

ICC-ES Evaluation Report

ESR-4180

Reissued October 2024

This report also contains:


- CA Supplement

Subject to renewal October 2026

- City of LA Supplement

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<p>DIVISION: 09 00 00— FINISHES</p> <p>Section: 09 22 26— SUSPENSION SYSTEMS</p> <p>Section: 09 53 00— ACOUSTICAL CEILING SUSPENSION ASSEMBLIES</p>	<p>REPORT HOLDER:</p> <p>CERTAINTEED CANADA, INC. dba CERTAINTEED ARCHITECTURAL PRODUCTS</p>	<p>EVALUATION SUBJECT:</p> <p>CEILENCIO CEILING SYSTEM</p>	
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1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, and 2012 [International Building Code® \(IBC\)](#)

Property evaluated:

- Structural

2.0 USES

The Ceilencio Ceiling System described in this report is an alternate suspended ceiling assembly used in non-fire-resistance-rated construction for applications noted in this report.

3.0 DESCRIPTION

3.1 General: The Ceilencio ceiling system consist of grid members, butterfly metal plates and torsion springs supporting ceiling panels.. The ceiling panels come in different dimensions and weights and must be supported by the torsion springs using retainer clips.

3.2 Ceiling Panels: The panels must be custom made for specific projects and come in different dimensions and weights. The panels and suspended ceiling framing system weight must not exceed the reported combined weight in [Table 1](#). The panels must come in sizes up to 4 feet by 8 feet (1.22 m by 2.44 m). The ceiling panels are supported by the grid system using retainer clips with torsion springs, which must be installed on the back of the ceiling panels. A minimum of four retainer clips with torsion springs must be used to support each panel, unless noted otherwise in this report.

3.3 Ceilencio Ceiling Grid System: The grid system is composed of aluminum extruded grid members, Type G and Type F. See [Figures 1](#) and [2](#). The Type F and Type G grid members come in various lengths up to 12 feet (3.66 m). The Type F grid member is installed at the perimeter of the ceiling system. The Type G grid member may be installed at the perimeter and in the field of the ceiling. The connection of the grid members are done using the B1 and B2 butterfly metal plates as shown in [Figures 1](#) and [2](#). The Type F and Type G grid members are made from aluminum having an alloy and temper of 6063-T6..

3.4 Butterfly Plate: The B1 and B2 butterfly plates are 0.081-inch-thick (2.1 mm) and made from aluminum having an alloy and temper of 3003-H14. The torsion springs are supported by the butterfly plates.

3.5 Torsion Spring: The torsion springs come in two configurations straight and curved. The straight configuration is made from galvanized hard drawn spring wire complying with ASTM A764 having a minimum diameter of 0.090-inch (2.3 mm). The curved configuration is made from galvanized hard drawn spring wire complying with ASTM A764 and having a minimum diameter of 0.072-inch (1.8 mm). See [Figures 3A](#) and [3B](#) for Torsion Spring configurations.

3.6 Retainer Clip: The retainer clip is made from spring steel complying with AISI 1055 and having a

minimum thickness of 0.031-inch (0.79 mm). See [Figure 4](#) for retainer clip.

3.7 Hanger Wire: Hanger wire for suspended ceiling framing members, and fixtures must comply with ASTM C636 as referenced in IBC Section 808.1.1.1 and Section 13.5.6 of ASCE 7 as referenced in IBC Section 2506.2.1.

4.0 DESIGN AND INSTALLATION

4.1 Design: The suspended ceiling framing system installed with panels as described in Section 3.2 of this report must be designed and installed in accordance with IBC Sections 808, 1613 and 2506.2.1, except as modified in this report. The allowable tension and compression capacity of the framing member connections is 90 pounds (400 N). The allowable tension capacity of the vertical hanger wire and splay wire is 125 pounds (556 N). The ceiling panels are not designed to load the grid members since vertical hanger wires must be placed through grid members adjacent to all butterfly plates supporting the ceiling panels.

4.2 Seismic Design: The ceiling system described in Section 4.4 of this report has been recognized for use in S_{ds} of 2.0 g or less. A registered design professional must determine the applicability.

