

ICC-ES Evaluation Report

ESR-3863

Reissued July 2019

This report is subject to renewal July 2020.

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 46 46—Fiber-Cement Siding

REPORT HOLDER:

CEMBRIT HOLDINGS A/S

EVALUATION SUBJECT:

CEMBRIT FIBER-CEMENT FAÇADE PANEL SYSTEM

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018, 2015, 2012, 2009 and 2006 *International Building Code*® (IBC)
- 2018, 2015, 2012, 2009 and 2006 *International Residential Code*® (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)[†]

[†]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-3863 LABC and LARC Supplement](#).

Properties evaluated:

- Structural
- Surface burning Characteristics
- Non-combustibility
- Physical characteristics

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

- 2016 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2015, 2012 and 2008 ICC 700 *National Green Building Standard*™ (ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1

2.0 USES

The Cembrit Fiber-Cement Façade Panel System is used as an exterior wall covering system. The façade panel system is also used for interior applications as part of a Class A interior wall finish. The façade panel system may be installed on buildings of all construction types under the IBC and on buildings constructed in accordance with the IRC.

3.0 DESCRIPTION

3.1 General:

The Cembrit Fiber-Cement Façade Panel system is an open-jointed veneer wall covering system that allows air to circulate between the panels and the exterior face of the approved water-resistive barrier. The fiber cement panels are mounted with visible fasteners onto extruded aluminum members. When used as an exterior wall covering, the façade panel system must be installed over a water-resistive barrier. The Cembrit Fiber-Cement Façade Panel System is shown in Figure 1.

The attributes of the Cembrit Fiber-Cement Façade Panel System have been verified as conforming to the provisions of (i) CALGreen Sections A4.405.1.3 (prefinished materials) and A5.406.1.2 (reduced maintenance); (ii) ICC 700-2015 and ICC 700-2012 Sections 601.7, 11.601.7, and 12.1(A).601.7 (site-applied finishing materials); and (iii) ICC 700-2008 Section 601.7 (site-applied finishing materials). 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. The code may provide supplemental information as guidance.

3.2 Materials:

3.2.1 Cembrit Panels: The Cembrit fiber cement panels are manufactured from Portland cement, additives, reinforcing fibers, and comply with ASTM C1186 as Type A, minimum Grade IV. The panels have a Class A index when tested in accordance with ASTM E84 and are classified as non-combustible when tested in accordance with ASTM E136. The panels are available in lengths of approximately 98 inches and 120 inches, (the actual lengths are 2500 mm and 3050 mm), a width of approximately 49.2 inches (actually 1250 mm) and thicknesses of approximately 0.31 inch (actually 8 mm). Both faces of the panels are coated with either an opaque or translucent material having an acrylic base. The panels are available under the trade names of Patina Original and Patina Rough.

3.2.2 Fasteners:

The visible fastening system is used with the 0.31-inch-thick (8 mm) panels and consists of BB-LF 4.8 x 20 x 16 stainless steel rivets supplied with the system. The aluminum Hat-shaped structural profiles are fastened to steel studs with two EJOT JT3-6-5.5 x 35-millimeter (1.378 inches) long E16 self-drilling stainless steel screws per steel stud intersection. The aluminum Z-shaped structural profiles are fastened to the aluminum hat-profiles with one EJOT JT4-6-5.5 x 22-millimeter (0.866 inch) long

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stainless steel screws per intersection. The maximum installed weight for the 0.31-inch-thick (8 mm) Patina Original and Patina Rough panels with visible fastening system is 3.3 psf (16.1 kg/m²). Connection of the visible fastening system to the underlying wall assembly must be designed in accordance with Section 4.2.

3.2.3 Attachment Systems: The Cembrit fiber-cement façade panels are supported by an attachment system composed of extruded Z-shaped and Hat-shaped structural profiles made of ASTM B221, 6005a-T61, alloy aluminum manufactured in accordance with the specifications for the Cembrit Fiber-Cement Façade Panel System contained in the approved manufacturer's quality control manual. The Z-shaped structural profiles are 0.098 inch (2.5 mm) in thickness, 0.882 inch (22.4 mm) in depth, and have 1¹/₄-inch-long (31.75 mm) legs. The Hat-shaped structural profiles are 0.098 inch (2.5 mm) in thickness, 1/2 inch (12.7 mm) in depth, and have 1¹/₂-inch-long (38.1 mm) legs with 1-inch-long (25.4 mm) hat.

