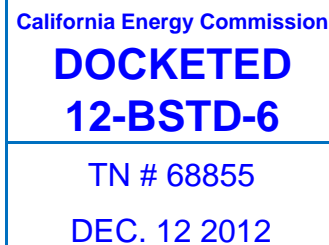


December 6, 2012

California Energy Commission  
Dockets Office, MS-4  
1516 Ninth Street  
Sacramento CA 95814-5512  
Via email: [docket@energy.state.ca.us]



To: Mazi Shirakh

**SUBJECT: Docket number: 12-BTSD-06**

### **Proposed Residential Manual Language Changes**

The following are additional concerns that ConSol has with the Residential Manual Draft:

#### **Wall insulation**

The Residential Manual does not explain how the requirement to fill the wall cavity applies (or does not apply) to homes using spray foam insulation. It was ConSol's understanding during the 2013 Standards development that spray foam could be applied without filling the cavity completely, but this is not clarified in the manual

#### **Whole house fans – Section 150.1 (c) 12**

Calculating the ventilation requirement when using a whole house fan is a new calculation and should be addressed in the Residential Manual. It would be useful to have both an explanation with equation and an example in "Q and A" format.

Vent installation should also be addressed, particularly installation of O'Hagan vents where Wildland Urban Interface (WUI) regulations and solar ready requirements could prohibit eave vents. The Residential Manual should also cover impact of WUI regulations since certain vents must be "tested and listed to resist intrusion of flame and burning embers" in those areas.

In an example home that ConSol used in analysis, the venting requirements for whole house fans required adding an additional 10 vents to 1/300 attic ventilation. An example that adds the required vent area using vents acceptable to WUI regulations and still meets solar ready requirements would be very useful

#### **Return duct sizing**

The Residential Manual should include examples of how to install double the return ducts, since this alternative to the mandatory requirement of fan watt draw testing is likely to be used frequently, since around half of the homes testing for fan watt draw do not pass this test.

It would also help if examples of how to install return grills in two story homes with two systems be included. A concern that needs to be addressed is how to fit the new return duct requirement in a small space.

#### **Solar ready**

The Residential Manual needs to clarify that the requirement is 250 ft<sup>2</sup> with exceptions to 150 ft<sup>2</sup>. It appears in the Residential Manual that the requirement is 150 ft<sup>2</sup>, which does not match the Standards.

In addition fire regulations for walkable space on roof should be addressed, with illustrative diagrams, such as those in the Fire Marshall's Solar Photovoltaic Installation Guide (dated April 22, 2008) and include a reference to that document.

#### **NAECA impact on compliance documentation**

Chapter 2 and Chapter 4 could both contain information about the change in NAECA standards during the 2013 code cycle. The confusion we are trying to prevent is builders not knowing that their plans created in 2014 are no longer in compliance in 2015. ConSol believes that the explanation of how to use the option within the software to create compliance documentation which will last for the entire three year code cycle should be included in Chapter 2, since it is a compliance documentation issue. It could also be repeated in Chapter 4 if necessary.

#### **Compliance Options**

The diagram for above deck insulation is unclear and does not show enough information to tell how to install these roof systems. ConSol thinks there would be benefit to diagrams of alternate wall assemblies, such as AWF systems in the Residential Manual, rather than only in JA4. If the CEC expects to increase the stringency of the Standards in 2016 then examples of how the CEC thinks the Standards will progress is useful to the building industry so they can test and determine if those solutions are practical.

Plumbing design that minimizes hot water loss and promotes efficient design should be demonstrated through examples in order to encourage builders to install such systems before they become requirements in subsequent code cycles

#### **Quality insulation installation (QII)**

For Quality Insulation Installation practices, ConSol would like to see metal tie downs and metal structural supports mentioned so that the inclusion of these metal components does not prevent claiming the credit for QII due to these components presence. This has been a problem with building departments in the past, and should be clarified (Section 3.1.23a). Examples that could be included are Simpson Strong-Tie, sturdy walls, and Hardy-frames. The proper insulation of metal components should be addressed.

In addition, to the metal issue, there is an ambiguity as to whether low density spray foam is can qualify for a QII credit. (Section 3.1.23, page 76-77)

#### **Window film**

The latest ACM Manual draft does not yet contain the math which explains how NFRC values of window film will be modified to account for the difference in the default window used by the CEC and the one used by the NFRC when evaluating window film.

#### **Vented gas fireplace heaters**

The two zone modeling which was inadvertently removed from the manual has already been submitted to the docket under separate comments. In addition ConSol would like to see clarification about the types of thermostats which will be considered valid for the two-zone credit, in particular, is it required that the central automatic dual setback thermostat be permanently mounted to a wall?

The minimum design AFUE for vented gas fireplaces using the two zone modeling credit and what lower infiltration due to retrofitting with a vented gas fireplace needs to be addressed.

Best regards,

Michael G. Hodgson

Cc: Bob Raymer, CBIA Technical Director