4.3 Installation: The Ceilencio ceiling grid system is installed by connecting the grid members using the B1 and B2 butterfly plates with supplied screws. See [Figures 1](#) and [2](#) for typical installation. The screws must be placed at the predrilled hole locations on the butterfly plates. A hanger wire, as described in Section 3.7 of this report, must be installed adjacent to each butterfly plate. A minimum of four butterfly plates are required to support each ceiling panel. Additional butterfly plates connected to grid members may be required to address larger and heavier ceiling panels as indicated in [Table 1](#) of this report. Ceiling panels larger than 4 ft by 4 ft (1219 by 1219 mm), must be also supported at the midspan of the ceiling panels with at least one Type F grid member, as shown in [Table 1](#), which must be installed at the back of the panels and connected to the intersecting grid members with butterfly plates and supplied screws. The hanger wires must be placed through a drilled hole located at the center of the web portion of the Type F and G grid members. The location of the holes is approximately 0.65-inch (16.5 mm) below the top of the Type G grid and approximately 0.70-inch (17.8 mm) below the top of the Type F grid. Each vertical hanger wire attached to the grid members and to the support above must be tightly wrapped and sharply bent to prevent any vertical movement or rotation of the member within the loops. The wire must be wrapped around itself a minimum of three full turns within a 3-inch (76 mm) length. The retainer clips with torsion springs must be positively attached to the back of the ceiling panels in accordance with ceiling panel manufacturer's recommended installation methods. The location of the retainer clips with torsion springs must be aligned with the butterfly plates. The torsion springs must be supported by the butterfly plates.

4.4 Seismic Installation: Installation in Seismic Design Categories C, D, E and F must comply with Section 4.3 of this report and this section. The seismic parameters for installation of the suspended ceiling system must be based using a maximum short period design spectral response acceleration, S_{ds} , of 2.0 g, height factor ratio, z/h , of 1.0 and component importance factor, I_p , of 1.0. The weight of the ceiling system must not exceed the reported weights in [Table 1](#) of this report. The Type G grid members of the ceiling system must be used to laterally brace the ceiling system in accordance with Section 5.2.8 of ASTM E580 using four No. 12 gage steel wires splayed 45 degrees with a compression strut. The wires must be installed in accordance with Section 4.3 requirements for vertical wires. The spacing of the lateral bracing and compression strut shall be determined by registered design professional and not exceed the lateral bracing spacing in Section 5 of ASTM E580. The spacing of the grid members is based on the size of the ceiling panels being supported. The maximum ceiling panel size must not exceed the panel sizes indicated in [Table 1](#). A Type F or Type G grid member must be located along the perimeter of the ceiling system. Additional Type F grid members attached to the perimeter grid member may be required as shown in [Table 1](#). The perimeter grid members must be attached (fixed side) on two adjacent walls and unattached (free side) on two opposite walls. A clearance of 1.625-inch (41 mm) must be maintained between the perimeter grid members and the walls on the free side. Where the perimeter grid members are attached or fixed to the supporting wall, the grid members must be attached to the wall using 2-inch-by-2-inch-by-0.62-inch-wide (51 by 51 by 15.7 mm) galvanized steel angle clip having a thickness of 0.06-inch (1.52 mm) and spaced maximum of 24 inches (610 mm) on center. The angle clip must be fastened to the supporting wall using two screws as determined by the registered design professional. The attachment of the angle clip to the perimeter grid member must be made by using one or two supplied No. 10 screws. Where the angle clip is located at a butterfly plate location, two supplied screws must be used to attach the clip to the grid member. Vertical hanger wires located along the perimeter must not deviate by more than 10 degrees from vertical (1:6).

4.5 Special Inspection: Suspended ceilings in Seismic Design Categories C, D, E and F, shall be subject to periodic as required 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 Item 3 of Section 1705.12). The special inspector must verify that the ceiling system is as described in this report, and complies with the installation instructions in this report, and with the approved construction documents. A statement of special inspections must be provided as

required in IBC Section 1704.3.

