

ICC-ES Evaluation Report

ESR-3352

Reissued January 2024

This report also contains:


- CBC and CRC Supplement

Subject to renewal January 2026

- LABC and LARC Supplement

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| DIVISION: 06 00 00— WOOD, PLASTICS AND COMPOSITES Section: 06 12 00— Structural Panels | REPORT HOLDER: AES CLEAN TECHNOLOGY, INC. | EVALUATION SUBJECT: AES CLEANROOM PANELS |  |
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1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2018, 2015, 2012, and 2009 [International Building Code® \(IBC\)](#)
- 2018, 2015, 2012, and 2009 [International Residential Code® \(IRC\)](#)

For evaluation for compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-3352 LABC and LARC Supplement](#).

Property evaluated:

- Structural
- Surface burning characteristics

1.2 Evaluation to the following green code(s) and/or standards:

- 2022 [California Green Building Standards Code \(CALGreen\)](#), Title 24, Part 11
- 2020, 2018, 2015, 2012 and 2008 ICC 700 [National Green Building Standard™](#) (ICC 700-2020, ICC 700-2018, ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1.

2.0 USES

The AES cleanroom panels described in this evaluation report are used as interior non-load-bearing wall and interior ceiling panels in pre-engineered, modular AES Cleanroom Systems intended for use in buildings classified as combustible construction.

3.0 DESCRIPTION

3.1 General:

The AES cleanroom panels are factory-assembled sandwich panels consisting of sheet-steel facers on both sides of an aluminum honeycomb core. The panels have a nominal thickness of 2 inches, and are 48 inches (1219 mm) wide and 120 inches (3048 mm) long for ceiling panels and 144 inches (3658 mm) long for wall panels. The core of the ceiling panels is continuous throughout the panels, and the wall panels have a maximum of one panel core joint. The panels have a flame-spread index of 25 or less and a maximum smoke-developed index of 450 or less when tested in accordance with ASTM E84.

The attributes of the panel system have been verified as conforming to the requirements of (i) CALGreen Section A4.404.3.3 and (ii) ICC 700-2020, ICC 700-2018, ICC 700-2015 and ICC 700-2012 Sections 601.5 and 11.601.5 and ICC 700-2008 Section 601.5. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Materials:

3.2.1 Panel Core: The aluminum honeycomb core made from Grade 3104 or 3004 aluminum has a cell size of 0.25 inch (6.4 mm) and a density of 3.5 lb/ft³ (56 kg/m³). The thickness of the aluminum of the honeycomb core is 0.0027 inch (0.068 mm). The nominal thickness of the honeycomb core is 2 inches. The core is 48 inches (1219 mm) wide by 120 inches (3048 mm) long. The core is supplied by the manufacturer noted in the approved quality documentation.

3.2.2 Panel Facers: The panel facers are No. 24 gage [minimum base-steel thickness of 0.022 inch (0.55 mm)] cold-formed galvanized sheet steel having a zinc coating weight of 0.056 lb/ft² (272 g/m²) on both surfaces. The facers are factory-coated with smooth, white, 4-mil (0.102 mm), unplasticized polyvinyl chloride (uPVC) coating. The steel is Grade DX51D steel complying with EN 10346 with a specified minimum ultimate tensile strength of 40 ksi (280 MPa) and yield strength of 33 ksi (230 MPa). The facers are 48 inches (1219 mm) wide by 122 inches (3100 mm) long and 48 inches (1219 mm) wide by 146 inches (3700 mm) long. The facers are supplied by the manufacturer noted in the approved quality documentation.

3.2.3 Panel Adhesive: Adhesive used to bond the facers to the aluminum honeycomb core complies with the Type I, Class 1, performance requirements set forth in the ICC-ES Acceptance Criteria for Sandwich Panel Adhesives (AC05). The adhesive is supplied by the manufacturer noted in the approved quality documentation.

