

# ICC-ES Evaluation Report

**ESR-3336**

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## DIVISION: 09 00 00—FINISHES

### Section: 09 22 26—Suspension Systems

### Section: 09 53 00—Acoustical Ceiling Suspension Assemblies

## REPORT HOLDER:

**CERTAINTEED CEILINGS CORPORATION**

## EVALUATION SUBJECT:

### SUSPENDED CEILING FRAMING SYSTEMS AND SEISMIC PERIMETER CLIPS

## 1.0 EVALUATION SCOPE

### Compliance with the following codes:

- 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)<sup>†</sup>

<sup>†</sup>The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-3336 LABC Supplement](#).

### Properties evaluated:

- Structural
- Interior finish

## 2.0 USES

The CertainTeed suspended ceiling framing systems for acoustical tiles described in this report are exposed framing systems for use with lay-in acoustical tile suspended ceiling assemblies used in interior construction as noted in this report. The CertainTeed Seismic Perimeter Clips are used to connect main runners and cross tees to a wall angle or shadow molding in suspended ceiling framing systems for acoustical tiles. The suspended ceiling systems for gypsum wallboard described in this report are suspended or direct-hung, concealed framing, ceiling assemblies used in interior and exterior applications.

## 3.0 DESCRIPTION

### 3.1 Suspended Ceiling Framing Systems:

**3.1.1 Acoustical Tile Suspended Ceiling Systems:** The <sup>15</sup>/<sub>16</sub>" Classic Stab (CS), <sup>15</sup>/<sub>16</sub>" EZ Stab Classic System (EZCS), <sup>15</sup>/<sub>16</sub>" Classic Aluminum Capped Stab

(ACS), <sup>15</sup>/<sub>16</sub>" EZ Stab Classic Aluminum Capped System (EZACS), <sup>15</sup>/<sub>16</sub>" Classic Environmental Stab (EVS), <sup>15</sup>/<sub>16</sub>" EZ Stab Classic Environmental System (EZEVS), <sup>9</sup>/<sub>16</sub>" Elite Narrow Stab (ES), <sup>9</sup>/<sub>16</sub>" EZ Stab Elite Narrow System (EZES), <sup>15</sup>/<sub>16</sub>" Cleanroom Stab (CRS), <sup>15</sup>/<sub>16</sub>" EZ Stab Cleanroom System (EZCRS), <sup>15</sup>/<sub>16</sub>" Fire Secure Stab (FSS) Fire Rated, <sup>9</sup>/<sub>16</sub>" EZ Stab Bolt Slot (EZBS) and <sup>9</sup>/<sub>16</sub>" EZ Stab Tier Drop (EZTD) acoustical suspended ceiling framing systems consist of main runners and cross tees for use with acoustical tile. The EZ systems have additional stitches on the webs and 0.219-inch (5.56 mm) diameter holes on the bulb's sides every 3-inches (76.2 mm) on center. Profiles of framing members are shown in Figure 1.

**3.1.2 Drywall Grid Framing System:** The Drywall Grid System (DWS) consists of main and cross runner framing systems as shown in Table 1 for use with gypsum wallboard attached to the bottom of framing members. Profiles of framing members are shown in Figure 1.

### 3.2 Seismic Perimeter Clips:

The Seismic Perimeter Clips (CTSPC and CTSPC-2) as shown in Figure 2 are used to connect main runners and cross tees to the wall angle at the ceiling perimeter. The clip is manufactured from 0.030-inch-thick (0.76 mm), cold-rolled steel complying with ASTM A653, with a hot-dipped galvanized coating designation of G30. The difference between the CTSPC and CTSPC-2, is that the CTSPC-2 is notched at the top of the clip and the inclusion of grip prongs. The CTSPC-2 may have two pre-drilled holes used for screw attachment.

### 3.3 Materials:

**3.3.1 Framing Members:** Main runners and cross tees are roll-formed from steel conforming to ASTM A653 and having a hot-dipped galvanized coating designation of G30 or higher. The bottom, exposed flange of both main runners and cross tees is covered with a painted capping made from steel or aluminum. Table 1 lists the profile shape designations, member type (main runner or cross tee), lengths, heights, metal thicknesses, maximum spans, allowable loading and, for main runners, the classification as either intermediate- or heavy-duty according to ASTM C635.

**3.3.2 Hanger and Bracing Wires:** Wires for suspended ceiling framing members and fixtures must comply with ASTM C636 as referenced in 2015, 2012 and 2009 IBC Section 808.1.1.1 (2006 IBC Section 803.9.1.1) and Section 13.5.6 of ASCE 7 as referenced in IBC Section 2506.2.1.

## 4.0 DESIGN AND INSTALLATION

### 4.1 Suspended Ceiling Framing Systems for Acoustical Tiles:

**4.1.1 General:** The suspended ceiling framing systems for acoustical tiles must be installed with acoustical tiles in accordance with this report and the manufacturer's published installation instructions. The suspended ceiling framing systems must be installed in accordance with 2015, 2012 and 2009 IBC Sections 808, 1613 and 2506.2.1 (2006 IBC Sections 803.9, 1613 and 2506.2.1). The minimum ultimate tension and compression capacity of framing member connections is 180 pounds (800 N).

**4.1.2 Main Runners:** The maximum applied loads for main runners must be less than or equal to the allowable capacities listed in Table 1 of this report.

**4.1.3 Cross Tees:** The maximum applied load for cross tees must be less than or equal to the allowable capacities listed in Table 1.

**4.1.4 Seismic Design Requirements:** Seismic design and installation details of the ceiling system, including lighting fixtures and mechanical services, must be in accordance with Section 13.5.6 of ASCE 7 as referenced in IBC Section 1613, except as noted in Section 4.2 of this report, for systems not exceeding 4 lb/ft<sup>2</sup> (19.5 kg/m<sup>2</sup>). Main runners classified as heavy-duty can be used in Seismic Design Categories A, B, C, D, E and F. Main runners classified as intermediate-duty can only be used in Seismic Design Categories A, B and C. Partitions must be laterally supported as required by Section 13.5.8 of ASCE 7, as referenced in IBC Section 1613.

### 4.2 Alternate Suspended Ceiling Framing Systems for Acoustical Tiles Using Seismic Perimeter Clip:

**4.2.1 Alternate Installation No. 1 for Seismic Design Categories D, E and F:** In this installation, the <sup>9</sup>/<sub>16</sub>" Elite Narrow Stab System, <sup>9</sup>/<sub>16</sub>" EZ Stab Elite Narrow System, <sup>15</sup>/<sub>16</sub>" Classic Stab System, <sup>15</sup>/<sub>16</sub>" EZ Stab Classic System, <sup>15</sup>/<sub>16</sub>" Classic Environmental Stab System, <sup>15</sup>/<sub>16</sub>" EZ Stab Classic Environmental System, <sup>15</sup>/<sub>16</sub>" Classic Aluminum Capped Stab System, <sup>15</sup>/<sub>16</sub>" EZ Stab Classic Aluminum Capped System, <sup>15</sup>/<sub>16</sub>" Cleanroom Stab System, and <sup>15</sup>/<sub>16</sub>" EZ Stab Cleanroom System main runners and cross tees must be those described in Section 3.3.1. The main runner must be classified as Heavy Duty in Table 1 of this report. The maximum total ceiling weight permitted is 2.57 lb/ft<sup>2</sup> (12.56 kg/m<sup>2</sup>). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is used to connect main runners and cross tees to the perimeter wall angle or shadow molding. The Seismic Perimeter Clip must be fixed to the framing member on two adjacent orthogonal walls and allow for free movement on the two opposing walls. Figure 3A and 7A show the fixed wall setup and Figure 4A and 6A show the free wall setup. As an alternate to the perimeter runner being fixed through the Seismic Perimeter Clip, the perimeter runner may be fastened through the wall angle with a <sup>1</sup>/<sub>8</sub>-inch-diameter (3.2 mm) by <sup>1</sup>/<sub>4</sub>-inch-long aluminum pop (blind) rivet, as shown in Figure 3A. A minimum <sup>15</sup>/<sub>16</sub>-inch-wide (23.4 mm) wall angle or shadow molding (SM1000) is used in lieu of the 2-inch-wide (51 mm) wall angle required by ASTM E580 and Section 13.5.6.2.2 of ASCE 7-10 (for the 2015 and 2012 IBC) and Section 13.5.6.2.2 of ASCE 7-05 (for the 2009 and 2006 IBC) for Seismic Design Categories D, E and F. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip, the <sup>15</sup>/<sub>16</sub>-inch-wide (23.4 mm) wall angle or shadow molding

and the elimination of the stabilizer bars.

The Seismic Perimeter Clip is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. On the two adjacent fixed walls, the perimeter clip must be attached to the framing member by a No. 7 by <sup>7</sup>/<sub>16</sub>-inch-long (11.1 mm) pan-head sharp-point screw fastened into the bulb or web of the runner and provide no clearance between the terminal runner end and the wall angle or shadow molding. On the free walls, the clips must allow for a minimum <sup>3</sup>/<sub>4</sub>-inch (19.1 mm) movement of the terminal runner end towards and away from the wall. Seismic Perimeter Clips installed in this manner are used in lieu of the stabilizer bars required in Section 5 of ASTM E580 (for the 2015 and 2012 IBC) and CISCA 3-4 (for the 2009 and 2006 IBC). ASTM E580 is referenced in ASCE 7-10, Section 13.5.6.2.2; and CISCA 3-4 is referenced in ASCE 7-05, Section 13.5.6.2.2, which are referenced in IBC Section 1613. The assembly described in this section is equivalent to that required by CISCA 3-4 and Section 5 of ASTM E580.

**4.2.2 Alternate Installation No. 2 for Seismic Design Categories D, E and F:** In this installation, the <sup>9</sup>/<sub>16</sub>" Elite Narrow Stab System, <sup>9</sup>/<sub>16</sub>" EZ Stab Elite Narrow System, <sup>15</sup>/<sub>16</sub>" Classic Stab System, <sup>15</sup>/<sub>16</sub>" EZ Stab Classic System, <sup>15</sup>/<sub>16</sub>" Classic Environmental Stab System, <sup>15</sup>/<sub>16</sub>" EZ Stab Classic Environmental System, <sup>15</sup>/<sub>16</sub>" Classic Aluminum Capped Stab System, <sup>15</sup>/<sub>16</sub>" EZ Stab Classic Aluminum Capped System, <sup>15</sup>/<sub>16</sub>" Cleanroom Stab System, and <sup>15</sup>/<sub>16</sub>" EZ Stab Cleanroom System main runners and cross tees must be those described in Section 3.3.1. The main runner must be classified as Heavy Duty in Table 1 of this report. The maximum total ceiling weight permitted is 4 lb/ft<sup>2</sup> (19.55 kg/m<sup>2</sup>). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is used to connect main runners and cross tees to the perimeter wall angle or shadow molding. The Seismic Perimeter Clip must be fixed to the framing member on two adjacent orthogonal walls and allow for free movement on the two opposing walls. Figure 3B and 7B show the fixed wall setup and Figure 4B and 6B show the free wall setup. Wall angle (WA14-14 or WA15-15) or shadow molding (SM1040 or SM1050) is used in lieu of the 2-inch-wide (51 mm) wall angle required by ASTM E580 and Section 13.5.6.2.2 of ASCE 7-10 (for the 2015 and 2012 IBC) and Section 13.5.6.2.2 of ASCE 7-05 (for the 2009 and 2006 IBC) for Seismic Design Categories D, E and F. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip, the wall angle or shadow molding and the elimination of the stabilizer bars.

The Seismic Perimeter Clip is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. The Seismic Perimeter Clip must be fastened to the wall angle or shadow molding using two (2) No. 7 by <sup>7</sup>/<sub>16</sub>-inch-long pan-head sharp-point screws. On the two adjacent fixed walls, the perimeter clip must be attached to the framing member by a No. 7 by <sup>7</sup>/<sub>16</sub>-inch-long (11.1 mm) pan-head sharp-point screw fastened into the bulb or web of the runner and provide no clearance between the terminal runner end and the wall angle or shadow molding. On the free walls, the clips must allow for a minimum <sup>3</sup>/<sub>4</sub>-inch (19.1 mm) movement of the terminal runner end towards and away from the wall. Seismic Perimeter Clips installed in this manner are used in lieu of the stabilizer bars required in Section 5 of ASTM E580 (for the 2015 and 2012 IBC) and CISCA 3-4 (for the 2009 and 2006 IBC). ASTM E580 is referenced in ASCE 7-10, Section 13.5.6.2.2; and CISCA 3-4 is referenced in ASCE

7-05, Section 13.5.6.2.2, which are referenced in IBC Section 1613. The assembly described in this section is equivalent to that required by CISCA 3-4 and Section 5 of ASTM E580.

**4.2.3 Alternate Installation No. 3 for Seismic Design Categories D, E and F:** In this installation, the  $\frac{9}{16}$ " EZ Stab Bolt Slot and  $\frac{9}{16}$ " EZ Stab Tier Drop main runners and cross tees must be those described in Section 3.3.1. The main runner must be classified as Heavy Duty in Table 1 of this report. The maximum total ceiling weight permitted is 4 lb/ft<sup>2</sup> (19.55 kg/m<sup>2</sup>). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is used to connect main runners and cross tees to the perimeter wall angle or shadow molding. The Seismic Perimeter Clip (CTSPC or CTSPC-2) must be fixed to the framing member on two adjacent orthogonal walls and allow for free movement on the two opposing walls. Figures 8 and 11 show the fixed wall setup and Figures 10 and 13 show the free wall setup. A minimum  $\frac{15}{16}$ -inch-wide (23.4 mm) wall angle or shadow molding (SM1040 or SM1050) is used in lieu of the 2-inch-wide (51 mm) wall angle required by ASTM E580 and Section 13.5.6.2.2 of ASCE 7-10 (for the 2015 and 2012 IBC) and Section 13.5.6.2.2 of ASCE 7-05 (for the 2009 and 2006 IBC) for Seismic Design Categories D, E and F. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip (CTSPC or CTSPC-2), the  $\frac{15}{16}$ -inch-wide (23.4 mm) wall angle or shadow molding (SM1040 or SM1050) and the elimination of the stabilizer bars.

