



INFORMATIONAL BULLETIN

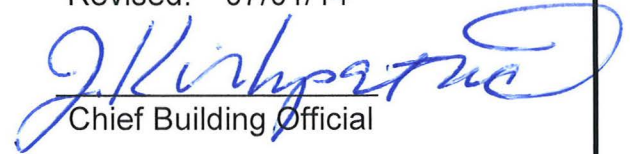
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Chief Building Official

REQUIREMENTS FOR ALTERATIONS MADE TO LOW RISE RESIDENTIAL SPLIT SYSTEM AIR CONDITIONER CONDENSING UNIT, HEATING OR COOLING COIL, OR FURNACE HEAT EXCHANGER REPLACEMENTS

Section 150.2 (b) of the 2013 California State Building Energy Efficiency Standards, effective July 1, 2014, regulates replacement of split system air conditioner units, heating or cooling coils and heat exchanger for low rise residential buildings. The requirements, defined below, apply to projects for which an application for permit is made on or after the effective date.

IMPORTANT NOTES FOR THE HOMEOWNER AND CONTRACTOR:

- 1) The types of work described by this bulletin may be eligible for a rebate or other incentive through Southern California Edison. To learn more visit the Rebates and Savings-Heating & Cooling webpage @ <http://www.sce.com/residential/rebates-savings>.
- 2) The California Certified Energy Rating & Testing Services (CalCERTS) and the California Home Energy Efficiency Rating System (CHEERS) are approved by the Energy Commission as HERS Providers to oversee HERS Raters. Rater directories may be accessed <https://www.calcerts.com/> or <http://www.cheers.org/>.
- 3) Under the Business and Professional Code of the State of California and enforced by the Contractor State License Board (CSLB), a project is considered incomplete until all acceptance requirements below are met. **Additionally, it is illegal for a contractor to accept/receive final payment before all work is complete, which includes a final inspection approval.** Misconduct in regards to any of these requirements may result in a complaint filed with CSLB.
- 4) The homeowner is cautioned against making a final payment to the contractor until the City Inspector has approved a final inspection.

EQUIPMENT REQUIREMENTS

Compliance Certification: All new equipment shall be certified with the California Energy Commission. For verification, go to www.energy.ca.gov/appliances/database.

A/C Efficiency: Central, single phase air conditioners and air source heat pumps shall have a minimum Seasonal Energy Efficiency Ratio (SEER) of 13 (SEER of 14 required for applications received on or after 1/1/2015). For other air conditioners or heat pumps refer to Table 4-6 of the 2013 Building Energy Efficiency Standards Residential Compliance Manual or go the link referenced above.

Gas-Fired Furnace Efficiency: Gas-fired furnaces shall have an AFUE (Annual fuel utilization efficiency) of 78% for units having a capacity less than 225,000 Btu/h, and an 80% AFUE for units having a capacity equal to or greater than 225,000btu/h.

Duct Insulation: New or replacement ducts and duct extensions within unconditioned space shall have R-6 insulation.

Hose Insulation: For the split system air conditioner the suction line only requires insulation having a thickness of 0.5 inches for lines having a diameter of less than 1.5 inches and a thickness of 1 inch for lines having a diameter of 1.5 inches or more. Insulation must be suitable for outdoor use and be protected against damages from sunlight, moisture, equipment maintenance and wind.

Setback Thermostat: Any existing non-setback thermostat is required to be replaced with a setback thermostat equipped with a clock mechanism allowing for temperature set points for at least four periods within 24 hours.

INSTALLATION AND TESTING RESPONSIBILITIES

The installing **contractor is responsible** for ensuring the equipment, installation, HERS (Home Energy Rating System) rater verification and project documentation conforms to the California Energy Code. See the table below for HERS requirements and corresponding documentation.

Title 24, Part 6, Residential Triggers

HERS RATER REQUIREMENTS			
Split Systems and Packaged Systems	HERS: Duct Seal and Test	HERS: Cooling Coil Airflow and Fan Watt Draw	HERS: Refrigerant Charge
Change this (and nothing else)	§ 150.0 (m) 1-3 & 11 § 150.2 (b) 1 C, D, & E	§ 150.0(m) 12, 13 & 15 § 150.2(b) 1C & D	§ 150.1(f)7 A § 150.2(b)1F
Whole split or packaged system (no ducts added or replaced)	YES ^A	No	YES ^{B,C}
Evaporator coil (cooling coil), condenser coil, or outdoor condensing unit	YES ^A	No	YES ^{B,C}
Furnace (air handler)	YES ^A	No	YES ^{B,C}
Compressor, refrigerant metering device	No	No	YES ^{B,C}
Some ducts	YES ^A	No	No
“All new” ducts ^D	YES ^E	YES ^F	No
Whole split or packaged system and all new ducts	YES ^E	YES ^F	YES ^{B,C}

HERS rater Compliance Forms ^G (to City Inspector at final inspection)	Duct Seal and Test: CF3R-MCH-20a-H (For new system) CF3R-MCH-20d-H (For altered system)	Cooling Coil Airflow CF3R-MCH-23-H Fan Watt Draw CF3R-MCH-22-H	Refrigerant Charge CF3R-MCH-25-H
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See the next page for footnotes

- A. *Duct systems must be sealed and verified if > 40 feet of ducts in unconditioned space. Duct system leakage must be \leq 15% in total, or \leq 10% to the outside. Or, if unable to meet the sealing requirements, all accessible leaks must be sealed and verified by a HERS rater.*
- B. *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. Note: Irvine is in climate zone 8.*
- C. *Although there are no commercially available HVAC systems with approved Charge Indicator Display (CID) devices at the time of publication (October 2013), the Standards do allow use of a CEC-approved CID should such equipment become available during the 2013 code cycle.*
- D. *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.*
- E. *In all climate zones, when new duct systems are installed in unconditioned space, leakage must be \leq 6% 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 \leq 0.58 W/CFM. Alternatively, the system can meet the requirements in Table 150.0-C or Table 150.0-D (return Duct Sizing and Filter Sizing).*
- G. *For PDF versions of these forms go to:
www.energy.ca.gov/title24/2013standards/residential_manual.html*

CITY FINAL INSPECTION AND ACCEPTANCE REQUIREMENTS

A final inspection is required upon completing the work. At this time the inspector will check the installation for compliance to the mechanical and electrical code and verify the following:

- Equipment Efficiency Rating
- Suction Line Hose Insulation
- Setback Thermostat

Completed Title 24 compliance documentation must be provided to the inspector at this time as well. This includes:

- Original, signed copy of the Installation Certificate (CF2R-MCH-01-H) from the contractor
- Original signed copies of the Certificates of Field Verification and Diagnostic Testing from the HERS rater as applicable per the table above.