <b>Mandatory Requirements</b>					 <b>Prescriptive Requirements</b>	
	Setback Thermostat §110.2(c), §150.2(b)1Fi	Cooling Load Calcs §150.0(h), §150.2(b)1C	Heating Load Calcs §150.0(h), §150.2(b)1C	HERS: Duct Seal and Test §150.0(m)1-3 & 11 §150.2(b)1C, D, & E	Air Filtration and HERS: Cooling Coil Airflow and Fan Watt Draw §150.2 (b)1C, D	Duct Insulation §150.2(b)1D	HERS: Refrigerant Charge §150.2(b)1F
Whole Split or Packaged System (no ducts added or replaced)	<b>YES</b>	no	no <sup>C</sup>	<b>YES<sup>D</sup></b>	no	no	<b>YES<sup>H, I</sup></b>
Evaporator Coil (cooling coil), Condenser Coil, or Outdoor Condensing Unit	<b>YES</b>	no	no <sup>C</sup>	<b>YES<sup>D</sup></b>	no	no	<b>YES<sup>H, I</sup></b>
Furnace (air handler)	<b>YES</b>	no	no <sup>C</sup>	<b>YES<sup>D</sup></b>	no	no	<b>YES<sup>H, I</sup></b>
Compressor, Refrigerant Metering Device	<b>YES</b>	no	no <sup>C</sup>	no	no	no	<b>YES<sup>H, I</sup></b>
Some Ducts >40 feet of new or replacement	no	maybe <sup>B</sup>	maybe <sup>C, B</sup>	<b>YES<sup>E</sup></b>	no	<b>YES<sup>G</sup></b>	no
"All New" Ducts <sup>A</sup>	no	maybe <sup>B</sup>	maybe <sup>C, B</sup>	<b>YES<sup>E</sup></b>	<b>YES<sup>F</sup></b>	<b>YES<sup>G</sup></b>	no
Whole Split or Packaged System and All New Ducts	<b>YES</b>	<b>YES<sup>B</sup></b>	<b>YES<sup>C, B</sup></b>	<b>YES<sup>E</sup></b>	<b>YES<sup>F</sup></b>	<b>YES<sup>G</sup></b>	<b>YES<sup>H, I</sup></b>

Note:   
 • Replacing the blower wheel fan is considered a repair and does NOT trigger the Energy Standards.   
 • All new HVAC equipment must meet minimum federal efficiency requirements   
 • Cooling line insulation is triggered if the line set (cooling system, suction line) is replaced or repaired. Line sets ≤ 1.5" in diameter must have 0.75" thick insulation.

- A The system is considered to have "all new" ducts when 75% or more of the ducts are new material and up to 25% reused parts from the existing duct system (e.g., registers, grilles, boots, air handler, coil, plenums, duct material) if the reused parts are accessible and can be sealed to prevent leakage.
- B Cooling and heating load calculations are required when ducts are added to serve new conditioned space, such as an addition.
- C Heating equipment must meet CBC minimum capacity requirements.
- D Duct system leakage must be ≤ 15% in total, or ≤ 10% to the outside. Or, if unable to meet the sealing requirements, all accessible leaks must be sealed and verified by a HERS rater. §150.2(b)1E applies.
- E Unless exceptions apply, duct systems must be sealed and verified if >40 feet of new or replacement ducts are installed. In all climate zones, when new duct systems are installed in unconditioned space, leakage must be ≤ 5% of the air handler airflow.

- F When new duct systems are installed, cooling coil airflow must be >350 CFM per ton, and fan watt draw must be ≤ 0.58W/CFM. Alternatively, the system can meet the requirements in Table 150.0-B or Table 150.0-C (Return Duct Sizing and Filter Sizing).
- G When adding or replacing >40 feet of ducts in unconditioned space: CZ 1-10 and 12-13: R-6; CZ 11 and 14-16: R-8. HERS verification is required for insulated ducts in conditioned space. Mandatory duct insulation requirements (R-4.2) apply to all new or replacement ducts (not existing or unaltered ducts).
- H HERS verification of refrigerant charge is required in climate zones 2 and 8–15 only when a refrigerant containing component of an air conditioner or heat pump is replaced or installed in an existing building.
- I Although there are no commercially available HVAC systems with approved Fault Indicator Displays (FID) devices at the time of publication (July 2016) the Energy Standards do allow use of a CEC-approved FID should such equipment become available during the 2016 code cycle.

# For More Information

## Primary Sources

- Energy Standards Section 110.2 – Mandatory Requirements for Space-Conditioning Equipment  
[energycodeace.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1102mandatoryrequirementsforspaceconditioningequipment.htm](http://energycodeace.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1102mandatoryrequirementsforspaceconditioningequipment.htm)
- Energy Standards Section 150.0 – Mandatory Features and Devices  
[energycodeace.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1500mandatoryfeaturesanddevices.htm](http://energycodeace.com/site/custom/public/reference-ace-2016/index.html#!Documents/section1500mandatoryfeaturesanddevices.htm)
- Energy Standards Section 150.1 – Performance and Prescriptive Compliance Approaches for Newly Constructed Residential Buildings  
[energycodeace.com/site/custom/publicreference-ace-2016/index.html#!Documents/section1501performanceandprescriptivecomplianceapproachesforlowr.htm](http://energycodeace.com/site/custom/publicreference-ace-2016/index.html#!Documents/section1501performanceandprescriptivecomplianceapproachesforlowr.htm)
- Energy Standards Section 150.2 – Energy Efficiency Standards for Additions and Alterations in Existing Buildings that Will Be Low-Rise Residential Occupancies  
[energycodeace.com/site/custom/public/reference-ace-2016/Documents/section1502energyefficiencystandardsforadditionsandalterationsto.htm](http://energycodeace.com/site/custom/public/reference-ace-2016/Documents/section1502energyefficiencystandardsforadditionsandalterationsto.htm)

## California Energy Commission Information & Services

- Energy Standards Hotline: 1-800-772-3300 (Free) or [Title24@energy.ca.gov](mailto:Title24@energy.ca.gov)
- Online Resource Center:  
[energy.ca.gov/title24/orc/](http://energy.ca.gov/title24/orc/)
  - The Energy Commission’s main web portal for Energy Standards, including information, documents, and historical information

## Additional Resources

- Energy Code Ace:  
[EnergyCodeAce.com](http://EnergyCodeAce.com)
  - An online “one-stop-shop” providing free resources and training to help appliance and building industry professionals decode and comply with Title 24, Part 6 and Title 20. The site is administered by California’s investor-owned utilities.  
*Of special interest:* 2016 Fact Sheet on Residential HVAC Alterations  
[energycodeace.com/content/resources-fact-sheets](http://energycodeace.com/content/resources-fact-sheets)  
Please register with the site and select an industry role for your profile in order to receive messages about all our free offerings!



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