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ICC-ES Evaluation Report
ESR-4234

Reissued July 2023

This report is subject to renewal July 2025.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 42 43—Composite Wall Panels

REPORT HOLDER:

SISTEMAS TECNICOS DEL ACCESORIO Y COMPONENTES

EVALUATION SUBJECT:

STACCBOND FR AND STACBOND PE

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

2018 and 2015 *International Building Code®* (IBC)

Properties evaluated:

- Types I-IV construction
- Interior finish
- Structural

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

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

Attributes verified:

See Section 3.1

2.0 USES

STACCBOND FR and STACBOND PE MCM panels are used in MCM systems (the assembled panels) as exterior wall panels in accordance with Chapter 14 of the IBC, or as interior wall finish in accordance with Chapter 8 of the IBC.

STACCBOND FR MCM panels used on exterior walls of Types I through IV Construction must be installed in accordance with Section 4.3 of this report.

STACCBOND PE MCM panels used on exterior walls of Types I through IV Construction must be installed in accordance with Section 5.5 of this report.

3.0 DESCRIPTION

3.1 General:

STACCBOND PE and STACBOND FR MCM panels are panels complying with 2018 IBC Section 1406 (2015 IBC Section 1407). The MCM panels must be attached by the fabricator to extruded aluminum profiles used to stiffen the field of the panels and to provide perimeter fastening to attach the panels to walls. The fabricated panels are available in widths up to 78.7 inches (2 m). Lengths are available up to 39.4 feet (10 m).

The attributes of the panels 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 700-2020 Sections 601.7 and 11.601.7 and 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 Panels:

STACCBOND FR or STACBOND PE MCM panels consist of an exterior 0.5 mm (0.02 inch) nominal thick aluminum skin and an interior 0.5 mm (0.02 inch) nominal thick aluminum skin, bonded to both surfaces of a polyethylene-based core containing inorganic fillers, or polyethylene plastic core, respectively. Both PE and FR MCM panels are available with overall panel thickness of 0.157 inch (4 mm). The panels weigh 1.12 lbf/ft^2 (53.9 N/m^2) and 1.49 lbf/ft^2 (71.6 N/m^2) for PE and FR panels, respectively. The core material has a nominal density of 0.935 gr/cm^3 (58.4 lb/ft^3) and 1.53 gr/cm^3 (95.5 lb/ft^3) for PE and FR panels, respectively. The aluminum skins are anodized, brushed, or painted, when applicable.

The panels have a flame spread index of no more than 25 and a smoke developed index no more than 450 when tested in accordance with ASTM E84, and have a Class A interior finish classification.

3.3 Aluminum Extrusions:

The perimeter fastening profiles and stiffeners must be extruded from 6063-T5/T6 alloy aluminum complying with

ASTM B317. The STACCBOND PE and STACBOND FR MCM panels must be cut, shaped, and assembled by the MCM system fabricators. The MCM fastening system described in this report is the rout and return method.

4.0 DESIGN AND INSTALLATION

4.1 Design:

The maximum allowable design wind load pressures for the STACCBOND FR are 25 psf (1.20 kPa) for positive and 45 psf (2.15 kPa) for negative. The maximum allowable design wind load pressures for STACBOND PE are 30 psf (1.44 kPa) for positive and 49 psf (2.35 kPa) for negative. MCM panels and systems must be installed in accordance with this report. The framing supporting panels, such as wall studs, must be designed in accordance with the applicable code to be adequate for these loadings.

4.2 Installation:

The fabricator of the MCM systems must route the entire perimeter of the flat panels using a V-groove router leaving the face sheet uncut at the base of the routed groove. The perimeter edges must then be folded at a right angle to create return legs at the panel edges, using uncut facer sheets to act as hinges so that the flat panels are formed into pans. The MCM system fabricator must then install aluminum perimeter rails along the inside of and along the folded edges, and secures the rails to the panels with No. 8 corrosion resistant self-drilling screws. The MCM system fabricator must also install H-shaped aluminum stiffeners on the back of the panels, vertically, parallel to the 60-inch (1524 mm) maximum panel span at a maximum spacing of 24 inches (610 mm) on center. The stiffeners must be adhered to the back of the panels using an approved structural silicone sealant/adhesive complying with ASTM C1184; and attached to the perimeter rails at the top and bottom of the panels with a No. 8 corrosion-resistant self-drilling screws at each end. The panel length measured in the direction parellel to the stiffeners must not exceed 5 feet (1.52 m). The perimeter extrusions must then be attached to the supporting wall structure as determined by a registered design professional.

The MCM systems must be assembled in fabrication facilities. Field fabrication must be limited to minor adjustments and cutting of the assembled panels to fit as necessary. The appropriate installation procedures must be followed for each system. The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the manufacturer's instructions must be available on the jobsite during installation.