5.0 CONDITIONS OF USE:

The Ceilencio 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 grid system are fabricated and installed in accordance with this report and the manufacturer's published installation instructions. In the event of a conflict between the manufacturer's installation instructions and this report, the most restrictive governs.
- 5.2 Design loads must not exceed the allowable loads reported in Section 4.1 of this report.
- 5.3 Suspended ceiling systems installed in Seismic Design Categories C, D, E and F must comply with Section 4.4 of this report.
- 5.4 Periodic special inspections and a statement of special inspections must be provided in accordance with Section 4.5 of this report.
- 5.5 The ceiling 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.
- 5.6 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.
- 5.7 The ceiling systems are limited to ceilings not considered accessible in accordance with Item 28 of IBC Table 1607.1.
- 5.8 The ceiling system are limited to interior application.
- 5.9 Light fixtures and mechanical services or any other utilities with a dynamic or dead load must not be supported by the ceiling system.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with Section 3.3 and 3.4 of the [ICC-ES Acceptance Criteria for Suspended Ceiling Framing Systems \(AC368\)](#), dated January 2022.
- 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 December 2020).
- 6.3 Engineering calculations.
- 6.4 Quality documentation.

7.0 IDENTIFICATION

- 7.1 The ceiling grid system are identified with the name of Decoustics and the evaluation report number (ESR-4180).
- 7.2 The report holder's contact information is the following:

CERTAINEED CANADA, INC.
dba CERTAINEED ARCHITECTURAL PRODUCTS
61 ROYAL GROUP CRESCENT
WOODBIDGE, ONTARIO L4H 1X9
CANADA
(905) 652-5232
www.decoustics.com

TABLE 1—CEILENCIO CEILING GRID SYSTEM INSTALLATION REQUIREMENTS

Nominal Ceiling Panel Size, inches		Maximum Ceiling Weight (includes weight of grid and ceiling panels), psf	Minimum Number of Butterfly Plates	Minimum Number of Torsion Springs Supporting Ceiling Panels	Additional Type F Grid Members Supporting Ceiling Panels	Additional Type F or Type G Grid Members Attached to Perimeter Grid Members
Width	Length					
24	48	1.2	4	4	None	None
48	64	1.2	6	6	One (1) located midlength of the panel connected to intersecting grid members with butterfly plates	None
48	96	1.2	6	6	One (1) located midlength of the panel connected to intersecting grid members with butterfly plates	None
24	48	2.0	6	6	One (1) located midlength of the panel connected to intersecting grid members with butterfly plates	None
38	64	2.0	8	8	Two (2) located third points along length of the panel connected to intersecting grid members with butterfly plates	19 inches on center connected to perimeter grid members with butterfly plates
24	48	2.8	6	6	One (1) located midlength of the panel connected to intersecting grid members with butterfly plates	None
48	72	2.8	8	10	Two (2) located third points along length of the panel connected to intersecting grid members with butterfly plates	24 inches on center connected to perimeter grid members with butterfly plates

For SI: 1 inch=25.4 mm, 1 psf= 4.88 kg/m².