The Seismic Perimeter Clip (CTSPC or CTSPC-2) is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. When using the CTSPC clip, the clip must be fastened to the wall angle or shadow molding using two (2) No. 7 by  $\frac{7}{16}$ -inch-long (11.1 mm) pan-head sharp-point screws. On the two adjacent fixed walls, the perimeter clip must be attached to the framing member by a No. 7 by  $\frac{7}{16}$ -inch-long (11.1 mm) pan-head sharp-point screw fastened into the bulb or web of the runner and provide no clearance between the terminal runner end and the wall angle or shadow molding. On the free walls, the clips must allow for a minimum  $\frac{3}{4}$ -inch (19.1 mm) movement of the terminal runner end towards and away from the wall. Seismic Perimeter Clips (CTSPC or CTSPC-2) installed in this manner are used in lieu of the stabilizer bars required in Section 5 of ASTM E580 (for the 2015 and 2012 IBC) and CISCA 3-4 (for the 2009 and 2006 IBC). ASTM E580 is referenced in ASCE 7-10, Section 13.5.6.2.2; and CISCA 3-4 is referenced in ASCE 7-05, Section 13.5.6.2.2, which are referenced in IBC Section 1613. The assembly described in this section is equivalent to that required by CISCA 3-4 and Section 5 of ASTM E580.

**4.2.4 Alternate Installation No. 4 for Seismic Design Categories A, B and C:** In this installation, the  $\frac{9}{16}$ " Elite Narrow Stab System,  $\frac{9}{16}$ " EZ Stab Elite Narrow System,  $\frac{15}{16}$ " Classic Stab System,  $\frac{15}{16}$ " EZ Stab Classic System,  $\frac{15}{16}$ " Classic Environmental Stab System,  $\frac{15}{16}$ " EZ Stab Classic Environmental System,  $\frac{15}{16}$ " Classic Aluminum Capped Stab System,  $\frac{15}{16}$ " EZ Stab Classic Aluminum Capped System,  $\frac{15}{16}$ " Cleanroom Stab System,  $\frac{15}{16}$ " EZ Stab Cleanroom System, and  $\frac{15}{16}$ " Fire Secure Stab Fire Rated System main runners and cross tees must be those described in Section 3.3.1. The Seismic Perimeter Clip (CTSPC or CTSPC-2) may be used in lieu of stabilizer bars in suspended ceiling installations regulated by Section 4 of ASTM E580 and CISCA 0-2. The Seismic Perimeter Clips (CTSPC or CTSPC-2) are placed at the intersections of main runners and wall angle (or shadow

molding (SM1020) and cross tees and  $\frac{15}{16}$ " wall angle (or shadow molding SM1020)). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. When using wall angles, two adjacent walls are fixed with a No. 7 by  $\frac{7}{16}$ -inch-long (11.1 mm) pan-head sharp-point screw through the bulb or web of the framing member. The two opposing walls are free and the installation of the clips must allow for minimum  $\frac{3}{8}$ -inch (9.5 mm) movement of the terminal runner end towards and away from the wall. When using the shadow molding (SM1020), the runner ends must not be fixed or screwed to the seismic perimeter clip (CTSPC or CTSPC-2) and the installation of the clips must allow for minimum  $\frac{3}{8}$ -inch (9.5 mm) movement of the runner end towards and away from the wall as shown in Figure 5. The maximum ceiling weight permitted is 2.28 lb/ft<sup>2</sup> (11.12 kg/m<sup>2</sup>). Seismic Perimeter Clips (CTSPC or CTSPC-2) installed in this manner are used in lieu of stabilizer bars required by Section 4 of ASTM E580 and CISCA 0-2. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip (CTSPC or CTSPC-2) and the elimination of the stabilizer bars. The assembly described in this section is equivalent to that required by CISCA 0-2 (for the 2009 and 2006 IBC) and Section 4 of ASTM E580 (for the 2015 and 2012 IBC).

**4.2.5 Alternate Installation No. 5 for Seismic Design Categories A, B and C:** In this installation, the  $\frac{9}{16}$ " EZ Stab Bolt Slot and  $\frac{9}{16}$ " EZ Stab Tier Drop main runners and cross tees must be those described in Section 3.3.1. The Seismic Perimeter Clip (CTSPC or CTSPC-2) may be used in lieu of stabilizer bars in suspended ceiling installations regulated by Section 4 of ASTM E580 and CISCA 0-2. The Seismic Perimeter Clips (CTSPC or CTSPC-2) are placed at the intersections of main runners and  $\frac{15}{16}$ " wall angle (or shadow molding (SM1040 or SM1050) and cross tees and wall angle or shadow molding (SM1040 or SM1050)). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding (SM1040 or SM1050). When using the CTSPC clip, the clip must be fastened to the wall angle or shadow molding using two (2) No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screws. On two adjacent walls the runner ends are screwed to the seismic perimeter clips with a No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screw through the bulb or web of the runner (see Figures 8 and 11). The two opposing walls are free and the installation of the clips must allow for minimum  $\frac{3}{8}$ -inch (9.5 mm) movement of the terminal runner end towards and away from the wall, (see Figures 9 and 12). The maximum ceiling weight permitted is 2.5 lb/ft<sup>2</sup> (12.22 kg/m<sup>2</sup>). Seismic Perimeter Clips (CTSPC or CTSPC-2) installed in this manner are used in lieu of stabilizer bars required by Section 4 of ASTM E580 and CISCA 0-2. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip (CTSPC or CTSPC-2) and the elimination of the stabilizer bars. The assembly described in this section is equivalent to that required by CISCA 0-2 (for the 2009 and 2006 IBC) and Section 4 of ASTM E580 (for the 2015 and 2012 IBC).

**4.3 Suspended Ceiling Systems for Gypsum Wallboard:** In this installation, the main and cross runners must be as described in Section 3.1.2. The installation must be in accordance with Section 4.1, except the ceiling must be designed for seismic loads required under Chapter 13 of ASCE 7-10 for the 2015 and 2012 IBC (ASCE 7-05 for the 2009 and 2006 IBC), as referenced by IBC Section 1613. The ceiling weight must



not exceed 4 psf (19.5 kg/m<sup>2</sup>). The ceiling weight may be increased up to 10 psf (48.82 kg/m<sup>2</sup>), when installed as indicated in Tables 2 through 5 of this report. Suspended ceilings constructed of gypsum boards, screw or nail attached to suspended members that support a ceiling on one level extending from wall to wall are exempt from lateral load design requirements of ASTM E580 and CISC Seismic Zones 2, 3 and 4.

**4.3.1 Gypsum Wallboard Attachment:** Gypsum wallboard must be installed and fastened to the ceiling framing system in accordance with IBC Section 2508.

#### 4.4 Special Inspection:

Suspended ceilings in Seismic Design Categories C, D, E and F, are subject to periodic special inspections during the installation of the suspended ceiling systems and their anchorage in accordance with the following requirements:

- For installations in accordance with Section 4.2 of this report, special inspection must be conducted as indicated in 2015 IBC Sections 1704.3, 1704.5, 1705.1.1 and 1705.13.2 (2012 IBC Sections 1704.3, 1705.1.1, 1705.11.4 and 1705.12, Item 3 and 1705.12.3; 2009 IBC Sections, 1704.15, 1708.1, Item 3; 2006 IBC Section 1704.13, 1708.4 and Item 3 of 1708.1; 2006 IBC Sections 1704.13, 1708.5 and Item 3 of Section 1708.2), as applicable.
- For installations in accordance with Sections 4.1.4 and 4.3 of this report, special inspection must be conducted as indicated in Section 11A.1.3.9, Item 2, of ASCE 7-10 for the 2015 and 2012 IBC; Section 13.5.6.2.2 (h) of ASCE 7-05 and 2009 IBC Section 1705.3.4, item 3 for the 2009 IBC; Section 13.5.6.2.2 (h) of ASCE 7-05 and 2006 IBC Section 1705.3, Item 4.3 for the 2006 IBC, as applicable.
- The special inspector must verify that the ceiling system is as described in this report, and complies with this report, and with the approved construction documents.

A statement of special inspections must be provided as required in 2015 and 2012 IBC Sections 1704.3 (2009 IBC Sections 1705.2 and 1705.3; and 2006 IBC Sections 1705.2 and 1705.3, as applicable), and must be verified by the special inspector.

#### 5.0 CONDITIONS OF USE

The CertainTeed suspended ceiling systems described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** The ceiling suspension main runners and cross tees, and the Seismic Perimeter Clip, must be manufactured and installed in accordance with this report and the manufacturer's published installation instructions. This report governs in the event of any conflict with the manufacturer's installation instructions.
- 5.2** Design loads and span lengths for main runners and cross tees must be as listed in Table 1 of this report.
- 5.3** Suspended ceiling systems must be designed in accordance with ASCE 7, Section 13.5.6, as referenced by IBC section 1613. The documents must be prepared by a registered design

professional where required by statutes of jurisdiction in which the project is to be constructed.

- 5.4** For Seismic Design Category C, D, E or F, a quality assurance plan complying with IBC Chapter 17, including 2015 and 2012 IBC Section 1704.3 (2009 and 2006 IBC Sections 1705.2 and 1705.3), must be submitted to the code official.
- 5.5** Periodic special inspections and a statement of special inspections must be provided in accordance with Section 4.4 of this report.
- 5.6** The ceiling framing system must not be used to provide lateral support for walls or partitions except as provided for in ASCE 7, Section 13.5.8.1, as referenced in IBC Section 1613.
- 5.7** The ceiling system must be braced to resist seismic forces as determined from Section 1613 of the IBC.
- 5.8** The supporting construction for the ceiling system has not been evaluated and is outside the scope of this report. The code official must approve the floor or roof construction supporting the suspended ceiling system.
- 5.9** The ceiling systems are limited to ceilings not considered accessible in accordance with Item 28 of 2015 and 2012 IBC Table 1607.1 (Item 31 of 2009 IBC Table 1607.1, or Item 32 of 2006 IBC Table 1607.1).
- 5.10** The ceiling systems are limited to interior applications. Exterior ceiling installations must be designed for wind loads.
- 5.11** Lay-in ceiling panels must be justified to the satisfaction of the code official as complying with the interior finish requirements of Chapter 8 of the IBC.
- 5.12** Lighting fixtures and mechanical services must be as described in Section 4 of this report.

#### 6.0 EVIDENCE SUBMITTED

- 6.1** Data in accordance with the ICC-ES Acceptance Criteria for Suspended Ceiling Framing Systems (AC368), dated July 2015.
- 6.2** Data in accordance with the ICC-ES Acceptance Criteria for Seismic Certification by Shake-table Testing of Nonstructural Components (AC156), dated October 2010 (Editorially revised May 2015).

#### 7.0 IDENTIFICATION

- 7.1** Cartons of ceiling suspension system framing members, Seismic Perimeter Clips and accessories are identified with the name of CertainTeed Ceilings and the evaluation report number (ESR-3336).
- 7.2** The report holder's contact information is the following:

##### **CERTAINTEED CEILINGS CORPORATION**

**20 MOORES ROAD  
MALVERN, PENNSYLVANIA 19355  
(610) 651-5806**

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TABLE 1—DIMENSIONS AND ALLOWABLE LOADS FOR SUSPENDED CEILING FRAMING MEMBERS <sup>5</sup>

