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**No: 2004 OSSC Section 1621.1 and  
2007 OSSC (effective on April 1, 2007) Section  
1613.1.**

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**Code Section:** 2004 OSSC Section 1621.1,  
2007 OSSC Section 1613.1,  
ASCE 7-02 Section 9.6.2.6 and  
ASCE 7-05 Section 13.5.6.2.2

**Code Edition:** 2004 and 2007 for OSSC's and  
2002 and 2005 for ASCE Standard 7.

**Date:** **REVISED: April 20, 2007**

**Subject:** Construction requirements for Suspended Ceiling Systems.

**Question:** What are the minimum requirements of the Oregon Structural Specialty Code for the construction of suspended ceiling systems?

**Answer:** ***I. The following options are available:***

- a. An engineered ceiling system designed for appropriate forces,
- b. Prescriptive ceiling systems per CISCA standards as provided below, except for ceiling systems in structures classified as Occupancy category III or IV:
  - i. in Seismic Design Category *C*, construction in accordance with CISCA standards for seismic zones 0-2.

***All of the notes in section IV of this interpretation shall be applicable in addition to the CISCA requirements.***

- ii. in Seismic Design Categories *D* through *F*, construction in accordance with CISCA standard for seismic zones 3 and 4 with modifications as noted in ASCE 7- 02 or ASCE 7-05 standard.

***All of the notes in sections IV and V of this interpretation shall be applicable in addition to the requirements contained in ASCE 7- 02/05 or ASCE 7-05 and the CISCA standards for***



***Seismic Design Categories D through F.***

- c. Effective April 1, 2007, (with the adoption of the 2007 OSSC) the following two additional options will be available based upon ASCE 7-05 Sections 13.2.5 and 13.2.6:
  - i. Shake table testing of components and their supports, to determine their seismic capacities, in accordance with ICC Acceptance criteria 156. {Section 13.2.5 of the ASCE 7-05.}, or
  - ii. Seismic qualification by experience data based on nationally recognized procedures. {Section 13.2.6 of the ASCE 7-05.}

***II. Northwest Wall & Ceiling Bureau - Technical Bulletin 401 OREGON (NWCB TB 401OR):*** In structures other than those classified as occupancy category III or IV, suspended ceilings installed in accordance with the prescriptive provisions of *NWCB TB 401OR* are ***deemed to comply with this interpretation.***

*NWCB TB 401OR* contains information compiled from the different applicable documents such as ASCE Standard 7-05, IBC 2006, ASTM Standard C635 and CISCA and is available at the following internet address:

[http://www.nwcb.org/images/resource\\_files/401\\_OREGON.pdf](http://www.nwcb.org/images/resource_files/401_OREGON.pdf)

***All of the notes in sections IV and V of this interpretation shall be applicable in addition to the requirements contained in NWCB TB 401OR.***

***III. The Seismic restraint for suspended ceiling systems in structures classified as Occupancy Category III and IV,*** are required to be designed for the specific project and the anchorage of the ceiling system is required to be periodically special inspected in Seismic Design Categories D, E, and F in accordance with the provisions of the current edition of the Oregon Structural Specialty Code.

***IV. GENERAL NOTES. The following notes are applicable to sections I and II:***

- a. ***SPECIALTY CEILINGS. Specialty ceilings, must be installed using an engineered design and may not use the provisions of this interpretation.*** Specialty ceilings include but are not limited to those:
  - i. Incorporating arched ceilings, curved or curvilinear ceilings or sloped ceilings; or
  - ii. Having no direct connection to the surrounding walls or supports, such as "free floating" or "cloud" ceiling elements.
- b. ***TILES.*** Suspended ceilings installed to this interpretation may use either standard acoustical lay-in ceiling panels, tegular or kerfed ceiling panels.

- c. SPREADER BARS.
  - i. Wire ties are deemed equivalent to spreader bars
  - ii. Spreader bars are not required if a 90 degree intersecting cross or main is within 8 inches of the perimeter wall.
  - iii. Spreader bars are not required at perimeters where ceiling grid ends are attached to closure angles.
- d. WIRE GAUGE: The minimum wire size shall be US Steel Wire Gage #12 (0.1055 inch).

**V. Notes Specific to Design Categories D through F**

- a. Lateral force bracing is required for ceilings over 144 square feet.
- b. Ceilings with interstitial spaces less than 12 inches to framing are not required to have lateral force bracing.
- c. GRID ATTACHMENT: The suspended ceiling grid **shall be attached to two adjacent walls**. Soffits complying D(ii)(2) are deemed to be equivalent to walls.
- d. SEISMIC JOINTS
  - i. For ceiling areas exceeding 2,500 square feet, a seismic separation joint shall be provided. The layout and location of seismic separation joints shall be per the designer of record and noted on the plans.
  - ii. In lieu of seismic separation joints, the ceiling may be divided into areas less than 2,500 square feet by the use of partitions or soffits as described below.
    - 1. Partitions. Where used, partitions shall extend a minimum of 6 inches above the level of the plane of the grid and shall be independently braced to the structure above.
    - 2. Soffits. Where used, soffits shall extend to a point at least level with the bottom plane of the grid and shall be independently supported and laterally braced to the structure above.
  - iii. Other than partitions and soffits, seismic joints may not be used as part of a fire rated ceiling assembly unless substantiating documentation is provided.
  - iv. The minimum movement that must be accommodated at seismic joints is  $\frac{3}{4}$  of an inch.
- e. PERIMETER CLIPS: Where substantiating documentation is provided, perimeter clips may be used to satisfy the following requirements:
  - i. 2 inch closure angle
  - ii. Spreader bar requirements
- f. Sprinkler Heads: Flexible head design that can accommodate 1 inch free movement in any direction shall be permitted as an

alternate to the requirement for 2 inch oversize rings, slee

