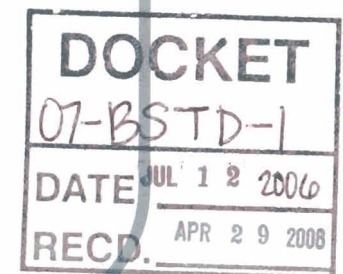


Low Leakage Air Handlers and Low Leakage Ducts in Conditioned Spaces

2008 California Building Energy Efficiency Standards

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Low Leakage Air Handlers

- Air handlers are a significant source of distribution system air leakage
- Raters report that leaky air handlers are one of the reasons systems fail duct sealing criteria
- Field applied air handler sealing, especially around access panels, may not be reliable

Low Leakage Air Handlers

Proposed Credit

- Propose a credit using the same testing definition as Florida code
- Manufacturers will have to test and certify to the Commission
- HERS Verification is required for credit
- Credit must be combined with verified duct leakage

Low Leakage Air Handlers

Definition

Low Leakage Air Handler

A factory sealed air handler unit tested by the manufacturer and certified to the Commission to have achieved a 2 percent or less leakage rate at 1-inch water gauge when all air inlets, air outlets and condensate drain port(s), when present, are sealed at an air pressure of 1-inch water gauge with no greater than 2-percent of design cubic foot per minute discharge.

Low Leakage Air Handlers

Two ACM Credit Methods

- Credit with verified duct leakage
 - Test to 6% (current criteria)
 - Reduce duct leakage factors in ACM calculations by 2% (from 8% to 6%)
- Credit with specified duct leakage
 - Test to specified total duct leakage level or lower
 - Reduce duct leakage factors to specified level assuming one half supply and one half return
 - Provides a way to do better than current leakage rate if done in conjunction with a low leakage air handler

Low Leakage Ducts in Conditioned Spaces

- Ducts in conditioned space can provide significant energy savings
- Current ACM rules separate conduction and air leakage losses
- Ducts qualifying as being in conditioned space have conduction losses set to zero, but still have same air leakage losses to outside as other ducts

Low Leakage Ducts in Conditioned Spaces

Proposed Credit

- Use test method described in Appendix RC.4.3.3, *Duct Leakage to Outside from Fan Pressurization of Ducts*
- Threshold of 25 cfm to meet definition of low leakage to account for practical measurement issues
- HERS Verification is required for credit
- Credit must be combined with verified duct in conditioned space

Low Leakage Ducts in Conditioned Spaces

Definition

Low Leakage Ducts

A duct system that has air leakage to outside conditions equal to or less than 25 cfm when measured in accordance with Section RC.4.3.3, steps 1 through 9.

Low Leakage Ducts in Conditioned Spaces

ACM Credit

- Reduce duct leakage factors in ACM calculations by 8% (from 8% to 0%)
 - Case with less than 12 feet of duct outside conditioned space needs to be considered