4.3 Exterior Walls of Buildings of Type I, II, III or IV (Noncombustible) Construction—STACBOND FR MCM panels (2018 IBC Section 1406.10 or 2015 IBC Section 1407.10):

Where exterior walls are required to be of noncombustible construction, the STACCBOND FR MCM walls must be built in accordance with the following:

The walls must be framined with minimum No. 20 gage C-channel steel studs at 24 inches (610 mm) on center. The interior surface of the wall must be faced with one layer of 5/8-inch (16 mm) thick Type X gypsum board in compliance with ASTM C1396. The gypsum board must be fastened to the wall framing with No. 6 by 1¼ inch (31 mm) long, self-drilling screws with a spacing of 8 inches (203 mm) around the board perimeter and 12 inches (305 mm) in the field. Gypsum board joints and fastener heads must be finished and taped in accordance with ASTM C840 or GA216. The walls must be filled with 4 pcf (64 kg/m^3) mineral wool insulation at the intersection of the floor and exterior wall in accordance with IBC Section 715.4.

The exterior surface of the wall assembly must be faced with one layer of horizontally installed $^5/_8$-inch (16 mm) thick gypsum sheathing in compliance with ASTM C1177. The gypsum board must be fastened to the wall framing with No. 6 by 1¼ inch (31 mm) long, corrosion-resistant self-drilling screws at a spacing of 8 inches (203 mm) around the board perimeter and 12 inches (305 mm) in the field. Openings must be framed with 20 gage cold-formed steel track members. 0.040-inch (1.1 mm) thick aluminum flashing must be installed around the opening. The window header must use ½-inch (13 mm) diameter open cell backer rod in the space of the flashing and MCM panel. ASTM C1184 silicone sealant must be used to cover the backer rod.

The exterior gypsum sheathing must be covered with VaproShield® WrapSheild® SA as a water-resistive barrier. The self-adhering membrane must be installed with a minimum 6 inches (152 mm) overlap.

The STACBOND FR MCM panels must be attached to aluminum extrusions in accordance with Section 4.2 of this report. The MCM panel joints must be ½-inch (13 mm) wide. MCM panel splines must be installed into vertical and horizontal panel joints. The minimum distance between the back of the MCM panels and the exterior gypsum sheathing must be 2 inches (50 mm).

4.4 Interior Wall Covering:

STACCBOND PE and STACBOND FR MCM panels used as an interior wall finish must be in compliance with IBC Chapter 8. The panels must be installed on the interior side of the wall in accordance with Section 4.2 of this report. The FR and PE MCM panels have a Class A interior finish classification.

5.0 CONDITIONS OF USE

STACCBOND PE and STACBOND FR MCM panels described in this report comply with, or are suitable alternatives to what is specified in, the codes indicated in Section 1.0 of this report subject to the following conditions:

5.1 Installation must comply with this report, the manufacturer's published instructions, the applicable code and the approved plans. If there are any conflicts between this report and the manufacturer's installation instructions, this report governs. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 The design of the structural support system (building framing, attachment accessories, and silicone adhesive) and panel connections provided by the MCM systems fabricator must be submitted to and approved by the code official for each project. The allowable transverse load capacity for the MCM panels and their interlock with their attachment accessories must be submitted to and approved by the code official for each project. The allowable transverse load capacity must not be equal to, or exceed the design loads determined in accordance with, Chapter 16 of the IBC. Allowable transverse loads for the MCM materials are set forth in Section 4.1 of this report.

5.3 The MCM systems fabricator must provide a certificate of compliance to the code official attesting that the MCM system fabrication includes the use of adhesives approved for use, that the adhesive

application complies with the adhesive manufacturer's installation guidelines, and that the MCM system fabrication complies with approved construction documents. Additionally, when the attachment methods employ adhesives other than to adhere stiffeners to the backs of the panels, special inspections are required in accordance with 2018 and 2015 IBC Section 1704.2.5, or the fabricator must be approved by the code official in accordance with 2018 and 2015 IBC Section 1704.2.5.1, as such operations are outside the scope of this report.

5.4 STACBOND FR MCM systems used on exterior walls of Types I, II, III or IV construction must be installed as specified in Section 4.3 of this report.

5.5 STACBOND PE MCM systems used on exterior walls of Types I, II, III or IV construction must be installed as specified in 2018 IBC Section 1406.11.1 (2015 IBC Section 1407.11.1).

5.6 Installation of STACCBOND PE and STACBOND FR MCM systems onto a fire-resistance-rated exterior wall are permitted when the assembly attachments do not penetrate through the entire exterior wall assembly.

5.7 Evidence of weather protection of the wall cladding system must be submitted to the code official in accordance with Section 1406.6 of the 2018 IBC and 1407.6 of the 2015 IBC.

5.8 The STACCBOND PE and STACBOND FR panels are manufactured by Sistemas Tecnicos Del Accesorio Y Componentes in Leon Villadecanes, Spain 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 Metal Composite Material (MCM) (AC25), dated October 2010 (editorially revised May 2018).

6.2 Reports of strength testing in accordance with ASTM E72.

6.3 Reports of surface burning testing in accordance with ASTM E84.

6.4 Reports of flammability testing in accordance with NFPA 285 for STACBOND FR MCM panels.

7.0 IDENTIFICATION

7.1 The panels are identified by a label noting the name and address of Sistemas Tecnicos Del Accesorio Y Componentes, the product name, the thickness, the flame-spread and smoke developed indices, and the evaluation report number (ESR-4234).

7.2 The report holder's contact information is the following:

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