



# Oregon

Theodore R. Kulongoski, Governor

Department of Consumer and Business Services

Building Codes Division

1535 Edgewater Street NW

PO Box 14470

Salem, OR 97309-0404

(503) 378-4133

FAX (503) 378-2322

bcd.oregon.gov

June 17, 2009

*Oregon Commercial Energy Conservation Advisory Committee*  
*Wednesday, May 13, 2009*  
**Meeting Minutes**

**\*\*NOTE:** *The following minutes are a summary of the committee's discussion.*  
*To review the meeting in its entirety, the archived video of the meeting is available*  
*on the committee's Web site at the following link:* <http://www.bcd.oregon.gov/committees/10cec.html>

**Members Present:** Skai Dancey, Oregon Health and Sciences University (OHSU)  
Andy Dykeman, Lease Crutcher Lewis  
Jim Edelson, Governor's Energy Efficiency Working Group (EEWG)  
Jim Klopfenstein, Mechanical Board Member  
Tim Nicol, International Brotherhood of Electrical Workers (IBEW)  
Samir Mokashi, American Institute of Architects (AIA)  
Ron Lowen, Best Heating  
Nathan Philips, National Electrical Contractors Association (NECA)  
Bruce Sohr, Building Owners and Managers Association (BOMA)  
Marci Wichman, United Association of Plumbers and Steamfitters (UA290)

**Members Absent:** Martin Brown, City of Wilsonville, Building Official  
Jeff Harris, NW Energy Efficiency Alliance (NWEA)

**Guests Present:** Doug Mault, EIFS Industry Members Association (EIMA)  
David Cohan, Northwest Energy Efficiency Alliance (NEEA)  
Michael Rosenberg, Pacific Northwest National Laboratory (PNNL)  
Tom Young, Northwest Concrete Masonry Association (NWCMA)  
Larry Taylor, International Brotherhood of Electrical Contractors (IBEW)

**Staff Present:** Wendy Beard, northwest regional coordinator  
Gabrielle Schiffer, sustainability coordinator  
Shane Sumption, code specialist  
Richard Rogers, structural program chief  
Mark Campion, inspector  
Brady Peeks, department of energy  
Alan Seymour, department of energy  
Shauna Parker, rules coordinator  
Dana Fischer, building code para-technical

Wendy Beard, welcomed the committee and guests. She reminded everyone the meeting is a public meeting and is being video streamed live. She also asked that anyone wanting to make a public comment to please step up to the testimony table, state their name and who they represent.

Shane Sumption noted the correct version of the ASHRAE Standard 90.1-2007 has been given to the committee.

### **Table 1312.2.1(1) Envelope prescriptive path, other buildings – climate zone 1**

#### **Roofs:**

Alan Seymour addressed the committee on behalf of the Building Envelope Code Development Workgroup, stating the roof category in the working document has been broken into three groups. He explained the three categories: 1) Continuous insulation, 2) Engineered metal building, and 3) Attic, non-continuous and other.

He further explained that the values listed are taken from the ASHRAE Addenda and that the U-factor can be averaged. He continued to explain how some of U-factors have shown poor performance.

Bruce Soihr asked if a building is re-roofed, will costs be dramatically increased? Mr. Seymour answered no, and referred the committee to section 1312.2.2 on alterations for an explanation of his answer. The section states “.....or to the full depth of the cavity”.

Nathan Philips asked for confirmation that if you open up the roof, you would have to comply with the code. Confirmation was not given.

Mr. Sumption stated that although installation standards for insulation have changed, there will be a large cost savings.

Mr. Phillips expressed that insulation is expensive but installation is fast and labor costs are relatively low.

#### **Walls:**

Mr. Seymour voiced his concern that steel and wood frame buildings do not have the same insulation value. He explained that the same value for both is achieved by using a more dense insulation where necessary.

Jim Edelson stated that ASHRAE recognizes the difference between steel and wood frame building insulation, and therefore suggested a change to their standard by aligning the R-values associated with each building type, more closely together.

Doug Mault introduced himself, explaining he is representing EIFS Industry Members Association (EIMA), and that EIFS is the acronym for “Exterior Insulation and Finish Systems.” He briefly explained to the committee key points of how the walls are assembled, and that EIFS is now defined in Section 1402 of the 2009 IBC.

Mr. Mault also handed out a document to the committee describing the “[Oak Ridge National Laboratory Study](#)” a study done on whole wall R-value comparisons. He explained to the committee

the background of the study. He further explained the EIFS product has been used for 40 years and can be found in major hotels and various other commercial buildings.