3.2.4 Water-resistive Barrier: Water-resistive barriers used with the Cembrit façade panel system must comply with 2018 IBC Section 1403.2 [2015, 2012, 2009 and 2006 IBC Section 1404.2] or IRC Section R703.2, as applicable, or be recognized in an ICC-ES evaluation report under the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38).

4.0 DESIGN AND INSTALLATION

4.1 General:

The Cembrit Fiber-Cement Façade Panel System (panels and attachment system) must be installed over existing wall assemblies capable of supporting the imposed loads including, but not limited to, transverse wind loads. The system must be securely connected to the supporting wall with fasteners that are compatible with the wall assembly substrate.

4.2 Design:

The allowable loads for the Cembrit Fiber-Cement Façade Panel System, given in Table 1, and the wind-load capacity of the underlying wall and substrate must be equal to or exceed the design uniform transverse wind loads determined in accordance with Chapter 16 of the IBC or Section R301.2.1 of the IRC, as applicable. The attachment system connections used to connect the Cembrit panel attachment system to the underlying wall or substrate must be designed by a design professional, and the details must be submitted to the code official for approval. The allowable loads must be reduced to the capacity of the attachment system connections if these are less than the values in Table 1. All fasteners used to connect the attachment system to exterior walls must be corrosion-resistant.

4.3 Installation:

4.3.1 General: The Cembrit Fiber-cement Façade Panel System must be installed in accordance with the manufacturer's published installation instructions and this report. A copy of the manufacturer's published installation instructions must be available on the jobsite at all times during construction.

The Cembrit Façade Panel System must be installed over wall assemblies complying with 2018 IBC Section 1402.3 and 2015 and 2012 IBC Section 1403.3, using the attachment systems described in Section 3.2.2. Exterior wall assemblies, on which the Cembrit Façade System is to be installed, must include flashing, a water-resistive barrier, a means of draining water, and protection against

condensation in accordance with 2018 IBC Section 1402.2 and 2015 and 2012 IBC Section 1403.2. The panels may be cut to accommodate various architectural designs. The system boundaries at the top, bottom, and around building openings must be finished in accordance with the manufacturer's published installation instructions. A ventilation path must be maintained to allow air to flow into, out of, and within the cavity between the water-resistive barrier and the Cembrit panels.

4.3.2 Visible Fastening System: The Hat-shaped structural profiles, spaced at a maximum on-center spacing of 22¹/₂ inches (571.5 mm), must be installed horizontally by using two EJOT JT3-6-5.5 by 35-millimeter (1.378 inches) long E16 self-drilling stainless steel screws per steel stud intersection, which is attached to the underlying wall or substrate complying with Section 4.2 of this evaluation report. The Z-shaped structural profiles, spaced at a maximum on-center spacing of 14 inches (355.6 mm), must be installed perpendicular to the Hat-shaped profiles by using one EJOT JT4-6-5.5 by 22-millimeter (0.866 inch) long self-drilling stainless steel screws per intersection. The panels must be fastened at a maximum horizontal on-center spacing of 14 inches (355.6 mm) and a maximum vertical on-center spacing of 18 inches (457.2 mm) onto the Z-shaped profiles with a minimum of one fastener per 1.75 square feet of panel (0.163 m²) of panel, using the 3/16-inch-diameter (4.76 mm), 4-by-19/K15 cladding rivets, provided. The maximum panel overhang for the visible fastening system is 3 inches (76.2 mm) and the maximum spacing between panels is 3/8 inch (9.5 mm). The panels must be installed with a minimum rivet edge distance of 3 inches (76.2 mm).

4.3.3 Type I, II, III or IV (Noncombustible) Construction: When installed as in accordance with Section 5.7 and Section 5.8 of this evaluation report, the nominally 8-millimeter (0.315 inch) Cembrit Patina Original or Patina Rough panels may be used on the exterior face of exterior walls of buildings required to be of Type I, II, III, or IV construction.

