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## Building Codes Division



*Working with Oregonians  
to ensure safe building  
construction while  
supporting a positive  
business climate.*

## Alternate Method Approvals

May 2008

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The division, with the assistance of the Building Codes Structures Board, has recently approved statewide alternate methods concerning snow loads, power actuated fasteners and screw anchors. In addition, the board has expressed support for the adoption of a statewide alternate method concerning adhesive anchors and identified acceptable criteria for such an alternate method.

### Statewide Alternate Methods:

Statewide Alternate methods are approved by the Division administrator in consultation with the appropriate advisory board. The advisory board's review includes the technical and scientific merits of the proposal. In addition:

- Building officials shall approve the use of any material, design or method of construction addressed in a statewide alternate method
- The decision to use a statewide alternate method is at the discretion of the owner or designer
- Statewide alternate methods do not limit the authority of the building official to consider site specific alternate methods encompassing the same subject matter

### Snow Loads:

As of May 7, 2008, Alternate Method No. OSSC 08-01 allows ground snow load to be determined in accordance with the *Snow Load Analysis for Oregon* published by the Structural Engineers Association of Oregon (SEAO), **October 2007**, as an alternate method to the ground snow load provided in SEAO's *Snow Load Analysis for Oregon, June 1971*. The October 2007 publication is available from SEAO: [www.seao.org](http://www.seao.org). The updated publication bases ground snow loads upon data collected by a remote data collection system, known as SNOTEL, managed by the Natural Resources Conservation Services. This data collection system records data every fifteen minutes from 77 Oregon sites; data includes temperature, precipitation, snow depth and snow water equivalent. This data was overlaid on a mapping system, known as PRISM, to create the updated snow load map. The following sections of *Snow Load Analysis for Oregon, October 2007* are approved for use under this alternate method:

- The Oregon map contained in the manual
- Part I, section, "USE OF MAP"
- Part II, section, "MINIMUM ROOF SNOW LOAD"
- Part II, section, "RAIN-ON-SNOW Surcharge"

### Power Actuated Fasteners:

As of May 7, 2008, Alternate Method No, OSSC 08-02 allows the continued use of Power Actuated Fasteners (PAFs) in seismic applications subject to the following limitations:

- PAFs must have current ICC-ES report
- PAFs cannot be used in tension
- Redundancy required; a minimum of 3 PAFs shall be installed in any application; minimum spacing, per PAF listing
- When used for exterior walls four stories or greater,
  - Limited to 15#/psf or less



- Increase factor of safety to 5:1 (20% of the listed value)
- When used for exterior walls three stories or less,
  - Limited to 15#/psf or less
  - Increase factor of safety to 2:1 (50% of the listed value)
- When used for interior walls,
  - Increase factor of safety to 2:1 (50% of the listed value)
- Engineering design calculations must be submitted

This alternate method will be reviewed in conjunction with the adoption of the 2010 Oregon Structural Specialty Code

### **Screw Anchors:**

As of May 7, 2008, Alternate Method No. OSSC 08-03 allows for the continued use of screw anchors subject to the following limitations:

- Continuous special inspections are required
- For legacy reports approved under the 1997 Uniform Building Code or 2000 International Building Code (IBC), design shall be based on 50% of the value listed
- For anchors currently submitted to ICC-ES for evaluation under the new ICC acceptance criteria per the 2003/2006 IBC Design shall be based upon 80% of the value stated in the report. A copy of the report shall be provided to the jurisdiction having authority
- Engineering design calculations must be submitted
- Applies to projects submitted for plan review prior to May 1, 2009

### **Adhesive Anchors:**

At the May 7, 2008 meeting of the Building Codes Structures Board, the board heard testimony from manufacturers concerning the need for a statewide alternate method allowing the continued use of adhesive anchors. Because the manufacturers had not requested an alternate method approval prior to the meeting, the division and the board were not able to take action on the request at the meeting. The board, however, indicated that it supported the development of an alternate method for adhesive anchors that included criteria similar to the approval for screw anchors.

If such an alternate method were approved, adhesive anchors would be allowed subject to the following limitations:

- Continuous special inspections are required
- For legacy reports approved under the 1997 Uniform Building Code or 2000 International Building Code (IBC), design shall be based on 50% of the value listed
- For anchors currently submitted to ICC-ES for evaluation under the new ICC acceptance criteria per the 2003/2006 IBC Design shall be based upon 80% of the value stated in the report. A copy of the report shall be provided to the jurisdiction having authority
- Engineering design calculations must be submitted
- Applies to projects submitted for plan review prior to May 1, 2009

The Building Codes Structures Board will likely consider an alternate method for adhesive anchors at its August 2008 meeting. Until that time, BCD is encouraging local jurisdictions to allow the use of adhesive anchors, per the limitations outlined above, as a site-specific alternate method.

### **Contact:**

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