FIGURE • A

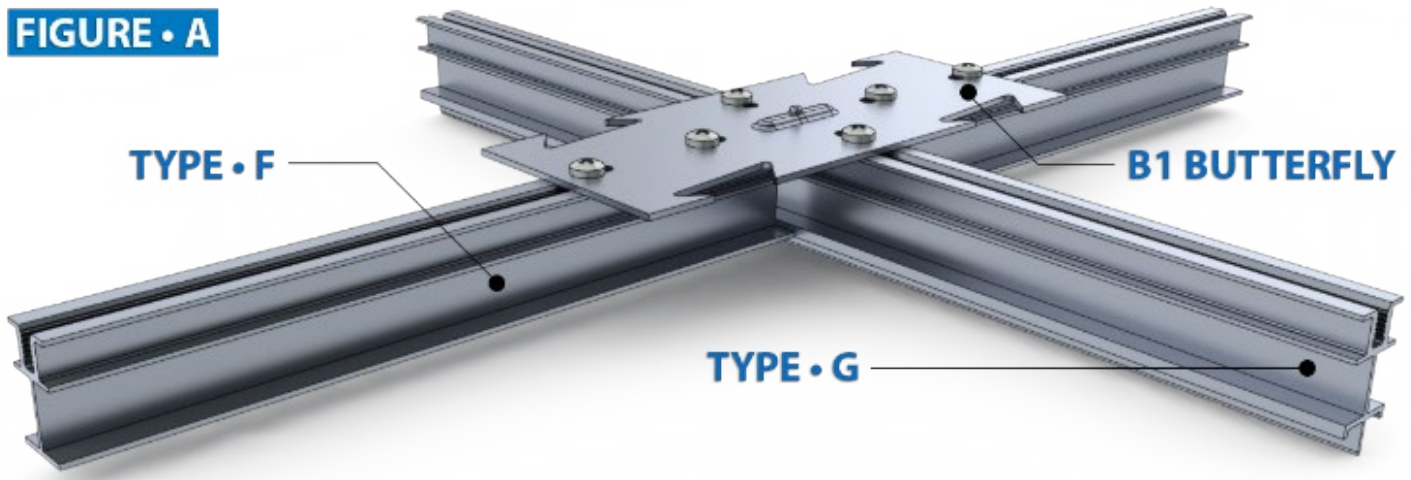


FIGURE 1- TYPE F AND TYPE G GRID MEMBERS WITH TYPE B1 BUTTERFLY PLATE

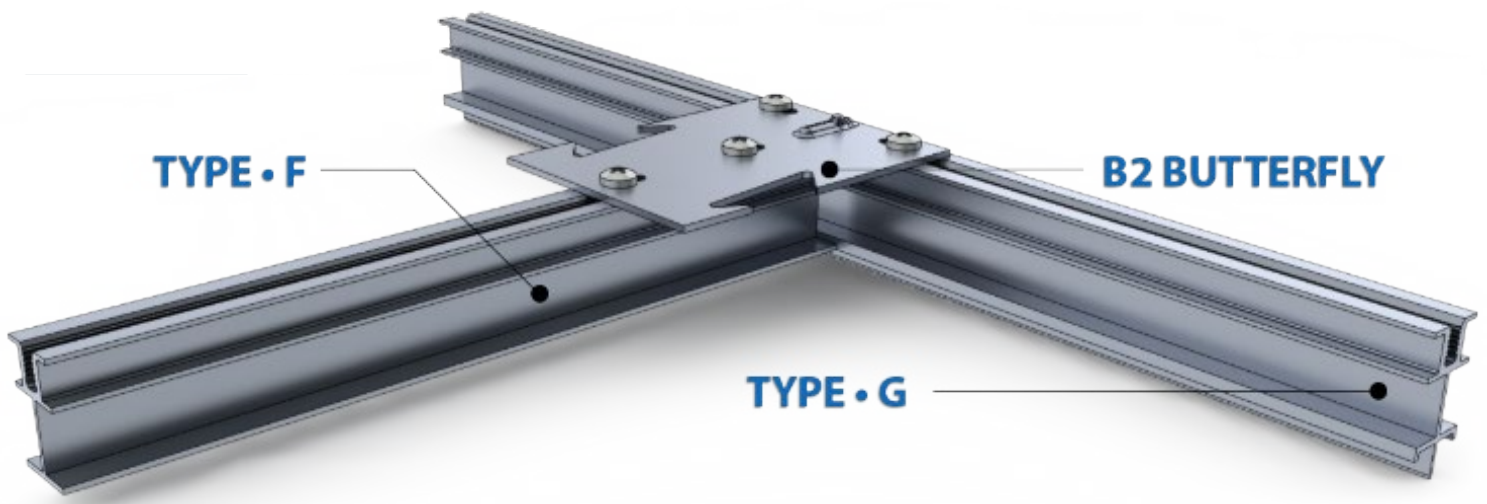


FIGURE 2--TYPE F AND TYPE G GRID