5.0 CONDITIONS OF USE

The Cembrit fiber-cement wall cladding described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.
- 5.2** The Cembrit Fiber-Cement Façade Panel System must be installed by qualified installers recognized by Cembrit Holdings A/S.
- 5.3** The allowable wind pressures for the Cembrit Fiber-Cement Façade Panel System shown in Table 1, the capacity of the supporting wall or substrate, and the capacity of the connections used to attach the system to the wall must be equal to, or exceed, the design wind pressure.
- 5.4** Drawings, design details, and calculations verifying the adequacy of the fastening to connect the Cembrit panel attachment system to the supporting wall must be submitted to the code official for approval. These must be prepared by a registered design professional when required by the statutes of the jurisdiction in which the system is to be installed.

- 5.5 When installed on exterior walls, the Cembrit Fiber-Cement Façade Panel System must be installed only on exterior walls incorporating sheathing capable of resisting positive and negative design wind pressures. The sheathing must be covered with a water-resistive barrier, as required by the applicable code, and a ventilation path must be maintained between the water-resistive barrier and the panels.
- 5.6 When installed with spaces between adjacent panels, on interior walls required to have a Class A finish, the Cembrit Fiber-Cement Façade Panels and System must be installed over a substrate having a Class A finish.
- 5.7 When installed over exterior walls on buildings of Types I, II III and IV construction in accordance with Section 1403.5 of the 2012 IBC, the fiber cement panel system is limited to 40 feet (12 192 mm) or less in height above the grade plane.
- 5.8 When installed over exterior walls on buildings of Types I, II III and IV construction in accordance with Exception 2 to Section 1402.5 of the 2018 IBC and Section 1403.5 of the 2015 IBC, the fiber cement panel system is not limited to 40 feet (12 192 mm) in height above the grade plane.
- 5.9 The Cembrit Fiber-Cement Façade Panel System is manufactured in Nyergesújfalu, Hungary, 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 Fiber Cement Siding Used as Exterior Wall Siding (AC90), dated October 2018.
- 6.2 Reports of testing in accordance with ASTM E84, Test Method for Surface Burning Characteristics of Building Materials.
- 6.3 Reports of testing in accordance with ASTM E136, Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 °C

7.0 IDENTIFICATION

- 7.1 The Cembrit panels and accessory components are labeled with the name of the manufacturer (Cembrit Holding A/S, the product name (Patina Original and Patina Rough), the evaluation report number (ESR-3863), the statement “conforms to ASTM C1186.”

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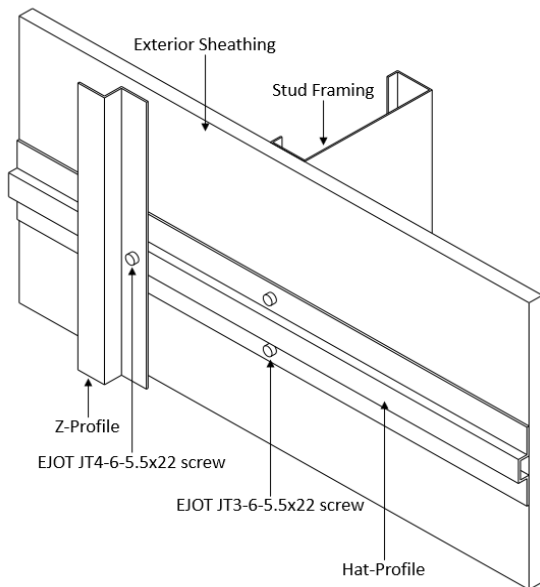
TABLE 1—ALLOWABLE TRANSVERSE WIND LOAD FOR USE OF THE CEMBRIT PANEL SYSTEM

SYSTEM TYPE, NOMINAL PANEL THICKNESS	ACTUAL THICKNESS	ALLOWABLE TRANSVERSE WIND LOAD ¹	
		Positive	Negative
Visible fastener attachment system, 8-millimeter (⁵ / ₁₆ -inch) panel	8 mm	70 psf	65 psf

