SUSPENDED ACOUSTICAL CEILING PER CBC 2007

REQUIRED REFERENCES

1. SUSPENDED ACOUSTICAL CEILINGS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C 635 AND ASTM C 636, AND, FOR SEISMIC DESIGN CATEGORIES D, E & F (ALL OF SANTA ROSA), IN ACCORDANCE WITH THE CSIC (CEILING AND INTERIORS SYSTEMS CONSTRUCTION ASSOCIATION) GUIDELINES FOR SEISMIC RESTRAINT FOR DIRECT-HUNG SUSPENDED CEILING ASSEMBLIES (7.0-1, 7.0-2, 7.0-3) AS MODIFIED BY ASCE 7-05 SEC. 13.5.5.22 INCLUDING SUB-SECTIONS A-H, (CBC 803.9.1.1 AND ASCE 7-07 13.5.5.22)

T-BAR GRID & VERTICAL SUPPORT

2. THE PERIMETER SUPPORTING Closure ANGLE SHALL BE 2" MIN. WIDE (UNLESS LISTED CLIPS FOR THIS PURPOSE ARE USED, IN WHICH CASE PROVIDE COPY OF ICC ES REPORT AND REFER TO REPORT ON DRAWINGS/DETAILS.) IN EACH ORTHOGONAL DIRECTION, ONE END OF THE CEILING GRID SHALL BE ATTACHED TO THE CLOSURE ANGLE, AND THE OTHER END SHALL REST ON THE SUPPORTING ANGLE WITH A 0.75" CLEARANCE TO THE WALL AND BE FREE TO SLIDE. (ASCE 7-05 SEC. 13.5.5.22 B) PERIMETER CLOSURE ANGLE ENDS, AND ENDS OF MAIN T-BAR AND CROSS T-BAR MEMBERS, SHALL BE TIED TOGETHER. (CSIC GUIDELINES FOR SEISMIC RESTRAINT)

3. A HEAVY DUTY T-BAR GRID SYSTEM SHALL BE USED AS DEFINED IN ASTM C 635 (ASCE 7-05 SEC. 13.5.5.22 A). THE MINIMUM MAIN T-BAR AND CROSS T-BAR CONNECTION STRENGTH SHALL BE 80 LBS. (CSIC GUIDELINES FOR SEISMIC RESTRAINT)

4. MAIN AND CROSS RUNNERS SHALL BE SUPPORTED TO STRUCTURE ABOVE BY A MIN. 12 GAUGE VERTICAL SUPPORT WIRE, BEGINNING 6" MAX. FROM WALLS AND EVERY 4" O.C. BOTH WAYS, (CSIC GUIDELINES FOR SEISMIC RESTRAINT & ASTM C 636 2.13 & 2.14) VERTICAL SUPPORT WIRE SHALL BE PLUMB WITHIN 1.0" OR REPLACED WITH TWO COUNTERSLOPING WIRES AT 45 DEGREES MIN. TO HORIZONTAL. (ASTM C 636 2.1.4) VERTICAL SUPPORT WIRES SHALL BE ATTACHED WITH 3 TURNS AT ENDS WITHIN A 2" LENGTH, WIRES NOT ATTACH TO OR BEAR AGAINST INTERFEROING MATERIAL OR EQUIPMENT AND SHALL BE INSTALLED TO PREVENT ANY SUBSEQUENT DOWNWARD MOVEMENT. (ASTM C 636 2.13,2.14,2)

5. THE CONNECTION DEVICE FROM VERTICAL WIRE TO THE STRUCTURE MUST SUSTAIN A MIN. 100 LBS. (CSIC GUIDELINES FOR SEISMIC RESTRAINT) SUSPENDED CEILINGS ANCHORS FOR TENSION IN CONCRETE OR MASONRY SHALL NOT BE POWER ACTUATED FASTENERS (UNLESS APPROVED AND LISTED FOR SUCH LOADING, IN WHICH CASE PROVIDE COPY OF ICC ES REPORT AND REFER TO REPORT ON DRAWINGS/DETAILS.) (ASCE 7-05 SEC. 13.5.5.18 & 13.4.8)

LATERAL SUPPORT

6. FOR CEILINGS OVER 1,000 S.F., PROVIDE HORIZONTAL RESTRAINT OF THE CEILING TO THE STRUCTURAL SYSTEM (COMPRESSION STRUTS WITH 4 SPLAY WIRES), TRIBUTARY AREAS OF THE HORIZONTAL RESTRAINT SHALL BE APPROXIMATELY EQUAL. EXCEPTION, RIGID BRACES ARE PERMITTED TO BE USED INSTEAD OF DIAGONAL SPLAY WIRES (ASCE 7-05 SEC. 13.5.5.22 C).

7. LATERAL FORCE COMPRESSION STRUTS SHALL BE OF EMT CONDUIT OR METAL STUDS OR OTHER APPROVED STRUTS. BRACES SHALL COMMENCE A MAX. OF 6" FROM WALLS AND BE SPACED A MAX. OF 12" O.C. THROUGHOUT, SPLAY WIRES AND BRACES TO BE SECURELY ATTACHED TO THE GRID AND THE SUPPORTING STRUCTURE. (CSIC GUIDELINES FOR SEISMIC RESTRAINT)

8. SPLAYED CEILING WIRES SHALL BE FOUR (4) 12 GAUGE, WIRES ATTACHED TO THE CEILING GRID WITHIN 2" OF THE STRUTS AND TO THE STRUCTURE ABOVE, SPLAY WIRES ARE TO BE ARRANGED 90 DEGREES FROM EACH OTHER AND A MAXIMUM OF 45 DEGREES FROM THE PLAN OF THE CEILING. SPLAY BRACING CONNECTION STRENGTH SHALL BE 200 LBS, OR DESIGNED PER ASCE 7.05 CHAPTER 13. (CSIC GUIDELINES FOR SEISMIC RESTRAINT)

9. FOR CEILINGS OVER 2,500 S.F., PROVIDE A SEISMIC SEPARATION JOINT OR FULL-HEIGHT PARTITION WALL (FOR SEPARATION INTO 2,500 S.F. AREAS) UNLESS ADEQUATE DOCUMENTATION IS PROVIDED BY A LICENSED DESIGNER JUSTIFYING THE INSTALLATION. (ASCE 7-05 SEC. 13.5.5.22 D).