3.2.4 Framing Members:

3.2.4.1 Ceiling Panels: The side and end framing members of the ceiling panels are 6063-T6 aluminum hollow extrusions. The thickness of the extrusions is $\frac{1}{8}$ inch (2 mm). The side members have a cross section of $1\frac{1}{8}$ inches (27 mm) by $1\frac{7}{8}$ inches (49 mm), while the end members have a cross section of 2 inches (50 mm) by $1\frac{7}{8}$ inches (49 mm). The side members have a groove centered on the member to accept an interconnecting tongue, and the end members have a notch on one side of the extruded members.

3.2.4.2 Wall Panels: All four edges of the wall panels are framed with 6063-T6 aluminum hollow extrusions with a nominally 2-inch-wide-by-3-inch-high (50 mm by 76 mm) cross section. The thickness of the extrusions is $\frac{1}{8}$ inch (2 mm). Each framing member has a groove to accept an interconnecting tongue. The tongue allows the panels to form a flush, rigid connecting joint between panels.

3.2.5 Adjustable Floor Track (Wall Base): The adjustable floor track consists of two 6053-T5 aluminum hollow extrusions: the upper section and lower section of the track. The thickness of the extrusions is $\frac{1}{8}$ inch (2 mm).

3.2.6 Floor Track Plate and Spline:

3.2.6.1 Plate: The cross-shaped aluminum floor track plate is used to connect wall panels to floor tracks (wall base), and is manufactured from 6063-T6 aluminum alloy.

3.2.6.2 Spline: The rectangular aluminum spline is used along the long edge of the wall panels connecting the wall panels, and is manufactured from 6063-T6 aluminum alloy. The spline is $\frac{1}{8}$ -inch (3 mm) thick by $\frac{3}{4}$ -inch (20 mm) long and is available in a length of 8 feet (2440 mm).

3.2.7 Fasteners: Fasteners used to assemble the adjustable floor track (wall base) must be #8 by 1-inch-long (25 mm) self-tapping screws, installed 24 inches (610 mm) on center and staggered on each side of the wall base.

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 Wall Panels: The wall panels, installed with a maximum wall height of 12 feet (3658 mm), comply with the interior wall load requirements of 2018 IBC Section 1607.15 [2015, 2012 and 2009 IBC Section 1607.14] and the L/120 deflection requirement of IBC Table 1604.3.

4.1.2 Ceiling Panels: The ceiling panels, supporting their own weight, have a maximum allowable span of 10 feet (3048 mm). Under these conditions, the deflection of the panels complies with the deflection requirement of L/360 specified in IBC Table 1604.3. The ceiling panels must be uniformly supported at the panel ends.

4.2 Installation:

4.2.1 General: The AES cleanroom panels must be installed in accordance with the manufacturer's published installation instructions, the approved plans, and this evaluation report. A copy of the manufacturer's published installation instructions or the approved plans must be available at all times on the jobsite during installation.

4.2.2 Wall Panel Installation: Wall panels are to be installed by mounting the panels on the adjustable extruded aluminum floor track. The anchor bolts used to anchor the wall base to the substrate, installed at a maximum spacing of 24 inches (610 mm) on center, are to be designed for each project to the satisfaction of the code official. In addition, the connection of the top of the wall panel is to be designed to the satisfaction of the code official.

4.2.3 Ceiling Panel Installation: The ceiling panels are to be installed with a suspension system that uses extruded architectural grade aluminum alloy ceiling beams supported by drop rods threaded with turnbuckles to allow the ceiling system to be leveled. Ceiling beams are typically spaced at 10 feet (3048 mm) on center, providing for 10-foot (3048 mm) open bays. Drop rods are typically installed at a maximum of 4 feet (1219 mm) on center along the length of each ceiling beam. The ceiling beams and drop rods are to be designed to the satisfaction of the code official.