ITEM NUMBER	MEMBER TYPE	LOAD CLASSIFICATION	NOMINAL LENGTH OF MEMBER (inches)	HEIGHT OF MEMBER (inches)	METAL THICKNESS (inch)	MAXIMUM SPAN (inches)	ALLOWABLE UNIFORM LOAD (plf)	ALLOWABLE CONCENTRATED LOAD AT MIDSPAN (lbf) <sup>1</sup>
<sup>9</sup> / <sub>16</sub> " Elite Narrow Stab System								
ES 12-12-18	Main Runner	Intermediate Duty	144	1.5	0.018	48	13.15	32.88
ES-12-12-19	Main Runner	Heavy Duty	144	1.687	0.019	48	17.97	44.93
ES 2-12-12	Cross Tee	_____	24	1.5	0.012	24	27.97	34.96
ES 4-12-12	Cross Tee	_____	48	1.5	0.012	48	8.44	21.09
ES 4-12-18	Cross Tee	_____	48	1.5	0.018	48	8.44	21.09
ES 2-12-19	Cross Tee	_____	24	1.687	0.019	24	17.97	44.93
ES 4-12-19	Cross Tee	_____	48	1.687	0.019	48	17.97	44.93
<sup>9</sup> / <sub>16</sub> " EZ Stab Elite Narrow System								
EZES 12-12-18	Main Runner	Intermediate Duty	144	1.5	0.018	48	13.15	32.88
EZES-12-12-19	Main Runner	Heavy Duty	144	1.687	0.019	48	17.97	44.93
EZES 2-12-12	Cross Tee	_____	24	1.5	0.012	24	27.97	34.96
EZES 4-12-12	Cross Tee	_____	48	1.5	0.012	48	8.44	21.09
EZES 4-12-18	Cross Tee	_____	48	1.5	0.018	48	8.44	21.09
EZES 2-12-19	Cross Tee	_____	24	1.687	0.019	24	17.97	44.93
EZES 4-12-19	Cross Tee	_____	48	1.687	0.019	48	17.97	44.93
<sup>15</sup> / <sub>16</sub> " Classic Stab System								
CS 12-12-15	Main Runner	Intermediate Duty	144	1.5	0.015	48	13.56	33.9
CS 12-12-20	Main Runner	Heavy Duty	144	1.5	0.020	48	16.58	41.45
CS 1-12-12	Cross Tee	_____	12	1.5	0.012	12	63.1	39.44
CS 2-12-12	Cross Tee	_____	24	1.5	0.012	24	34.8	43.51
CS 4-12-12	Cross Tee	_____	48	1.5	0.012	48	9.67	24.16
CS 5-12-12	Cross Tee	_____	60	1.5	0.012	60	6.00	18.75
CS 8-12-12	Cross Tee	_____	96	1.5	0.012	48	10.48	26.19
CS 2-12-20	Cross Tee	_____	24	1.5	0.020	24	16.58	41.45
CS 4-12-20	Cross Tee	_____	48	1.5	0.020	48	16.58	41.45
<sup>15</sup> / <sub>16</sub> " EZ Stab Classic System								
EZCS 12-12-15	Main Runner	Intermediate Duty	144	1.5	0.015	48	13.56	33.9
EZCS 12-12-20	Main Runner	Heavy Duty	144	1.5	0.020	48	16.58	41.45
EZCS 1-12-12	Cross Tee	_____	12	1.5	0.012	12	63.1	39.44
EZCS 2-12-12	Cross Tee	_____	24	1.5	0.012	24	34.8	43.51
EZCS 4-12-12	Cross Tee	_____	48	1.5	0.012	48	9.67	24.16
EZCS 5-12-12	Cross Tee	_____	60	1.5	0.012	60	6.00	18.75
EZCS 8-12-12	Cross Tee	_____	96	1.5	0.012	48	10.48	26.19
EZCS 2-12-20	Cross Tee	_____	24	1.5	0.020	24	16.58	41.45
EZCS 4-12-20	Cross Tee	_____	48	1.5	0.020	48	16.58	41.45
<sup>15</sup> / <sub>16</sub> " Classic Aluminum Capped Stab System <sup>2</sup>								
ACS 12-12-20	Main Runner	Heavy Duty	144	1.5	0.020	48	16.7	41.72
ACS 12-12-15	Main Runner	Intermediate Duty	144	1.5	0.015	48	12.05	30.13
ACS 2-12-12	Cross Tee	_____	24	1.5	0.012	24	36.14	45.18
ACS 4-12-12	Cross Tee	_____	48	1.5	0.012	48	8.98	22.44
<sup>15</sup> / <sub>16</sub> " EZ Stab Classic Aluminum Capped System <sup>2</sup>								
EZACS 12-12-20	Main Runner	Heavy Duty	144	1.5	0.020	48	16.7	41.72
EZACS 12-12-15	Main Runner	Intermediate Duty	144	1.5	0.015	48	12.05	30.13
EZACS 2-12-12	Cross Tee	_____	24	1.5	0.012	24	36.14	45.18
EZACS 4-12-12	Cross Tee	_____	48	1.5	0.012	48	8.98	22.44

(Continued)

TABLE 1—DIMENSIONS AND ALLOWABLE LOADS FOR SUSPENDED CEILING FRAMING MEMBERS <sup>5</sup> (Continued)

ITEM NUMBER	MEMBER TYPE	LOAD CLASSIFICATION	NOMINAL LENGTH OF MEMBER (inches)	HEIGHT OF MEMBER (inches)	METAL THICKNESS (inch)	MAXIMUM SPAN (inches)	ALLOWABLE UNIFORM LOAD (plf)	ALLOWABLE CONCENTRATED LOAD AT MIDSPAN (lbf) <sup>1</sup>
<sup>15</sup> / <sub>16</sub> " Cleanroom Stab System <sup>2</sup>								
CRS 12-12-20	Main Runner	Heavy Duty	144	1.5	0.020	48	16.6	41.47
CRS 2-12-12	Cross Tee	—————	24	1.5	0.012	24	45.6	57.01
CRS 4-12-12	Cross Tee	—————	48	1.5	0.012	48	10.6	26.48
CRS 4-12-20	Cross Tee	—————	48	1.5	0.020	48	16.4	41
<sup>15</sup> / <sub>16</sub> " EZ Stab Cleanroom System <sup>2</sup>								
EZCRS 12-12-20	Main Runner	Heavy Duty	144	1.5	0.020	48	16.6	41.47
EZCRS 2-12-12	Cross Tee	—————	24	1.5	0.012	24	45.6	57.01
EZCRS 4-12-12	Cross Tee	—————	48	1.5	0.012	48	10.6	26.48
EZCRS 4-12-20	Cross Tee	—————	48	1.5	0.020	48	16.4	41
<sup>15</sup> / <sub>16</sub> " Fire Secure Stab Fire Rated System								
FSS12-12-15	Main Runner	Intermediate Duty	144	1.5	0.016	48	13.35	33.75
FSS2-12-15	Cross Tee	—————	24	1.5	0.015	24	44	55.01
FSS4-12-15	Cross Tee	—————	48	1.5	0.015	48	10.28 <sup>3</sup>	25.71
<sup>9</sup> / <sub>16</sub> " EZ Stab Bolt Slot ¼-inch								
14EZBS12-14-17-24	Main Runner	Heavy Duty	144	1.75	0.016	48	16.2	40.5
14EZBS12-14-17-48	Main Runner	Heavy Duty	144	1.75	0.016	48	16.2	40.5
14EZBS10-14-17-20	Main Runner	Heavy Duty	120	1.75	0.016	48	16.2	40.5
14EZBS10-14-17-30	Main Runner	Heavy Duty	120	1.75	0.016	48	16.2	40.5
14EZBS2-14-17-00	Cross Tee	—————	24	1.75	0.016	24	103.0	103.0
14EZBS4-14-17-00	Cross Tee	—————	48	1.75	0.016	48	16.2	40.5
14EZBS4-14-17-224	Cross Tee	—————	48	1.75	0.016	48	16.2	40.5
14EZBS4-14-17-124	Cross Tee	—————	48	1.75	0.016	48	16.2	40.5
14EZBS12-14-15-24	Main Runner	Intermediate Duty	144	1.75	0.014	48	14.2	35.5
14EZBS12-14-15-48	Main Runner	Intermediate Duty	144	1.75	0.014	48	14.2	35.5
14EZBS10-14-15-20	Main Runner	Intermediate Duty	120	1.75	0.014	48	14.2	35.5
14EZBS10-14-15-30	Main Runner	Intermediate Duty	120	1.75	0.014	48	14.2	35.5
14EZBS1.67-14-15-00	Cross Tee	—————	20	1.75	0.014	20	114.4	95.3
14EZBS2-14-15-00	Cross Tee	—————	24	1.75	0.014	24	81.3	81.3
14EZBS2.5-14-15-00	Cross Tee	—————	30	1.75	0.014	30	51.5	64.4
14EZBS4-14-15-224	Cross Tee	—————	48	1.75	0.014	48	14.2	35.5
14EZBS4-14-15-124	Cross Tee	—————	48	1.75	0.014	48	14.2	35.5

14EZBS4-14-15-00	Cross Tee	—————	48	1.75	0.014	48	14.2	35.5
14EZBS5-14-15-00	Cross Tee	—————	60	1.75	0.014	60	7.5	23.4
14EZBS5-14-15-230	Cross Tee	—————	60	1.75	0.014	60	7.5	23.4
14EZBS5-14-15-220	Cross Tee	—————	60	1.75	0.014	60	7.5	23.4
14EZBS5-14-15-120	Cross Tee	—————	60	1.75	0.014	60	7.5	23.4

<sup>9</sup> / <sub>16</sub> " EZ Stab Bolt Slot 1/8-inch								
18EZBS12-14-17-24	Main Runner	Heavy Duty	144	1.75	0.016	48	16.1	40.2
18EZBS12-14-17-48	Main Runner	Heavy Duty	144	1.75	0.016	48	16.1	40.2
18EZBS10-14-17-20	Main Runner	Heavy Duty	120	1.75	0.016	48	16.1	40.2
18EZBS10-14-17-30	Main Runner	Heavy Duty	120	1.75	0.016	48	16.1	40.2
18EZBS2-14-17-00	Cross Tee	—————	24	1.75	0.016	24	96.8	96.8
18EZBS4-14-17-00	Cross Tee	—————	48	1.75	0.016	48	16.1	40.2
18EZBS4-14-17-224	Cross Tee	—————	48	1.75	0.016	48	16.1	40.2
18EZBS4-14-17-124	Cross Tee	—————	48	1.75	0.016	48	16.1	40.2
18EZBS12-14-15-24	Main Runner	Intermediate Duty	144	1.75	0.014	48	13.0	32.5
18EZBS12-14-15-48	Main Runner	Intermediate Duty	144	1.75	0.014	48	13.0	32.5

(Continued)

TABLE 1—DIMENSIONS AND ALLOWABLE LOADS FOR SUSPENDED CEILING FRAMING MEMBERS <sup>5</sup> (Continued)

ITEM NUMBER	MEMBER TYPE	LOAD CLASSIFICATION	NOMINAL LENGTH OF MEMBER (inches)	HEIGHT OF MEMBER (inches)	METAL THICKNESS (inch)	MAXIMUM SPAN (inches)	ALLOWABLE UNIFORM LOAD (plf)	ALLOWABLE CONCENTRATED LOAD AT MIDSPAN (lbf) <sup>1</sup>
18EZBS10-14-15-20	Main Runner	Intermediate Duty	120	1.75	0.014	48	13.0	32.5
18EZBS10-14-15-30	Main Runner	Intermediate Duty	120	1.75	0.014	48	13.0	32.5
18EZBS1.67-14-15-00	Cross Tee	—————	20	1.75	0.014	20	115.8	96.5
18EZBS2-14-15-00	Cross Tee	—————	24	1.75	0.014	24	74.7	74.7
18EZBS2.5-14-15-00	Cross Tee	—————	30	1.75	0.014	30	48.9	61.1
18EZBS4-14-15-00	Cross Tee	—————	48	1.75	0.014	48	13.0	32.5
18EZBS4-14-15-224	Cross Tee	—————	48	1.75	0.014	48	13.0	32.5
18EZBS4-14-15-124	Cross Tee	—————	48	1.75	0.014	48	13.0	32.5
18EZBS5-14-15-00	Cross Tee	—————	60	1.75	0.014	60	7.6	23.8
18EZBS5-14-15-230	Cross Tee	—————	60	1.75	0.014	60	7.6	23.8
18EZBS5-14-15-220	Cross Tee	—————	60	1.75	0.014	60	7.6	23.8
18EZBS5-14-15-120	Cross Tee	—————	60	1.75	0.014	60	7.6	23.8
<sup>9/16"</sup> EZ Stab Tier Drop								
EZTD12-14-18	Main Runner	Heavy Duty	144	1.75	0.017	48	16.5	41.2
EZTD2-14-18	Cross Tee	—————	24	1.75	0.017	24	75.8	75.8
EZTD4-14-18	Cross Tee	—————	48	1.75	0.017	48	16.5	41.2
EZTD12-14-15	Main Runner	Intermediate Duty	144	1.75	0.015	48	15.0	37.5
EZTD2-14-15	Cross Tee	—————	24	1.75	0.015	24	55.8	55.8
EZTD2.5-14-15	Cross Tee	—————	30	1.75	0.015	30	42.0	52.5
EZTD4-14-15	Cross Tee	—————	48	1.75	0.015	48	15.0	37.5
EZTD5-14-15	Cross Tee	—————	60	1.75	0.015	60	7.8	24.4
EZTD5-14-15-3S	Cross Tee	—————	60	1.75	0.015	60	7.8	24.4
EZTD6-14-15	Cross Tee	—————	72	1.75	0.015	72	4.6	17.2
EZTD8-14-15	Cross Tee	—————	96	1.75	0.015	96	2.0	10.0
Drywall Grid System <sup>4</sup>								
DWS12-13-20	Main Runner	Heavy Duty	144	1.6	0.016	48	19.2	48.0
DWS-2-13-20	Cross Tee	—————	24	1.6	0.017	24	76.00	95.03
DWS2.16-13-20	Cross Tee	—————	26	1.6	0.017	26	67.90	91.98
DWS3-13-20	Cross Tee	—————	36	1.6	0.017	36	42.50 <sup>3</sup>	79.71
DWS4-13-20	Cross Tee	—————	48	1.6	0.017	48	18.32 <sup>3</sup>	45.8
DWS4.16-13-20	Cross Tee	—————	50	1.6	0.017	50	16.6 <sup>3</sup>	43.35
DWS6-13-20	Cross Tee	—————	72	1.6	0.017	72	5.89 <sup>3</sup>	22.09

For **SI**: 1 inch=25.4 mm; 1 lbf = 4.45 N, 1 plf = 14.6 N/m.

<sup>1</sup>Allowable concentrated loads at midspan are determined in accordance with AC308 Section 3.2. For each framing member, the allowable concentrated load must not be combined with the allowable uniform load.