10. CHANGES IN CEILING HEIGHT SHALL BE PROVIDED WITH POSITIVE BRACING. (ASCE 7-05 SEC. 13.5.5.22 F)

CONN. FOR 100% POWER ACTUATED FASTENERS NOT ALLOWED UNLESS APPROVED LISTING (SUCH AS ICC ES REPORT) IS PROVIDED

12 GA. WIRE MIN. W/NO BENDS. CONN. W/ 3 TURNS WITHIN 3" AT ENDS. PLUMB WITHIN 1.0° SLOPE OR PROVIDE COUNTER SLOPE CONFIGURATION PER DET. 2

NEW DUTY T-BAR SYSTEM

COUNTER SLOPED WIRE EA. SIDE OF SUPPORTED T-BAR IN LIEU OF VERT. WIRE...INSTALLED AT SAME SPACING AND CONN. REGTS. AS DETAIL 1

NAME, ADDRESS AND PHONE NO. OF DESIGNER

WET SIGNATURE OF DESIGNER ON EACH SHEET

EXAMPLE BUILDING

SUSPENDED CEILING DETAIL

SAMPLE DRAWING

SCALE: N.T.S.

DATE: FEB. 17, 2008

SC-1
SUPPLEMENTAL ACOUSTICAL CEILING NOTES (CONTINUED)

PARTITION LATERAL BRACING

11. Partition bracing shall be independent from splay bracing for ceiling grid system. Partition bracing shall be by separate splay wires in both directions perpendicular to the wall, or by rigid braces, or by a combination of both. Details shall be shown on the drawings. (CICSA Guidelines for Seismic Restraint & CBC 1614A.1.12-10)

WRITING, LIGHTING, AIR TERMINALS & FIRE SPRINKLERS

12. Cable trays and electrical conduits shall be supported independently of the ceiling. (ASCE 7-05 Sec. 13.5.5.6.22 G) All wiring methods and materials in suspended ceilings shall be approved for that application. Non-metallic sheathed cable is not approved for open wiring in suspended ceilings. All wiring and other components used in suspended ceilings must be specifically approved for that use. (CICSA Guidelines for Seismic Restraint)

13. All surface mounted light fixtures and air terminals for suspended ceilings shall be securely fastened to the ceiling members by bolts, screw, rivets or listed clips specifically approved for use with the type of framing and fixtures. (CICSA Guidelines for Seismic Restraint and CBC 410.10) Light fixtures shall be installed as follows:

A. Light fixtures weighing less than 10 pounds shall have one 12 GA wire hanger connected from the fixture to the structure above (wire may be slack).
B. Fixtures weighing more than 10 pounds and less than 56 pounds shall have two (2) 12 gauge wires at opposing corners to the structure above (wires may be slack).
C. Fixtures weighing more than 56 pounds must be directly attached to the structure above by approved hangers (not dependent on ceiling grid for support).
D. Pendant hung fixtures must be attached to the structure above by one 9 gauge wire or approved alternate (not dependent on ceiling grid for support).

14. Air terminals shall be installed as follows (CICSA Guidelines for Seismic Restraint):

A. Air terminals weighing less than 20 pounds shall be positively attached to grid.
B. Air terminals weighing more than 20 pounds and less than 56 pounds shall be positively attached to grid and shall have two (2) 12 gauge wires at opposing corners to the structure above (wires may be slack).
C. Air terminals weighing more than 56 pounds must be directly attached to the structure above by approved hangers (not dependent on ceiling grid for support).

15. All fire sprinkler piping and layout to be approved by the Fire Department prior to installation of ceiling tiles. (CICSA Guidelines for Seismic Restraint) Except where rigid braced are used to limit lateral deflection, fire sprinkler heads shall have a 2" oversize ring, sleeve or adapter through the ceiling to allow for at least 1" of movement in all directions. (ASCE 7-05 Sec. 13.5.6.22 E)

SPECIAL CASES (FIRE RATED CEILINGS, HOSPITALS ETC.)

16. Acoustical ceiling systems that are part of fire-resistant-rated construction shall be installed in the same manner used in the assembly tested and comply with the provisions of Chapter 7, (CBC 803.8.1, 12), for fire-rated main runners. All expansion relief cut outs shall be within 3' of a vertical support wire. (ASTM C 636 - 2.3.5)

17. For buildings under the OSHPD & DSA requirements of the CBC (Hospitals Etc.), see Chapter 16A Section 1614A.1.11 for a series of special suspended ceiling requirements.

NAME, ADDRESS AND PHONE NO. OF DESIGNER
XXX XXX XXX XXX
XXX XXX XXX XXX
WET SIGNATURE OF DESIGNER ON EACH SHEET
(AND PROFESSIONAL STAMP IF APPLICABLE)

EXAMPLE BUILDING
1234 MAIN ST.
SANTA ROSA, CA 95401
APN # 000-000-000

SUSPENDED CEILING DETAIL
SAMPLE DRAWING

SCALE: N.T.S.
DATE: FEB. 17, 2006

SHEET NO. SC-2