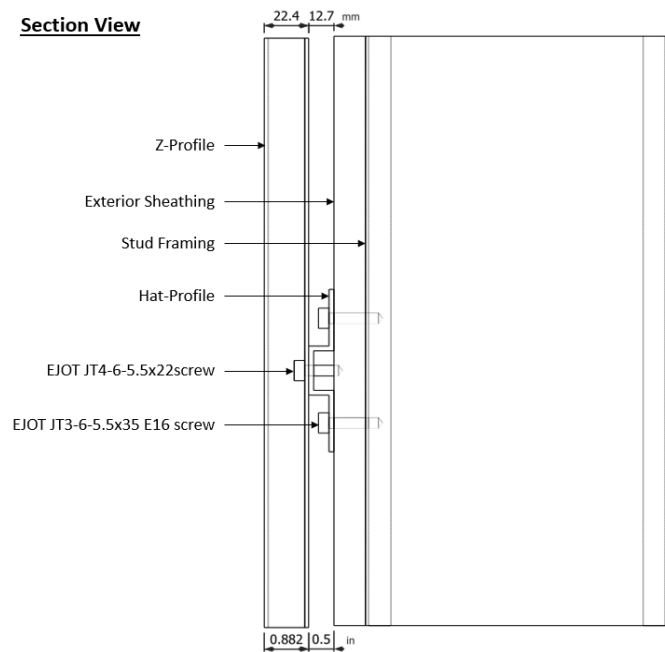
For SI: 1 inch = 25.4 mm, 1 psf = 0.0479 kPa.

¹Maximum allowable positive and negative transverse wind loads for use of the panels fastened to the Cembrit panel attachment system. Allowable loads must be reduced to the capacity of the fastening, determined in accordance with Section 4.2, used to connect the Cembrit panel attachment system to the underlying wall or substrate.

Perspective View



Section View



Plan View

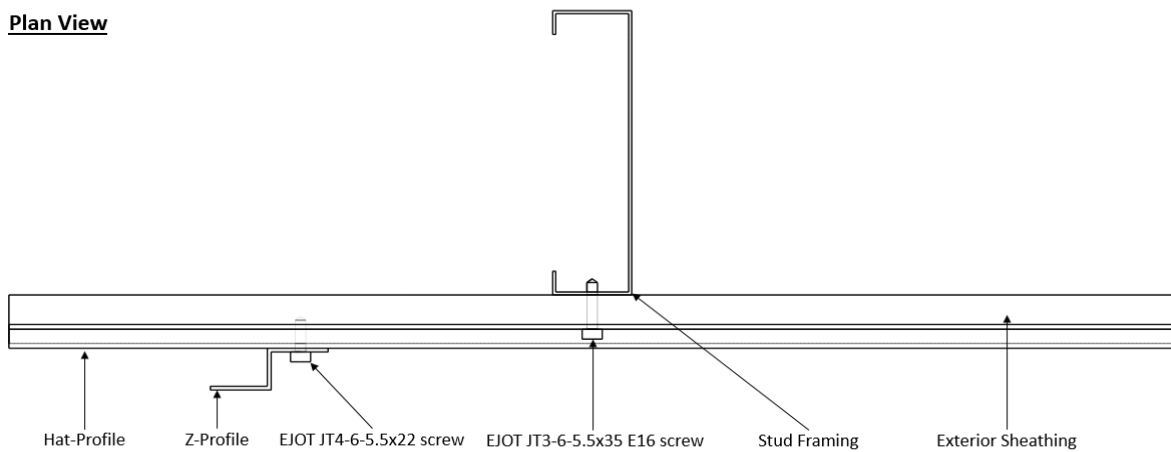


FIGURE 1—CEMBRIT FIBER-CEMENT FAÇADE PANEL SYSTEM

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ESR-3863 LABC and LARC Supplement

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 46 46—Fiber-Cement Siding

REPORT HOLDER:

CEMBRIT HOLDINGS A/S

EVALUATION SUBJECT:

CEMBRIT FIBER-CEMENT FAÇADE PANEL SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Cembrit Holdings A/S Fiber-Cement Façade Panel Systems, described in ICC-ES master evaluation report [ESR-3863](#), 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:

- 2017 *City of Los Angeles Building Code* (LABC)
- 2017 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The Cembrit Holdings A/S Fiber-Cement Façade Panel Systems, described in Sections 2.0 through 7.0 of the master evaluation report [ESR-3863](#), comply with the LABC Chapters 7, 8 and 14, and the LARC Chapter R7, and are subjected to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The Cembrit Holdings A/S Fiber-Cement Façade Panel Systems described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the master evaluation report [ESR-3863](#).
- The design, installation and inspection are in accordance with additional requirements of the LABC Chapters 16 and 17, as applicable.
- The Cembrit Holdings A/S Fiber-Cement Façade Panel Systems have not been evaluated under the LABC Chapter 7A or the LARC Section R337 for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland—Urban Interface Area.

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

ICC-ES Evaluation Report

ESR-3863 CBC and CRC Supplement

Issued July 2019

This report is subject to renewal July 2020.

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 46 46—Fiber-Cement Siding

REPORT HOLDER:

CEMBRIT HOLDINGS A/S

EVALUATION SUBJECT:

CEMBRIT FIBER-CEMENT FAÇADE PANEL SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Cembrit Holdings A/S Fiber-Cement Façade Panel Systems, recognized in ICC-ES master evaluation report ESR-3863, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2016 *California Building Code*® (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) and Division of State Architect (DSA), see section 2.1.1 and 2.1.2 below

- 2016 *California Residential Code*® (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The Cembrit Holdings A/S Fiber-Cement Façade Panel Systems, described in Sections 2.0 through 7.0 of the master evaluation report ESR-3863, comply with CBC Chapters 7, 8 and 14, provided the design and installation are in accordance with the 2015 *International Building Code*® (IBC) provisions noted in the master report and the additional requirements of CBC Chapters 16 and 17, as applicable.

The Cembrit Holdings A/S Fiber-Cement Façade Panel Systems have not been evaluated under CBC Chapter 7A for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland—Urban Interface Area.

2.1.1 OSHPD:

OSHPD requirements as indicated in the CBC are beyond the scope of this supplement.

2.1.2 DSA:

DSA requirements as indicated in the CBC are beyond the scope of this supplement.

2.2 CRC:

The Cembrit Holdings A/S Fiber-Cement Façade Panel Systems, described in Sections 2.0 through 7.0 of the master evaluation report ESR-3863, comply with CRC Chapter 7, provided the design and installation are in accordance with the 2015 *International Residential Code*® (IRC) provisions noted in the master report.

The Cembrit Holdings A/S Fiber-Cement Façade Panel Systems have not been evaluated under CRC Section R337 for use in the exterior design and construction of new buildings located in any Fire Hazard Severity Zone within State Responsibility Areas or any Wildland—Urban Interface Area.

The products recognized in this supplement have not been evaluated for compliance with the *International Wildland—Urban Interface Code*®.

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

ICC-ES Evaluation Report

ESR-3863 FBC Supplement

Issued July 2019

This report is subject to renewal July 2020.

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Section: 07 46 46—Fiber-Cement Siding

REPORT HOLDER:

CEMBRIT HOLDINGS A/S

EVALUATION SUBJECT:

CEMBRIT FIBER-CEMENT FAÇADE PANEL SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Cembrit Holdings A/S Fiber-Cement Façade Panel System, recognized in ICC-ES master evaluation report ESR-3863, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2017 *Florida Building Code—Residential*
- 2017 *Florida Building Code—Building*

2.0 CONCLUSIONS

The Cembrit Holdings A/S Fiber-Cement Façade Panel System, described in Sections 2.0 through 7.0 of the master evaluation report ESR-3863, complies with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design and installation are in accordance with the 2015 *International Building Code*® provisions noted in the master report.

Use of the Cembrit Holdings A/S Fiber-Cement Façade Panel System for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 9N-3, verification that the report holder's quality-assurance program is audited by a quality-assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

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