<sup>2</sup>The <sup>15/16"</sup> Classic Aluminum Capped Stab System and <sup>15/16"</sup> EZ Stab Classic Aluminum Capped System can be found as the <sup>15/16"</sup> Classic Environmental Stab System and <sup>15/16"</sup> EZ Stab Classic Environmental System with a G60 hot-dipped galvanized coating and item numbers EVS 12-12-20-G60, EVS 12-12-15-G60, EVS 2-12-12-G60, EVS 4-12-12-G60, EZEVS 12-12-20-G60, EZEVS 12-12-15-G60, EZEVS 2-12-12-G60, and EZEVS 4-12-12-G60. The <sup>15/16"</sup> Cleanroom Stab System and <sup>15/16"</sup> EZ Stab Cleanroom System has a G60 hot-dipped galvanized coating and includes a gasket tape on the interior flange side.

<sup>3</sup>Laterally braced at mid-span.

<sup>4</sup>All "DWS" items above are available in G90 hot dipped galvanized coating and identified with the item number ending in G90.

<sup>5</sup>EZCS Series main runners may be used with Classic Series (CS) cross tees; and Classic Series (CS) main runners may be used with EZCS Series cross tees. Elite Series (ES) main runners may be used with EZES Series cross tees; and EZES Series main runners may be used with Elite Series (ES) cross tees. When Classic Series (CS) or Elite Series (ES) cross tee clips do not match with EZ Series cross tee clips through main runner slots, two L-brackets (CertainTeed item LBRC) must be fastened on each side of the main runner and cross tee (one L-bracket on each side of the connection) using a minimum of two (2) #7 x 7/16 inch steel screws per bracket in order to achieve AC308 connection requirements.

**TABLE 2—CEILING LOAD LIMITS (PSF) FOR DIFFERENT CONFIGURATIONS OF DRYWALL SYSTEMS  
AT L/360 WITH CROSS TEES AT 24 INCHES ON CENTER**

		Hanger Spacing on Main Runner (inches) <sup>1</sup>		
		48	32	16
Main Runner Spacing (inches on center)	72	2.9	2.9	2.9
	50	4.5	8.3	8.3
	48	4.7	9.2	9.2
	36	6.2	10	10
	24	9.3	10	10

For **SI**: 1 inch=25.4 mm; 1 psf= 574.6 Pa.

<sup>1</sup>Hanger wires must comply with Section 3.3.2 of this report.

**TABLE 3—CEILING LOAD LIMITS (PSF) FOR DIFFERENT CONFIGURATIONS OF DRYWALL SYSTEMS  
AT L/240 WITH CROSS TEES AT 24 INCHES ON CENTER**

		Hanger Spacing on Main Runner (inches) <sup>1</sup>		
		48	32	16
Main Runner Spacing (inches on center)	72	3.8	4.4	4.4
	50	5.5	10	10
	48	5.7	10	10
	36	7.6	10	10
	24	10	10	10

For **SI**: 1 inch=25.4 mm; 1 psf= 574.6 Pa.

<sup>1</sup>Hanger wires must comply with Section 3.3.2 of this report.

**TABLE 4—CEILING LOAD LIMITS (PSF) FOR DIFFERENT CONFIGURATIONS OF DRYWALL SYSTEMS  
AT L/360 WITH CROSS TEES AT 16 INCHES ON CENTER**

		Hanger Spacing on Main Runner (inches) <sup>1</sup>		
		48	32	16
Main Runner Spacing (inches on center)	72	3.1	4.4	4.4
	50	4.5	10	10
	48	4.7	10	10
	36	6.2	10	10
	24	9.3	10	10

For **SI**: 1 inch=25.4 mm; 1 psf= 574.6 Pa.

<sup>1</sup>Hanger wires must comply with Section 3.3.2 of this report.

**TABLE 5—CEILING LOAD LIMITS (PSF) FOR DIFFERENT CONFIGURATIONS OF DRYWALL SYSTEMS  
AT L/240 WITH CROSS TEES AT 16 INCHES ON CENTER**

		Hanger Spacing on Main Runner (inches) <sup>1</sup>		
		48	32	16
Main Runner Spacing (inches on center)	72	4.7	6.5	6.5
	50	6.7	10	10
	48	7.0	10	10
	36	9.3	10	10
	24	10	10	10

For **SI**: 1 inch=25.4 mm; 1 psf= 574.6 Pa.

<sup>1</sup>Hanger wires must comply with Section 3.3.2 of this report.



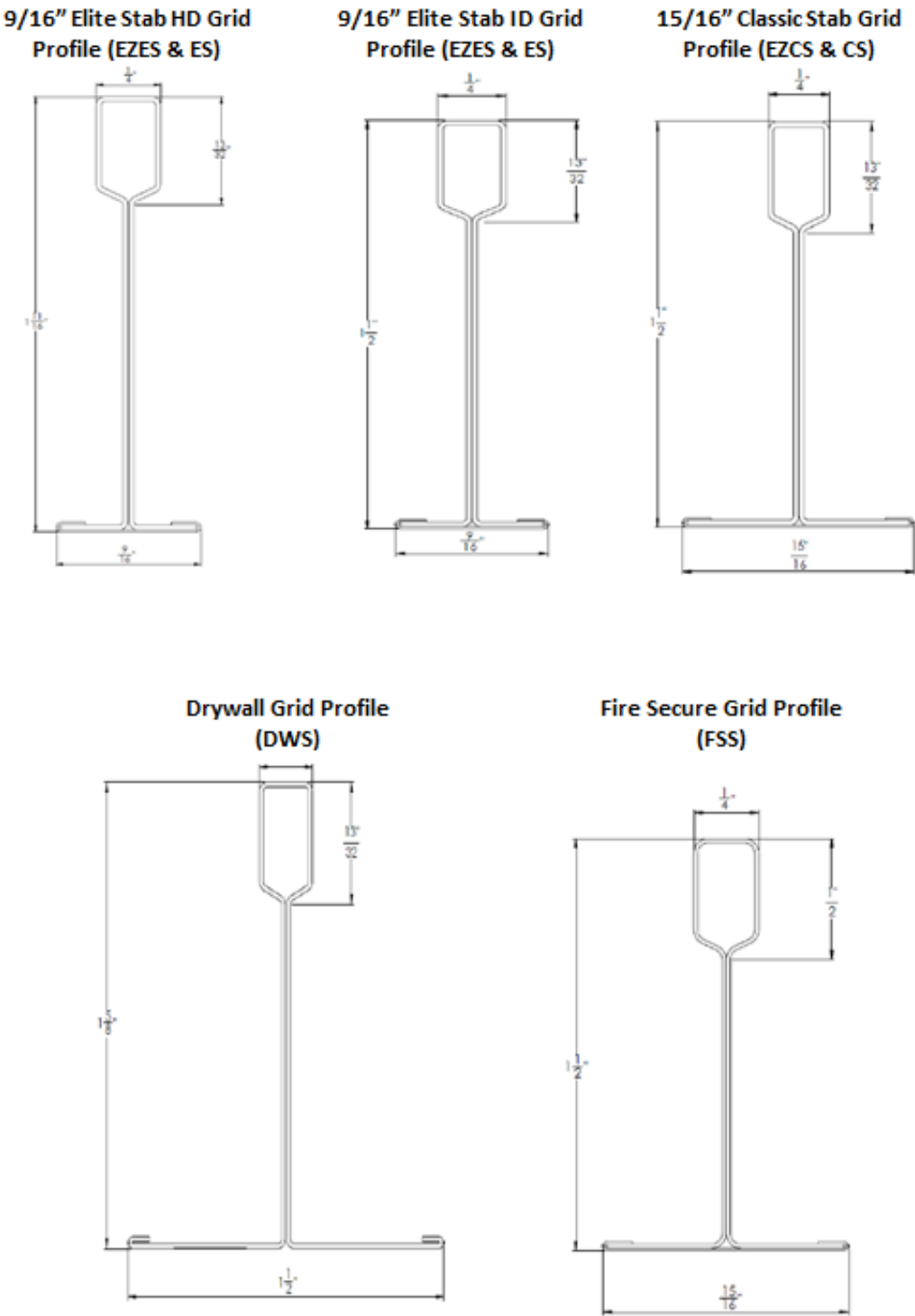


FIGURE 1—FRAMING MEMBER PROFILES

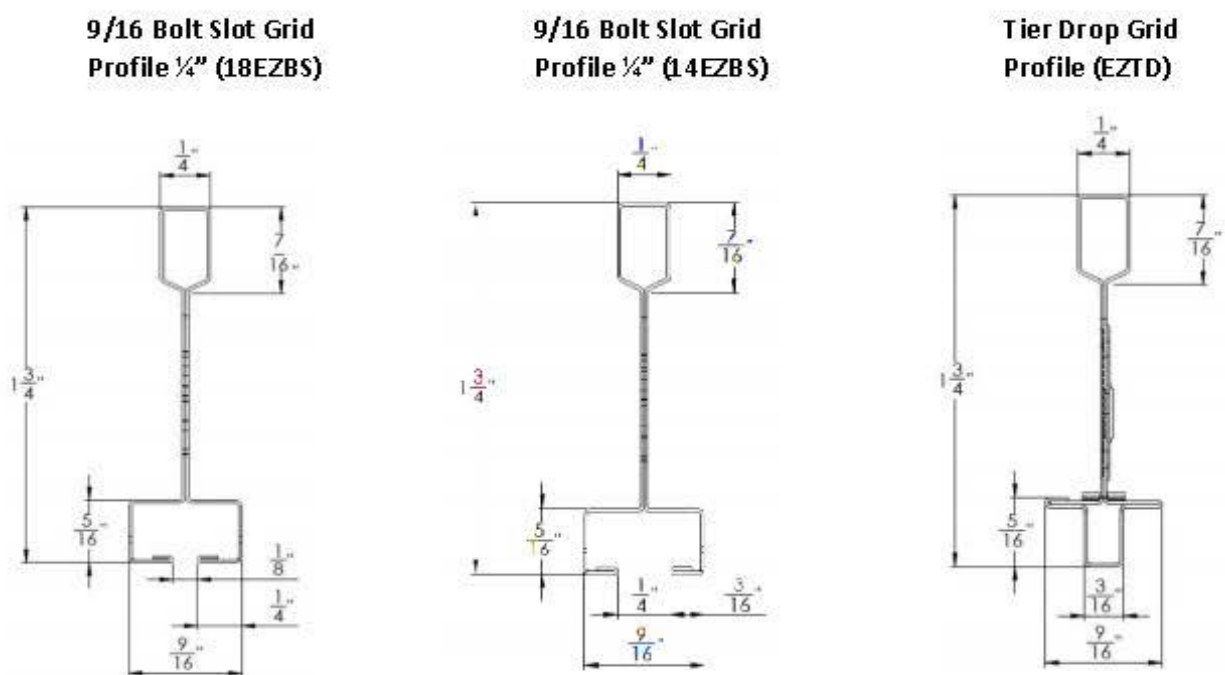


FIGURE 1—FRAMING PROFILES (continued)