MEMBERS WITH TYPE B2 BUTTERFLY PLATE

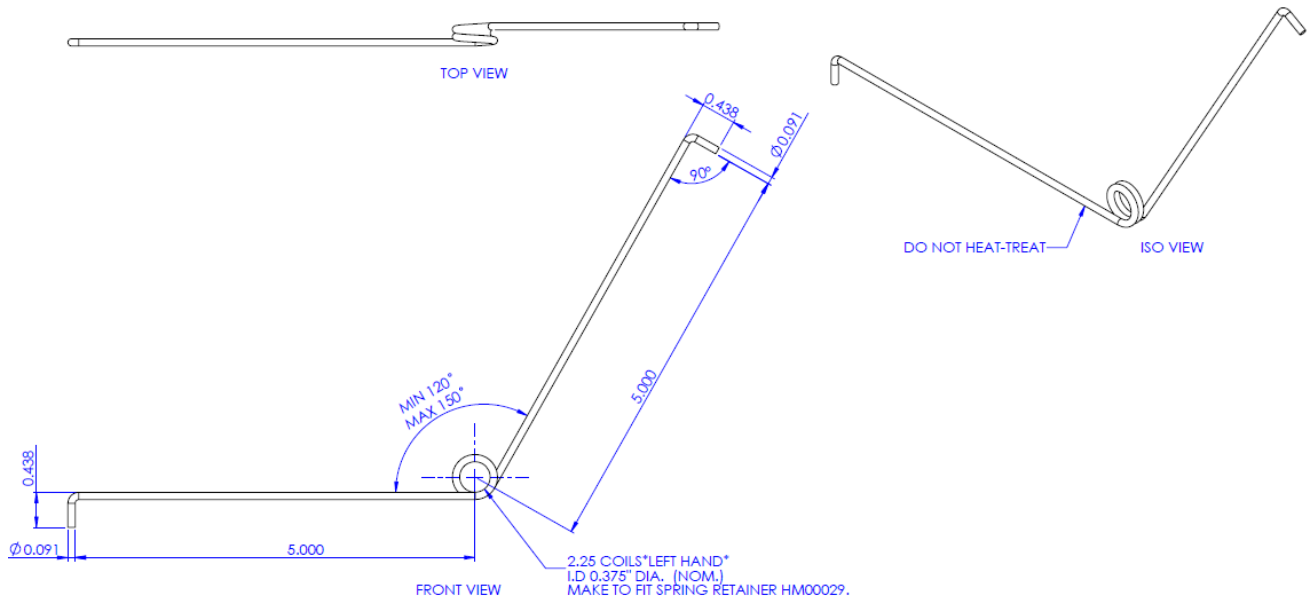


FIGURE 3A—TORSION SPRING STRAIGHT

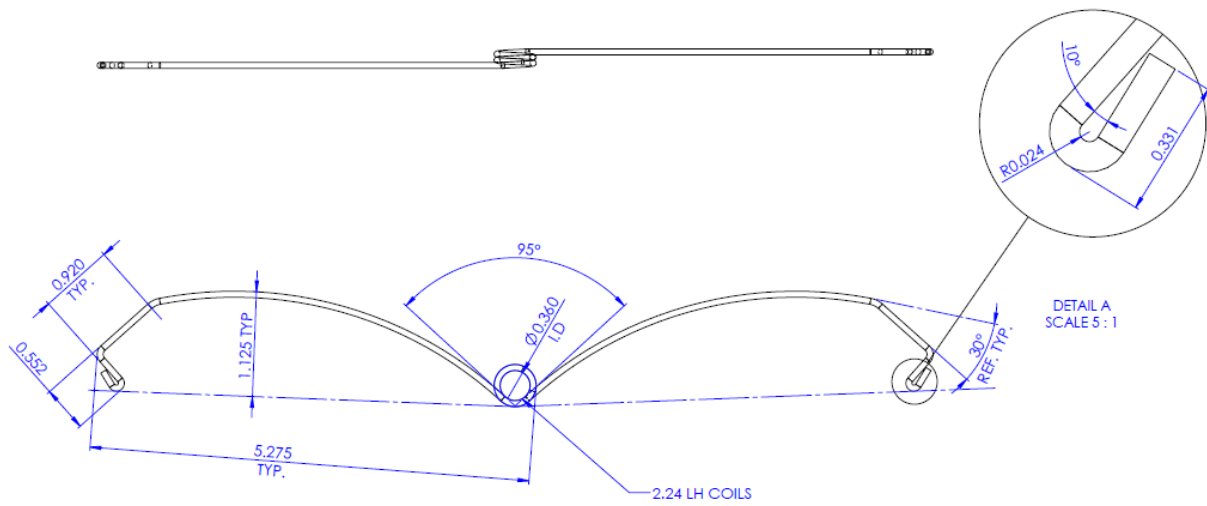
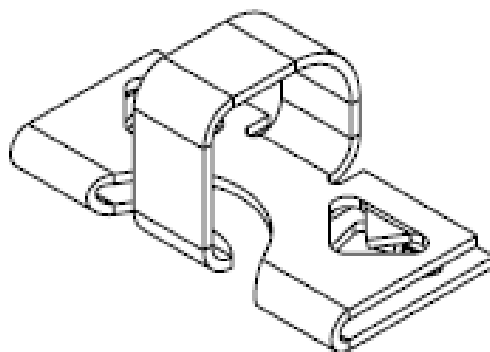


