

October 27, 2011

Ron Yasny  
Contract Manager High Performance Buildings  
and Standards Development Office  
California Energy Commission  
1516 Ninth Street, MS-37  
Sacramento, CA 95814



Re: Public comments on draft language for 2013 Building Energy Efficiency Standards  
(October 14 Workshop), docket number 10-BSTD-01

Dear Mr. Yasny:

The following are my comments on the draft proposed language for **Section 150.2**. There will be comments to follow on other sections, under separate cover.

Thank you for your consideration and the hard work of CEC staff on this important topic.

Sincerely,

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<b>DOCKET</b>	
<b>10-BSTD-01</b>	
DATE	Oct. 27 2011
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150.2(b) Alterations.

1. Prescriptive Approach.

D. **Duct Replacement**: When more than 40 feet of new or replacement space-conditioning ducts are installed in unconditioned space **or indirectly conditioned space**, the new ducts shall . . .

i. If the new ducts form an **entirely new or replacement duct system** directly connected to the air handler, the measured duct leakage shall be less than 6 percent of fan flow . . .

“Entirely new or replacement duct systems” is a specifically defined term, the definition of which is not intuitive with the actual words in the term. The term should be italicized and then followed by, “as defined in section ...”

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150.2(b) Alterations.

1. Prescriptive Approach.

- D. **Duct Replacement**: When more than 40 feet of new or replacement space-conditioning ducts are installed in unconditioned space **or indirectly conditioned space**, the new ducts shall . . .
- ii. If the new ducts are an extension of an existing duct system, the combined new and existing duct system shall meet one of the following requirements:
- a. The measured duct leakage shall be less than 15 percent of system fan flow **as determined utilizing the procedures in Reference Residential Appendix Section**; or
  - b. The measured duct leakage to outside shall be less than 10 percent of system fan flow **as determined utilizing the procedures in Reference Residential Appendix Section 4**; or
  - c. If it is not possible to meet the duct sealing requirements of **either Section 150.2(b)1Diia, or Section 150.2(b)1Diib**, **then** all accessible leaks shall be sealed and verified through a visual inspection and a smoke test by a certified HERS rater **utilizing the methods specified in Reference Residential Appendix RA3.1.4.3.6.**

We strongly support making the duct sealing requirements equal in all climate zones. The title of section D should be “Duct Replacement – Duct Sealing”, consistent with section E.

I believe that the target should be 15% and you should be able to meet it by either a total duct leakage test or a leakage to outside test. Here is a situation that occurs by having the two different targets: a single story house has all of its ducts and equipment located in the attic. They measure the total leakage at 14.9%. Clearly all of this leakage is to the outside. Another house has some of the ducts inside conditioned space and they measure leakage to outside at 10.1%. The first house passes, but the second house does not, even though it clearly has about 1/3 less leakage to the outside.

I suggest that the 15% target leakage be leakage to the outside (since that is what the compliance software assumes) and they be allowed to test using the normal total leakage test or the leakage to outside test. I suggest the following language:

- ii. If the new ducts are an extension of an existing duct system, the combined new and existing duct system shall meet one of the following requirements:
- a. The measured duct leakage shall be less than 15 percent of system fan flow **as determined utilizing the procedures in Reference Residential Appendix Section RA3.1.....; or RA3.1.... (leakage to outside method).**
  - b. If it is not possible to meet the 15% leakage target **then** all accessible leaks shall be sealed and verified through a visual inspection and a smoke test by a certified HERS rater **utilizing the methods specified in Reference Residential Appendix RA3.1.4.3.6.**

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150.2(b) Alterations.

1. Prescriptive Approach.

E. **Altered Space Conditioning System - Duct Sealing:** In all climate zones, when a space-conditioning system is altered by the installation or replacement of space-conditioning equipment (including replacement of the air handler, outdoor condensing unit of a split system air conditioner or heat pump, cooling or heating coil, or the furnace heat exchanger) the duct system

I recommend removing furnace heat exchanger replacement as a trigger for duct sealing. It is a very rare occurrence and is far more consistent with the definition of a repair, rather than alteration. Most building departments do not require a permit for a furnace heat exchanger replacement, so it should not be something that alone could trigger the entire HERS process.

I have the same comments on section E that I have on Section D, above, regarding leakage to the outside, in fact, I believe that these two sections could be easily combined by treating the adding or replacing of 40 feet of ducts similar to adding or replacing a condenser, coil or airhandler.

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