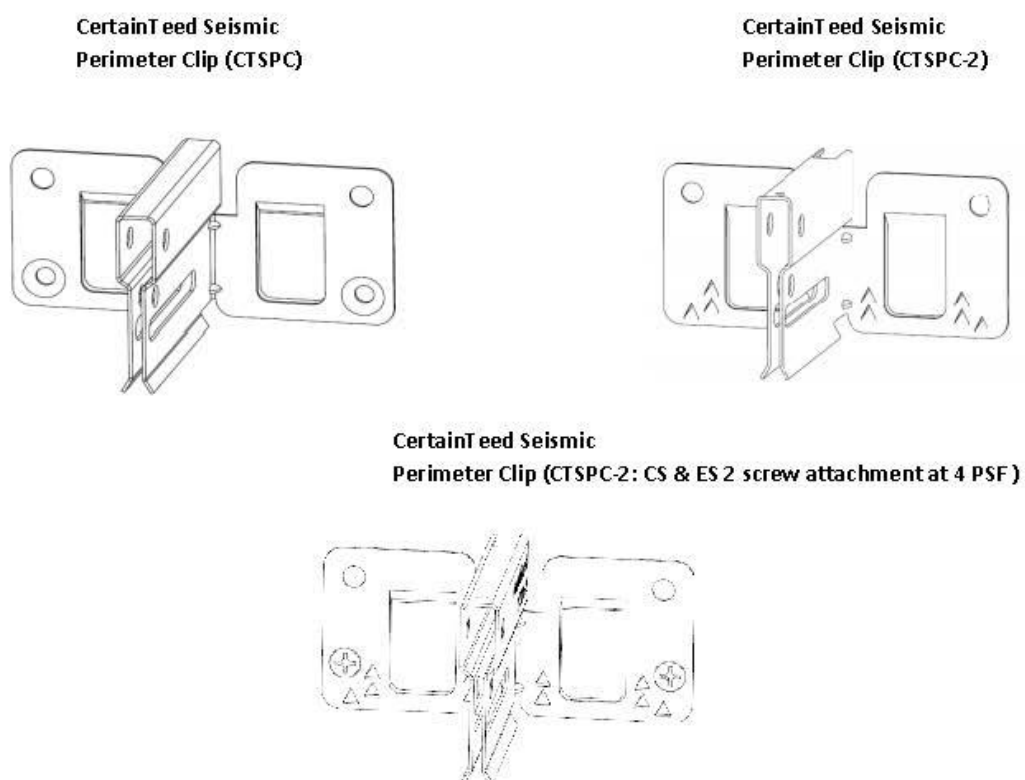


FIGURE 2—SEISMIC PERIMETER CLIPS

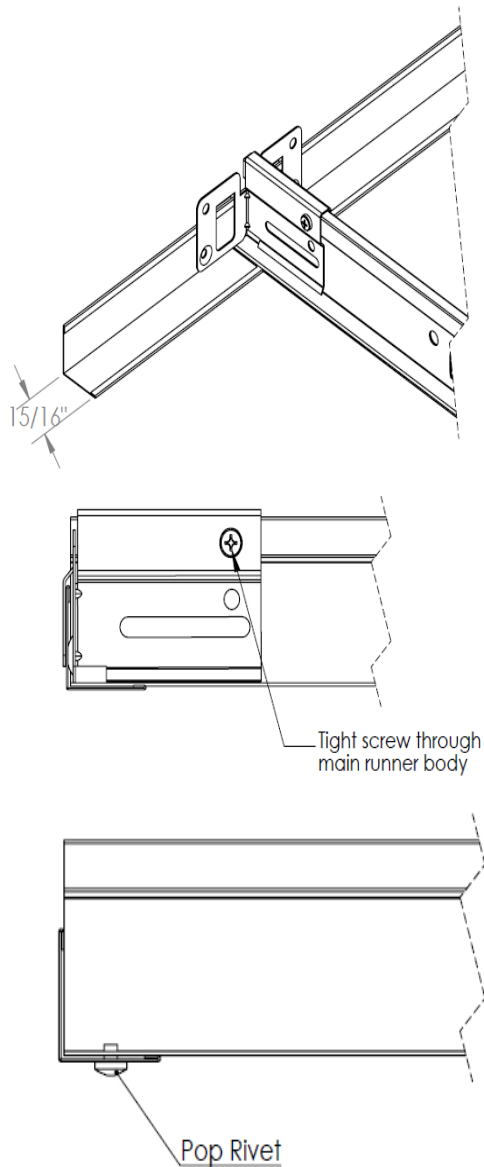


FIGURE 3A—SEISMIC PERIMETER CLIP (CTSPC shown) FIXED WALL ASSEMBLY IN SECTION 4.2.1

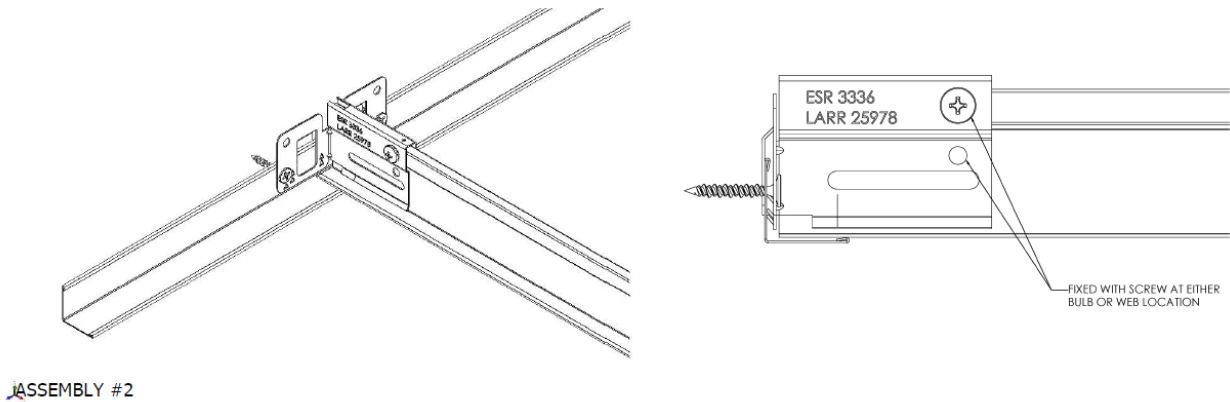


FIGURE 3B—SEISMIC PERIMETER CLIP (CTSPC-2 WITH TWO SCREW ATTACHMENT) FIXED WALL ASSEMBLY WITH WALL ANGLE (WA14-14 AND WA15-15) IN SECTION 4.2.2

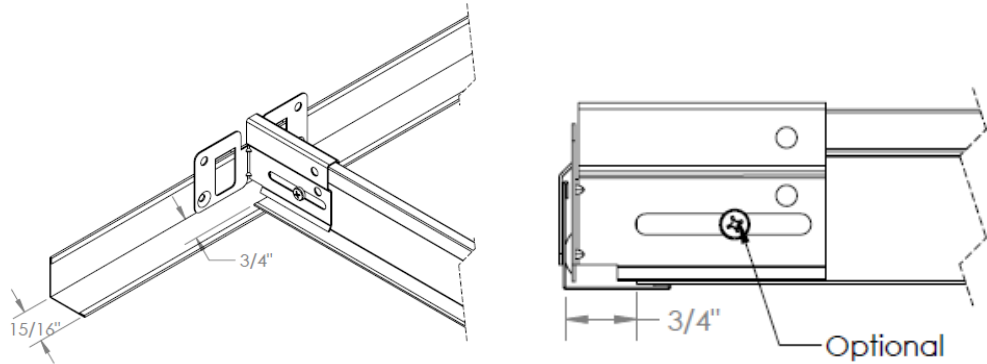


FIGURE 4A—SEISMIC PERIMETER CLIP (CTSPC shown) FREE WALL ASSEMBLY IN SECTION 4.2.1

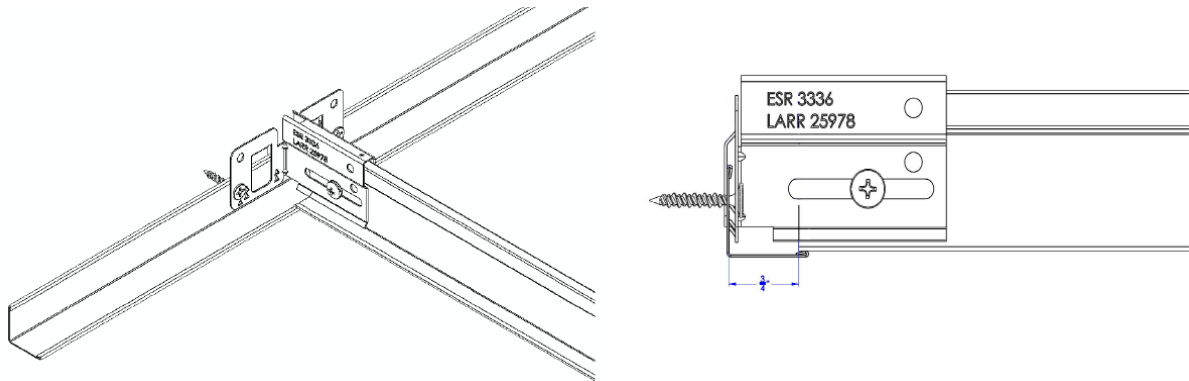


FIGURE 4B—SEISMIC PERIMETER CLIP (CTSPC-2 WITH TWO SCREW ATTACHMENT) FREE WALL ASSEMBLY WITH WALL ANGLE (WA14-14 AND WA15-15) IN SECTION 4.2.2

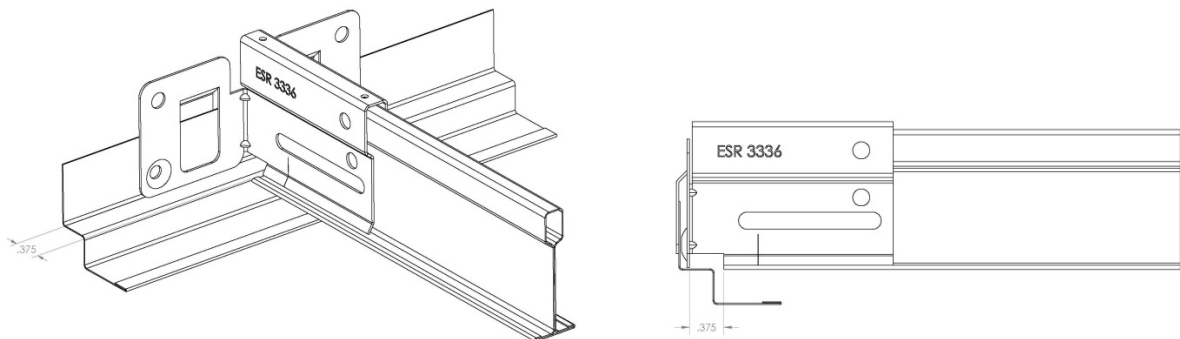


FIGURE 5—SEISMIC PERIMETER CLIP (CTSPC shown) FREE WALL SETUP FOR SEISMIC DESIGN CATEGORY C IN SECTION 4.2.4 (SHADOW MOLDING SM1020)



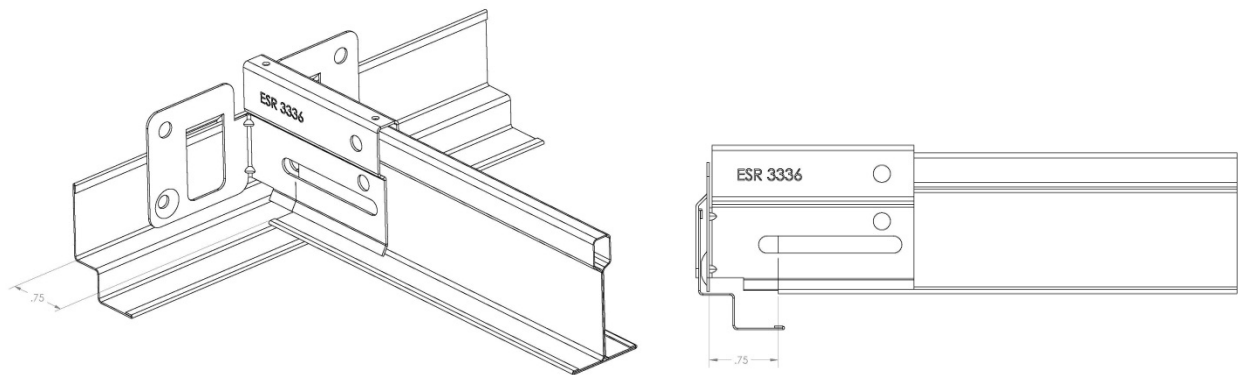


FIGURE 6A—SEISMIC PERIMETER CLIP (CTSPC shown) FREE WALL SETUP FOR SEISMIC DESIGN CATEGORIES D, E AND F IN SECTION 4.2.1 (SHADOW MOLDING SM1000)

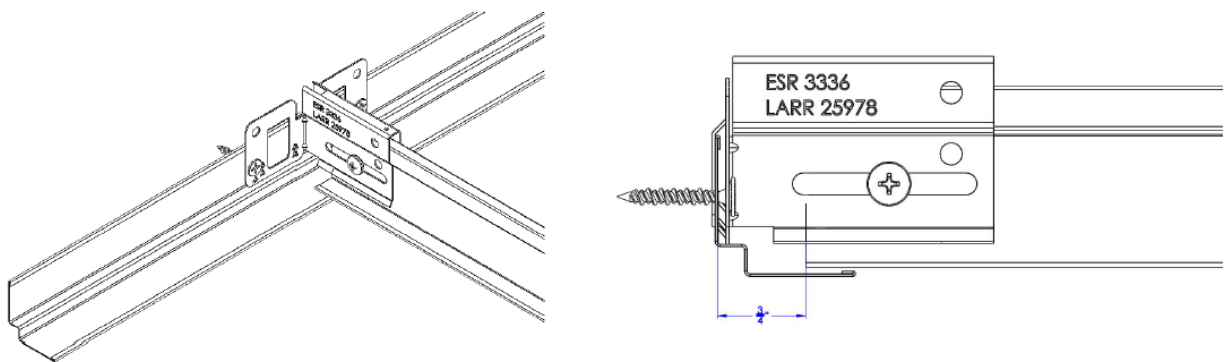


FIGURE 6B—SEISMIC PERIMETER CLIP (CTSPC-2 WITH TWO SCREW ATTACHMENT) FREE WALL SETUP FOR SEISMIC DESIGN CATEGORIES D, E AND F IN SECTION 4.2.2 (SHADOW MOLDING SM1040 AND SM1050)

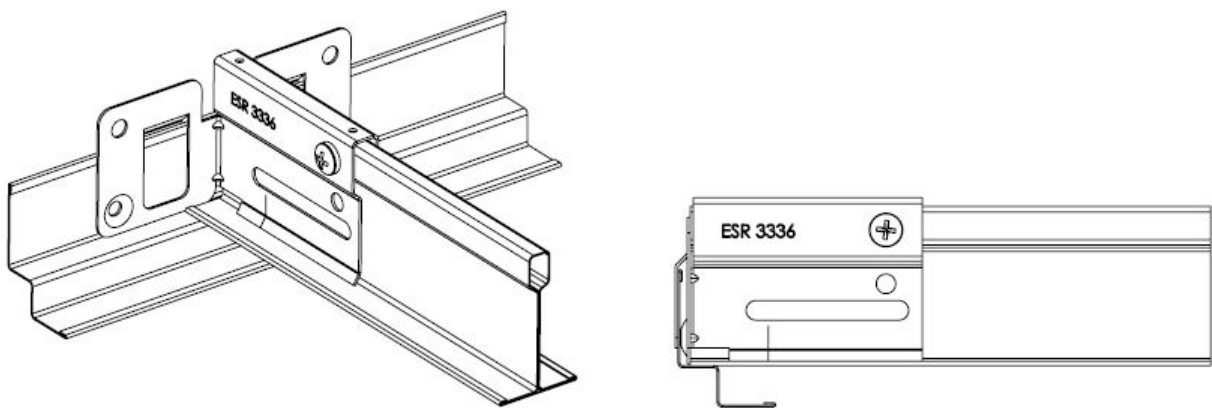
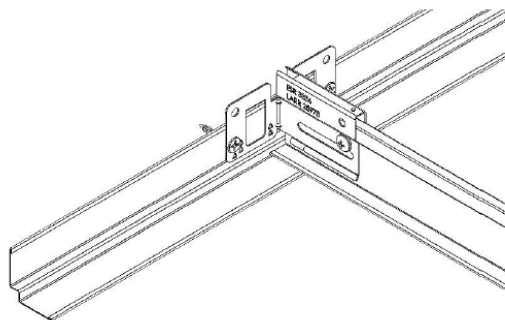
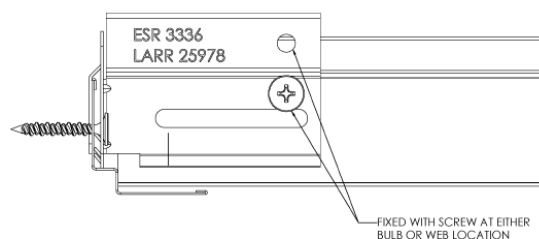