Mr. Seymour, on behalf of Mr. Mault, summarized that the proposal's intent is to work around the fact that the EIFS product is not specified in code for metal or wood framed walls when all the insulation is installed, rigidly, on the exterior walls; the U-value can be calculated to comply with the proposal by using "continuous insulation." He further stated that he added two foot notes to Table 1312.2 which will allow two ways for insulation to be installed and that to better insulate a metal building, continuous insulation should be on the outside.

Andy Dykeman stated that the majority of exterior systems have a short circuited exterior skin. He explained several different types of attachments and joints that can be used.

Mr. Seymour shared with the committee some concerns that members of the Building Envelope Code Development Workgroup have. The group is concerned with whether energy efficiency is truly being gained through improvements to metal buildings with the use of insulation and short circuited exterior attachments. He explained a product called an "angle attachment" that replaces the typical C channel or other type of attachment allows either a ridged or floating attachment, and allows attachments to be placed farther apart.

Mr. Philips expressed concern that there may be a seismic issue. No other comment was made.

Mr. Sumption summarized that there may still be an issue with the foot notes, but believes it is covered by being able to achieve the U-factor. Mr. Philips reminded the committee that there was a question of whether they prefer the foot note or the table.

Jim Edelson asked where the proposal came from and expressed his disappointment in it. He believes it is a step backward from what ASHARE 2007 and the 2009 IECC list in their codes and that there should be one table for the state of Oregon which would make it easier for the construction industry. There was no answer to his question of where the proposal came from.

Tom Young, Northwest Concrete Masonry Association (NWCMA), commented on the wall provisions. He stated his industry feels they will take a big financial hit if the proposed tables of 1312.1(1) and 1312.1(2) are approved. The association is concerned with the potential elimination of a whole system of wall construction which is fire proof and durable. He further stated that the changes to the tables are too restrictive and have a negative impact on the masonry industry. The changes should be cost effective and should have been vetted in the Envelope Group.

Mr. Young handed out a counter proposal to [Tables 1312.1\(1\) and 1312.1\(2\)](#). He suggests maintaining a narrow option for the single insulated wall by insulating the core so the fire safe surface is on the inside. He further suggests reducing the U-factor by 15 percent in zone 1 and limiting the glass in zone 2 to provide better energy efficiency. For interior insulation options, he agrees with using continuous insulation.

Mr. Sumption asked Mr. Seymour if the values listed in Tables 1312.1(1) and 1312.1(2) were taken from ASHRAE 2007. The question went unanswered.

Mr. Rosenberg explained to the committee how the numbers in ASHRAE 90.1 are developed for the envelope. He noted that they are on a life cycle cost basis, and have a defined set of criteria. The numbers developed for the 2007 edition were established in 2005. Recently, ASHRAE re-did the numbers, with a proposal for the 2010 edition of U.104 or 9.5 inches of continuous insulation. It does not matter if it is interior or exterior.

The committee and guests continued to discuss Tables 1312.1(1) and 1312.1(2), how ASHRAE's cost savings analysis is determined and how it affects industry. Several members questioned if there is really a cost savings or not.

**Table 1312.1.2**

No Changes

**Table 1312.3.1(2) Envelope prescriptive path, other buildings – climate zone 2**

No changes.

**Table 1312.4 Effective R-values for fiberglass batt**

No changes.

**Table 1312.4.1 Assembly U-Factors for engineered metal buildings**

Mr. Sumption explained a clarification previously discussed on skylights, that the curb would be insulated to R-10 or the same as roof decks. No other changes were noted.

Mr. Mokashi requested that any tables taken from the ASHRAE Standard should list a side note, stating where the table came from so as not to confuse its origin. Mr. Philips agreed.

Mr. Sumption asked Mr. Seymour to summarize the prescriptive language. Mr. Seymour explained that the exception in this section is new. He pointed out an editorial error in the numbers contained in Table 1312.4.4.2.2. The table contains a column for "Overall U-factor." At the bottom of that row, the numbers to the right of U-0.057 and U-0.048 are incorrectly listed.

Mr. Philips and Mr. Edelson ask what the purpose of Table 1312.4.4.2.2 is. Mr. Seymour replied that he uses the table when jurisdictions and designers contact him on how to get information about assemblies and U-values. Mr. Seymour stated he refers the customer to the DOE Code Compliance Manual. If the information they need is not contained in the compliance manual, then he refers them to the ASHRAE Standard. The information is difficult to find in the ASHRAE Standard. This prompted Mr. Seymour to include the table so the information is easy to access.

