

## CALIFORNIA ENERGY COMMISSION

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## ***Staff Supplement to CASE Report #2016-RES-ENV1-F***

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**Subject:** Residential Ducts in Conditioned Space/High Performance Attics 2016-RES-ENV1-F

California Energy Commission

**DOCKETED**

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### DESCRIPTION OF PROPOSED REGULATORY CHANGES

CASE report #2016-RES-ENV1-F, titled, Residential Ducts in Conditioned Space/High Performance Attics proposes to make the following changes to the Standards:

- Change the prescriptive requirements for Roof and Ceiling insulation in Section 150.1(c)1, and provide two options for meeting code requirements, depending on where the mechanical system is located and where the roof deck insulation will be placed. Option A requires R-13 insulation below the roof deck or R-6 continuous insulation at the roof deck that is not thermally bridged. Where no roof deck insulation is required, a radiant barrier on the roof deck is required. Option B applies to insulation that is located at the roof deck for unvented attics or cathedral ceilings, or at the boundary between the between the attic and the conditioned space below for vented attics
- Impose prescriptive requirements on distribution systems located in high performance attics or in conditioned spaces. The requirements vary depending on the location of the distribution system: the requirements for ducts in high performance attics include increased insulation, while the requirement for ducts in conditioned spaces includes field verification of the duct location. The purpose of this change is to decrease the heat loss or heat gain from the attic space to the conditioned air in the distribution system.
- Modify the field testing procedure requirements and protocols in the Residential Appendix associated with each of the above approaches. The report recommends changes to Residential Appendices RA2 for HERS verification, testing, and documentation procedures, RA3 for residential field verification and diagnostic test protocols, RA4 for eligibility criteria for energy efficiency measures, and the Table RA2-1 Summary of Measures Requiring Field Verification and Diagnostic.
- Modify RA3 for verification of installing ducts in conditioned space and quality insulation installation.

Staff agrees with the proposed changes to Section 150.1(c) and has incorporated substantively similar changes into the proposed Express Terms.

#### STAFF ANALYSIS AND CONCLUSION

Staff has analyzed the submitted CASE report and reached the following conclusions for the measures included in the Express Terms:

- Based on the evidence presented in the CASE Report, the measures, as proposed, appear to be cost effective and the author appears to have appropriately followed the Energy Commission's Life Cycle Cost methodology.
- Measure costs premiums presented in the CASE Report appear reasonable and appropriate for the measure proposed.
- Measure energy savings presented in the CASE Report appear to have been appropriately modeled and appear credible.
- Measure environmental impacts presented in the CASE Report appear reasonable and appropriate for the measure proposed.