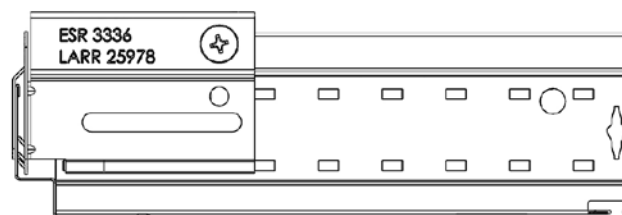
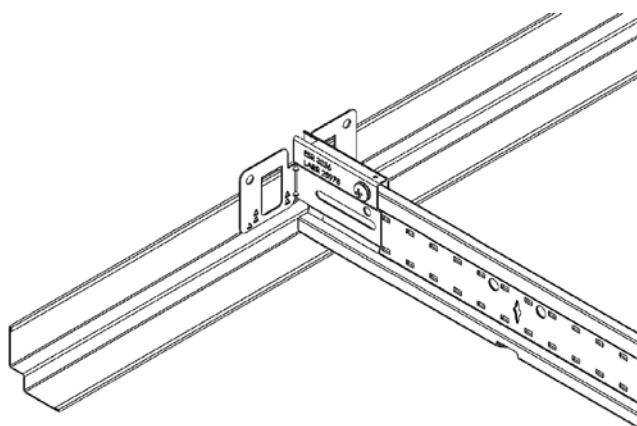
FIGURE 7A—SEISMIC PERIMETER CLIP (CTSPC shown) FIXED WALL SETUP FOR SEISMIC DESIGN CATEGORIES D, E AND F IN SECTION 4.2.1 (SHADOW MOLDING SM1000)



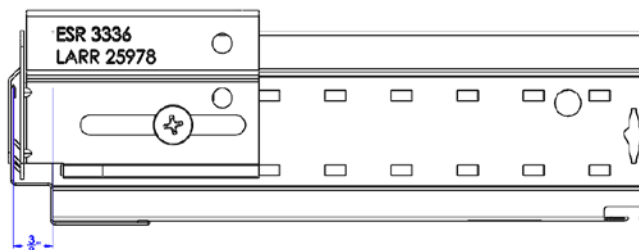
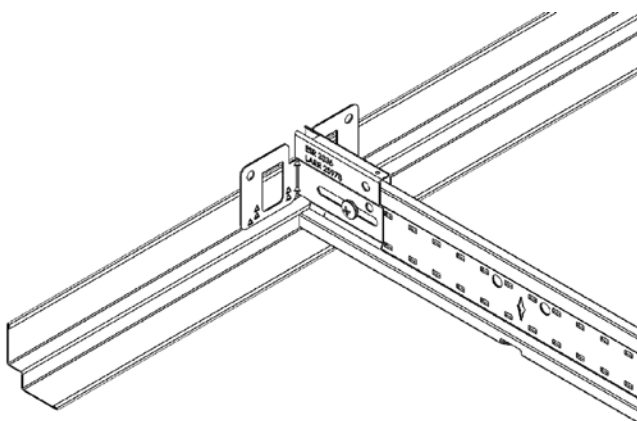
ASSEMBLY #3



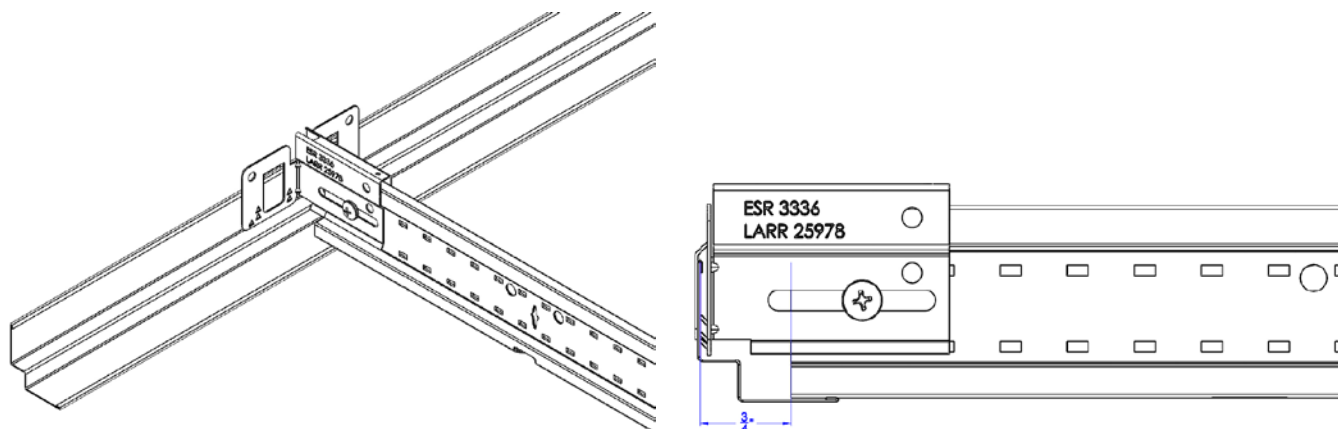
**FIGURE 7B—SEISMIC PERIMETER CLIP (CTSPC-2 WITH TWO SCREW ATTACHMENT) FREE WALL SETUP FOR SEISMIC DESIGN CATEGORIES D, E AND F IN SECTION 4.2.2 (SHADOW MOLDING SM1040 AND SM1050)**



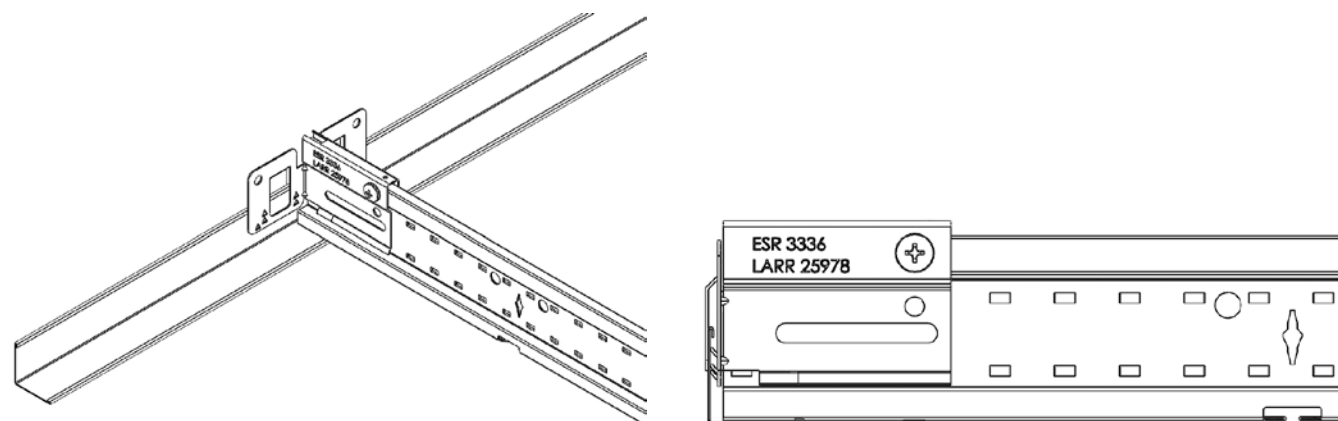
**FIGURE 8— $\frac{9}{16}$ " EZ STAB BOLT SLOTS AND  $\frac{9}{16}$ " EZ STAB TIER DROP FIXED WALL SETUP WITH 1040 OR 1050 SHADOW MOLD AND SEISMIC PERIMETER CLIP (CTSPC-2 shown) (SEISMIC DESIGN CATEGORIES A, B, C, D, E AND F) IN SECTIONS 4.2.3 AND 4.2.5**



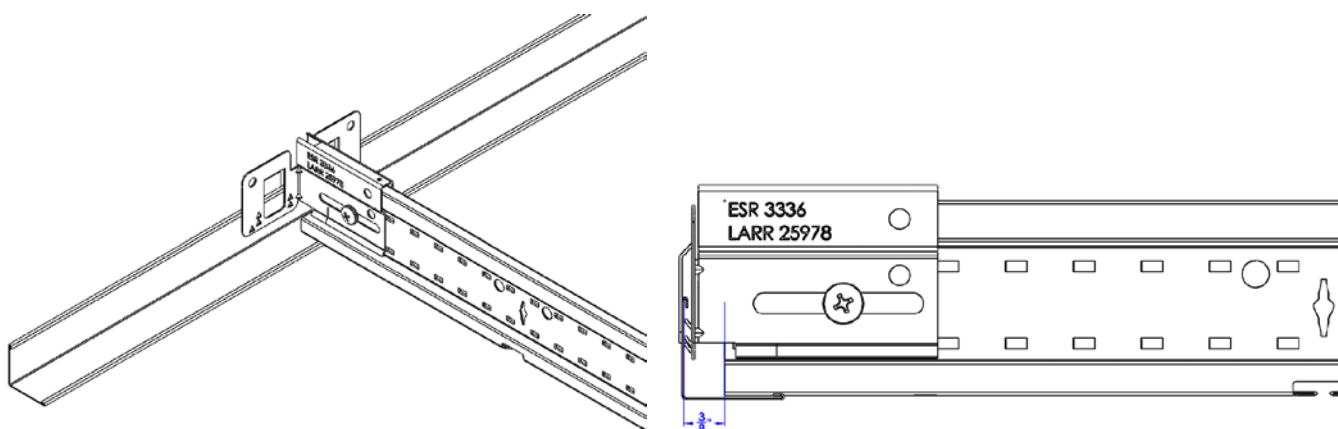
**FIGURE 9— $\frac{9}{16}$ " EZ STAB BOLT SLOTS AND  $\frac{9}{16}$ " EZ STAB TIER DROP FREE WALL SETUP (LOOSELY SCREWED) WITH 1040 OR 1050 SHADOW MOLD AND SEISMIC PERIMETER CLIP (CTSPC-2 shown) (SDCS A, B AND C) IN SECTION 4.2.5**



**FIGURE 10— $\frac{3}{16}$ " EZ STAB BOLT SLOTS AND  $\frac{9}{16}$ " EZ STAB TIER DROP FREE WALL SETUP (LOOSELY SCREWED) WITH 1040 OR 1050 SHADOW MOLD AND SEISMIC PERIMETER CLIP (CTSPC-2 shown) (SEISMIC DESIGN CATEGORIES D, E AND F) IN SECTION 4.2.3**



**FIGURE 11— $\frac{3}{16}$ " EZ STAB BOLT SLOTS AND  $\frac{9}{16}$ " EZ STAB TIER DROP FIXED WALL SETUP WITH  $1\frac{5}{16}$ " WALL ANGLE AND SEISMIC PERIMETER CLIP (CTSPC-2 shown) (SEISMIC DESIGN CATEGORIES A, B, C, D, E AND F) IN SECTIONS 4.2.3 AND 4.2.5**



**FIGURE 12— $\frac{3}{16}$ " EZ STAB BOLT SLOTS AND  $\frac{9}{16}$ " EZ STAB TIER DROP FREE WALL SETUP (LOOSELY SCREWED) WITH  $1\frac{5}{16}$ " WALL ANGLE AND SEISMIC PERIMETER CLIP (CTSPC-2 shown) (SDCS A, B AND C) IN SECTION 4.2.5**