FIGURE 3B—TORSION SPRING CURVED



ISO VIEW

FIGURE 4—RETAINER CLIP

DIVISION: 09 00 00—FINISHES
Section: 09 22 26—SUSPENSION SYSTEMS
Section: 09 53 00—ACOUSTICAL CEILING SUSPENSION ASSEMBLIES

REPORT HOLDER:

CERTAINTED CANADA, INC. dba CERTAINTED ARCHITECTURAL PRODUCTS

EVALUATION SUBJECT:

CEILENCIO CEILING SYSTEM

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the Ceilencio Ceiling System, described in ICC-ES evaluation report [ESR-4180](#), has also been evaluated for compliance with the code noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 City of Los Angeles Building Code ([LABC](#))

2.0 CONCLUSIONS

The Ceilencio Ceiling System, described in Sections 2.0 through 7.0 of the evaluation report [ESR-4180](#), complies with the LABC Chapters 8, 16 and 25, and is subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Ceilencio Ceiling System described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-4180](#).
- The design, installation, conditions of use and identification of the Ceilencio Ceiling System is in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-4180](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16, 17 and 25, as applicable.
- Grid members and butterfly plates shall be identified by indentation or by nontransferable decal with letters not less than ¼-inch high, and shall include company name and part number.

This supplement expires concurrently with the evaluation report reissued October 2024.

DIVISION: 09 00 00—FINISHES
Section: 09 22 26—Suspension Systems
Section: 09 53 00—Acoustical Ceiling Suspension Assemblies

REPORT HOLDER:

CERTAINTED CANADA, INC. dba CERTAINTED ARCHITECTURAL PRODUCTS

EVALUATION SUBJECT

CEILENCIO CEILING SYSTEM

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the Ceilencio ceiling system, described in ICC-ES evaluation report ESR-4180, has also been evaluated for compliance with the code noted below.

Applicable code edition(s):

- 2022 California Building Code (CBC)

For evaluation of applicable Chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

2.0 CONCLUSIONS

The Ceilencio ceiling system, described in Sections 2.0 through 7.0 of the evaluation report ESR-4180, complies with CBC Chapters 8, 16 and 25, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 8, 16, 17 and 25, as applicable.

2.1 OSHPD

The Ceilencio ceiling system, described in Sections 2.0 through 7.0 of the evaluation report ESR-4180, complies with CBC Chapters 8, 16, 17 and 25, with applicable amendments, and Chapter 16A and 17A, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report, and the additional requirements in Sections 2.1.1 and 2.12 of this supplement:

2.1.1 Conditions of Use:

1. All loads applied shall be determined by a registered structural engineer and shall comply with applicable loads from CBC Chapter 16 and its amendments, and Chapter 16A.
2. Section 13.5.6.2 of ASCE 7 shall be revised in accordance with CBC Section 1617A.1.21 [OSHPD 1& 4].
3. Design and installation shall comply with the requirements of OSHPD Preapproved Details (OPD) OPD-0002-13, as applicable.

2.1.2 Special Inspection Requirements:

1. Periodic special inspection is required, in accordance with Section 1705A.13.5 of the CBC [OSHPD 1& 4].

2.2 DSA

The Ceilencio ceiling system, described in Sections 2.0 through 7.0 of the evaluation report ESR-4180, complies with CBC Chapters 8, 16 and 25, with applicable amendments, and Chapter 16A and 17A, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report, and the additional requirements in Sections 2.2.1 and 2.2.2 of this supplement:

2.2.1 Conditions of Use:

1. All loads applied shall be determined by a registered structural engineer and shall comply with applicable loads from CBC Chapter 16 and its amendments, and Chapter 16A.
2. Section 13.5.6.2 of ASCE 7 shall be revised in accordance with CBC Section 1617.11.16 [DSA-SS/CC] and Section 1617A.121 [DSA-SS].
3. Design and installation shall comply with the requirements of DSA Interpretation of Regulations (IR) DSA IR 25-2.13, as applicable.

2.2.2 Special Inspection Requirements:

1. Periodic special inspection is required, in accordance with Section 1705A.13.5 of the CBC [DSA-SS & DSA-SS/CC].

This supplement expires concurrently with the evaluation report, reissued October 2024.