Mr. Philips asked if he is correct in understanding that the information in Section 1312.4 can be considered a "tool" to apply the factors in Table 1312.4.4.2.2, and if that clarification could be added to the section. Mr. Mokashi agreed. Mr. Edelson asked if it could be added as an appendix rather than inserted in the code. Mr. Mokashi feels it is better to have the table listed in the code. Mr. Philips agrees and stated he believes if the table is listed in the code that makes it more enforceable, but if the table is listed in the appendix it may not be as enforceable.

Mike Rosenberg, Pacific Northwest National Laboratory (PNNL), commented there are different category requirements contained in the sections and believes it would be a mistake to put them all in an appendix. He also stated that in Section 1312.4.2, Suspended Ceilings that the language crossed out “used to separate conditioned spaces from unconditioned spaces” should be left in. This language, if removed, would create situations that happened before the language was in the code where batt was installed directly above ceiling tiles with no insulation on the roof. That turns the area into an exterior building envelope and could create a situation where there is too much air movement when ceiling fixtures are repaired.

Mr. Dykeman questioned why there is a percentage difference listed in Sections 1312.4.4.1 and 1312.4.4.2. He stated that the difference seems to imply that you can have a clip up to 14 percent but it cannot span member to member. Mr. Rosenberg stated that he believes Section 1312.4.4.1 was created by the “Building Envelope Code Development Work Group” that Mr. Seymour was a member of, and Section 1312.4.4.2 is taken from ASHRAE 90.1. He further stated that Section 1312.4.4.2 is referring to instances where there is not a metal surface spanning member it is differentiating between a steel framed wall and metal building wall.

**Table 1312.4.4.2 Effective Insulation/framing layer R-values for wall insulation installed between steel framing**

Andy Dykeman requested more detailed information on exterior surface spanning members. Mr. Seymour agreed to research the request. The committee continued to discuss wall insulation and how changing this section’s language will affect several other sections.

The committee agreed to finish discussion on this section, after Mr. Seymour can bring back answers to the committee on the requested research. Richard Rogers suggested putting this table at the back of Chapter 13 of the OSSC as an appendix for reference.

**1312.4.4.5 Below-grade wall insulation**

Mr. Seymour commented that the intent of this section is to address below grade wall insulation. He further explained that in some cases a concrete wall may be part of a full basement, and have some above grade insulation and some below grade insulation. In Oregon, a little bit of above grade wall is considered part of the below grade wall. He noted that the definition actually allows up to 2 feet of a wall to be above grade. This occurs when there is a slope to the outside grade. This creates a situation where there are two requirements that need to be applied to the same area of construction.

**1312.6 Concrete slab floors – above-grade**

Mr. Seymour explained that this section clarifies that the edge of the slab on-grade floor is part of the wall and has to be insulated. He further stated that continuous insulation can be used or the same insulation amount required for the exterior wall, whichever is less.

Mr. Edelson asked if this means more insulation will be required at the mass wall? Mr. Seymour answered yes, but questions if the committee believes the requirement should be the same? The question went unanswered. Mr. Seymour further stated that it is considered part of the wall assembly and needs to be insulated. He also noted that in some construction, there may be no insulation because it is over looked.

Mr. Philips stated he believes the second sentence “metal suspension, subframing systems for exterior cladding shall not exceed six percent of exterior slab floor perimeter surface area” is problematic because it now states you cannot exceed six percent, but used to say you could not exceed fourteen percent. Mr. Seymour agreed, but stated that this requirement pertains to slab or surface area only. He noted the change in percent should not be a problem because the area will be much smaller.

Mr. Dykeman asked if this really pertains to buildings where a wall system is being built floor to floor and not pertaining to balloon framing past the floor? Mr. Seymour answered yes.

Mr. Dykeman asked for clarification, if insulation will now be required where the sheathing comes down past the face? The question went unanswered.

Mr. Philips commented that he believes the six percent still seems extremely restrictive.

Mr. Lowen noted that if the structural angle attached to the wall is going to be on an R10 wall with about three inches of rigid insulation on it, it will have to be fifty percent heavier than if it was at the edge to hold the weight of the brick. He noted if the goal is to have no thermal conductivity of the floor to keep heat or cold out you could use a one inch (3.2 R rating) on the exterior and there would not be such a large distance that needs to be structurally beefed up.

Mr. Seymour commented that it is not the thickness of the metal that determines the conductivity it is the surface.

Mr. Sumption stated that the committee will continue this discussion at the next meeting.

### **Adjourn**

Meeting adjourned at 4:05 p.m.