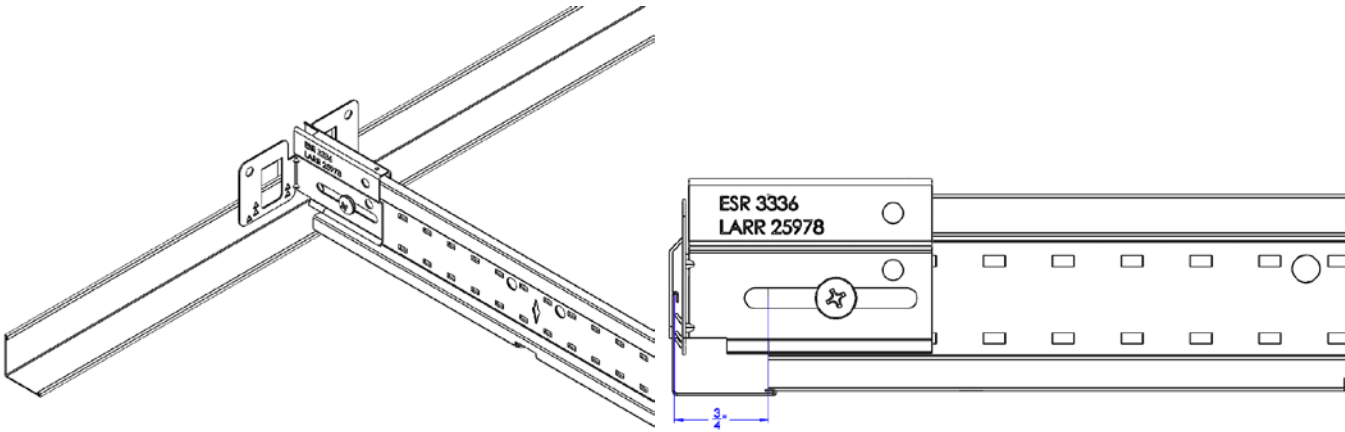
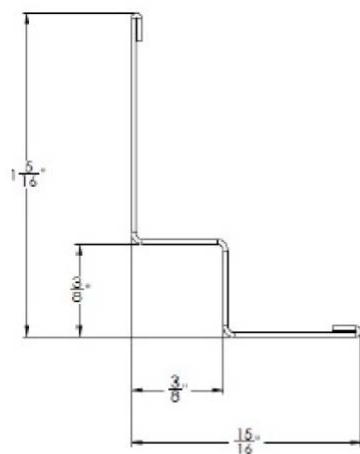


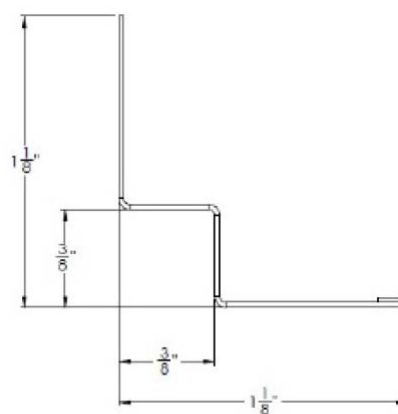
FIGURE 13— $\frac{9}{16}$ " EZ STAB BOLT SLOTS AND  $\frac{9}{16}$ " EZ STAB TIER DROP FREE WALL SETUP (LOOSELY SCREWED) WITH  $\frac{15}{16}$ " WALL ANGLE AND SEISMIC PERIMETER CLIP (CTSPC-2 shown) (SDCS D, E AND F) IN SECTION 4.2.3





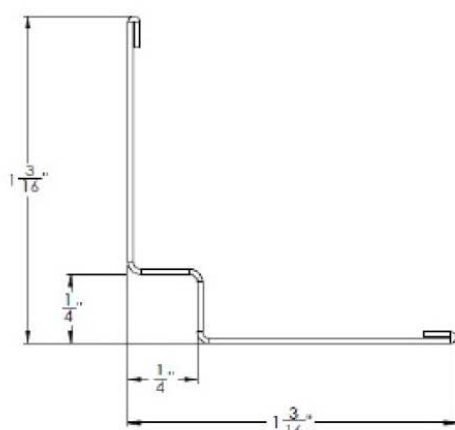
FRONT VIEW  
SCALE: 1/8" = 1"

**SM1000**



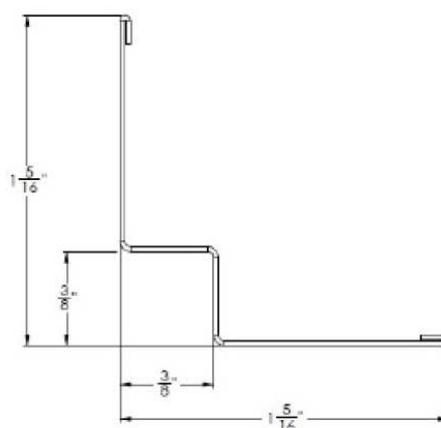
FRONT VIEW  
SCALE: 1/8" = 1"

**SM1020**



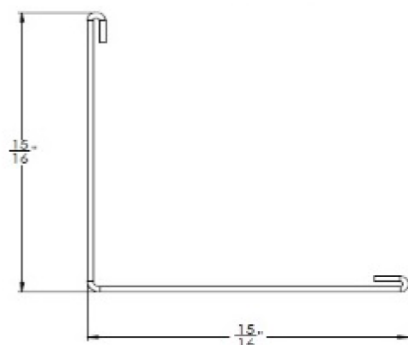
FRONT VIEW  
SCALE: 1/8" = 1"

**SM1040**

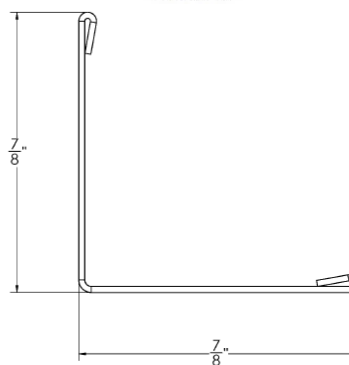


FRONT VIEW  
SCALE: 1/8" = 1"

**SM1050**



**WA15-15**



**WA14-14**

**FIGURE 14—SHADOW MOLDINGS AND WALL ANGLE**

## ICC-ES Evaluation Report

## ESR-3336 LABC Supplement

Issued April 2019

Revised July 2019

*This report is subject to renewal January 2021.*

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*A Subsidiary of the International Code Council®*

**DIVISION: 09 00 00—FINISHES**

**Section: 09 22 26—Suspension Systems**

**Section: 09 53 00—Acoustical Ceiling Suspension Assemblies**

### REPORT HOLDER:

**CERTAINTEED CEILINGS CORPORATION**

### EVALUATION SUBJECT:

**SUSPENDED CEILING FRAMING SYSTEMS AND SEISMIC PERIMETER CLIPS**

### 1.0 REPORT PURPOSE AND SCOPE

#### Purpose:

The purpose of this evaluation report supplement is to indicate that the CertainTeed suspended ceiling framing systems and seismic perimeter clips, described in ICC-ES master evaluation report [ESR-3336](#), have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

#### Applicable code edition:

2017 *City of Los Angeles Building Code* (LABC)

### 2.0 CONCLUSIONS

The CertainTeed suspended ceiling framing systems and seismic perimeter clips, described in Sections 2.0 through 7.0 of the master evaluation report [ESR-3336](#), comply with the LABC Chapters 8, 16, 16A and 25, and are subjected to the conditions of use described in this supplement.

### 3.0 CONDITIONS OF USE

The CertainTeed suspended ceiling framing systems and seismic perimeter clips described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the master evaluation report [ESR-3336](#).
- The design, installation, conditions of use and identification of the CertainTeed suspended ceiling framing systems and seismic perimeter clips are in accordance with the 2015 *International Building Code*® (2015 IBC) provisions noted in the master evaluation report [ESR-3336](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16, 16A, 17 and 17A, as applicable.
- Main runners shall be identified by indentation or by nontransferable decal with letters not less than 1/4-inch high, and shall include the company name, runner designation and load rating.

This supplement expires concurrently with the master report, reissued January 2019 and revised July 2019.

## ICC-ES Evaluation Report

## ESR-3336 CBC Supplement

Reissued January 2019

Revised July 2019

*This report is subject to renewal January 2021.*

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A Subsidiary of the International Code Council®

**DIVISION: 09 00 00—FINISHES**

**Section: 09 22 26—Suspension Systems**

**Section: 09 53 00—Acoustical Ceiling Suspension Assemblies**

### REPORT HOLDER:

**CERTAINTED CEILINGS CORPORATION**

### EVALUATION SUBJECT:

**SUSPENDED CEILING FRAMING SYSTEMS AND SEISMIC PERIMETER CLIPS**

### 1.0 EVALUATION SCOPE

**Compliance with the following code:**

2016 *California Building Code* (CBC)

**Properties evaluated:**

- Interior finish
- Structural

### 2.0 PURPOSE OF THIS SUPPLEMENT

This supplement is issued to indicate that the suspended ceiling framing systems described in master report ESR-3336 comply with CBC Chapters 8, 16, 16A and 25, when design and installation are in accordance with the master evaluation report and additional requirements in the 2016 CBC Chapters 8, 16, 16A, 17, 17A and 25, as applicable, with modifications *italicized* as follows:

***Modify Section 3.3.2 (Hanger and Bracing Wires) as follows:***

Wires for suspended ceiling framing members, and fixtures, must comply with ASTM C636 as referenced in 2016 CBC Sections 808, 1616.10.16 and 1616A.1.21; and with Section 13.5.6 of ASCE 7-10 as referenced in 2016 CBC Sections 1613, 1613A, 1616.10.16, 1616A.1.21 and 2506.2.1; and with ASTM E580 as referenced in 2016 CBC Sections 1616.10.16 and 1616A.1.21.

***Modify Section 4.1.1 (General) as follows:***

The suspended ceiling framing systems for acoustical tiles must be installed with acoustical tiles (panels) in accordance with this report and the manufacturer's published installation instructions. The suspended ceiling framing systems must be installed in accordance with Section 13.5.6 of ASCE 7-10 as referenced in 2016 CBC Sections 808.1, 1613, 1613A and 2506.2.1 and modified by 2016 CBC Sections 1616.10.16 and 1616A.1.21. The minimum ultimate tension and compression capacity of framing member connections is 180 pounds (800 N).

***Modify Section 4.1.4 (Seismic Design Requirements for Suspended Ceiling Systems for Acoustical Tiles under the 2016 CBC) as follows:***

Seismic design and installation details of the ceiling system, including lighting fixtures and mechanical services, must be in accordance with Section 13.5.6 of ASCE 7-10 as referenced in 2016 CBC Sections 1613, 1613A and 2506.2.1, and modified by 2016 CBC Sections 1616.10.16 and 1616A.1.21, except as noted in Section 4.2 of this report, for systems not exceeding 4 pounds per square foot (19.5 kg/m<sup>2</sup>). Main runners classified as heavy-duty can be used in Seismic Design Categories A, B, C, D, E and F. Main runners classified as intermediate-duty can only be used in Seismic Design Categories A, B and C. Partitions must be laterally supported as required by Section 13.5.8 of ASCE 7-10 as referenced by 2016 CBC Sections 1613, 1613A and 2506.2.1 and modified by 2016 CBC Sections 1616.10.16 and 1616A.1.21.

**Modify Section 4.2.1 (Alternate Installation No. 1 for Suspended Ceiling Systems of Acoustical Tiles Used in Seismic Design Categories D, E and F) as follows:**

In this installation, the  $\frac{9}{16}$ " Elite Narrow Stab System,  $\frac{9}{16}$ " EZ Elite Narrow Stab System,  $\frac{15}{16}$ " Classic Stab System,  $\frac{15}{16}$ " EZ Classic Stab System,  $\frac{15}{16}$ " Classic Environmental Stab System,  $\frac{15}{16}$ " EZ Classic Environmental Stab System,  $\frac{15}{16}$ " Classic Aluminum Capped Stab System,  $\frac{15}{16}$ " EZ Classic Aluminum Capped Stab System,  $\frac{15}{16}$ " Clean Room Stab System, and  $\frac{15}{16}$ " EZ Clean Room Stab System main runners and cross tees must be those described in Section 3.3.1 of the master report. The main runner must be classified as Heavy Duty in Table 1 of the master evaluation report. The maximum ceiling weight permitted is 2.57 pounds per square foot (12.56 kg/m<sup>2</sup>). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is used to connect main runners and cross tees to the perimeter wall angle or shadow molding. The Seismic Perimeter Clip must be fixed to framing member on two orthogonal adjacent walls and allow for free movement on the two opposing walls. Master report Figures 3A and 7A show the fixed wall setup and Figures 4A and 6A show the free wall setup. As an alternate to the perimeter runner being fixed through the Seismic Perimeter Clip, the perimeter runner may be fastened through the wall angle with a  $\frac{1}{8}$ -inch-diameter (3.2 mm) by  $\frac{1}{4}$ -inch long aluminum pop (blind) rivet, as shown in Figure 3 of the master report. A minimum  $\frac{15}{16}$ -inch-wide (23.4 mm) wall angle or shadow molding (SM1000) is used in lieu of the 2-inch-wide (51 mm) wide wall angle required by Section 5.2.2 of ASTM E580 as referenced in Section 13.5.6.2.2 of ASCE 7-10 for the 2016 CBC for Seismic Design Categories D, E and F. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip, the  $\frac{15}{16}$ -inch-wide (23.4 mm) wall angle or shadow molding and the elimination of the stabilizer bars. The Seismic Perimeter clip is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. On the two adjacent fixed walls, the perimeter clip must be attached to the framing member by a No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screw fastened into the bulb or web of the runner, and provides no clearance between the terminal runner end and the wall angle. On the free walls, the clips must allow for a minimum of  $\frac{3}{4}$ -inch (19.1 mm) movement of the terminal runner end towards and away from the wall. Seismic Perimeter Clips installed in this manner are used in lieu of the stabilizer bars required in Section 5 of ASTM E580 as referenced in ASCE 7-10, Section 13.5.6.2.2 for the 2016 CBC. ASCE 7-10 is referenced in 2016 CBC Sections 1613, 1613A and 2506.2.1. The assembly described in this section is equivalent to that required by Section 5 of ASTM E580, which is referenced in 2016 CBC Sections 1616.10.16 and 1616A.1.21.