5.0 CONDITIONS OF USE:

The AES cleanroom panels 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 panels must be manufactured, identified, and installed in accordance with this report, the approved plans, and the manufacturer's published installation instructions. If there is a conflict between this evaluation report, the approved plans and the manufacturer's published installation instructions, this evaluation report governs.
- 5.2** The wall panels are limited to interior nonload-bearing applications. The maximum wall height of the AES Cleanroom System is 12 feet (3658 mm).
- 5.3** Use of the ceiling panels to support loads other than the panel weight has not been evaluated and is outside the scope of this evaluation report.
- 5.4** Calculations and drawings demonstrating compliance with this evaluation report must be submitted, at the time of permit application, for approval by the code official. The calculations and drawings must be prepared by a registered design professional where required by the statutes of the jurisdiction in which the project is to be constructed.
- 5.5** The installation details of the adjustable floor track, including fastener type, size and spacing, as well as the substrates to which the floor tracks are attached, must be shown or defined in drawings, plans, and specifications and must be approved by the code official.
- 5.6** The suspension system used as the supporting element for the ceiling panels has not been evaluated and is outside scope of this evaluation report.
- 5.7** The panels are manufactured at the AES Cleanroom Technology manufacturing location in Suwanee, Georgia, under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1** Data in accordance with the [ICC-ES Acceptance Criteria for Sandwich Panels \(AC04\)](#), dated June 2019.
- 6.2** Data in accordance with the [ICC-ES Acceptance Criteria for Sandwich Panel Adhesives \(AC05\)](#), dated June 2009 (editorially revised May 2018).
- 6.3** Report of tests in conformance with ASTM E84.

7.0 IDENTIFICATION

- 7.1 Each AES cleanroom panel described in this report must be identified by a label bearing the manufacturer's name (AES Cleanroom Technology, Inc.) and the evaluation report number (ESR-3352).
- 7.2 The report holder's contact information is the following:

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3465 MARTIN FARM ROAD
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(678) 804-0260
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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 12 00—Structural Panels

REPORT HOLDER:

AES CLEAN TECHNOLOGY, INC.

EVALUATION SUBJECT:

AES CLEANROOM PANELS

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that AES cleanroom panels, described in ICC-ES evaluation report [ESR-3352](#), 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 editions:

- 2020 *City of Los Angeles Building Code* (LABC)
- 2020 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The AES cleanroom panels, described in Sections 2.0 through 7.0 of the evaluation report [ESR-3352](#), comply with the LABC Chapters 7 and 8, and the LARC, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The AES cleanroom panels described in this evaluation report supplement must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-3352](#).
- The design, installation, conditions of use and identification are in accordance with the 2018 *International Building Code*® (IBC) provisions noted in the evaluation report [ESR-3352](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.

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

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 12 00—Structural Panels

REPORT HOLDER:

AES CLEAN TECHNOLOGY, INC.

EVALUATION SUBJECT:

AES CLEANROOM PANELS

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the AES Cleanroom Panels, described in ICC-ES evaluation report ESR-3352, have also been evaluated for compliance with the codes noted below.

Applicable codes:

- 2019 *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.

- 2019 *California Residential Code*® (CRC)

2.0 CONCLUSIONS**2.1 CBC:**

The AES Cleanroom Panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-3352, comply with CBC Chapters 7, 8 and 26, provided the design and installation are in accordance with the 2018 *International Building Code*® (IBC) provisions, respectively, noted in the evaluation report ESR-3352 and the additional requirements of the CBC Chapters 7, 8, 16, and 26, as applicable.

2.1.1 OSHPD: The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA: The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The AES Cleanroom Panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-3352, comply with CRC Chapters 3, 6, 7, and 8, provided the design and installation are in accordance with the 2018 *International Residential Code*® (IRC) provisions, respectively, noted in the evaluation report ESR-3352 and the additional requirements of the CRC Chapters 3, 6, 7, and 8, as applicable.

This evaluation report supplement expires concurrently with the evaluation report ESR-3352, reissued January 2024.