

State of Oregon
Building Codes Division

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Statewide Alternate Method No. OSSC 08-03

(Ref.: ORS 455.060)

Issued May 7, 2008

SCREW ANCHORS

Oregon Structural Specialty Code, Section 1613.1

Statewide Alternate Methods are approved by the Division administrator in consultation with the appropriate advisory board. The advisory board's review is limited to 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 designer,*
- *Statewide Alternate Methods do not limit the authority of the building official to consider other proposed alternate methods encompassing the same subject matter*

Requested by: Oregon Building Codes Division

Purpose:

The International Codes Council Evaluation Service (ICC-ES) has established acceptance criteria (ref.; AC 193) for the consideration of screw anchors in cracked and un-cracked concrete. Currently, there are no screw anchors available with an AC 193 listing. Several manufacturers have completed their third party testing per the new criteria and are waiting for ICC-ES review and listing. However, ICC-ES is reporting a significant back-log of work and anticipates up to a years delay in the issuance of the same.

In the interim period, this alternate method will allow the continued use of screw anchors subject to certain considerations including special inspections and a required reduction in listed values.

Background:

Beginning with the 2003 International Building Code (IBC), the use of all post-installed anchors in concrete came under increased scrutiny. The IBC references ACI 318, Appendix D as the appropriate standard for these anchors.

Consistent with the IBC's "*strength design*" methodology, Appendix D requires that the design consider nominal tension and shear strength values for post-installed mechanical anchors used in cracked and un-cracked concrete. This is in contrast to the "*allowable stress design*" methodology used under previous codes, which considered the use of post-installed anchors in un-cracked concrete only.

As noted above, the International Codes Council Evaluation Service (ICC-ES) has established acceptance criteria (ref.; AC 193) for the consideration of screw anchors in cracked and un-cracked concrete.

The scientific and technical merits of this alternate method have been reviewed by the Building Codes Structures Board.

Applicable Code Citation:

2007 Oregon Structural Specialty Code, section 1613.1

Statewide Alternate Method:

Screw Anchors. In the absence of an approved ICC-ES report under the new ICC acceptance criteria, screw anchors may be used subject to the following:

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

The recommendation and findings of the Building Codes Structures Board are accepted and are adopted:

Mark Long, Administrator
Building Codes Division

May 7, 2008
Date