**Modify Section 4.2.2 (Alternate Installation No. 2 for Suspended Ceiling Systems of Acoustical Tiles Used in Seismic Design Categories D, E and F) as follows:**

In this installation, the  $\frac{9}{16}$ " Elite Narrow Stab System,  $\frac{9}{16}$ " EZ Elite Narrow Stab System,  $\frac{15}{16}$ " Classic Stab System,  $\frac{15}{16}$ " EZ Classic Stab System,  $\frac{15}{16}$ " Classic Environmental Stab System,  $\frac{15}{16}$ " EZ Classic Environmental Stab System,  $\frac{15}{16}$ " Classic Aluminum Capped Stab System,  $\frac{15}{16}$ " EZ Classic Aluminum Capped Stab System,  $\frac{15}{16}$ " Clean Room Stab System, and  $\frac{15}{16}$ " EZ Clean Room Stab System main runners and cross tees must be those described in Section 3.3.1. The main runner must be classified as Heavy Duty in Table 1 of this report. The maximum total ceiling weight permitted is 4 lb/ft<sup>2</sup> (19.55 kg/m<sup>2</sup>). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is used to connect main runners and cross tees to the perimeter wall angle or shadow molding. The Seismic Perimeter Clip must be fixed to the framing member on two adjacent orthogonal walls and allow for free movement on the two opposing walls. Figure 3B and 7B show the fixed wall setup and Figure 4B and 6B show the free wall setup. Wall angle (W14 or W15) or shadow molding (SM1040 or SM1050) is used in lieu of the 2-inch-wide (51 mm) wall angle required by Section 5.2.2 of ASTM E580 and Section 13.5.6.2.2 of ASCE 7-10 for the 2016 CBC for Seismic Design Categories D, E and F. The ceiling system must be installed as prescribed by the applicable code, except for the use of the Seismic Perimeter Clip, the wall angle or shadow molding and the elimination of the stabilizer bars. The Seismic Perimeter Clip is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. The Seismic Perimeter Clip must be fastened to the wall angle or shadow molding using two (2) No. 7 by  $\frac{7}{16}$ -inch long pan-head sharp-point screws. On the two adjacent fixed walls, the perimeter clip must be attached to the framing member by a No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screw fastened into the bulb or web of the runner and provide no clearance between the terminal runner end and the wall angle or shadow molding. On the free walls, the clips must allow for a minimum  $\frac{3}{4}$ -inch (19.1 mm) movement of the terminal runner end towards and away from the wall. Seismic Perimeter Clips installed in this manner are used in lieu of the stabilizer bars required in Section 5 of ASTM E580 as referenced in ASCE 7-10 for the 2016 CBC. ASCE 7-10 is referenced in 2016 CBC Sections 1613, 1613A and 2506.2.1. The assembly described in this section is equivalent to that required by Section 5 of ASTM E580, which is referenced in 2016 CBC Sections 1616.10.16 and 1616A.1.21.

**Modify Section 4.2.3 (Alternate Installation No. 3 for Suspended Ceiling Systems of Acoustical Tiles Used in Seismic Design Categories D, E and F) as follows:**

In this installation, the  $\frac{9}{16}$ " EZ Stab Bolt Slot and  $\frac{9}{16}$ " EZ Stab Tier Drop main runners and cross tees must be those described in Section 3.3.1 of the master report. The main runner must be classified as Heavy Duty in Table 1 of the master report. The maximum total ceiling weight permitted is 4 lb/ft<sup>2</sup> (19.55 kg/m<sup>2</sup>). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is used to connect main runners and cross tees to the perimeter wall angle or shadow molding. The Seismic Perimeter Clip (CTSPC or CTSPC-2) must be fixed to the framing member on two adjacent orthogonal walls and allow for free movement on the two opposing walls. Master report Figures 8 and 11 show the fixed wall setup and Figures 10 and 13 show the free wall setup. A minimum  $\frac{15}{16}$ -inch-wide (23.4 mm) wall angle or shadow molding (SM1040 or SM1050) is used in lieu of the 2-inch-wide (51 mm) wall angle required by ASTM E580 and Section 13.5.6.2.2 of ASCE 7-10 for the 2016 CBC for Seismic Design Categories D, E and F. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip (CTSPC or CTSPC-2), the  $\frac{15}{16}$ -inch-wide (23.4 mm) wall angle or shadow molding (SM1040 or SM1050) and the elimination of the stabilizer bars.

The Seismic Perimeter Clip (CTSPC or CTSPC-2) is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. When using the CTSPC clip, the clip must be fastened to the wall angle or shadow molding using two (2) No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screws. On the two adjacent fixed walls, the perimeter clip must be attached to the framing member by a No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screw fastened into the bulb or web of the runner and provide no clearance between the terminal runner end and the wall angle or shadow molding.



On the free walls, the clips must allow for a minimum  $\frac{3}{4}$ -inch (19.1 mm) movement of the terminal runner end towards and away from the wall. Seismic Perimeter Clips (CTSPC or CTSPC-2) installed in this manner are used in lieu of the stabilizer bars required in Section 5 of ASTM E580 as referenced in ASCE 7-10, Section 13.5.6.2.2 for the 2016 CBC. ASCE 7-10 is referenced in 2016 CBC Sections 1613, 1613A and 2506.2.1. The assembly described in this section is equivalent to that required by Section 5 of ASTM E580, which is referenced in 2016 CBC Sections 1616.10.16 and 1616A.1.21.

**Modify Section 4.2.4 (Alternate Installation No. 4 for Suspended Ceiling Systems of Acoustical Tiles Used in Seismic Design Category C) as follows:**

In this installation, the  $\frac{9}{16}$ " Elite Narrow Stab System,  $\frac{9}{16}$ " EZ Elite Narrow Stab System,  $\frac{15}{16}$ " Classic Stab System,  $\frac{15}{16}$ " EZ Classic Stab System,  $\frac{15}{16}$ " Classic Environmental Stab System,  $\frac{15}{16}$ " EZ Classic Environmental Stab System,  $\frac{15}{16}$ " Classic Aluminum Capped Stab System,  $\frac{15}{16}$ " EZ Classic Aluminum Capped Stab System,  $\frac{15}{16}$ " Clean Room Stab System,  $\frac{15}{16}$ " EZ Clean Room Stab System, and  $\frac{15}{16}$ " Fire Secure Stab Fire Rated System main runners and cross tees must be those described in Section 3.3.1 of the master report. Seismic Perimeter Clips (CTSPC or CTSPC-2) may be used in lieu of stabilizer bars in suspended ceilings installations regulated by Section 4 of ASTM E580. The Seismic Perimeter Clips (CTSPC or CTSPC-2) are placed at the intersections of main runners and  $\frac{15}{16}$ " wall angle or shadow molding (SM1020) and cross tees and wall angle or shadow molding (SM1020). The Seismic Perimeter Clip is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding. When using wall angles, two adjacent walls are fixed with a No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screw through the bulb or web of the framing member. The two opposing walls are free and the installation of the clips must allow for minimum  $\frac{3}{8}$ -inch (9.5 mm) movement of the terminal runner end towards and away from the wall. When using the shadow molding (SM1020), the runner ends must not be fixed or screwed to the seismic perimeter clip (CTSPC or CTSPC-2) and the installation of the clips must allow for minimum  $\frac{3}{8}$ -inch (9.5 mm) movement of the runner end towards and away from the wall as shown in Figure 5 of the master report. The maximum ceiling weight permitted is 2.28 lb/ft<sup>2</sup> (11.12 kg/m<sup>2</sup>). Seismic Perimeter Clips (CTSPC or CTSPC-2) installed in this manner are used in lieu of stabilizer bars required by Section 4 of ASTM E580. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip (CTSPC or CTSPC-2) and the elimination of the stabilizer bars. The assembly described in this section is equivalent to code-prescribed construction as required by Section 4 of ASTM E580. ASTM E580 is referenced in 2016 CBC Sections 1616.10.16 and 1616A.1.21.

**Modify Section 4.2.5 (Alternate Installation No. 5 for Suspended Ceiling Systems of Acoustical Tiles Used in Seismic Design Category C) as follows:**

In this installation, the  $\frac{9}{16}$ " EZ Stab Bolt Slot and  $\frac{9}{16}$ " EZ Stab Tier Drop main runners and cross tees must be those described in Section 3.3.1 of the master report. The Seismic Perimeter Clip (CTSPC or CTSPC-2) may be used in lieu of stabilizer bars in suspended ceiling installations regulated by Section 4 of ASTM E580. The Seismic Perimeter Clips (CTSPC or CTSPC-2) are placed at the intersections of main runners and wall angle or shadow molding (SM1040 or SM1050) and cross tees and  $\frac{15}{16}$ " wall angle or shadow molding (SM1040 or SM1050). The Seismic Perimeter Clip (CTSPC or CTSPC-2) is installed by pushing the back tabs of the clip over the vertical hem of the wall angle or shadow molding (SM1040 or SM1050). When using the CTSPC clip, the clip must be fastened to the wall angle or shadow molding using two (2) No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screws. On two adjacent walls the runner ends are screwed to the seismic perimeter clips with a No. 7 by  $\frac{7}{16}$ -inch long (11.1 mm) pan-head sharp-point screw through the bulb or web of the runner, See Figures 8 and 11 of the master report. The two opposing walls are free and the installation of the clips must allow for minimum  $\frac{3}{8}$ -inch (9.5 mm) movement of the terminal runner end towards and away from the wall, See Figures 9 and 12 of the master report. The maximum ceiling weight permitted is 2.5 lb/ft<sup>2</sup> (12.22 kg/m<sup>2</sup>). Seismic Perimeter Clips (CTSPC or CTSPC-2) installed in this manner are used in lieu of stabilizer bars required by Section 4 of ASTM E580. The ceiling system must be installed as prescribed by the applicable code except for the use of the Seismic Perimeter Clip (CTSPC or CTSPC-2) and the elimination of the stabilizer bars. The assembly described in this section is equivalent to that required by Section 4 of ASTM E580. ASTM E580 is referenced in 2016 CBC Sections 1616.10.16 and 1616A.1.21.

**Modify Section 4.3 (Seismic Design Requirements for Suspended Ceiling Systems for Gypsum Wallboard under the 2016 CBC) as follows:**

In this installation, the main and cross runners must be as described in Section 3.1.2. The installation must be in accordance with Section 4.1, except the ceiling must be designed for seismic loads required under Chapter 13 of ASCE 7-10 as referenced in 2016 CBC Sections 1613, 1613A and 2506.2.1, and modified by 2016 CBC Sections 1616.10.16 and 1616A.1.21. The ceiling weight must not exceed 4 psf (19.5 kg/m<sup>2</sup>). The ceiling weight may be increased up to 10 psf (48.82 kg/m<sup>2</sup>) when installed as indicated in Tables 2 through 5 of the report.

**Modify Section 4.3.1 (Gypsum Wallboard Attachment under the 2016 CBC) as follows:**

Gypsum wallboard must be installed and fastened to the ceiling framing system in accordance with CBC Section 2508.

**Modify Section 4.4 (Special Inspection) as follows:**

Suspended ceilings in Seismic Design Categories C, D, E, and F, are subject to periodic special inspections during the installation of the suspended ceiling systems and their anchorage in accordance with the following requirements: For installations in accordance with Section 4.2 of this report, special inspection must be conducted as indicated in 2016 CBC Sections 1704.3, 1704.5, 1705.1.1, 1705.13.2, 1704A.3, 1704A.5, 1705A.1.1, 1705A.12.5 and 1705A.13.2. For installations in accordance with Section 4.1.4 of this report, special inspection must be conducted in accordance with 2016 CBC Sections 1704.3, 1704A.3, 1704.5, 1704A.5, 1705A.12.5 and Section 11A.1.3.9, Item 2 of ASCE 7-10 for the 2016 CBC. The special inspector must verify that the ceiling system is as described in this report, and complies with this report, and with the approved construction documents.

**Modify Section 5.3 as follows:**

Suspended ceiling systems must be designed in accordance with Section 13.5.6 of ASCE 7-10 as referenced by 2016 CBC Sections 1613 and 1613A, and 2506.2.1 and modified by 2016 CBC Sections 1616.10.16 and 1616A.1.21 for the 2016 CBC. The documents must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.

**Modify Section 5.4 as follows:**

For Seismic Design Category C, D, E or F, a quality assurance plan complying with *CBC Chapters 17 and 17A*, as applicable, must be submitted to the code official for approval.

**Modify Section 5.5 as follows:**

Periodic special inspections must be provided in accordance with Section 4.4 of this report. A statement of special inspection must be provided as required in 2016 CBC Sections 1704.3 and 1704A.3 for the 2016 CBC.

**Modify Section 5.6 as follows:**

The ceiling systems must not be used to provide lateral support for walls or partitions, except as provided for in ASCE 7, Section 13.5.8.1, as referenced in *CBC Sections 1613, 1613A and 2506.2.1 and modified by 2016 CBC Sections 1616.10.16 and 1616A.1.21, and must comply with applicable code provisions referenced in Section 4.1.4 of this report.*

**Modify Section 5.7 as follows:**

The ceiling systems must be braced to resist seismic forces as determined from *Sections 1613 and 1613A of the CBC, and modified by 2016 CBC Sections 1616.10.16 and 1616A.1.21.*

**Modify Section 5.9 as follows:**

The ceiling systems are limited to ceilings not considered accessible in accordance with *Item 28 of 2016 CBC Tables 1607.1 and 1607A.1.*

**Modify Section 5.11 as follows:**

Lay-in ceiling panels must be justified to the satisfaction of the code official as complying with the interior finish requirements of *Chapter 8 of the CBC.*

This supplement expires concurrently with the master evaluation report, reissued January 2019 and revised July 2019.